LOGICAL DEVICES
SL761 (International) - 6.21

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1 Billing Period

1.1 Cosem objects

1.1.1 BillingPeriodInitParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;137;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	BillingPeriodInitParametersOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

This object defines the preset value of the number of EOB. It is taken into account immediately after programming (not at the end of session).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`BillingPeriodInitValue`

BillingPeriodInitValue

Data type: UNSIGNED8

Authorized value: 0 to 99

Default value: 0

1.1.2 BillingPeriodParameters

This object defines the periodical end of billing period parameters.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;137;0;1;255	1	0	2	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	BillingPeriodParametersOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Defines the hour where the daily EOB is triggered.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`DailyBillingHour`

DailyBillingHour

Range : 0 .. 23 and 65535
65535 is the inhibition value for this function (default value)

Data type: UNSIGNED16

Authorized value: 0 to 23 and 65535

Default value: 65535

1.1.3 EOBStatus

This data contains the EOB date and status. It is used to allow capture in a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;98;134;1;255	4	0	3	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EOBStatusOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NbDays`

NbDays

Number of days since last EOB.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE       // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 4: day

Default value: day (4)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  NumberOfEOB
  SourceOfLastEOB
}
```

NumberOfEOB

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

SourceOfLastEOB

Data type: UNSIGNED8

Authorized values:
0: By communication
1: By push button
2: By Control input
20: Internal, by end of period

Default value: By communication (0)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

1.1.4 NumberOfAvailableHistoricalSets

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;0;1;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NumberOfAvailableHistoricalSetsOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
NumberOfAvailableHistoricalSets
```

NumberOfAvailableHistoricalSets

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

1.2 Cosem profiles

1.2.1 EOBData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;1;98;1;0;255	7	1	12	7fff	ROM	66	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EOBDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 66 elements
  {
    EOBStatus (Att. Id: 0, Abs. Number: 3)
    AllTotalEnergies (Att. Id: 2, Abs. Number: 4)
    AllEnergyRates (Att. Id: 2, Abs. Number: 7)
    MaximumDemand1 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand1 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand2 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand2 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand3 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand3 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand4 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand4 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand5 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand5 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand6 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand6 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand7 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand7 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand8 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand8 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand9 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand9 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand10 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand10 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand11 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand11 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand12 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand12 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand13 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand13 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand14 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand14 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand15 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand15 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand16 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand16 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand17 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand17 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand18 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand18 (Att. Id: 2, Abs. Number: 1)
    MaximumDemand19 (Att. Id: 1, Abs. Number: 1)
    MaximumDemand19 (Att. Id: 2, Abs. Number: 1)
```

```
      MaximumDemand20 (Att. Id: 1, Abs. Number: 1)
      MaximumDemand20 (Att. Id: 2, Abs. Number: 1)
      MaximumDemand21 (Att. Id: 1, Abs. Number: 1)
      MaximumDemand21 (Att. Id: 2, Abs. Number: 1)
      MaximumDemand22 (Att. Id: 1, Abs. Number: 1)
      MaximumDemand22 (Att. Id: 2, Abs. Number: 1)
      MaximumDemand23 (Att. Id: 1, Abs. Number: 1)
      MaximumDemand23 (Att. Id: 2, Abs. Number: 1)
      MaximumDemand24 (Att. Id: 1, Abs. Number: 1)
      MaximumDemand24 (Att. Id: 2, Abs. Number: 1)
      AllCumulativeMaxDemands (Att. Id: 2, Abs. Number: 4)
      MinimumPowerFactorSinceLastEOB (Att. Id: 0, Abs. Number: 1)
      AveragePowerFactor (Att. Id: 1, Abs. Number: 2)
      AveragePowerFactor (Att. Id: 2, Abs. Number: 2)
      AveragePowerFactor (Att. Id: 4, Abs. Number: 2)
      MinFrequency (Att. Id: 0, Abs. Number: 2)
      MaxFrequency (Att. Id: 0, Abs. Number: 2)
      AllRmsMaxValues (Att. Id: 2, Abs. Number: 1)
      MinTemperature (Att. Id: 0, Abs. Number: 1)
      MaxTemperature (Att. Id: 0, Abs. Number: 1)
      ImportActivePowerAggregate (Att. Id: 0, Abs. Number: 1)
      ExportActivePowerAggregate (Att. Id: 0, Abs. Number: 1)
      ImportReactivePowerAggregate (Att. Id: 0, Abs. Number: 1)
      ExportReactivePowerAggregate (Att. Id: 0, Abs. Number: 1)
      ExcessDemandProfile (Att. Id: 2, Abs. Number: 2)
   }
 }
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (EOBStatus): Obis_code = 1;0;98;134;1;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 2 (AllTotalEnergies): Obis_code = 0;0;98;133;2;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 3 (AllEnergyRates): Obis_code = 0;0;98;133;1;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 4 (MaximumDemand1): Obis_code = 0;0;98;133;61;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 5 (MaximumDemand1): Obis_code = 0;0;98;133;61;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 6 (MaximumDemand2): Obis_code = 0;0;98;133;62;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 7 (MaximumDemand2): Obis_code = 0;0;98;133;62;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 8 (MaximumDemand3): Obis_code = 0;0;98;133;63;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 9 (MaximumDemand3): Obis_code = 0;0;98;133;63;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 10 (MaximumDemand4): Obis_code = 0;0;98;133;64;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 11 (MaximumDemand4): Obis_code = 0;0;98;133;64;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 12 (MaximumDemand5): Obis_code = 0;0;98;133;65;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 13 (MaximumDemand5): Obis_code = 0;0;98;133;65;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 14 (MaximumDemand6): Obis_code = 0;0;98;133;66;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 15 (MaximumDemand6): Obis_code = 0;0;98;133;66;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 16 (MaximumDemand7): Obis_code = 0;0;98;133;67;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 17 (MaximumDemand7): Obis_code = 0;0;98;133;67;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 18 (MaximumDemand8): Obis_code = 0;0;98;133;68;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 19 (MaximumDemand8): Obis_code = 0;0;98;133;68;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 20 (MaximumDemand9): Obis_code = 0;0;98;133;69;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 21 (MaximumDemand9): Obis_code = 0;0;98;133;69;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 22 (MaximumDemand10): Obis_code = 0;0;98;133;70;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 23 (MaximumDemand10): Obis_code = 0;0;98;133;70;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 24 (MaximumDemand11): Obis_code = 0;0;98;133;71;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 25 (MaximumDemand11): Obis_code = 0;0;98;133;71;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 26 (MaximumDemand12): Obis_code = 0;0;98;133;72;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 27 (MaximumDemand12): Obis_code = 0;0;98;133;72;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 28 (MaximumDemand13): Obis_code = 0;0;98;133;73;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 29 (MaximumDemand13): Obis_code = 0;0;98;133;73;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 30 (MaximumDemand14): Obis_code = 0;0;98;133;74;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 31 (MaximumDemand14): Obis_code = 0;0;98;133;74;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 32 (MaximumDemand15): Obis_code = 0;0;98;133;75;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 33 (MaximumDemand15): Obis_code = 0;0;98;133;75;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 34 (MaximumDemand16): Obis_code = 0;0;98;133;76;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 35 (MaximumDemand16): Obis_code = 0;0;98;133;76;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 36 (MaximumDemand17): Obis_code = 0;0;98;133;77;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 37 (MaximumDemand17): Obis_code = 0;0;98;133;77;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 38 (MaximumDemand18): Obis_code = 0;0;98;133;78;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 39 (MaximumDemand18): Obis_code = 0;0;98;133;78;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 40 (MaximumDemand19): Obis_code = 0;0;98;133;79;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 41 (MaximumDemand19): Obis_code = 0;0;98;133;79;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 42 (MaximumDemand20): Obis_code = 0;0;98;133;80;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 43 (MaximumDemand20): Obis_code = 0;0;98;133;80;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 44 (MaximumDemand21): Obis_code = 0;0;98;133;81;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 45 (MaximumDemand21): Obis_code = 0;0;98;133;81;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 46 (MaximumDemand22): Obis_code = 0;0;98;133;82;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 47 (MaximumDemand22): Obis_code = 0;0;98;133;82;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 48 (MaximumDemand23): Obis_code = 0;0;98;133;83;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 49 (MaximumDemand23): Obis_code = 0;0;98;133;83;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 50 (MaximumDemand24): Obis_code = 0;0;98;133;84;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 51 (MaximumDemand24): Obis_code = 0;0;98;133;84;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 52 (AllCumulativeMaxDemands): Obis_code = 0;0;98;133;90;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 53 (MinimumPowerFactorSinceLastEOB): Obis_code = 1;1;13;3;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 54 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 1, Data_index = 0

Index 55 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 2, Data_index = 0

Index 56 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 4, Data_index = 0

Index 57 (MinFrequency): Obis_code = 1;1;14;3;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 58 (MaxFrequency): Obis_code = 1;1;14;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 59 (AllRmsMaxValues): Obis_code = 1;1;98;134;3;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 60 (MinTemperature): Obis_code = 0;0;128;3;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 61 (MaxTemperature): Obis_code = 0;0;128;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 62 (ImportActivePowerAggregate): Obis_code = 1;1;1;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 63 (ExportActivePowerAggregate): Obis_code = 1;1;2;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 64 (ImportReactivePowerAggregate): Obis_code = 1;1;3;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 65 (ExportReactivePowerAggregate): Obis_code = 1;1;4;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 66 (ExcessDemandProfile): Obis_code = 0;0;98;133;7;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 66 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

1.2.2 LightEOBData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;1;98;2;0;255	7	1	5	7fff	ROM	5	0	18	18	18

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LightEOBDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 18 elements
{
  SEQUENCE      // 5 elements
  {
    SerialNumber (Att. Id: 0, Abs. Number: 1)
    EOBStatus (Att. Id: 0, Abs. Number: 3)
    LightTotalEnergies (Att. Id: 2, Abs. Number: 2)
    AllEnergyRates (Att. Id: 2, Abs. Number: 7)
    AllMaximumDemands (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (SerialNumber): Obis_code = 0;0;96;1;0;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 2 (EOBStatus): Obis_code = 1;0;98;134;1;255, Class_id = 4, Attribute_index = 0, Data_index = 0
Index 3 (LightTotalEnergies): Obis_code = 0;0;98;133;3;255, Class_id = 7, Attribute_index = 2, Data_index = 0
Index 4 (AllEnergyRates): Obis_code = 0;0;98;133;1;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 5 (AllMaximumDemands): Obis_code = 0;0;98;133;6;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

2 Communication

2.1 Cosem objects

2.1.1 CommProgrammingAuthorizationParameters

This object allows all programming through communication links (excepted date and time programming) when the reset push button is sealed (security issue).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;12;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CommProgrammingAuthorizationParametersOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

`CommProgrammingAuthorization`

CommProgrammingAuthorization

Data type: UNSIGNED8

Authorized values:
0: ALWAYS_AUTHORIZED
15: AUTHORIZED_BY_RESET_BUTTON

Default value: ALWAYS_AUTHORIZED (0)

2.1.2 CommunicationTypeParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;16;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CommunicationTypeParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Here is fixed, types of communication managed by the customer port and by the utility port.
The IEC1107 configuration is only available on one channel (means that the configuration of both channels with IEC1107 is prohibited).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  CustomerCommunicationType
  UtilityCommunicationType
}
```

CustomerCommunicationType

Specifies the communication type for the customer port :
- IEC1107 is only available if "RealTimePortActivationParameter = TRUE".

Data type: ENUMERATED

Authorized values:
0: TCP
1: HDLC
2: IEC1107

Default value: HDLC (1)

UtilityCommunicationType

Specifies the communication type for the utility port :
- TCP is not available on this port.
 - IEC1107 is only available if "RealTimePortActivationParameter = TRUE".

Data type: ENUMERATED

Authorized values:
1: HDLC
2: IEC1107

Default value: HDLC (1)

2.1.3 ConnectionUserNameParameters

The ConnectionUserNameParameters object holds the name of the author of the connection at each COSEM connection.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;12;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ConnectionUserNameParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get/Set	Get/Set	Get/Set	Get/Set

Attribute description

```
ConnectionUsername
```

ConnectionUsername

This parameter is independant from restrictive programmation conditions.

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: username

2.1.4 COSEMLogicalDeviceName

This object contains the current COSEM logical device name

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;42;0;0;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	COSEMLogicalDeviceNameOBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
COSEMLogicalDeviceName
```

COSEMLogicalDeviceName

Indicates the current logical device name
Composed of :
- Meter type (6 first digits) : Value = "SLB761"
- Logical device type (2 digits) : Value ="MA" for Management logical device or "EL" for Electricity logical device
- Serial Number (8 last digits)

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 16)

Default value: 83;76;66;55;54;49;77;65;115;110;48;48;48;48;48;48; (SLB761MAsn000000)

2.1.5 CurrentAssociationID

This object allows modeling of application associations between a meter and a system, using the application context short name referencing. The short name of the current "Association SN" object is preset to 0xFA00.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;0;255	15	0	5	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentAssociationIDOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	NULL	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.

The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }
          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: 1

Default value: 1

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**
Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description
```
SEQUENCE     // 2 elements
{
  current_client_SAP
  current_server_SAP
}
```
current_client_SAP

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

current_server_SAP

Data type: UNSIGNED16

Authorized value: 0 to 16383

Default value: 0

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description
```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```
joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE     // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service

Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process. Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

association status

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.6 CustomerHDLCParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;2;22;0;0;255	23	1	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerHDLCParametersOBISCode
A2. comm_speed	ENUMERATED	See below
A3. window_size_transmit	UNSIGNED8	See below
A4. window_size_receive	UNSIGNED8	See below
A5. max_info_field_length_transmit	UNSIGNED16	See below
A6. max_info_field_length_receive	UNSIGNED16	See below
A7. inter_octet_time_out	UNSIGNED16	See below
A8. inactivity_time_out	UNSIGNED16	See below
A9. device_address	UNSIGNED16	See below

■ Attribute 2: comm_speed

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

comm_speed

comm_speed

Data type: ENUMERATED

Authorized values:
2: 1200 bauds
3: 2400 bauds
4: 4800 bauds
5: 9600 bauds
6: 19200 bauds

Default value: 9600 bauds (5)

■ Attribute 3: window_size_transmit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`window_size_transmit`

window_size_transmit

Data type: UNSIGNED8

Authorized value: 1 to 7

Default value: 7

■ **Attribute 4: window_size_receive**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`window_size_receive`

window_size_receive

Data type: UNSIGNED8

Authorized value: 0 to 1

Default value: 1

■ **Attribute 5: max_info_field_length_transmit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`max_info_field_length_transmit`

max_info_field_length_transmit

Data type: UNSIGNED16

Authorized value: 768

Default value: 768

■ **Attribute 6: max_info_field_length_receive**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`max_info_field_length_receive`

max_info_field_length_receive

Data type: UNSIGNED16

Authorized value: 240

Default value: 240

■ **Attribute 7: inter_octet_time_out**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`inter_octet_time_out`

<u>inter_octet_time_out</u>

Defines the time, expressed in ms, over which, when any character is received from the primary station, the device will treat the already received data as a complete frame.

Data type: UNSIGNED16

Authorized value: 1 to 1000

Default value: 110

■ **Attribute 8: inactivity_time_out**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`inactivity_time_out`

<u>inactivity_time_out</u>

Defines the time, expressed in seconds over which, when any frame is received from the primary station, the device will process a disconnection.

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 30

■ **Attribute 9: device_address**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`device_address`

<u>device_address</u>

Contains the physical device address of a device :
- 0x01 .. 0x0F : Reserved for future use
- 0x10 .. 0x03FFD : Usable address space
- 0x03FFE : CALLER Physical Device Address

Data type: UNSIGNED16

Authorized value: 1 to 16382

Default value: 17

2.1.7 CustomerModemDiagnosticParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;2;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerModemDiagnosticParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  ModemDiagnosticPeriod
  ModemDiagnosticType
}
```

ModemDiagnosticPeriod

Period in second between two GSM/GPRS customer modem diagnostic.

Data type: UNSIGNED32

Authorized value: 10 to 86400

Default value: 3600

ModemDiagnosticType

Define which type of diagnostic frame must be used.

Data type: ENUMERATED

Authorized values:
0: NO_DIAGNOSTIC
1: SIEMENS_TC65_DIAGNOSTIC

Default value: NO_DIAGNOSTIC (0)

2.1.8 CustomerModemDiagnosticRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;2;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerModemDiagnosticRegisterOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 7 elements
{
  DiagDateTime
  rs
  MNC
  PWR
  dBm
```

```
  RXLev
  ModemStatus
}
```

DiagDateTime

Date of this diagnoctic

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

rs

Received signal strength indication.

Data type: UNSIGNED8

Authorized value: 0 to 63

Default value: 0

MNC

Mobile Network Code, it corresponds to the operator.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

PWR

Current power level in dBm

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

dBm

Receiving level of the BCCH carrier (in dBm)

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

RXLev

Minimal receiving level (in dBm) to allow registration

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

ModemStatus

Modem status regarding network and dedicated channel.
The possible values are :
"Searching" (modem is searching a cell)
"Cell Rese" (modem is reselecting a cell)
"Low Serv" (only emergency calls are allowed)
"No Conn" (modem is not connected to a distant device)

Data type: VISIBLESTRING

Authorized value: Size = 9

Default value:

2.1.9 CustomerModemParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;2;2;2;0;255	28	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerModemParametersOBISCode
A2. mode	ENUMERATED	See below
A3. listening_window	ARRAY	See below
A4. status	ENUMERATED	See below
A5. number_of_calls	UNSIGNED8	See below
A6. number_of_rings	NULL	See below

■ Attribute 2: mode

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

Mode

Mode

Complementary informations :
1 : Once the number of calls is reached, the window status becomes inactive until the next start date, whatever the result of the call.
2 : Once the number of successful communications is reached, the window status becomes inactive until next start date.
3 : No modem to manage.
204 : The modem power supply is "ON", without modem management.
205 : The modem power supply is "OFF", without modem management.

Data type: ENUMERATED

Authorized values:
0: Dedicated line to the device
1: Share line management with limited number of calls allowed
2: Share line management with limited number of successful calls allowed
3: Direct line
204: APS ON
205: APS OFF

Default value: Dedicated line to the device (0)

■ Attribute 3: listening_window

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  SEQUENCE     // 2 elements
  {
    start_time
    end_time
```

```
    }
}
```

start_time

Only the fields hour and minutes are managed in these UTC. Other fields are not significative :
- when programmed, they are not taken into account.
- when read, they are equal to 255, excepted 'deviation highbyte' (=128) and 'deviation lowbyte' (=0).
Default value : 0h00.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;0;0;255;255;128;0;255;

end_time

Only the fields hour and minutes are managed in these UTC. Other fields are not significative :
- when programmed, they are not taken into account.
- when read, they are equal to 255, excepted 'deviation highbyte' (=128) and 'deviation lowbyte' (=0).
Default value : 0h00.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;0;0;255;255;128;0;255;

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Status
```

Status

Complementary informations :
0 : The device will manage no new incoming call. This status is automatically reset to Active when the next listening window starts.
1 : The device can answer to the next incoming call.
2 : No new incoming call will be accepted in the currend window until next window be opened.

Data type: ENUMERATED

Authorized values:
0: Inactive
1: Active
2: Locked

Default value: Inactive (0)

■ Attribute 5: number_of_calls

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
number_of_calls
```

number_of_calls

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 6: number_of_rings**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

2.1.10 CustomerModemSetup

These parameters allow to define if a modem can be activated or not on the customer link, the initialisation string for the modem and the modem baudrate.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;2;2;0;0;255	27	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerModemSetupOBISCode
A2. comm_speed	ENUMERATED	See below
A3. initialization_string	ARRAY	See below
A4. modem_profile	ARRAY	See below

■ **Attribute 2: comm_speed**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`comm_speed`

comm_speed

Data type: ENUMERATED

Authorized values:
2: 1200 bauds
3: 2400 bauds
4: 4800 bauds
5: 9600 bauds
6: 19200 bauds

Default value: 2400 bauds (3)

■ **Attribute 3: initialization_string**

"initialization_string" is an ordered array to send to the modem for its initialization.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  SEQUENCE OF      // 2 elements ("Array Of" view as "Sequence" in get only)
  {
    RequestAndResponse
  }
}
```

RequestAndResponse

Request
Default value of request in the first init string : "ATX3&D0S0=2"
Default value of request for other init strings : ""
Response
Init string responses are not managed by the meter => the response is always equal to 'NOT USED' when reading the CustomerModemSetup object.
Size octet string = 9

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 27)

Default value: 65;84;88;51;38;68;48;83;48;61;50;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; (ATX3&D0S0=2)

■ **Attribute 4: modem_profile**

"modem_profile" is an ordered array of octet-strings, which position allows to determine the answer of the modem.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 17 elements
{
  modem_profile
}
```

modem_profile

Default values are listed below :
· location 0 : OK
· location 1 : CONNECT
· location 2 : RING
· location 3 : NO CARRIER
· location 4 : ERROR
- location 5 : NOT USED
· location 6 : NO DIALTONE
· location 7 : BUSY
· location 8 : NO ANSWER
- locations 9 to 16 : NOT USED.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 27)

Default value: 78;79;84;32;85;83;69;68;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; (NOT USED)

2.1.11 CustomerRemoteReportParameters1

This object holds the parameters relative to remote address when meter customer modem is used to send out a given alarm. It allows to select the alarm notification mode(s) (email, SMS and/or PSTN auto dialing). The format is the same for each of three possible remote addresses.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;4;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerRemoteReportParameters1OBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	NULL	See below
A6. phone_list	ARRAY	See below

■ **Attribute 2: mode**

Defines the alarm notification mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Mode`

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed.

Data type: ENUMERATED

Authorized values:
0: No selected mode
4: SMS used for alarm notification
6: Email used for alarm notification

Default value: No selected mode (0)

■ **Attribute 3: repetitions**

Not used (used only in PSTN mode).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`repetitions`

repetitions

Not used (used only in PSTN mode).

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ **Attribute 4: repetition_delay**

Delay between two consecutive attempts when the former attempt failed.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
repetition_delay
```

repetition_delay

This delay is common to the 3 alarm notification media and is not linked to the channel :
- Unit : sec ; default value : 6h

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 21600

■ Attribute 5: calling_window

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 6: phone_list

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 0..3 elements
{
  Address
}
```

Address

PROGRAMMATION
Only one address can be programmed at once (1 element in the array).
This address is relative to the mode programmed in the same programming sequence
 (ended by a validate) and not to the current mode of the device.
Several addresses can take place in the same programming sequence.
LECTURE
When read, this array will contain all the valid programmed addresses
related to the concerned channel, whatever the mode is => 3 elements max (one per mode).
When no mode is selected, an array of 0 element is read.

According to the corresponding mode, max length of the address is :
- 15 characters for PSTN and SMS
- 63 characters for email
Default value : empty array

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;
(ÿÿÿ)

2.1.12 CustomerRemoteReportParameters2

This object holds the parameters relative to remote address when meter customer modem is used to send out a given alarm. It allows to select the alarm notification mode(s) (email, SMS and/or PSTN auto dialing).
The format is the same for each of three possible remote addresses.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;5;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerRemoteReportParameters2OBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	NULL	See below
A6. phone_list	ARRAY	See below

■ **Attribute 2: mode**

Defines the alarm notification mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Mode`

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed.

Data type: ENUMERATED

Authorized values:
0: No selected mode
4: SMS used for alarm notification
6: Email used for alarm notification

Default value: No selected mode (0)

■ **Attribute 3: repetitions**

Not used (used only in PSTN mode).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`repetitions`

repetitions

Not used (used only in PSTN mode).

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ Attribute 4: repetition_delay

Delay between two consecutive attempts when the former attempt failed.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
repetition_delay
```

repetition_delay

This delay is common to the 3 alarm notification media and is not linked to the channel :
- Unit : sec ; default value : 6h

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 21600

■ Attribute 5: calling_window

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 6: phone_list

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 0..3 elements
{
  Address
}
```

Address

PROGRAMMATION
Only one address can be programmed at once (1 element in the array).
This address is relative to the mode programmed in the same programming sequence
 (ended by a validate) and not to the current mode of the device.
Several addresses can take place in the same programming sequence.
LECTURE
When read, this array will contain all the valid programmed addresses
related to the concerned channel, whatever the mode is => 3 elements max (one per mode).
When no mode is selected, an array of 0 element is read.

According to the corresponding mode, max length of the address is :
- 15 characters for PSTN and SMS
- 63 characters for email
Default value : empty array

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;255;
(ÿÿÿ)

2.1.13 CustomerRemoteReportParameters3

This object holds the parameters relative to remote address when meter customer modem is used to send out
 a given alarm. It allows to select the alarm notification mode(s) (email, SMS and/or PSTN auto dialing).
The format is the same for each of three possible remote addresses.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;6;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerRemoteReportParameters3OBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	NULL	See below
A6. phone_list	ARRAY	See below

■ Attribute 2: mode

Defines the alarm notification mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Mode`

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed.

Data type: ENUMERATED

Authorized values:
0: No selected mode
4: SMS used for alarm notification
6: Email used for alarm notification

Default value: No selected mode (0)

■ Attribute 3: repetitions

Not used (used only in PSTN mode).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`repetitions`

repetitions

Not used (used only in PSTN mode).

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ Attribute 4: repetition_delay

Delay between two consecutive attempts when the former attempt failed.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
repetition_delay
```

repetition_delay

This delay is common to the 3 alarm notification media and is not linked to the channel :
- Unit : sec ; default value : 6h

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 21600

■ Attribute 5: calling_window

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 6: phone_list

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 0..3 elements
{
  Address
}
```

Address

PROGRAMMATION
Only one address can be programmed at once (1 element in the array).
This address is relative to the mode programmed in the same programming sequence
 (ended by a validate) and not to the current mode of the device.
Several addresses can take place in the same programming sequence.
LECTURE
When read, this array will contain all the valid programmed addresses
related to the concerned channel, whatever the mode is => 3 elements max (one per mode).
When no mode is selected, an array of 0 element is read.

According to the corresponding mode, max length of the address is :
- 15 characters for PSTN and SMS
- 63 characters for email
Default value : empty array

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;255;
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2.1.14 DataPushAuthorizationParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;18;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DataPushAuthorizationParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

`DataPushAuthorization`

DataPushAuthorization

Not authorized : Not allow the programming of DataPush parameters
Authorized : Allow the programming of DataPush parameters

Data type: ENUMERATED

Authorized values:
0: NOT_AUTHORIZED
1: AUTHORIZED

Default value: NOT_AUTHORIZED (0)

2.1.15 DataPushListParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;21;0;5;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DataPushListParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1..8 elements
{
  SEQUENCE      // 3 elements
  {
    ClassID
    LogicalName
    AttributeId
  }
}
```

ClassID

Data type: UNSIGNED16

Authorized value: 4

Default value: 4

LogicalName

The logical name authorized are only those are configured in Load profile channel 2.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

AttributeId

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

2.1.16 DataPushParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;7;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DataPushParametersOBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	ARRAY	See below
A6. phone_list	ARRAY	See below

■ **Attribute 2: mode**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Mode`

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed
- 4 : SMS used for alarm notification is not allowed

Data type: ENUMERATED

Authorized values:
0: No selected mode
201: FTP

Default value: No selected mode (0)

■ **Attribute 3: repetitions**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`Repetitions`

Repetitions

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 6

■ **Attribute 4: repetition_delay**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`repetition_delay`

repetition_delay

Delay between two consecutive attempts when the former attempt failed :
- Unit : sec

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 3600

■ **Attribute 5: calling_window**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 0..7 elements
{
  SEQUENCE      // 2 elements
  {
    start_time
```

```
        end_time
    }
}
```

start_time

UTC format with only hour and minute fields significant and other fields always 0xff, except second field always equal to 0.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;0;255;255;255;255;255;255;255;255;255;255;

end_time

Not used : always 0xFF for each octet string.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

■ **Attribute 6: phone_list**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  AddressIP
}
```

AddressIP

63 characters for email. Default value : empty array.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;
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2.1.17 ElecElectricityFieldAssociation

Remarks about "Association" :
COSEM logical devices able to establish application associations within a COSEM context using logical name referencing, model the associations through instances of the "Association LN" class.
A COSEM logical device has one instance of this IC for each association the device is able to support.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;13;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
False	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ElecElectricityFieldAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE     // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE     // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE     // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0
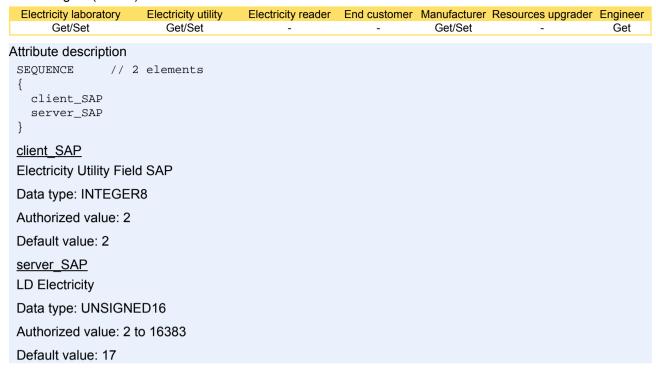
access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: 1

Default value: 1

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Electricity Utility Field SAP

Data type: INTEGER8

Authorized value: 2

Default value: 2

server_SAP

LD Electricity

Data type: UNSIGNED16

Authorized value: 2 to 16383

Default value: 17

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE    // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>identified-organization-element:</u>

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

<u>DLMS-UA-element</u>

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

<u>application-context-element</u>

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

<u>context-id-element</u>

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

<u>conformance</u>

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

<u>max_receive_pdu_size</u>

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	Set	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Default value at first power up.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
association status
```

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.18 ElecElectricityLaboratoryAssociation

Remarks about "Association" :
COSEM logical devices able to establish application associations within a COSEM context using logical name referencing, model the associations through instances of the "Association LN" class.
A COSEM logical device has one instance of this IC for each association the device is able to support.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;12;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
False	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ElecElectricityLaboratoryAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
```

```
    Version
    logical_name
    SEQUENCE     // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE     // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }
          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE     // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id

Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:

0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 3: associated_partners_id
Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Electricity Utility Laboratory SAP

Data type: INTEGER8

Authorized value: 1

Default value: 1

server_SAP

LD Electricity

Data type: UNSIGNED16

Authorized value: 2 to 16383

Default value: 17

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.

This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service

Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	-	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Default value at first power up.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.19 ElecElectricityReaderAssociation

Remarks about "Association" :
COSEM logical devices able to establish application associations within a COSEM context using logical name referencing, model the associations through instances of the "Association LN" class.
A COSEM logical device has one instance of this IC for each association the device is able to support.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;14;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
False	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ElecElectricityReaderAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF      // 1..1 elements
            {

            }
          }
        }
      }
      SEQUENCE OF      // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
```

```
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 3: associated_partners_id

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	-	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Electricity Reader SAP

Data type: INTEGER8

Authorized value: 3

Default value: 3

server_SAP

LD Electricity

Data type: UNSIGNED16

Authorized value: 2 to 16383

Default value: 17

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE     // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	-	Set	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Default value at first power up.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.20 ElecEngineerAssociation

Remarks about "Association" :
COSEM logical devices able to establish application associations within a COSEM context using logical name referencing, model the associations through instances of the "Association LN" class.
A COSEM logical device has one instance of this IC for each association the device is able to support.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;15;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
False	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ElecEngineerAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF      // 1..1 elements
            {

            }
          }
        }
      }
      SEQUENCE OF      // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 3: associated_partners_id

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get/Set

Attribute description

```
SEQUENCE      // 2 elements
{
  client_SAP
```

```
    server_SAP
}
```

client_SAP

Engineer SAP

Data type: INTEGER8

Authorized value: 122

Default value: 122

server_SAP

LD Electricity

Data type: UNSIGNED16

Authorized value: 2 to 16383

Default value: 17

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description
```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ Attribute 6: authentication_mechanism_name

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	Set

Attribute description

`LLS_secret`

LLS_secret

Default value at first power up.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.21 ElecManufacturerAssociation

Remarks about "Association" :
COSEM logical devices able to establish application associations within a COSEM context using logical name referencing, model the associations through instances of the "Association LN" class.
A COSEM logical device has one instance of this IC for each association the device is able to support.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;11;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
False	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ElecManufacturerAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
```

```
      SEQUENCE      // 3 elements
      {
        attribute_id
        access_mode
        CHOICE
        {
          SEQUENCE OF      // 1..1 elements
          {

          }
        }
      }
    }
  }
  SEQUENCE OF      // 0..65535 elements
  {
    SEQUENCE      // 2 elements
    {
      method_id
      access_mode
    }
  }
    }
   }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id

Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Manufacturer SAP

Data type: INTEGER8

Authorized value: 120

Default value: 120

server_SAP

LD Electricity

Data type: UNSIGNED16

Authorized value: 2 to 16383

Default value: 17

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.

This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service

Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	-

Attribute description

```
LLS_secret
```

LLS_secret

Default value at first power up defined in confidential document.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 0)

Default value:

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
association status
```

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.22 ElectricityObjectList

This object allows the programming of the access rights of a set of Cosem configurable objects, inside the Electricity logical device.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;10;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ElectricityObjectListOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Non used elements are set to 0.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 30 elements
{
  SEQUENCE     // 4 elements
  {
    logicalName
    attributeId
    classId
    SEQUENCE     // 10 elements
    {
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
```

```
      }
      SEQUENCE      // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE      // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE      // 2 elements
      {
        ClientId
        AccessMode
      }
    }
  }
}
```

logicalName

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attributeId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

classId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

2.1.23 FTPParameters

For IEC7, programmed only if DataPushAuthorizationParameters is AUTHORIZED

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;128;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	FTPParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  UserName
  Password
}
```

UserName

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 32)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255; (ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ)

Password

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 16)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255; (ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ)

2.1.24 GPRSModemSetup

Here are defined the parameters allowing the usage of the GPRS network. Main parameters are the pin code and the access point name.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;4;0;255	45	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	GPRSModemSetupOBISCode
A2. APN	OCTETSTRING	See below
A3. PIN_code	UNSIGNED16	See below
A4. quality_of_service	SEQUENCE	See below

■ **Attribute 2: APN**

Defines the access point name of the network.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

APN

APN

Defines the access point name of the network.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 32)

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; ()

■ **Attribute 3: PIN_code**

Defines the personal identification number used by the SIM card.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
PIN_code
```

PIN_code

Defines the personal identification number used by the SIM card.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 4: quality_of_service**

Specifies the quality of service parameters. It is a structure of 2 elements :
- the first one defines the default or minimum characteristics of the concerned network. These parameters have to be set to best effort value.
- the second element defines the requested parameters.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  SEQUENCE      // 5 elements
  {
    precedence
    delay
    reliability
    peak throughput
    mean throughput
  }
  SEQUENCE      // 5 elements
  {
    precedence
    delay
    reliability
    peak throughput
    mean throughput
  }
}
```

precedence

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

delay

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

reliability

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

peak throughput

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mean throughput

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

precedence

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

delay

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

reliability

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

peak throughput

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mean throughput

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

2.1.25 IdentificationRequest

This object allows the set of the identification command the device have to respond. The data is a string of one or three characters length.
 The meter will respond if the received string match the first character or all the three.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;7;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IdentificationRequestOBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`IdentificationRequest`

IdentificationRequest

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 5)

Default value: 73;0;0;0;0; (I)

2.1.26 IdentificationResponse

This object allows the set of the identification response to the 'I' command or any other identification. The data is a string of 80 length maximum.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;8;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IdentificationResponseOBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`IdentificationResponse`

IdentificationResponse

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 80)

Default value:
65;67;69;32;83;76;55;48;48;48;45;73;69;67;53;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; (ACE SL7000-IEC5)

2.1.27 IEC1107DataParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IEC1107DataParametersOBISCode
A2. value	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
   IdentificationCodeDelimiters
   NumbersOfHistoricalSetToRead
}
```

IdentificationCodeDelimiters

Data type: UNSIGNED8

Authorized values:
0: OBIS delimiters
1: Dots delimiters
2: No delimiters

Default value: OBIS delimiters (0)

NumbersOfHistoricalSetToRead

Data type: UNSIGNED8

Authorized value: 0 to 18

Default value: 0

2.1.28 IEC1107Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;20;0;0;255	19	0	5	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IEC1107ParametersOBISCode
A2. default_mode	ENUMERATED	See below
A3. default_baud	ENUMERATED	See below
A4. prop_baud	ENUMERATED	See below
A5. response_time	ENUMERATED	See below
A6. device_addr	OCTETSTRING	See below

■ Attribute 2: default_mode

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

`default_mode`

default_mode

Data type: ENUMERATED

Authorized values:
0: IEC - Mode C (7 bits, even parity) ou Mode E (8 bits, no parity, HDLC)
1: HDLC (8 bits, no parity)

Default value: HDLC (8 bits, no parity) (1)

■ Attribute 3: default_baud

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`default_baud`

default_baud

Not used if 'default_mode' = 1

Data type: ENUMERATED

Authorized values:
0: Fixed to 300 bauds
1: Not used

Default value: Fixed to 300 bauds (0)

■ Attribute 4: prop_baud

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`prop_baud`

prop_baud

Data type: ENUMERATED

Authorized values:
2: 1200 bauds
3: 2400 bauds
4: 4800 bauds
5: 9600 bauds

Default value: 9600 bauds (5)

■ Attribute 5: response_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`response_time`

response_time

Not used if 'default_mode' = 1

Data type: ENUMERATED

Authorized values:
0: 20 ms
1: 200 ms

Default value: 200 ms (1)

■ **Attribute 6: device_addr**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`device_addr`

device_addr

This attribute contains the IEC 1107 device address to which the device will respond if included in the sign on message.
This attribute is on READ ONLY.
Meter will respond with the client serial number (8 digits).

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 115;110;48;48;48;48;48;48; (sn000000)

2.1.29 IPCMInitializationTimeoutParameters

This object defines the duration which, when elapsed, triggers the reset of the IPCM.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;128;5;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IPCMInitializationTimeoutParametersOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`IPCMInitializationTimeout`

IPCMInitializationTimeout

Unit = minutes

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 360

2.1.30 IPDeviceTypeParameters

Here is fixed the type of the IPCM selection.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;128;1;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IPDeviceTypeParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
IPDeviceType
```

IPDeviceType

Specifies the supplier type of the device.

Data type: ENUMERATED

Authorized values:
0: Sparklet(Ethernet)
1: eDevice (Ethernet & GPRS)
2: Sparklett(GPRS)

Default value: Sparklet(Ethernet) (0)

2.1.31 IPMediationParameters

Here is fixed, the mediation parameter needed if ever a mediation server is available.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;128;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IPMediationParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 3 elements
{
  Method
  ServerAddress
```

```
    ServerPort
}
```

Method

Indicates which mediation method will be used.

Data type: ENUMERATED

Authorized values:
0: No Mediation
1: Cosem Mediation

Default value: No Mediation (0)

ServerAddress

IP address or domain name string of the mediation server.

Data type: VISIBLESTRING

Authorized value: Size = 56

Default value:

ServerPort

Port number of the registration service.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 10705

2.1.32 IPMediumTypeParameters

Here is fixed, the type of medium used. Three kind of medium can be selected.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;128;2;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IPMediumTypeParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
IPMediumType
```

IPMediumType

Specifies the medium use by the device.

Data type: ENUMERATED

Authorized values:
0: Ethernet
1: GPRS

Default value: Ethernet (0)

2.1.33 IPRegistrationParameters

Here is fixed, the registration parameter needed if ever a registration server is available.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;128;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IPRegistrationParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 4 elements
{
  Method
  ServerAddress
  ServerPort
  RegistrationString
}
```

Method

Indicates which registration method will be used.

Data type: ENUMERATED

Authorized values:
0: No Registration
1: Cosem Registration
2: String Registration

Default value: No Registration (0)

ServerAddress

IP address or domain name string of the registration server.

Data type: VISIBLESTRING

Authorized value: Size = 56

Default value:

ServerPort

Port number of the registration service.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 10706

RegistrationString

When the corresponding method is activated, this string will be send after the connection to the server.
A parameters tag is define to dynamically insert the current ip address in the string.
Max length : 300 characters
IP address tag: <ipaddress>.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 255)

Default value:
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; ()

2.1.34 IPv4Setup

The following parameters define for any media, the internet Ipv4 parameters.
When the DHCP flag is set, the related network assigns the proper value for the IP address. When this flag is not set, the IP address, the gateway address, and the subnet mask need to be configured.
For the DNS, at least the primary DNS has to be set.
For the moment, the multi cast purpose is not used. The value of this attribute has to be let void.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;1;0;255	42	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IPv4SetupOBISCode
A2. DL_reference	NULL	See below
A3. IP_address	UNSIGNED32	See below
A4. multicast_IP_address	ARRAY	See below
A5. IP_options	NULL	See below
A6. subnet_mask	UNSIGNED32	See below
A7. gateway_IP_address	UNSIGNED32	See below
A8. use_DHCP_flag	BOOLEAN	See below
A9. primary_DNS_address	UNSIGNED32	See below
A10. secondary_DNS_address	UNSIGNED32	See below

■ **Attribute 2: DL_reference**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: IP_address**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

IP_address

IP_address

Contains the Ipv4 address of the device.
Default value: 0x0 (not defined).
When the DHCP_flag is set, this value is not used.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 4: multicast_IP_address**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE OF      // 4 elements
{
  multicast_IP_address
}
```

multicast_IP_address

Not used.

Min value : 0xE0000000 (224.0.0.0)
Max value : 0xEFFFFFFF (239.255.255.255)
Default value in the meter : 0x0 (not defined)
Default value for programming : 0xE0000000

Data type: UNSIGNED32

Authorized value: 3758096384 to 4026531839

Default value: 3758096384

■ **Attribute 5: IP_options**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 6: subnet_mask**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
Subnet_mask
```

Subnet_mask

Defines the subnet mask when the device is used on an Ethernet network.
Default value : 0xFFFFFF00 (255.255.255.0)
When the DHCP_flag is set, this value is not used.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967040

■ Attribute 7: gateway_IP_address

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Gateway_IP_address`

Gateway_IP_address

Defines the gateway IP address when the device is used on an Ethernet network.
Default value : 0x0 (not defined).
When the DHCP_flag is set, this value is not used.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 8: use_DHCP_flag

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Use_DHCP_flag`

Use_DHCP_flag

Activates (or not) the DHCP.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 9: primary_DNS_address

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Primary_DNS_address`

Primary_DNS_address

Defines the IP address of the primary Domain Name Server (DNS).
Default value : 0x0 (not defined).
When the DHCP_flag is set, this value is not used.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 10: secondary_DNS_address

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

Secondary_DNS_address

Secondary_DNS_address

Defines the IP address of the secondary Domain Name Server (DNS).
Default value : 0x0 (not defined).
When the DHCP_flag is set, this value is not used.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

2.1.35 ManagementObjectList

This object allows the programming of the access rights of a set of Cosem configurable objects, inside the Management logical device.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;9;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ManagementObjectListOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Non used elements are set to 0.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 30 elements
{
  SEQUENCE     // 4 elements
  {
    logicalName
    attributeId
    classId
    SEQUENCE     // 10 elements
    {
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
```

```
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
      SEQUENCE     // 2 elements
      {
        ClientId
        AccessMode
      }
    }
  }
}
```

logicalName

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attributeId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

classId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

ClientId

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

AccessMode

Data type: UNSIGNED8

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

2.1.36 MngtElectricityFieldAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;2;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtElectricityFieldAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF      // 1..1 elements
            {

            }

          }

        }
      }
      SEQUENCE OF      // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:

0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Electricity Utility Field SAP

Data type: INTEGER8

Authorized value: 2

Default value: 2

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:

Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.
Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 16

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 756

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 5

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 8

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	Set	-	-	Set	-	-

Attribute description

`LLS_secret`

<u>LLS_secret</u>

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

`association status`

<u>association status</u>

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.37 MngtElectricityLaboratoryAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;1;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtElectricityLaboratoryAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF      // 1..1 elements
            {

            }
          }
        }
      }
      SEQUENCE OF      // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id

Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	-	-	-	Get/Set	-	Get

Attribute description
```
SEQUENCE      // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Electricity Utility Laboratory SAP

Data type: INTEGER8

Authorized value: 1

Default value: 1

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE       // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE    // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info
The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ Attribute 6: authentication_mechanism_name

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 16

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 756

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 5

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 8

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	-	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.38 MngtElectricityReaderAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;6;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtElectricityReaderAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE     // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE     // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE     // 2 elements
        {
          method_id
          access_mode
        }
```

```
              }
          }
        }
    }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Electricity Reader SAP

Data type: INTEGER8

Authorized value: 3

Default value: 3

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE     // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 16

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 756

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 5

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 8

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

■ **Attribute 7: LLS_secret**
Contains the authentication value for the LLS authentication process.
Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	-	Set	-	Set	-	-

Attribute description

`LLS_secret`

<u>LLS_secret</u>

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get	-	Get

Attribute description

`association status`

<u>association status</u>

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.39 MngtEndCustomerAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;10;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtEndCustomerAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id

Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id

Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	-	Get/Set	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

End Customer SAP

Data type: INTEGER8

Authorized value: 7

Default value: 7

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	Set	-	Set	Set	-	-

Attribute description

LLS_secret

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

association status

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.40 MngtEngineerAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;5;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtEngineerAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description
```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
```

```
                access_mode
            }
        }
      }
    }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 3: associated_partners_id

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get/Set

Attribute description

```
SEQUENCE      // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Engineer SAP

Data type: INTEGER8

Authorized value: 122

Default value: 122

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	Set

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.41 MngtGasReaderAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;7;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtGasReaderAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE     // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE     // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE     // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id

Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1
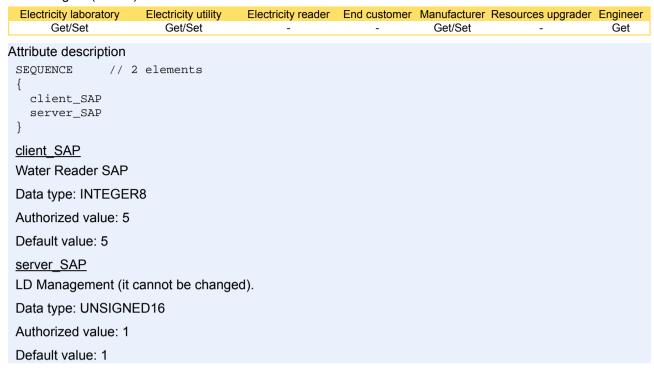
access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	-	-	Get/Set	-	Get

Attribute description
```
SEQUENCE      // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Gas Reader SAP

Data type: INTEGER8

Authorized value: 4

Default value: 4

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ **Attribute 4: application_context_name**

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service

Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:

0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.42 MngtHeatReaderAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;9;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtHeatReaderAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF      // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF      // 0..65535 elements
```

```
      {
        SEQUENCE     // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 3: associated_partners_id

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Heat Reader SAP

Data type: INTEGER8

Authorized value: 6

Default value: 6

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
```

```
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE    // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
```

```
    quality_of_service
    cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.43 MngtManufacturerAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;4;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtManufacturerAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE     // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE     // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }

          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE     // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  client_SAP
```

```
    server_SAP
}
```

client_SAP

Manufacturer SAP

Data type: INTEGER8

Authorized value: 120

Default value: 120

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.

This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 16

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 756

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 5

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 8

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 2

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

■ Attribute 7: LLS_secret

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 8: association status

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
association status
```

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.44 MngtResourcesUpgraderAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;3;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtResourcesUpgraderAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ **Attribute 2: object_list**

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.
The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	Get	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF      // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF      // 1..1 elements
```

```
                    {

                    }

                  }
                }
              }
        SEQUENCE OF       // 0..65535 elements
        {
          SEQUENCE      // 2 elements
          {
            method_id
            access_mode
          }
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id

Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ Attribute 3: associated_partners_id

Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	Get/Set	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```

client_SAP

Resources Upgrader SAP

Data type: INTEGER8

Authorized value: 121

Default value: 121

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	Get	Get

Attribute description

```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 5: xDLMS_context_info**

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	Get	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service

Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	Get	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	Set	-

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	Get	Get

Attribute description

`association status`

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.45 MngtWaterReaderAssociation

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;40;0;8;255	15	0	2	7055	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MngtWaterReaderAssociationOBISCode
A2. object_list	ARRAY	See below
A3. associated_partners_id	SEQUENCE	See below
A4. application_context_name	SEQUENCE	See below
A5. xDLMS_context_info	SEQUENCE	See below
A6. authentication_mechanism_name	SEQUENCE	See below
A7. LLS_secret	OCTETSTRING	See below
A8. association status	ENUMERATED	See below

■ Attribute 2: object_list

Contains the list of visible COSEM objects with their class_id, version, logical name and the access rights to their attributes and methods within the given application association.

The maximum size of the array is not limited.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1..65535 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    Version
    logical_name
    SEQUENCE      // 2 elements
    {
      SEQUENCE OF     // 1..65535 elements
      {
        SEQUENCE      // 3 elements
        {
          attribute_id
          access_mode
          CHOICE
          {
            SEQUENCE OF     // 1..1 elements
            {

            }
          }
        }
      }
      SEQUENCE OF     // 0..65535 elements
      {
        SEQUENCE      // 2 elements
        {
          method_id
          access_mode
        }
      }
    }
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Version

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

attribute_id
Contains all implemented attributes.

Data type: INTEGER8

Authorized value: 0 to 127

Default value: 0

access_mode

Data type: ENUMERATED

Authorized values:
0: No access
1: Read only
2: Write only
3: Read and write

Default value: No access (0)

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: NULL

Authorized value:

Default value:

method_id
Contains all implemented methods.

Data type: INTEGER8

Authorized value: 1 to 127

Default value: 1

access_mode

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

■ **Attribute 3: associated_partners_id**
Contains the identifiers of the COSEM client and the COSEM server (logical device) application processes within the physical devices hosting these processes, which belong to the application association modelled by the "Association LN" object.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	-	-	Get/Set	-	Get

Attribute description
```
SEQUENCE     // 2 elements
{
  client_SAP
  server_SAP
}
```
client_SAP

Water Reader SAP

Data type: INTEGER8

Authorized value: 5

Default value: 5

server_SAP

LD Management (it cannot be changed).

Data type: UNSIGNED16

Authorized value: 1

Default value: 1

■ Attribute 4: application_context_name

In the COSEM environment, it is intended that an application context preexists and is referenced by its name during the establishment of an application association.
This attribute contains the name of the application context for that association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description
```
SEQUENCE     // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  application-context-element
  context-id-element
}
```
joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

application-context-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

context-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 5: xDLMS_context_info

Contains all the necessary information on the xDLMS context for the given association.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  conformance
  max_receive_pdu_size
  max_send_pdu_size
  dlms_version_number
  quality_of_service
  cyphering_info
}
```

conformance

The conformance element contains the xDLMS conformance block supported by the server.

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

max_receive_pdu_size

The max_receive_pdu_size element contains the maximum length for an xDLMS APDU, expressed in bytes that the client may send.
This is the same as the server-max-receive-pdu-size parameter of the DLMS-Initiate.response pdu (see Green Book Clause 9.4.4.).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

max_send_pdu_size

The max_send_pdu_size, in an active association contains the maximum length for an xDLMS APDU, expressed in bytes that the server may send.
This is the same as the client-max-receive-pdu-size parameter of the DLMS-Initiate.request pdu (see Green Book Clause 9.4.4).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

dlms_version_number

The dlms_version_number element contains the DLMS version number supported by the server.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

quality_of_service
Not used.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

cyphering_info

The cyphering_info, in an active association, contains the dedicated key parameter of the DLMS-Initiate.request pdu (See Green Book Clause 9.4.4).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

■ **Attribute 6: authentication_mechanism_name**

Contains the name of the authentication mechanism for the association.
The authentication mechanism name is specified as an OBJECT IDENTIFIER in Clause 9.3.3.7.2 of the Green Book.
The authentication_mechanism_name attribute includes the arc labels of the OBJECT IDENTIFIER.
No mechanism-name is required when no authentication is used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
SEQUENCE      // 7 elements
{
  joint-iso-ctt-element
  country-element
  country-name-element
  identified-organization-element:
  DLMS-UA-element
  authentication-mechanism-name-element
  mechanism-id-element
}
```

joint-iso-ctt-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

country-name-element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

identified-organization-element:

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

DLMS-UA-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

authentication-mechanism-name-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

mechanism-id-element

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 7: LLS_secret**

Contains the authentication value for the LLS authentication process.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Set	-	-

Attribute description

`LLS_secret`

LLS_secret

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ **Attribute 8: association status**

To be inserted by the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	-	Get	-	Get

Attribute description

```
association status
```

association status

Indicates the current status of the association, which is modeled by the object.

Data type: ENUMERATED

Authorized values:
0: Non-associated
1: Association-pending
2: Associated

Default value: Non-associated (0)

2.1.46 ModemMonitoringResetParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;2;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ModemMonitoringResetParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE       // 4 elements
{
  ModemPowerEstablishmentDelay
  ModemPowerResetDelay
  ModemReconfigureDelay
  ModemRestartDelay
}
```

ModemPowerEstablishmentDelay

Delay in seconds to make sure modem is started

Data type: UNSIGNED16

Authorized value: 10 to 900

Default value: 60

ModemPowerResetDelay

Delay in seconds to make sure modem is reset

Data type: UNSIGNED16

Authorized value: 10 to 900

Default value: 60

ModemReconfigureDelay

Delay in minutes without frame reception, which initiate modem reconfiguration

Data type: UNSIGNED8

Authorized value: 5 to 255

Default value: 10

ModemRestartDelay

Delay in hours without frame reception, which initiate modem restart (Power down, power up, reconfiguration)

Data type: UNSIGNED8

Authorized value: 12 to 255

Default value: 24

2.1.47 PPPSetup

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;3;0;255	44	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PPPSetupOBISCode
A2. PHY_reference	NULL	See below
A3. LCP_options	NULL	See below
A4. IPCP_options	NULL	See below
A5. PPP_authentication	SEQUENCE	See below

■ **Attribute 2: PHY_reference**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: LCP_options**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 4: IPCP_options

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: PPP_authentication

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE      // 2 elements
{
  tag
  SEQUENCE     // 2 elements
  {
    username
    password
  }
}
```

<u>tag</u>

Data type: UNSIGNED8

Authorized values:
0: no_authentication
1: PAP_password

Default value: no_authentication (0)

<u>username</u>
if tag =0, length=0

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 31)

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; ()

<u>password</u>
if tag =0, length=0

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 15)

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; ()

2.1.48 RealTimePortActivation

Allows to activate the real time port function.
Saved as a manufacturer parameter.

Access restricted to manufacturer to be used as a meter resource.
Firmware upgrade from ACE7K IEC4 to ACE7K IEC5 will be possible without loss of manufacturer parameter.

If this parameter is changed from TRUE to FALSE, and a port is configured with IEC1107 protocol, the meter will continue to provide the function on the port.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;17;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RealTimePortActivationOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

`RealTimePortActivation`

RealTimePortActivation

Manufacturer parameter to activate the IEC1107 protocol configuration
TRUE : Allow to configure the Customer and Utility port with IEC1107 protocol
FALSE : Configuring Customer or Utility port with IEC1107 protocol is inhibited.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

2.1.49 RealTimePortIEC1107Parameters

Allows to configure the IEC1107 common parameter on the real time port.
The real time port can be activated on Utility or on Customer port.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;1;20;0;0;255	19	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RealTimePortIEC1107ParametersOBISCode
A2. default_mode	ENUMERATED	See below
A3. default_baud	ENUMERATED	See below
A4. prop_baud	ENUMERATED	See below
A5. response_time	ENUMERATED	See below
A6. device_addr	OCTETSTRING	See below

■ **Attribute 2: default_mode**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DefaultMode`

DefaultMode

Allowed enumerated values are :
0 : IEC (7 bits, even parity) – ModeC only if RealTimePortActivationParameter is TRUE)(
1 :HDLC (8 bits, no parity) (default value)
NOT CONFIGURABLE

Data type: ENUMERATED

Authorized values:
0: IEC Mode C
1: HDLC

Default value: IEC Mode C (0)

■ Attribute 3: default_baud

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`DefaultBaud`

DefaultBaud

Baud rate used at connection procedure.

Data type: ENUMERATED

Authorized values:
4: 4800 bauds
5: 9600 bauds
6: 19200 bauds

Default value: 9600 bauds (5)

■ Attribute 4: prop_baud

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`PropBaud`

PropBaud

READ ONLY
Firmware always takes the value of Default_baud parameter.
Thus there isn't baudrate switching.
Baud rate used for meter readout

Data type: ENUMERATED

Authorized value:

Default value: (0)

■ Attribute 5: response_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`ResponseTime`

ResponseTime

Data type: ENUMERATED

Authorized values:
0: 20 ms
1: 200 ms

Default value: 200 ms (1)

■ **Attribute 6: device_addr**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DeviceAddr`

DeviceAddr

This attribute contains the IEC 1107 device address to which the device will respond if included in the sign on message.
READ ONLY
Meter will respond with the client serial number (8 digits).
The same behavior is used on optical head.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 0)

Default value: ()

2.1.50 RestrictiveProgrammingByLabSwitchParameters

This object allows programming of some parameters only if laboratory switch is activated. Parameters concerned by this programming restriction are identified in XMI, by the 'Restrictive programming' column.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;0;13;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RestrictiveProgrammingByLabSwitchParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

`RestrictiveProgrammingByLabSwitchParameters`

RestrictiveProgrammingByLabSwitchParameters

Restrictive programming by laboratory switch : TRUE.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

2.1.51 SapAssignment

This data contains the list of all logical devices and their SAP addresses within the physical device.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;41;0;0;255	17	0	5	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SapAssignmentOBISCode
A2. SAP_assignment_list	ARRAY	See below

■ **Attribute 2: SAP_assignment_list**

There are 6 logical devices inside the meter, but only 2 logical devices are provided in the SAP assignment object :
  the Management logical device and the Electricity logical device.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	Get	Get

Attribute description

```
SEQUENCE OF     // 2 elements
{
  SEQUENCE     // 2 elements
  {
    SAP
    LogicalDeviceName
  }
}
```

SAP

SAP
- MANAGEMENT logical device (Default value = 1) = first element
- ELECTRICITY logical device (Default value = 17) = second element

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 1

LogicalDeviceName

Logical device name
- 1rst element : MANAGEMENT logical device name (Default value = "SLB761MAsn000000")
- 2nd element : ELECTRICITY logical device(Default value = "SLB761ELsn000000")
Composed of :
- Meter type (6 first digits) : Value = "SLB761"
- Logical device type (2 digits) : Value = "MA" for Management logical device and "EL" for Electricity logical

device
- Meter serial number (8 digits)

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 16)

Default value: 83;76;66;55;54;49;77;65;115;110;48;48;48;48;48;48; (SLB761MAsn000000)

2.1.52 SMTPSetupParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;5;0;255	46	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SMTPSetupParametersOBISCode
A2. server_port	UNSIGNED16	See below
A3. user_name	OCTETSTRING	See below
A4. login_password	OCTETSTRING	See below
A5. server_address	OCTETSTRING	See below
A6. sender_address	OCTETSTRING	See below

■ Attribute 2: server_port

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`SmtpPortID`

SmtpPortID
Defines the SMTP port ID.
It is a read-only parameter.
Default value : 25 (port ID defined by IETF)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 25

■ Attribute 3: user_name

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`userName`

userName
Defines the username to be used for the login to the SMTP server.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 15)

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; ()

■ Attribute 4: login_password

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`password`

password

Defines the password to be used for login.
A void string means that there is no authentication.
Default value : "" (no authentication)

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 15)

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; ()

■ **Attribute 5: server_address**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`serverAddress`

serverAddress

Defines the server address.
This server address can be a name which must be resolvable by the primary DNSor the secondary DNS.
 In the case that it is directly the IP address of the server which is specified here it will be a string in dot format.
Example "10.217.106.87"
Default value : ""

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;
0;0;0;0;0;0; ()

■ **Attribute 6: sender_address**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`meterAddress`

meterAddress

Defines the meter address.
This server address can be a name. In the case that it is directly the IP address of
the server which is specified here it will be a string in dot format.
Default value : ""

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;
0;0;0;0;0;0; ()

2.1.53 TCPUDPSetup

The parameters accessible via this interface class are mainly related to the TCP session.
UDP is not used in the current implementation.
Here the TCP port Id need to be fixed. By default this port id is 703 (Cosem port).
The number of simultaneous communications depends on the IPCM used.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;25;0;0;255	41	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TCPUDPSetupOBISCode
A2. TCP-UDP_port	UNSIGNED16	See below
A3. IP_reference	OCTETSTRING	See below
A4. MSS	UNSIGNED16	See below
A5. nb_of_sim_conn	UNSIGNED8	See below
A6. inactivity_time_out	UNSIGNED16	See below

■ **Attribute 2: TCP-UDP_port**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
`TcpUdpPort`

TcpUdpPort
Defines the value of the port used by the COSEM TCP / UDP server.
Default value: 703 (Cosem port)

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 703

■ **Attribute 3: IP_reference**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
`IpReference`

IpReference
Not used

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 0)

Default value:

■ **Attribute 4: MSS**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`MaxSegmentSize`

<u>MaxSegmentSize</u>

Defines the maximum receive TCP segment size (in bytes).
Only a read access is given for this attribute.
The set is not implemented.

Data type: UNSIGNED16

Authorized value: 40 to 65535

Default value: 576

■ **Attribute 5: nb_of_sim_conn**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`NbOfSimConn`

<u>NbOfSimConn</u>

Defines the maximum number of simultaneous connections on the COSEM TCP / UDP server.

Data type: UNSIGNED8

Authorized value: 1 to 255

Default value: 3

■ **Attribute 6: inactivity_time_out**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`InactivityTimeout`

<u>InactivityTimeout</u>

Defines the time, expressed in seconds over which,
if no frame is received from its Client, the non-active TCP connection shall be aborted.
When this value is set to 0, this means that the inactivity_time_out is not operational.
Default value : 180 (seconds)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 180

2.1.54 UtilityHDLCParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;1;22;0;0;255	23	1	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityHDLCParametersOBISCode
A2. comm_speed	ENUMERATED	See below
A3. window_size_transmit	UNSIGNED8	See below
A4. window_size_receive	UNSIGNED8	See below
A5. max_info_field_length_transmit	UNSIGNED16	See below
A6. max_info_field_length_receive	UNSIGNED16	See below
A7. inter_octet_time_out	UNSIGNED16	See below
A8. inactivity_time_out	UNSIGNED16	See below
A9. device_address	UNSIGNED16	See below

■ Attribute 2: comm_speed

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`comm_speed`

comm_speed

Data type: ENUMERATED

Authorized values:
2: 1200 bauds
3: 2400 bauds
4: 4800 bauds
5: 9600 bauds
6: 19200 bauds

Default value: 9600 bauds (5)

■ Attribute 3: window_size_transmit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`window_size_transmit`

window_size_transmit

Data type: UNSIGNED8

Authorized value: 1 to 7

Default value: 7

■ Attribute 4: window_size_receive

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`window_size_receive`

window_size_receive

Data type: UNSIGNED8

Authorized value: 0 to 1

Default value: 1

■ Attribute 5: max_info_field_length_transmit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`max_info_field_length_transmit`

max_info_field_length_transmit

Data type: UNSIGNED16

Authorized value: 768

Default value: 768

■ **Attribute 6: max_info_field_length_receive**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`max_info_field_length_receive`

max_info_field_length_receive

Data type: UNSIGNED16

Authorized value: 240

Default value: 240

■ **Attribute 7: inter_octet_time_out**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`inter_octet_time_out`

inter_octet_time_out

Defines the time, expressed in ms, over which, when any character is received from the primary station, the device will treat the already received data as a complete frame.
The Utility HDLC Parameter 'inter_char_time_out' value is also used to dimension the IEC1107 intercharacter timeout.

Data type: UNSIGNED16

Authorized value: 1 to 1000

Default value: 110

■ **Attribute 8: inactivity_time_out**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`inactivity_time_out`

inactivity_time_out

Defines the time, expressed in seconds over which, when any frame is received from the primary station, the device will process a disconnection.

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 30

■ Attribute 9: device_address

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
device_address
```

device_address

Contains the physical device address of a device :
- 0x01 .. 0x0F : Reserved for future use
- 0x10 .. 0x03FFD : Usable address space
- 0x03FFE : CALLER Physical Device Address

Data type: UNSIGNED16

Authorized value: 1 to 16382

Default value: 17

2.1.55 UtilityModemDiagnosticParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;2;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityModemDiagnosticParametersOBISCode
A2. value	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  ModemDiagnosticPeriod
  ModemDiagnosticType
}
```

ModemDiagnosticPeriod

Period in second between two GSM/GPRS utility modem diagnostic.

Data type: UNSIGNED32

Authorized value: 10 to 86400

Default value: 3600

ModemDiagnosticType

Define which type of diagnostic frame must be used.

Data type: ENUMERATED

Authorized values:

0: NO_DIAGNOSTIC
1: SIEMENS_TC65_DIAGNOSTIC

Default value: NO_DIAGNOSTIC (0)

2.1.56 UtilityModemDiagnosticRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;2;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityModemDiagnosticRegisterOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 7 elements
{
  DiagDateTime
  rs
  MNC
  PWR
  dBm
  RXLev
  ModemStatus
}
```

DiagDateTime

Date of this diagnoctic

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

rs

Received signal strength indication.

Data type: UNSIGNED8

Authorized value: 0 to 63

Default value: 0

MNC

Mobile Network Code, it corresponds to the operator.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

PWR

Current power level in dBm

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

dBm
Receiving level of the BCCH carrier (in dBm)

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

RXLev
Minimal receiving level (in dBm) to allow registration

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

ModemStatus
Modem status regarding network and dedicated channel.
The possible values are :
"Searching" (modem is searching a cell)
"Cell Rese" (modem is reselecting a cell)
"Low Serv" (only emergency calls are allowed)
"No Conn" (modem is not connected to a distant device)

Data type: VISIBLESTRING

Authorized value: Size = 9

Default value:

2.1.57 UtilityModemParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;1;2;2;0;255	28	0	3	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityModemParametersOBISCode
A2. mode	ENUMERATED	See below
A3. listening_window	ARRAY	See below
A4. status	ENUMERATED	See below
A5. number_of_calls	UNSIGNED8	See below
A6. number_of_rings	NULL	See below

■ Attribute 2: mode

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`Mode`

Mode

Complementary informations :
Share line...of calls allowed : Once the number of calls is reached, the window status becomes inactive until the next start date, whatever the result of the call.
Share line...of successful calls allowed : Once the number of successful communications is reached, the window status becomes inactive until next start date.
Direct line : No modem to manage.
APS ON : The modem power supply is "ON", without modem management.
APS OFF : The modem power supply is "OFF", without modem management.

Data type: ENUMERATED

Authorized values:
0: Dedicated line to the device
1: Share line management with limited number of calls allowed
2: Share line management with limited number of successful calls allowed
3: Direct line
204: APS ON
205: APS OFF

Default value: Dedicated line to the device (0)

■ Attribute 3: listening_window

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  SEQUENCE      // 2 elements
  {
    start_time
    end_time
  }
}
```

start_time
Only the fields hour and minutes are managed in these UTC. Other fields are not significative :
- when programmed, they are not taken into account.
- when read, they are equal to 255, excepted 'deviation highbyte' (=128) and 'deviation lowbyte' (=0).
Default value : 0h00.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;0;0;255;255;128;0;255;

end_time
Only the fields hour and minutes are managed in these UTC. Other fields are not significative :
- when programmed, they are not taken into account.
- when read, they are equal to 255, excepted 'deviation highbyte' (=128) and 'deviation lowbyte' (=0).
Default value : 0h00.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;0;0;255;255;128;0;255;

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`Status`

Status

Complementary informations :
Inactive : The device will manage no new incoming call. This status is automatically reset to Active when the next listening window starts.
Active : The device can answer to the next incoming call.
Locked : No new incoming call will be accepted in the currend window until next window be opened.

Data type: ENUMERATED

Authorized values:
0: Inactive
1: Active
2: Locked

Default value: Inactive (0)

■ Attribute 5: number_of_calls

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`number_of_calls`

number_of_calls

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 6: number_of_rings

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

2.1.58 UtilityModemSetup

These parameters allow to define if a modem can be activated or not on the utility link, the initialisation string for the modem and the modem baudrate.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;1;2;0;0;255	27	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityModemSetupOBISCode
A2. comm_speed	ENUMERATED	See below
A3. initialization_string	ARRAY	See below
A4. modem_profile	ARRAY	See below

■ Attribute 2: comm_speed

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`comm_speed`

comm_speed

Data type: ENUMERATED

Authorized values:
2: 1200 bauds
3: 2400 bauds
4: 4800 bauds
5: 9600 bauds
6: 19200 bauds

Default value: 2400 bauds (3)

■ Attribute 3: initialization_string

"initialization_string" is an ordered array to send to the modem for its initialization.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
   SEQUENCE OF     // 2 elements ("Array Of" view as "Sequence" in get only)
   {
     RequestAndResponse
   }
}
```

RequestAndResponse
Request
Default value of request in the first init string : "ATX3&D0S0=2"
Default value of request for other init strings : ""
Response
Init string responses are not managed by the meter => the response is always equal to 'NOT USED' when reading the UtilityModemSetup object.
Size octet string = 9

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 27)

Default value: 65;84;88;51;38;68;48;83;48;61;50;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; (ATX3&D0S0=2)

■ Attribute 4: modem_profile

"modem_profile" is an ordered array of octet-strings, which position allows to determine the answer of the modem.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 17 elements
{
  modem_profile
}
```

modem_profile

Default values are listed below :
· location 0 : OK
· location 1 : CONNECT
· location 2 : RING
· location 3 : NO CARRIER
· location 4 : ERROR
- location 5 : NOT USED
· location 6 : NO DIALTONE
· location 7 : BUSY
· location 8 : NO ANSWER
- locations 9 to 16 : NOT USED.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 27)

Default value: 78;79;84;32;85;83;69;68;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0; (NOT USED)

2.1.59 UtilityRemoteReportParameters1

This object holds the parameters relative to remote address when meter utility modem is used to send out a given alarm. It allows to select the alarm notification mode(s) (email, SMS and/or PSTN auto dialing).
The format is the same for each of three possible remote addresses.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;1;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityRemoteReportParameters1OBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	NULL	See below
A6. phone_list	ARRAY	See below

■ **Attribute 2: mode**

Defines the alarm notification mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
Mode
```

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed.
- 6 : Email programming is not allowed (for the Utility channel).

Data type: ENUMERATED

Authorized values:
0: No selected mode
4: SMS used for alarm notification

Default value: No selected mode (0)

■ Attribute 3: repetitions

Not used (used only in PSTN mode).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
repetitions
```

repetitions

Not used (used only in PSTN mode).

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ Attribute 4: repetition_delay

Delay between two consecutive attempts when the former attempt failed.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
repetition_delay
```

repetition_delay

This delay is common to the 3 alarm notification media and is not linked to the channel :
- Unit : sec ; default value : 6h

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 21600

■ Attribute 5: calling_window

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 6: phone_list

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 0..3 elements
{
  Address
}
```

Address

PROGRAMMATION
Only one address can be programmed at once (1 element in the array).
This address is relative to the mode programmed in the same programming sequence
 (ended by a validate) and not to the current mode of the device.
Several addresses can take place in the same programming sequence.
LECTURE
When read, this array will contain all the valid programmed addresses
related to the concerned channel, whatever the mode is => 3 elements max (one per mode).
When no mode is selected, an array of 0 element is read.

According to the corresponding mode, max length of the address is :
- 15 characters for PSTN and SMS

Default value : empty array

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;
(ÿÿÿ)

2.1.60 UtilityRemoteReportParameters2

This object holds the parameters relative to remote address when meter utility modem is used to send out a given alarm. It allows to select the alarm notification mode(s) (email, SMS and/or PSTN auto dialing).
The format is the same for each of three possible remote addresses.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;2;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityRemoteReportParameters2OBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	NULL	See below
A6. phone_list	ARRAY	See below

■ **Attribute 2: mode**

Defines the alarm notification mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
Mode
```

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed.
- 6 : Email programming is not allowed (for the Utility channel).

Data type: ENUMERATED

Authorized values:
0: No selected mode
4: SMS used for alarm notification

Default value: No selected mode (0)

■ Attribute 3: repetitions

Not used (used only in PSTN mode).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
repetitions
```

repetitions

Not used (used only in PSTN mode).

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ Attribute 4: repetition_delay

Delay between two consecutive attempts when the former attempt failed.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
repetition_delay
```

repetition_delay

This delay is common to the 3 alarm notification media and is not linked to the channel :
- Unit : sec ; default value : 6h

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 21600

■ Attribute 5: calling_window

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 6: phone_list

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 0..3 elements
{
  Address
}
```

Address

PROGRAMMATION
Only one address can be programmed at once (1 element in the array).
This address is relative to the mode programmed in the same programming sequence
 (ended by a validate) and not to the current mode of the device.
Several addresses can take place in the same programming sequence.
LECTURE
When read, this array will contain all the valid programmed addresses
related to the concerned channel, whatever the mode is => 3 elements max (one per mode).
When no mode is selected, an array of 0 element is read.

According to the corresponding mode, max length of the address is :
- 15 characters for PSTN and SMS

Default value : empty array

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;
(ÿÿÿ)

2.1.61 UtilityRemoteReportParameters3

This object holds the parameters relative to remote address when meter utility modem is used to send out a given alarm. It allows to select the alarm notification mode(s) (email, SMS and/or PSTN auto dialing).
The format is the same for each of three possible remote addresses.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;3;2;1;0;255	29	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityRemoteReportParameters3OBISCode
A2. mode	ENUMERATED	See below
A3. repetitions	UNSIGNED8	See below
A4. repetition_delay	UNSIGNED16	See below
A5. calling_window	NULL	See below
A6. phone_list	ARRAY	See below

■ **Attribute 2: mode**

Defines the alarm notification mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Mode`

Mode

Complementary information :
- 0 : => Erasing of the current remote address parameters (no selected mode)
- 3 : PSTN auto dialing used for alarm notification is not allowed.
- 6 : Email programming is not allowed (for the Utility channel).

Data type: ENUMERATED

Authorized values:
0: No selected mode
4: SMS used for alarm notification

Default value: No selected mode (0)

■ **Attribute 3: repetitions**

Not used (used only in PSTN mode).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`repetitions`

repetitions

Not used (used only in PSTN mode).

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ **Attribute 4: repetition_delay**

Delay between two consecutive attempts when the former attempt failed.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`repetition_delay`

repetition_delay

This delay is common to the 3 alarm notification media and is not linked to the channel :
- Unit : sec ; default value : 6h

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 21600

■ **Attribute 5: calling_window**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 6: phone_list**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 0..3 elements
{
  Address
}
```

Address

PROGRAMMATION
Only one address can be programmed at once (1 element in the array).
This address is relative to the mode programmed in the same programming sequence
 (ended by a validate) and not to the current mode of the device.
Several addresses can take place in the same programming sequence.
LECTURE
When read, this array will contain all the valid programmed addresses
related to the concerned channel, whatever the mode is => 3 elements max (one per mode).
When no mode is selected, an array of 0 element is read.

According to the corresponding mode, max length of the address is :
- 15 characters for PSTN and SMS

Default value : empty array

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 63)

Default value:
255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;2
55;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;255;25
5;255;255;255;255;255;255;255;255;255;255;255;255;255;255;
(ÿÿÿ)

2.2 Cosem profiles

2.2.1 CustomerModemDiagnosticElement

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;11;255	7	1	1	0	ROM	1	0	24	24	24

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerModemDiagnosticElementOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 24 elements
{
  SEQUENCE      // 1 elements
  {
    CustomerModemDiagnosticRegister (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (CustomerModemDiagnosticRegister): Obis_code = 0;0;144;2;1;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

2.2.2 UtilityModemDiagnosticElement

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;12;255	7	1	1	0	ROM	1	0	24	24	24

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityModemDiagnosticElementOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 24 elements
{
  SEQUENCE      // 1 elements
  {
    UtilityModemDiagnosticRegister (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (UtilityModemDiagnosticRegister): Obis_code = 0;0;144;2;2;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

3 Control Input

3.1 Cosem objects

3.1.1 ControlInputOffsetParameters

This parameter depends on Auxiliary Board. It defines the position of the first Control Input in the input buffer.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;138;0;3;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlInputOffsetParametersOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`IOBoardType`

IOBoardType

Data type: UNSIGNED8

Authorized values:
2: light IO board
4: full IO board

Default value: full IO board (4)

3.1.2 ControlInputParameters

This object allows the setting of the control input configuration.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;138;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlInputParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE       // 4 elements
{
  AuthorizedIndex
  AuthorizedDayProfile
  AuthorizedSeason
  EOBConfig
}
```

AuthorizedIndex

Each bit is relative to a specific index : the element i in the bitstring indicates if the index i is allowed or not from control input (bit = 1: authorized, bit=0 : not authorized).

Data type: BITSTRING

Authorized values:
Size = 50
ViewAsType = BitString

Default value:
0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

AuthorizedDayProfile

Each bit is relative to a specific day profile : the element i in the bitstring indicates if the day profile i is allowed or not from control input (bit = 1: authorized, bit=0 : not authorized).

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

AuthorizedSeason

Each bit is relative to a specific season : the element i in the bitstring indicates if the season i is allowed or not from control input (bit = 1: authorized, bit=0 : not authorized).

Data type: BITSTRING

Authorized values:
Size = 12
ViewAsType = BitString

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;

EOBConfig

- TRUE = change over contact
- FALSE = single contact

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

3.1.3 ControlInputPhysicalParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;138;0;1;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlInputPhysicalParametersOBISCode
A2. value	SEQUENCE	See below

■ Attribute 2: value

The object ControlInputPhysicalParameters is modified in order to manage on the first input, the magnet detection.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
   SEQUENCE OF     // 8 elements
   {
     ControlInputMapping
   }
   ControlInputActiveLevel
}
```

ControlInputMapping

The value to select is the functionnality (from 0 to 24 or 255 for "Not affected") to associate to the physical input.
The element 0 of the array is for the physical input 1, ..., and the element 7 of the array is for the physical input 8.

If magnet sensor is managed by the meter, the functionnality "magnet detection" can be managed only on the first input and
in that case, any other function can be affected to this input.

Data type: UNSIGNED8

Authorized values:
0: Index bit 0
1: Index bit 1
2: Index bit 2
3: Index bit 3
4: Index bit 4
5: Index bit 5
6: Day profile bit 0
7: Day profile bit 1
8: Day profile bit 2
9: Day profile bit 3
10: Day profile bit 4
11: Season bit 0
12: Season bit 1
13: Season bit 2
14: Season bit 3
15: Pulse 1 direction
16: Pulse 2 direction
17: Pulse 3 direction
18: Pulse 4 direction
19: Alarm
20: EOB 1
21: EOB 2
22: EOI

23: Clock synchro
24: Display button
25: Magnet sensor
255: Not affected

Default value: Not affected (255)

ControlInputActiveLevel

- bit 0 logic of input 1
- …
- bit 7 logic of input 8
Value "0" only accepted for Magnet sensor input, value "0" or "1" for the other inputs.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

4 Control Output

4.1 Cosem objects

4.1.1 ControlOuputPhysicalParameters

This object is intended for the physical control outputs configuration.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;139;0;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlOuputPhysicalParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
   SEQUENCE OF     // 21 elements
   {
     ControlOutputMapping
   }
   ControlOutputActiveLevel
}
```

ControlOutputMapping

Defines for each output functionnality, if a physical output is allocated to it or not.
List of the 21 output functionnality, in the array :
- element 0 Logical control output 1 in index table
- element 1 Logical control output 2 in index table
- element 2 Logical control output 3 in index table
- element 3 Logical control output 4 in index table
- element 4 Logical control output 5 in index table
- element 5 Logical control output 6 in index table
- element 6 Logical control output 7 in index table
- element 7 Logical control output 8 in index table
- element 8 Pulse output 1 direction
- element 9 Pulse output 2 direction
- element 10 Pulse output 3 direction
- element 11 Pulse output 4 direction
- element 12 Pulse output 5 direction
- element 13 Pulse output 6 direction
- element 14 alarm
- element 15 excess demand
- element 16 EOB1
- element 17 EOB2
- element 18 EOI
- element 19 Clock synchro

- element 20 Phase cut
Only 8 functionnalities (among 21) can be associated to the outputs.
Each output can be allocated to only one functionnality.

Data type: UNSIGNED8

Authorized values:
0: Physical output 1
1: Physical output 2
2: Physical output 3
3: Physical output 4
4: Physical output 5
5: Physical output 6
6: Physical output 7
7: Physical output 8
255: Not affected

Default value: Not affected (255)

ControlOutputActiveLevel

- bit 0 logic of output 1
- …
- bit 7 logic of output 8
For each bit, value "1" = positive and value "0" = negative.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 207

4.1.2 ControlOutputEOIDecouplingTimeParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;139;0;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlOutputEOIDecouplingTimeParametersOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

Decouplingtime

Decouplingtime

in seconds

Data type: UNSIGNED8

Authorized value: 1 to 9

Default value: 1

4.1.3 ControlOutputParameters

This parameter defines the EOB contact working mode.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;139;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlOutputParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`EOBOutputType`

EOBOutputType

TRUE = change over contact, FALSE = single contact

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

5 Database

5.1 Cosem objects

5.1.1 CompleteExtFirmwareIdParameters

This object holds the firmware revision of the external code memory. It is a read only object because this information is "hard coded" in the firmware.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;1;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CompleteExtFirmwareIdParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

`CompleteExternalFirmwareRevision`

CompleteExternalFirmwareRevision

"XX.Yyt.ZZ" where :
- XX is the major firmware revision
- Yyt is the minor firmware revision
- ZZ is the logical device revision
Example : « 01.10a.00 »

Data type: VISIBLESTRING

Authorized value: Size = 9

Default value:

5.1.2 CompleteIntFirmwareIdParameters

This object holds the firmware revision of the internal code memory. It is a read only object because this information is "hard coded" in the firmware.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;1;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CompleteIntFirmwareIdParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

`InternalFirmwareRevision`

InternalFirmwareRevision

"XX.Yyt" where :
- XX is the major firmware revision
- Yyt is the minor firmware revision
Example : «04.02a »

Data type: VISIBLESTRING

Authorized value: Size = 6

Default value:

5.1.3 DisplayReadOutTableParameters

This object defines the selected information to be sent in the 1107 readout and data, displayed in the three display modes.
 The code to display (or transmit on the read out) is also defined in this object.
NB : at least, one element must be defined in the 'sequence of'.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;21;0;0;255	1	0	11	0	False	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DisplayReadOutTableParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1..100 elements
{
  SEQUENCE      // 7 elements
  {
    InternalIdentifier
    SequenceIndicator
    IdentificationCode
    Scaler
    NumberOfDecimal
    NumberOfdisplayableDigit
    dividedBy100
  }
}
```

InternalIdentifier

See Id_listing in XMI (meter_interface)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

SequenceIndicator

Data type: BITSTRING

Authorized values:
Size = 8
ViewAsType = BitString
BIT 0: ReadoutIndicator
BIT 1: NormalSequenceIndicator
BIT 2: AlternateShortIndicator
BIT 3: AlternateLongIndicator
BIT 4: SetAbleIndicator
BIT 5: Not used
BIT 6: Not used
BIT 7: Not used

Default value: 0;0;0;0;0;0;0;0;

IdentificationCode
Identification code of the data.

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value:

Scaler

Data type: UNSIGNED8

Authorized values:
0: 0
3: 3
6: 6
9: 9

Default value: 0 (0)

NumberOfDecimal

Data type: UNSIGNED8

Authorized value: 0 to 4

Default value: 0

NumberOfdisplayableDigit
Can take following discrete values : 3,4, 5, 6, 7, 8 or 9
If the meter is MIDComplianceParameters = TRUE
, then for TER register (ID_TOTAL_ENERGY_IMP_ACT_ENERGY_PH1,
ID_TOTAL_ENERGY_IMP_ACT_ENERGY_PH2, ID_TOTAL_ENERGY_IMP_ACT_ENERGY_PH3,
ID_TOTAL_ENERGY_IMP_ACT_ENERGY_AGG, ID_TOTAL_ENERGY_EXP_ACT_ENERGY_PH1,
ID_TOTAL_ENERGY_EXP_ACT_ENERGY_PH2, ID_TOTAL_ENERGY_EXP_ACT_ENERGY_PH3,
ID_TOTAL_ENERGY_EXP_ACT_ENERGY_AGG   ), only value 9 is autorised.

Data type: UNSIGNED8

Authorized value: 3 to 9

Default value: 9

dividedBy100

this parameter is always equal to False if the meter is not UFER.
if the meter is UFER, it is possible to set this parameter to True or False.
True means that the real value of the register is divided by 100.
This parameter is only valid if the displayed value is an energy regsiter. This control is only done in the configuration tools and not in the meter.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

5.1.4 DownloadProtectionParameters

A manufacturer parameter allows to define if the firmware download can be performed cover closed or not.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;2;1;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DownloadProtectionParametersOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get/Set	-	Get

Attribute description

`DownloadProtectionParameter`

DownloadProtectionParameter

If MIDComplianceParameters = TRUE, only AMBER_DOWNLOAD_PROTECTED is authorized.
In case of flash memory completely erased (no manufacturer parameters recorded), the default value is 0xFFFF, so the default mode is AMBER_DOWNLOAD_NOT_PROTECTED (the firmware download can be performed cover closed).

Data type: UNSIGNED16

Authorized values:
257: AMBER_DOWNLOAD_PROTECTED
65535: AMBER_DOWNLOAD_NOT_PROTECTED

Default value: AMBER_DOWNLOAD_NOT_PROTECTED (65535)

5.1.5 ExtFirmwareIdParameters

This object holds the firmware revision of the external code memory. It is a read only object because this information is "hard coded" in the firmware. The reading format is different from the previous one.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;1;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExtFirmwareIdParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  FirmwareMajorRevision
  FirmwareMinorRevision
}
```

FirmwareMajorRevision

Equal to XX of the object 'CompleteExternalFirmwareRevision'.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

FirmwareMinorRevision

Equal to YY of the object 'CompleteExternalFirmwareRevision', the numerical fields only.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

5.1.6 HardwareParameters

This object is only used to store hardware information but it is not used by firmware. This object is only programmed in process in manufacturer client.
The syntactic control must be done by the tool.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;3;1;255	1	0	12	0	True	False	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	HardwareParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

```
SEQUENCE      // 6 elements
{
  EnergyActiveClass
  SEQUENCE      // 2 elements
  {
    CurrentRating.Iref
    CurrentRating.Imax
  }
  ConnectionType
  SEQUENCE      // 2 elements
  {
    CommunicationPort.TypePort1
    CommunicationPort.TypePort2
  }
  VoltageRange
  MagnetSensorBoard
}
```

EnergyActiveClass

Data type: UNSIGNED8

Authorized values:
1: Cl 0.2
2: Cl 0.5
3: Cl 1
4: Cl A
5: Cl B
6: Cl C

Default value: Cl 0.5 (2)

CurrentRating.Iref

the values are programmed in tenth A(15 means 1,5 A).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 100

CurrentRating.Imax

the values are programmed in tenth A(15 means 1,5 A).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 600

ConnectionType

Data type: UNSIGNED8

Authorized values:
1: USE
2: VDE

Default value: VDE (2)

CommunicationPort.TypePort1

Data type: UNSIGNED8

Authorized values:
0: Nothing
1: RS232

2: RS485
3: TCP/IP

Default value: RS232 (1)

CommunicationPort.TypePort2

Data type: UNSIGNED8

Authorized values:
0: Nothing
1: RS232
2: RS485
3: TCP/IP

Default value: RS232 (1)

VoltageRange

Data type: UNSIGNED8

Authorized values:
1: 57.7V-100V
2: 127V-220V
3: 230V-400V
4: Auto ranging

Default value: 230V-400V (3)

MagnetSensorBoard

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

5.1.7 HardwareResetInhibitionParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;6;1;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	HardwareResetInhibitionParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

`HardwareResetInhibition`

HardwareResetInhibition

No Inhibition : Hardware reset processing can be done
Inhibition : Hardware reset processing cannot be done

Data type: ENUMERATED

Authorized values:
0: NO_INHIBITION
1: INHIBITION

Default value: NO_INHIBITION (0)

5.1.8 InternalDevelopmentVersion

Indicates the internal development version

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;1;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InternalDevelopmentVersionOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`InternalDevelopmentVersion`

InternalDevelopmentVersion

"XX.YY" where :
- XX is the major number (validation)
- YY is the minor number (integration)
Example : « 01.03 »

Data type: VISIBLESTRING

Authorized value: Size = 5

Default value:

5.1.9 IntFirmwareIdParameters

This object holds the firmware revision of the internal code memory. It is a read only object because this information is "hard coded" in the firmware.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;1;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IntFirmwareIdParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  FirmwareMajorRevision
  FirmwareMinorRevision
}
```

FirmwareMajorRevision

Equal to XX of the object 'CompleteInternalFirmwareRevision'.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

FirmwareMinorRevision

Equal to YY of the object 'CompleteInternalFirmwareRevision', the numerical fields only.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

5.1.10 LongSerialNumber

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;1;2;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LongSerialNumberOBISCode
A2. value	VISIBLESTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get	Get

Attribute description

```
LongSerialNumber
```

LongSerialNumber

Default value : sn00000000000000

Data type: VISIBLESTRING

Authorized value: Size = 16

Default value: sn00000000000000

5.1.11 ManufacturerIdParameters

This object contains an ID which is manufacturer specific.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;0;3;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ManufacturerIdParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

`ManufacturerId`

ManufacturerId

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: manuf id

5.1.12 MeterTypeIdentification

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;4;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MeterTypeIdentificationOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE      // 20 elements
{
  SAP
  InternalFirmwareRevision
  ExternalFirmwareRevision
  InternalChecksum
  ExternalChecksum
  MIDComplianceParameters
  CurrentConnectionParameters
  EnergyActiveClass
  SEQUENCE      // 2 elements
  {
```

```
      Iref_CurrentRating
      IMax_CurrentRating
   }
   ConnectionType
   CommunicationTypePort1
   CommunicationTypePort2
   VoltageRange
   ControlOutputNumber
   ControlInputNumber
   PulseOutputNumber
   PulseInputNumber
   NominalFrequency
   ConnectionTopology
   AuthorisationImaxInTERParameters
}
```

SAP

Data type: VISIBLESTRING

Authorized value: Size = 6

Default value:

InternalFirmwareRevision

Data type: VISIBLESTRING

Authorized value: Size = 6

Default value:

ExternalFirmwareRevision

Data type: VISIBLESTRING

Authorized value: Size = 6

Default value:

InternalChecksum

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value:

ExternalChecksum

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value:

MIDComplianceParameters
TRUE : the meter is MID compliant.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

CurrentConnectionParameters

FALSE : Direct connection,
TRUE : Transformer connection

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

EnergyActiveClass

Data type: UNSIGNED8

Authorized values:
1: Cl 0.2
2: Cl 0.5
3: Cl 01
4: Cl A
5: Cl B
6: Cl C

Default value: Cl 0.5 (2)

Iref_CurrentRating
CurrentRating: the values are programmed in tenth A(15 means 1,5 A).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 100

IMax_CurrentRating
CurrentRating: the values are programmed in tenth A(15 means 1,5 A).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 600

ConnectionType

Data type: UNSIGNED8

Authorized values:
1: USE
2: VDE

Default value: VDE (2)

CommunicationTypePort1

Data type: UNSIGNED8

Authorized values:
0: Nothing
1: RS232
2: RS485
3: TCP/IP

Default value: RS232 (1)

CommunicationTypePort2

Data type: UNSIGNED8

Authorized values:
0: Nothing
1: RS232
2: RS485
3: TCP/IP

Default value: RS232 (1)

VoltageRange

Data type: UNSIGNED8

Authorized values:
1: [57.7V-100V]
2: [127V-220V]
3: [230V-400V]
4: Auto ranging

Default value: [230V-400V] (3)

ControlOutputNumber

Data type: UNSIGNED8

Authorized value: 0 to 8

Default value: 4

ControlInputNumber

Data type: UNSIGNED8

Authorized value: 0 to 8

Default value: 2

PulseOutputNumber

Data type: UNSIGNED8

Authorized value: 0 to 4

Default value: 4

PulseInputNumber

Data type: UNSIGNED8

Authorized value: 0 to 6

Default value: 6

NominalFrequency

Data type: UNSIGNED16

Authorized values:
5000: 50 Hz
6000: 60 Hz

Default value: 50 Hz (5000)

ConnectionTopology

Data type: UNSIGNED8

Authorized values:
3: 3 wires
4: 4 wires

Default value: 4 wires (4)

AuthorisationImaxInTERParameters

TRUE : Imax in TER when Magnet sensor detection.
FALSE : Inhibition of Imax in TER when Magnet sensor detection.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

5.1.13 MIDComplianceParameters

This object indicates if the meter is MID compliant or not.
If parameter is set to true, it allows programming of "MID compliant" parameters only if laboratory switch is activated.
Parameters concerned by this programming restriction are identified in XMI,
by the 'MID compliance' column.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;5;1;255	1	0	1	0	True	False	True

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MIDComplianceParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

`MIDComplianceParameters`

MIDComplianceParameters

Meter is MID compliant when set to TRUE.
When MIDComplianceParameters is set to TRUE :
- DownloadProtectionParameters is forced to AMBER_DOWNLOAD_PROTECTED.
- AuthorisationImaxInTERParameters is forced to FALSE.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

5.1.14 ResourcesIdParameters

This object defines the resources configuration of the meter.
It can only be programmed with the laboratory switch set.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;0;2;255	1	0	2	0	True	False	True

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResourcesIdParametersOBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

ResourceId

ResourceId

This octet string contents the resources defined in the following way (one byte each) :
- Control input number   // 0..8
- Control output number // 0..8
- Pulse input number   // 0..4
- Pulse output number   // 0..6
- Voltage quality   // 0 : disabled ; 1 : enabled
- Channels and rates resources level // 0..4 : see table below
The resources which do not need to be set during a programming will be set to wildcard (0xFF)
- Channels and rates resources levels -   0 -   1 -   2 -   3 -   4
- Demand channels resources -   2 -   3 -   6 -   6 -   10
- Demand registers resources -   4 -   7 - 15 - 18 -   24
- Energy channels resources -   2 -   3 -   6 -   6 -   10
- Energy registers resources -   4 - 10 - 24 - 24 -   32
- Load profile channels resources -   0 -   3 -   5 -   6 -   8

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 2;4;4;6;0;4;

5.1.15 SerialNumber

This object contains the serial number of the meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;1;0;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SerialNumberOBISCode
A2. value	VISIBLESTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get	Get

Attribute description

`SerialNumber`

<u>SerialNumber</u>

Default value : sn00000000000000

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: sn000000

5.1.16 TypesOfMeterBoards

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;142;3;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TypesOfMeterBoardsOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	Get	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  TypeOfBoardTop
  TypeOfBoardIHM
}
```

<u>TypeOfBoardTop</u>

Data type: UNSIGNED8

Authorized values:
0: IEC4 Board
1: IEC5 Board (Crossed comms)

Default value: IEC4 Board (0)

<u>TypeOfBoardIHM</u>

Data type: UNSIGNED8

Authorized values:
0: IEC4 Driver (Driver SED1540)
1: IEC5 Driver (Driver S1D15206)

Default value: IEC4 Driver (Driver SED1540) (0)

5.1.17 UtilityId10Parameters

These objects hold the utility Ids (from Id1 to Id10).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;9;255	1	0	2	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId10ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	Get/Set	Get

Attribute description

`UtilityId10`

UtilityId10

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: D0000000

5.1.18 UtilityId1Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;0;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId1ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`UtilityId1`

UtilityId1

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility0

5.1.19 UtilityId2Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;1;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId2ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

UtilityId2

UtilityId2

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility1

5.1.20 UtilityId3Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;2;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId3ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

UtilityId3

UtilityId3

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility2

5.1.21 UtilityId4Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;3;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId4ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
`UtilityId4`

UtilityId4

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility3

5.1.22 UtilityId5Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;4;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId5ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
`UtilityId5`

UtilityId5

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility4

5.1.23 UtilityId6Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;5;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId6ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
UtilityId6

UtilityId6

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility5

5.1.24 UtilityId7Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;6;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId7ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
UtilityId7

UtilityId7

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility6

5.1.25 UtilityId8Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;7;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId8ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
UtilityId8

UtilityId8

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility7

5.1.26 UtilityId9Parameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;0;8;255	1	0	4	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityId9ParametersOBISCode
A2. value	VISIBLESTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
UtilityId9

UtilityId9

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: utility8

5.2 Cosem profiles

5.2.1 UtilityIdTable

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;0;0;255;255	7	1	4	0	ROM	10	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilityIdTableOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE     // 10 elements
  {
    UtilityId1Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId2Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId3Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId4Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId5Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId6Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId7Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId8Parameters (Att. Id: 0, Abs. Number: 2)
    UtilityId9Parameters (Att. Id: 0, Abs. Number: 4)
    UtilityId10Parameters (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (UtilityId1Parameters): Obis_code = 1;0;0;0;0;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 2 (UtilityId2Parameters): Obis_code = 1;0;0;0;1;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 3 (UtilityId3Parameters): Obis_code = 1;0;0;0;2;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 4 (UtilityId4Parameters): Obis_code = 1;0;0;0;3;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 5 (UtilityId5Parameters): Obis_code = 1;0;0;0;4;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 6 (UtilityId6Parameters): Obis_code = 1;0;0;0;5;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 7 (UtilityId7Parameters): Obis_code = 1;0;0;0;6;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 8 (UtilityId8Parameters): Obis_code = 1;0;0;0;7;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 9 (UtilityId9Parameters): Obis_code = 1;0;0;0;8;255, Class_id = 1, Attribute_index = 0, Data_index = 0
Index 10 (UtilityId10Parameters): Obis_code = 1;0;0;0;9;255, Class_id = 1, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 4 elements
```

```
   {
     Class_id
     Obis_code
     Attribute_index
     Data_index
   }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6 Demand Registering

6.1 Cosem objects

6.1.1 AveragePowerFactor

The power factor of the last integration period is represented by a register object and is automatically updated at the end of each integration period.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;13;4;0;255	5	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AveragePowerFactorOBISCode
A2. current_average_value	INTEGER16	See below
A3. last_average_value	INTEGER16	See below
A4. scaler_unit	SEQUENCE	See below
A5. status	NULL	See below
A6. capture_time	NULL	See below
A7. start_time_current	NULL	See below
A8. period	NULL	See below
A9. number_of_periods	NULL	See below

■ **Attribute 2: current_average_value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`current_average_value`

current_average_value

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: last_average_value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`last_average_value`

last_average_value

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 4: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -4: 4 decimals

Default value: 4 decimals (-4)

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 5: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 6: capture_time

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 7: start_time_current

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 8: period

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 9: number_of_periods

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.2 DemandChannelParameters

This object defines the allocation of each demand register for all the available channels.
The demand parameter type is a sequence of 10 elements (maximum number of available channels).
 See the resourcesIdParameter for the définition of the number of available channels.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;135;0;2;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandChannelParametersOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 6 elements
  {
    QuantityId
    NumberOfRate
    Scaler
```

```
    Unit
    Fluid
    QuantityType
  }
}
```

<u>QuantityId</u>

It defines which energy quantity is allocated to this channel :
- Default value for the first element : 3 (ImportActiveEnergyAgg)
- Default value for the others : 255 (No energy - No allocation)

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2
10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate
24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1
33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
40: Import External Energy 1
41: Import External Energy 2
42: Import External Energy 3
43: Import External Energy 4
44: Export External Energy 1
45: Export External Energy 2

46: Export External Energy 3
47: Export External Energy 4
48: Summation Energy 1
49: Summation Energy 2
50: Summation Energy 3
51: Summation Energy 4
255: No energy - No allocation

Default value: No energy - No allocation (255)

NumberOfRate

Defines how many rates are managed for this channel :
- Default value for the first element : 1
- Default value for the others : 0

Data type: UNSIGNED8

Authorized value: 0 to 8

Default value: 0

Scaler

It defines the scaler attached to this channel :
- The allowed discrete values are -1, 0, 1, 2, 3, 4, 5 and 6

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

Unit

It defines the unit attached to this channel :
- Default value for the first element : 27 (W)
- Default value for the others : 255 (No unit)

Data type: UNSIGNED8

Authorized values:
27: W
28: VA
29: VAR
255: No unit

Default value: No unit (255)

Fluid

Default value for the first element : 0 (Electricity)
Default value for the others : 255 (No fluid)

Data type: UNSIGNED8

Authorized values:
0: Electricity
1: Heat
2: Gas
3: Water
255: No fluid

Default value: Electricity (0)

QuantityType

Value of the OBIS code field C :
- Default value for the first element : 1
- Default value for the others : 82

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

6.1.3 DemandParameters

This object defines all the parameters allowing a specific demand management. It applies to all demand channels and registers.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;135;0;1;255	1	0	2	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 9 elements
{
  IntegrationPeriod
  SlidingDepth
  IntegrationPeriodRestartMode
  ClockModificationThreshold
  IncompletePeriodMode
  ExcessDemandControlMode
  ActiveDemandThresholdForPF
  DemandCalculationAlgorithm
  MaxDemandMode
}
```

IntegrationPeriod

It is the duration elapsed between two demands calculation :

- The value must be a sub-multiple of 60
- Unit = minute

Data type: UNSIGNED8

Authorized values:

1: 1 min
2: 2 min
3: 3 min
4: 4 min
5: 5 min
6: 6 min
10: 10 min
12: 12 min
15: 15 min
20: 20 min
30: 30 min
60: 60 min

Default value: 15 min (15)

SlidingDepth

It is the number of subintervals which creates a full period. Programming a value outside the range leads to a programming error.

Data type: UNSIGNED8

Authorized value: 1 to 15

Default value: 1

IntegrationPeriodRestartMode

It defines the way the demand calculation will restart after a power failure.
Complementary informations :
- Restart : A new integration period will start after a power up.
- Resume : The period which was interrupted by power failure continues after power up in order to have a complete integration period.
- Synchronize : The integration period is always synchronized with the round hour.

Data type: UNSIGNED8

Authorized values:
0: Restart
1: Resume
2: Synchronize

Default value: Synchronize (2)

ClockModificationThreshold

It is a percentage of the integration period (0 to 5%).
When the date and time is updated by programming within this percentage, no need to process an incomplete period calculation. Otherwise, the integration period will be ended.

Data type: UNSIGNED8

Authorized value: 0 to 5

Default value: 1

IncompletePeriodMode

It defines how to manage periods which ends anormally (if the value calculated will be used or will be neglected).

Data type: UNSIGNED8

Authorized values:
0: Neglected
1: Used

Default value: Used (1)

ExcessDemandControlMode

I defines the way to manage the excess demands.
Complementary informations :
- Projection : By a projection of the actual demand to the end of the integration period
- Rising value : By monitoring the rising value

Data type: UNSIGNED8

Authorized values:
0: No management
1: End of integration period
2: Rising value
3: Projection

Default value: No management (0)

ActiveDemandThresholdForPF

It defines the minimum value of the active demand, allowing the power factor calculation. The scaler and unit are the same as for the concerned register.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

DemandCalculationAlgorithm

It defines the way the demands are calculated ; if it will be the standard average algorithm or a specific algorithm.

Data type: UNSIGNED8

Authorized values:
0: Standard (average)
1: Green tariff

Default value: Standard (average) (0)

MaxDemandMode

It defines the way as Maximum Demand is managed.
Complementary informations :
- Maximum Mode (Maximum value is saved)
- Maximum Excess Mode (Difference between maximum value and threshold is saved)

Data type: ENUMERATED

Authorized values:
0: Maximum Mode
1: Maximum Excess Mode

Default value: Maximum Mode (0)

6.1.4 DemandRate10Parameters

This object defines the thresholds associated to the demand rate register number 10, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;9;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate10ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ **Attribute 2: thresholds**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 3: monitored_value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 3 elements
{
  class_Id
  logical_name
  attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ Attribute 4: actions

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.5 DemandRate1Parameters

This object defines the thresholds associated to the demand rate register number 1, and actions to trigger when the excess demand occurs.

The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.

As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.

The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;0;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate1ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ **Attribute 2: thresholds**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
   Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 3: monitored_value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 3 elements
{
   class_Id
   logical_name
   attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name
OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index
last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**
Not used.
Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.6 DemandRate2Parameters

This object defines the thresholds associated to the demand rate register number 2, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitly with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;1;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate2ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ **Attribute 2: thresholds**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE OF      // 1 elements
{
   Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 3: monitored_value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE      // 3 elements
{
   class_Id
   logical_name
   attribute_index
}
```

class_Id
Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name
OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index
last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.7 DemandRate3Parameters

This object defines the thresholds associated to the demand rate register number 3, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
 As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitly with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;2;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate3ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ Attribute 2: thresholds

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE OF     // 1 elements
{
   Threshold
}
```
Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 3: monitored_value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE    // 3 elements
 {
```

```
  class_Id
  logical_name
  attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.8 DemandRate4Parameters

This object defines the thresholds associated to the demand rate register number 4, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitly with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;3;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate4ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ Attribute 2: thresholds

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 3: monitored_value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 3 elements
{
  class_Id
  logical_name
  attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index
last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.9 DemandRate5Parameters

This object defines the thresholds associated to the demand rate register number 5, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
 As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;4;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate5ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ **Attribute 2: thresholds**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE OF      // 1 elements
{
  Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 3: monitored_value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 3 elements
{
  class_Id
  logical_name
  attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.10 DemandRate6Parameters

This object defines the thresholds associated to the demand rate register number 6, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;5;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate6ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ Attribute 2: thresholds

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE OF     // 1 elements
{
   Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 3: monitored_value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description
```
SEQUENCE    // 3 elements
{
   class_Id
   logical_name
   attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.11 DemandRate7Parameters

This object defines the thresholds associated to the demand rate register number 7, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
 As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;6;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate7ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ **Attribute 2: thresholds**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 3: monitored_value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 3 elements
{
  class_Id
  logical_name
  attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ Attribute 4: actions

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.12 DemandRate8Parameters

This object defines the thresholds associated to the demand rate register number 8, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.

As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.

The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;7;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate8ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ Attribute 2: thresholds

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
   Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 3: monitored_value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 3 elements
{
   class_Id
   logical_name
   attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index
last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.13 DemandRate9Parameters

This object defines the thresholds associated to the demand rate register number 9, and actions to trigger when the excess demand occurs.
The objects are automatically created and allocated to the monitored_value when the demand rate allocation is configured. Up to 10 objects are available in SL7000.
 As the identification of the demand rate surveyed is performed by its OBIS code, the demand channel parameters must be programmed before this object.
The actions related to the crossing of threshold are defined implicitely with the event manager configuration and do not reference a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;1;5;8;255	21	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DemandRate9ParametersOBISCode
A2. thresholds	ARRAY	See below
A3. monitored_value	SEQUENCE	See below
A4. actions	NULL	See below

■ **Attribute 2: thresholds**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
   Threshold
}
```

Threshold

The unit and scaler matches the associated demand channel :
- Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 3: monitored_value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 3 elements
{
   class_Id
   logical_name
   attribute_index
}
```

class_Id

Demand register class Id.

Data type: UNSIGNED16

Authorized value: 5

Default value: 5

logical_name

OBIS Code of the demand rate concerned.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index
last_average_value

Data type: INTEGER8

Authorized value: 3

Default value: 3

■ **Attribute 4: actions**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

6.1.14 IntegrationPeriodDuration

This parameter holds the interval period (integration period) for demand management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IntegrationPeriodDurationOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
IntegrationPeriod
```

IntegrationPeriod

It is the duration elapsed between two demands calculation.
The value must be a sub-multiple of 60.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 15

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 6: min

Default value: min (6)

6.1.15 MinimumPowerFactorSinceLastEOB

This data is represented by an extended register object and is automatically updated at the end of each integration period.
It is reset when an EOB occurs.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;13;3;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MinimumPowerFactorSinceLastEOBOBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

MinPowerFactor

MinPowerFactor

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -4: 4 decimals

Default value: 4 decimals (-4)

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

`DateTime`

<u>DateTime</u>

Date and time of the minimum power factor

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

6.1.16 PreviousPowerFactor

This parameter holds the last average value of power factor (on previous integration period).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;13;5;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PreviousPowerFactorOBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

`PreviousPowerFactor`

<u>PreviousPowerFactor</u>

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	-	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -4

Default value: -4

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

6.2 Cosem profiles

6.2.1 AllCumulativeMaxDemands

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;90;255	7	1	4	0	RAM	0	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllCumulativeMaxDemandsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

For each demand rate configured (max 24 rates configured), there are 2 elements :
- one for the value of the cumulative max demand register.
- one for the scaler-unit of the cumulative max demand register.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 1 elements
{
  CHOICE
  {
    SEQUENCE OF    // 2..48 elements ("Array Of" view as "Sequence" in get only)
```

```
    {
        CHOICE
        {
          CumulativeMaxDemandValue
          CumulativeMaxDemandValue
        }
        SEQUENCE      // 2 elements
        {
          Scaler
          Unit
        }
    }
    Null
  }
}
```

CumulativeMaxDemandValue

The type (Unsigned32) corresponds to historical cumulative max demand value.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

CumulativeMaxDemandValue

The type (Unsigned8) corresponds to current cumulative max demand value.
Always equal to 0 in this case.

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var

Default value: W (27)

Null

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: capture_objects**

For each demand rate configured (max 24 rates configured), there are 2 entries in capture object :
- one with attribute index = 2 to read the value of the cumulative max demand register.
- one with attribute index = 3 to read the scaler-unit of the cumulative max demand register.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 0..48 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    ConcernedDemandRegisterOBISCode
    attribute_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ConcernedDemandRegisterOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.2 AllDemands

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;5;255	7	1	4	0	RAM	0	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllDemandsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

For each demand channel configured (max 10), 2 elements (structures) are provided :
- First element corresponds to the Previous demand
- Second element corresponds to the Rising demand

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  CHOICE
  {
    SEQUENCE      // 2..20 elements ("Array Of" view as "Sequence")
    {
      SEQUENCE      // 3 elements
      {
        PreviousDemandRegisterOBISCode or RisingDemandRegisterOBISCode
        PreviousDemandValue or RisingDemandValue
        SEQUENCE      // 2 elements
        {
          Scaler
          Unit
        }
      }
    }
  }

  }
}
```

PreviousDemandRegisterOBISCode or RisingDemandRegisterOBISCode

FPrevious demand OBIS code or Rising demand OBIS code :
- Previous demand : field D of OBIS code = 5.
- Rising demand : field D of OBIS code = 4.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

PreviousDemandValue or RisingDemandValue

Previous demand value or Rising demand value.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var

Default value: W (27)

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: capture_objects**

The sort order is defined by the configuration of the meter, from channel 1 to channel 10.
The captured objects attribute is created automatically when configuring the meter.
There are 2 entries in the capture object for each demand channel configured

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 0..20 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    ConcernedDemandRegisterOBISCode
    attribute_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ConcernedDemandRegisterOBISCode

Previous demand OBIS code or Rising demand OBIS code :
- Previous demand : field D of OBIS code = 5.
- Rising demand : field D of OBIS code = 4.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

= 0 all attribut

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.3 AllMaximumDemands

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;6;255	7	1	1	0	RAM	48	0	1	1	48

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllMaximumDemandsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Here below, the details of each index in the array (max 48 elements) :
Index 1 : MaximumDemand1 OBIS code
Index 2 : MaximumDemand1 peak values
Index 3 : MaximumDemand2 OBIS code
Index 4 : MaximumDemand2 peak values
Index 5 : MaximumDemand3 OBIS code
Index 6 : MaximumDemand3 peak values
Index 7 : MaximumDemand4 OBIS code
Index 8 : MaximumDemand4 peak values
Index 9 : MaximumDemand5 OBIS code
Index 10 : MaximumDemand5 peak values
Index 11 : MaximumDemand6 OBIS code
Index 12 : MaximumDemand6 peak values
Index 13 : MaximumDemand7 OBIS code
Index 14 : MaximumDemand7 peak values
Index 15 : MaximumDemand8 OBIS code
Index 16 : MaximumDemand8 peak values
Index 17 : MaximumDemand9 OBIS code
Index 18 : MaximumDemand9 peak values
Index 19 : MaximumDemand10 OBIS code
Index 20 : MaximumDemand10 peak values
Index 21 : MaximumDemand11 OBIS code
Index 22 : MaximumDemand11 peak values
Index 23 : MaximumDemand12 OBIS code
Index 24 : MaximumDemand12 peak values
Index 25 : MaximumDemand13 OBIS code
Index 26 : MaximumDemand13 peak values
Index 27 : MaximumDemand14 OBIS code
Index 28 : MaximumDemand14 peak values
Index 29 : MaximumDemand15 OBIS code
Index 30 : MaximumDemand15 peak values
Index 31 : MaximumDemand16 OBIS code
Index 32 : MaximumDemand16 peak values
Index 33 : MaximumDemand17 OBIS code
Index 34 : MaximumDemand17 peak values
Index 35 : MaximumDemand18 OBIS code
Index 36 : MaximumDemand18 peak values
Index 37 : MaximumDemand19 OBIS code
Index 38 : MaximumDemand19 peak values
Index 39 : MaximumDemand20 OBIS code
Index 40 : MaximumDemand20 peak values
Index 41 : MaximumDemand21 OBIS code
Index 42 : MaximumDemand21 peak values
Index 43 : MaximumDemand22 OBIS code

Index 44 : MaximumDemand22 peak values
Index 45 : MaximumDemand23 OBIS code
Index 46 : MaximumDemand23 peak values
Index 47 : MaximumDemand24 OBIS code
Index 48 : MaximumDemand24 peak values

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  CHOICE
  {
    SEQUENCE OF     // 2..48 elements ("Array Of" view as "Sequence" in get only)
    {
        ConcernedMaximumDemandOBISCode
        SEQUENCE OF     // 5 elements
        {
          SEQUENCE     // 3 elements
          {
            PeakValue
            SEQUENCE     // 2 elements
            {
              Scaler
              Unit
            }
            PeakDateTimeStamp
          }
        }
    }
    Null
  }
}
```

ConcernedMaximumDemandOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA

29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

Null

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array (max 48 elements) :

Index 1 (MaximumDemand1): Obis_code = 0;0;98;133;61;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 2 (MaximumDemand1): Obis_code = 0;0;98;133;61;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 3 (MaximumDemand2): Obis_code = 0;0;98;133;62;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 4 (MaximumDemand2): Obis_code = 0;0;98;133;62;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 5 (MaximumDemand3): Obis_code = 0;0;98;133;63;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 6 (MaximumDemand3): Obis_code = 0;0;98;133;63;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 7 (MaximumDemand4): Obis_code = 0;0;98;133;64;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 8 (MaximumDemand4): Obis_code = 0;0;98;133;64;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 9 (MaximumDemand5): Obis_code = 0;0;98;133;65;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 10 (MaximumDemand5): Obis_code = 0;0;98;133;65;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 11 (MaximumDemand6): Obis_code = 0;0;98;133;66;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 12 (MaximumDemand6): Obis_code = 0;0;98;133;66;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 13 (MaximumDemand7): Obis_code = 0;0;98;133;67;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 14 (MaximumDemand7): Obis_code = 0;0;98;133;67;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 15 (MaximumDemand8): Obis_code = 0;0;98;133;68;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 16 (MaximumDemand8): Obis_code = 0;0;98;133;68;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 17 (MaximumDemand9): Obis_code = 0;0;98;133;69;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 18 (MaximumDemand9): Obis_code = 0;0;98;133;69;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 19 (MaximumDemand10): Obis_code = 0;0;98;133;70;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 20 (MaximumDemand10): Obis_code = 0;0;98;133;70;255, Class_id = 7, Attribute_index = 2,

Data_index = 0

Index 21 (MaximumDemand11): Obis_code = 0;0;98;133;71;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 22 (MaximumDemand11): Obis_code = 0;0;98;133;71;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 23 (MaximumDemand12): Obis_code = 0;0;98;133;72;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 24 (MaximumDemand12): Obis_code = 0;0;98;133;72;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 25 (MaximumDemand13): Obis_code = 0;0;98;133;73;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 26 (MaximumDemand13): Obis_code = 0;0;98;133;73;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 27 (MaximumDemand14): Obis_code = 0;0;98;133;74;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 28 (MaximumDemand14): Obis_code = 0;0;98;133;74;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 29 (MaximumDemand15): Obis_code = 0;0;98;133;75;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 30 (MaximumDemand15): Obis_code = 0;0;98;133;75;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 31 (MaximumDemand16): Obis_code = 0;0;98;133;76;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 32 (MaximumDemand16): Obis_code = 0;0;98;133;76;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 33 (MaximumDemand17): Obis_code = 0;0;98;133;77;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 34 (MaximumDemand17): Obis_code = 0;0;98;133;77;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 35 (MaximumDemand18): Obis_code = 0;0;98;133;78;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 36 (MaximumDemand18): Obis_code = 0;0;98;133;78;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 37 (MaximumDemand19): Obis_code = 0;0;98;133;79;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 38 (MaximumDemand19): Obis_code = 0;0;98;133;79;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 39 (MaximumDemand20): Obis_code = 0;0;98;133;80;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 40 (MaximumDemand20): Obis_code = 0;0;98;133;80;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 41 (MaximumDemand21): Obis_code = 0;0;98;133;81;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 42 (MaximumDemand21): Obis_code = 0;0;98;133;81;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 43 (MaximumDemand22): Obis_code = 0;0;98;133;82;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 44 (MaximumDemand22): Obis_code = 0;0;98;133;82;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 45 (MaximumDemand23): Obis_code = 0;0;98;133;83;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 46 (MaximumDemand23): Obis_code = 0;0;98;133;83;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 47 (MaximumDemand24): Obis_code = 0;0;98;133;84;255, Class_id = 7, Attribute_index = 1, Data_index = 0

Index 48 (MaximumDemand24): Obis_code = 0;0;98;133;84;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 0..48 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    ConcernedQuantityOBISCode
    attribut_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ConcernedQuantityOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribut_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.4 AllPowerFactors

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;133;31;255	7	1	3	0	ROM	5	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllPowerFactorsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 5 elements
  {
    AveragePowerFactor (Att. Id: 1, Abs. Number: 2)
    AveragePowerFactor (Att. Id: 3, Abs. Number: 2)
    AveragePowerFactor (Att. Id: 2, Abs. Number: 2)
    AveragePowerFactor (Att. Id: 4, Abs. Number: 2)
    MinimumPowerFactorSinceLastEOB (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 1, Data_index = 0

Index 2 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 3, Data_index = 0

Index 3 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 2, Data_index = 0

Index 4 (AveragePowerFactor): Obis_code = 1;1;13;4;0;255, Class_id = 5, Attribute_index = 4, Data_index = 0

Index 5 (MinimumPowerFactorSinceLastEOB): Obis_code = 1;1;13;3;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.5 ExcessDemandProfile

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;7;255	7	1	2	0	RAM	0	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExcessDemandProfileOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

The Excess Demand Profile contains the Threshold, Occurrences, Duration, and Magnitude for each configured rate (monitored or not).
To know which rates are monitored, the value "monitored_value" of each DemandRateParameters has to be read.

Each group of 4 elements in the array corresponds to a configured rate :
- first element : excess demand Threshold
- second element : excess demand Occurrences
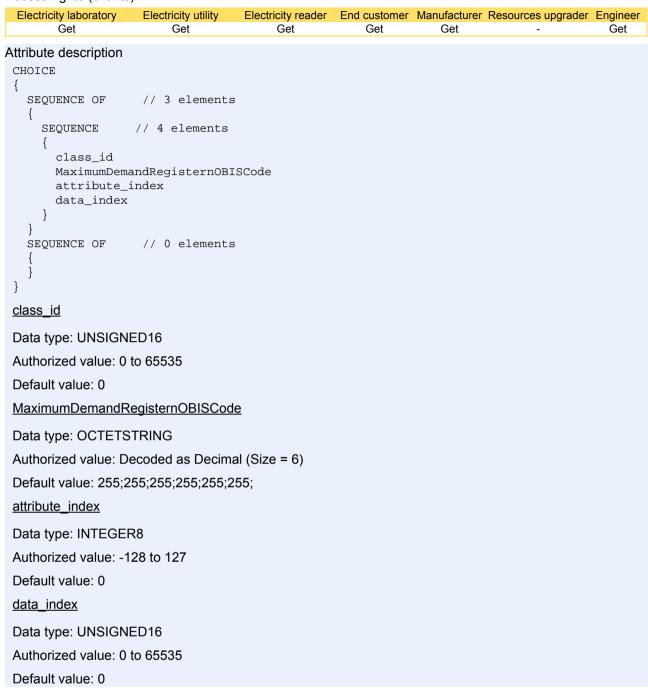- third element : excess demand Duration
- fourth element : excess demand Magnitude

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  CHOICE
  {
    SEQUENCE      // 4..96 elements ("Array Of" view as "Sequence")
    {
      SEQUENCE     // 3 elements
      {
        logical_name
        CHOICE
        {
          Excess demand Magnitude or Duration
          Excess demand Threshold or Occurrences
        }
        SEQUENCE     // 2 elements
        {
          Scaler
          unit
        }
```

```
            }
        }
        RateOperatingTime
    }
}
```

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Excess demand Magnitude or Duration

Corresponds to value of Excess demand Magnitude (max value = 999 999 999) or to value of Excess demand Duration.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

Excess demand Threshold or Occurrences

Corresponds to value of Excess demand Threshold or value of Excess demand Occurrences.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

For Excess demand Ocurrences and Excess demand Duration, scaler is always equal to 0.
For Excess demand magnitude and Excess demand threshold, scaler corresponds to channel scaler.

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

For Excess demand Occurrences, Unit is always equal to No unit (255).
For Excess demand Duration, Unit is always equal to Min (6).
For Excess demand Threshold and Magnitude, Unit can be equal to W(27), VA(28) or var(29).

Data type: ENUMERATED

Authorized values:
6: min
27: W
28: VA
29: var
255: No unit

Default value: No unit (255)

RateOperatingTime

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: capture_objects**

All excess data are available for reading as a whole through a profile (current values in Demand Registering exploitation data or historical values in the EOBData profile).

The Excess Demand Profile contains the Threshold, Occurrences, Duration, and Magnitude
for each configured rate (monitored or not).
To know which rates are monitored, the value "monitored_value" of each DemandRateParameters
has to be read. So, the DemandRateXParameters objects (X = 1..10) are now readable
in the Electricity Logical Device to allow the reading of each monitored_value parameter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 0..96 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    logical_name
    attribute_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

logical_name

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.6 MaximumDemand1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;61;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand1OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.7 MaximumDemand10

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;70;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand10OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.8 MaximumDemand11

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;71;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand11OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
   Null data
   SEQUENCE      // 3 elements
   {
     PeakValue
     SEQUENCE      // 2 elements
     {
       Scaler
       unit
     }
     PeakDateTimeStamp
   }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:

27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ Attribute 3: capture_objects

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.9 MaximumDemand12

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;72;25 5	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand12OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.10 MaximumDemand13

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;73;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand13OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.11 MaximumDemand14

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;74;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand14OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.12 MaximumDemand15

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;75;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand15OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF      // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF      // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.13 MaximumDemand16

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;76;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand16OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF    // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF    // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.14 MaximumDemand17

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;77;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand17OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
```

```
            }
        }
    }
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF    // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF    // 0 elements
  {
```

```
        }
    }
    class_id
```

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegledsternOBISCode

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.15 MaximumDemand18

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;78;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand18OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
```

```
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ Attribute 3: capture_objects

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
```

```
            data_index
        }
    }
    SEQUENCE OF     // 0 elements
    {
    }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.16 MaximumDemand19

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;79;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand19OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
```

```
      Null data
      SEQUENCE      // 3 elements
      {
        PeakValue
        SEQUENCE      // 2 elements
        {
          Scaler
          unit
        }
        PeakDateTimeStamp
      }
    }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
```

```
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.17 MaximumDemand2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;62;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand2OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.18 MaximumDemand20

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;80;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand20OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF      // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF      // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.19 MaximumDemand21

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;81;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand21OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.20 MaximumDemand22

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;82;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand22OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.21 MaximumDemand23

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;83;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand23OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF       // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE       // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:

27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.22 MaximumDemand24

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;84;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand24OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ Attribute 3: capture_objects

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.23 MaximumDemand3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;63;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand3OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

<u>PeakDateTimeStamp</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

<u>class_id</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>MaximumDemandRegisternOBISCode</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

<u>attribute_index</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.24 MaximumDemand4

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;64;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand4OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF    // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF    // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.25 MaximumDemand5

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;65;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand5OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.26 MaximumDemand6

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;66;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand6OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE      // 3 elements
    {
      PeakValue
      SEQUENCE      // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ Attribute 3: capture_objects

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.27 MaximumDemand7

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;67;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand7OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE     // 2 elements
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
```

```
      }
    }
  }
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
```

```
    }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.28 MaximumDemand8

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;68;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand8OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
    Null data
    SEQUENCE     // 3 elements
    {
      PeakValue
      SEQUENCE       // 2 elements
```

```
      {
        Scaler
        unit
      }
      PeakDateTimeStamp
    }
  }
}
```

Null data

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

PeakValue

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

PeakDateTimeStamp

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF     // 3 elements
  {
    SEQUENCE      // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
```

```
        data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

6.2.29 MaximumDemand9

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;69;255	7	1	1	0	RAM	0	0	5	5	5

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumDemand9OBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	CHOICE	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5 elements
{
  CHOICE
  {
```

```
        Null data
        SEQUENCE      // 3 elements
        {
          PeakValue
          SEQUENCE      // 2 elements
          {
            Scaler
            unit
          }
          PeakDateTimeStamp
        }
      }
    }
```

<u>Null data</u>

Null data when corresponding demand rate is not configured.

Data type: NULL

Authorized value:

Default value:

<u>PeakValue</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>Scaler</u>

Data type: INTEGER8

Authorized value: -1 to 6

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
255: No unit

Default value: W (27)

<u>PeakDateTimeStamp</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
CHOICE
{
  SEQUENCE OF      // 3 elements
  {
```

```
    SEQUENCE     // 4 elements
    {
      class_id
      MaximumDemandRegisternOBISCode
      attribute_index
      data_index
    }
  }
  SEQUENCE OF     // 0 elements
  {
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MaximumDemandRegisternOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

7 Diagnostic & Tamper

7.1 Cosem objects

7.1.1 BatteryEndOfLifeDateParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;6;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	BatteryEndOfLifeDateParametersOBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`BatteryEndOfLifeDateParameters`

BatteryEndOfLifeDateParameters

Some fields only are managed in this UTC :
- Field 'year highbyte' : when programmed, this field is not taken into account (it is calculated by the meter according to the year lowbyte).
- Field 'year lowbyte' : range 0 .. 99.
- Field 'month' : range 1 .. 12.
- Field 'day' : range 1 .. 31.
- Other fields are not significative : when programmed, they are not taken into account ; when read, they are equal to 255, excepted 'deviation highbyte' (=128) and 'deviation lowbyte' (=0).
Default value : reference date (January 1st, 1992).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;255;255;255;255;128;0;255;

7.1.2 BatteryThresholdParameters

This object defines the battery management characteristics.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	BatteryThresholdParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Duration
  VoltageLevel
}
```

Duration

The Duration is the number of days of the battey use time, relative to its characteristic.
The default value corresponds to a meter without battery.
Remark: In AIMSPRO, this Duration is always configured between 365 days and 1095 days (3 years).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

VoltageLevel

VoltageLevel is the threshold under which the battery need to be changed, expressed in 1/100th V.
The default value corresponds to a meter without battery.
Remark: In AIMSPRO, this VoltageLevel is always configured to 200 (2 V).

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

7.1.3 CurrentFrequency

This register holds the current frequency.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;14;7;0;255	3	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentFrequencyOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
CurrentFrequency
```

CurrentFrequency

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 44: Hz

Default value: Hz (44)

7.1.4 CurrentReversalAlarmParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;9;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalAlarmParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
CurrentReversalAggregateAlarm
```

CurrentReversalAggregateAlarm

Indicates if the Aggregate Current Reversal alarm detection is managed by the meter :
- TRUE : yes, it is managed
- FALSE : no, it is inhibited

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

7.1.5 CurrentTemperature

This object allows to read the temperature value as it is measured by the analog digital converter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;128;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentTemperatureOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`CurrentTemperature`

CurrentTemperature

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

7.1.6 CurrentTemperatureInDegrees

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;9;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentTemperatureInDegreesOBISCode
A2. value	INTEGER8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`CurrentTemperatureInDegrees`

CurrentTemperatureInDegrees

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 9: °C

Default value: °C (9)

7.1.7 ErrorLogbook

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;43;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ErrorLogbookOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

This object is manufacturer specific. The values of the fields ClassCode, MethodCode and ErrorCode are defined in the Excel document D0209124.
It is sorted by chronological order.
A reference date in the field CaptureTime indicates that the element is not significant (other fields set to 0).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	Get

Attribute description

```
SEQUENCE OF      // 50 elements
{
  SEQUENCE     // 4 elements
  {
    ClassCode
    MethodCode
    ErrorCode
    CaptureTime
  }
}
```

ClassCode

ClassCode is defined in the Excel document D0209124.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

MethodCode

MethodCode is defined in the Excel document D0209124.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

ErrorCode

ErrorCode is defined in the Excel document D0209124.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

CaptureTime

A reference date in this field indicates that the element is not significant (other fields set to 0).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

7.1.8 ExternalChecksum

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;54;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExternalChecksumOBISCode
A2. value	VISIBLESTRING	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExternalChecksumType
```

ExternalChecksumType

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value:

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

7.1.9 InternalChecksum

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;54;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InternalChecksumOBISCode
A2. value	VISIBLESTRING	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`InternalChecksumType`

InternalChecksumType

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value:

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

7.1.10 MaxFrequency

This extended register object holds the maximum frequency in the billing period (since the last EOB).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;14;6;0;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaxFrequencyOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
MaxFrequency
```

MaxFrequency

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 44: Hz

Default value: Hz (44)

■ **Attribute 4: status**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

DateTime

Date and time of the maximum frequency

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

7.1.11 MaxTemperature

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;128;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaxTemperatureOBISCode
A2. value	INTEGER8	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`MaxTemperature`

MaxTemperature

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 9: °C

Default value: °C (9)

■ **Attribute 4: status**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Date and time of the maximum temperature

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

7.1.12 MinFrequency

This extended register object holds the minimum frequency in the billing period (since the last EOB).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;14;3;0;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MinFrequencyOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`MinFrequency`

MinFrequency

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 44: Hz

Default value: Hz (44)

■ Attribute 4: status

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

DateTime

Date and time of the minimum frequency

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

7.1.13 MinTemperature

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;128;3;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MinTemperatureOBISCode
A2. value	INTEGER8	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`MinTemperature`

MinTemperature

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 9: °C

Default value: °C (9)

■ **Attribute 4: status**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
DateTime
```
DateTime

Date and time of the minimum temperature

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

7.1.14 NbrOfDaysWithoutExternalConsumption

This object contains the number of days without any external consumption (without input pulses).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;54;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NbrOfDaysWithoutExternalConsumptionOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DaysCounter`

DaysCounter

it contains a counter indicating how many days the meter was on power but without input pulses

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 4: day

Default value: day (4)

7.1.15 NbrOfDaysWithoutInternalConsumption

This object contains the number of days without any internal consumption (through the internal metrology : all phases in creep condition).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;54;2;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NbrOfDaysWithoutInternalConsumptionOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DaysCounter

<u>DaysCounter</u>

It contains a counter indicating how many days the meter was on power but without consumption through the internal metrology (all phases in creep condition)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 4: day

Default value: day (4)

7.1.16 NetworkSurveyParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;3;255	1	0	7	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NetworkSurveyParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 5 elements
{
  NeutralLossThreshold
  ZeroUThreshold
  ZeroIThreshold
  NoConsumptionThreshold
  ZeroSequenceIDurationThreshold
}
```

NeutralLossThreshold

It defines a threshold under which an alarm will be set for Neutral loss.
The threshold is the same for the 3 phases.
Simple voltages are concerned.
It is expressed in 1/10 V

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ZeroUThreshold

It defines threshold for voltage zero sequences.
When the voltage measured is above its threshold, a non fatal alarm is set.
They are expressed in 1/10 V

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 200

ZeroIThreshold

It defines threshold for current zero sequences.
When the current measured is above its threshold, a non fatal alarm is set.
They are expressed in 1/100 A

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 1000

NoConsumptionThreshold

It defines thresholds expressed in days for non consumption duration.
When there is no consumption till this threshold is reached, a non fatal alarm is set
(thresholds are common for internal and external measurement)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 5

ZeroSequenceIDurationThreshold

The unit of this value is minute.
if the value is equal to 255 , the coincident alarm "zero sequence I Trapped" is not detected

Data type: UNSIGNED8

Authorized value: 0 to 60 and 255

Default value: 255

7.1.17 PowerSupplyParameters

This object allows the programming of the power supply thresholds.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;7;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PowerSupplyParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 3 elements
{
  AcFailHighThreshold
  AcFaillowThreshold
  PwrFailThreshold
}
```

AcFailHighThreshold

The value is for PSU 230 V.

Data type: UNSIGNED8

Authorized value: 169 to 199

Default value: 178

AcFaillowThreshold

The value is for PSU 230 V.

Data type: UNSIGNED8

Authorized value: 153 to 189

Default value: 171

PwrFailThreshold

The value is for PSU 230 V.

Data type: UNSIGNED8

Authorized value: 91 to 129

Default value: 103

7.1.18 RmsMaximumCurrentPhase1

This object holds maximum current on phase 1 and its capture time.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;31;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsMaximumCurrentPhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsMaximumCurrentPhase1`

RmsMaximumCurrentPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

■ Attribute 4: status

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Date and time of the maximum current phase 1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

7.1.19 RmsMaximumCurrentPhase2

This object holds maximum current on phase 2 and its capture time.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;51;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsMaximumCurrentPhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsMaximumCurrentPhase2
```

RmsMaximumCurrentPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

■ **Attribute 4: status**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
`DateTime`

DateTime

Date and time of the maximum current phase 2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

7.1.20 RmsMaximumCurrentPhase3

This object holds maximum current on phase 3 and its capture time.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;71;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsMaximumCurrentPhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsMaximumCurrentPhase3`

RmsMaximumCurrentPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

■ Attribute 4: status

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

DateTime

Date and time of the maximum current phase 3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

7.1.21 RmsMaximumVoltagePhase1

This object holds maximum voltage on phase 1 (and its capture time), with reference to neutral for a 4 wires meter, and reference to phase 2 for a 3 wires meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;32;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsMaximumVoltagePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsMaximumVoltagePhase1`

RmsMaximumVoltagePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
```

```
    Unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

■ **Attribute 4: status**

not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

DateTime

Date and time of the maximum voltage phase 1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

7.1.22 RmsMaximumVoltagePhase2

This object holds maximum voltage on phase 2 (and its capture time), with reference to neutral for a 4 wires meter, and reference to phase 2 for a 3 wires meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;52;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsMaximumVoltagePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsMaximumVoltagePhase2`

RmsMaximumVoltagePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

■ Attribute 4: status

not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Date and time of the maximum voltage phase 2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

7.1.23 RmsMaximumVoltagePhase3

This object holds maximum voltage on phase 3 (and its capture time), with reference to neutral for a 4 wires meter, and reference to phase 2 for a 3 wires meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;72;6;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsMaximumVoltagePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsMaximumVoltagePhase3
```

RmsMaximumVoltagePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
   Scaler
```

```
    Unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

■ **Attribute 4: status**

not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
DateTime
```
DateTime
Date and time of the maximum voltage phase 3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

7.1.24 RTCCorrectionParameters

This object allows the set of the real time clock correction parameters.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;6;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RTCCorrectionParametersOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 256 elements
{
  Correction
}
```

Correction

Default value :
31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31,
30, 30, 30, 30, 30, 30, 30, 30, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19,
19, 18, 17, 16, 16, 15, 15, 14, 14, 13, 12, 12, 12, 11, 11, 10, 10, 9, 9, 9,
8, 8, 8, 7, 7, 7, 7, 6, 6, 6, 6, 5, 5, 5, 5, 4, 4, 4, 4, 4,
4, 3, 3, 3, 3, 3, 3, 2, 2, 2, 2, 2, 2, 2, 2, 2, 1, 1, 1, 1,
1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 3, 3, 3,
3, 4, 4, 4, 4, 4, 4, 4, 5, 5, 5, 5, 5, 6, 6, 6, 6, 6, 7, 7,
7, 7, 8, 8, 8, 8, 9, 9, 9, 9, 10, 10, 10, 11, 11, 11, 12, 12, 13, 13,
13, 14, 14, 15, 15, 16, 16, 17, 17, 18, 19, 19, 20, 21, 21, 22, 23, 24, 25, 26,
27, 28, 30, 30, 30, 30, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31

Data type: INTEGER8

Authorized value: -31 to 31

Default value: 0

7.1.25 TemperatureTableParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;5;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TemperatureTableParametersOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 256 elements
{
```

```
   Temperature
}
```

Temperature

The unit of the element of this table is implicit. It is volt per degree.

Default value :

127, 127, 127, 127, 127, 127 ,127, 127, 127, 127, 127, 127, 127, 127, 127, 127, 127, 127 ,127, 127,
100, 98, 96, 94, 93, 91, 89, 88, 87, 85, 84, 83, 81, 80, 79, 78, 77, 76, 75, 74,
73, 72, 71, 70, 69, 68, 68, 67, 66, 65, 64, 64, 63, 62, 61, 61, 60, 59, 59, 58,
57, 57, 56, 55, 55, 54, 54, 53, 52, 52, 51, 51, 50, 50, 49, 48, 48, 48, 47, 46,
46, 45, 45, 44, 44, 43, 43, 42, 42, 42, 41, 40, 40, 40, 39, 39, 38, 38, 37, 37,
36, 36, 36, 35, 35, 34, 34, 33, 33, 33, 32, 32, 31, 31, 30, 30, 30, 29, 29, 28,
28, 28, 27, 27, 26, 26, 26, 25, 25, 24, 24, 24, 23, 23, 23, 22, 22, 21, 21, 21,
20, 20, 19, 19, 19, 18, 18, 18, 17, 17, 16, 16, 16, 15, 15, 14, 14, 14, 13, 13,
13, 12, 12, 11, 11, 10, 10, 10, 9, 9, 9, 8, 8, 7, 7, 6, 6, 6, 5, 5,
4, 4, 4, 3, 3, 2, 2, 1, 1, 0, 0, 0, -1, -1, -2, -2, -3, -3, -4, -4,
-5, -5, -6, -6, -6, -7, -8, -8, -9, -9, -10, -10, -11, -11, -12, -13, -13, -14, -14, -15,
-16, -16, -17, -18, -18, -19, -20, -21, -21, -22, -23, -24, -25, -26, -26, -27, -28, -30, -31, -32,
-33, -34, -36, -37, -38, -40, 127, 127, 127, 127, 127, 127, 127, 127, 127, 127

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

7.1.26 TestWatchdogCounter

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;97;97;5;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TestWatchdogCounterOBISCode
A2. value	UNSIGNED32	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Value
```

Value

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

7.2 Cosem profiles

7.2.1 AllChecksums

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;135;5;255	7	1	1	0	ROM	2	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllChecksumsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 2 elements
  {
    InternalChecksum (Att. Id: 0, Abs. Number: 1)
    ExternalChecksum (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (InternalChecksum): Obis_code = 0;0;96;54;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 2 (ExternalChecksum): Obis_code = 0;0;96;54;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 2 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

<u>Class_id</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>Obis_code</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

7.2.2 AllConsumptions

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;135;4;25 5	7	1	1	0	ROM	2	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllConsumptionsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 2 elements
  {
    NbrOfDaysWithoutInternalConsumption (Att. Id: 0, Abs. Number: 1)
    NbrOfDaysWithoutExternalConsumption (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (NbrOfDaysWithoutInternalConsumption): Obis_code = 0;0;96;54;2;255, Class_id = 3,
Attribute_index = 0, Data_index = 0
Index 2 (NbrOfDaysWithoutExternalConsumption): Obis_code = 0;0;96;54;1;255, Class_id = 3,
Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 2 elements
{
```

```
SEQUENCE      // 4 elements
{
  Class_id
  Obis_code
  Attribute_index
  Data_index
}
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

7.2.3 AllFrequencies

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;135;1;255	7	1	1	0	ROM	3	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllFrequenciesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 3 elements
```

```
  {
    CurrentFrequency (Att. Id: 0, Abs. Number: 2)
    MaxFrequency (Att. Id: 0, Abs. Number: 2)
    MinFrequency (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (CurrentFrequency): Obis_code = 1;1;14;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 2 (MaxFrequency): Obis_code = 1;1;14;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0
Index 3 (MinFrequency): Obis_code = 1;1;14;3;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

7.2.4 AllRmsMaxValues

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;134;3;255	7	1	1	0	ROM	6	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllRmsMaxValuesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 6 elements
  {
    RmsMaximumCurrentPhase1 (Att. Id: 0, Abs. Number: 1)
    RmsMaximumCurrentPhase2 (Att. Id: 0, Abs. Number: 1)
    RmsMaximumCurrentPhase3 (Att. Id: 0, Abs. Number: 1)
    RmsMaximumVoltagePhase1 (Att. Id: 0, Abs. Number: 1)
    RmsMaximumVoltagePhase2 (Att. Id: 0, Abs. Number: 1)
    RmsMaximumVoltagePhase3 (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (RmsMaximumCurrentPhase1): Obis_code = 1;1;31;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 2 (RmsMaximumCurrentPhase2): Obis_code = 1;1;51;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 3 (RmsMaximumCurrentPhase3): Obis_code = 1;1;71;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 4 (RmsMaximumVoltagePhase1): Obis_code = 1;1;32;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 5 (RmsMaximumVoltagePhase2): Obis_code = 1;1;52;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 6 (RmsMaximumVoltagePhase3): Obis_code = 1;1;72;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 6 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

7.2.5 AllTemperatures

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;135;2;255	7	1	1	0	ROM	3	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllTemperaturesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 1 elements
{
  SEQUENCE     // 3 elements
  {
    CurrentTemperatureInDegrees (Att. Id: 0, Abs. Number: 1)
    MaxTemperature (Att. Id: 0, Abs. Number: 1)
    MinTemperature (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (CurrentTemperatureInDegrees): Obis_code = 0;0;96;9;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (MaxTemperature): Obis_code = 0;0;128;6;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 3 (MinTemperature): Obis_code = 0;0;128;3;0;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

8 Display

8.1 Cosem objects

8.1.1 DisplayGeneralParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;141;0;1;255	1	0	16	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DisplayGeneralParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 23 elements
{
  LeadingZero
  Backlight
  EOBConfirm
  StringEOBConfirm
  SeparatorsDisplay
  TimeFormat
  DateFormat
  TimeOutforSetMode
  DisplayOnTimeOut
  DisplayOffTimeOut
  NbDisplayedHistoSetsNormalMode
  ExistenceOfEndOfText
  EndOfTextString
  NbDisplayedHistoSetsAltShort
  NbDisplayedHistoSetsAltLong
  TimeoutForAltMode
  AutorizedEOB
  TimeoutTestMode
  WeekDayDisplayed
  DisplayingOfLPMenus
  DisplayingOfMIDMenu
  DisplayingOfALTShortMenu
  DisplayButtonEmulationByOpticalHead
}
```

LeadingZero

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

Backlight

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

EOBConfirm

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

StringEOBConfirm

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: V EOB

SeparatorsDisplay

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

TimeFormat
Complementary informations :
- FALSE : 12 hours format
- TRUE : 24 hours format

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

DateFormat

Data type: UNSIGNED8

Authorized values:
0: dd:mm:yy
1: mm:dd:yy
2: yy:mm:dd

Default value: dd:mm:yy (0)

TimeOutforSetMode
En secondes.

Data type: UNSIGNED8

Authorized value: 2 to 10

Default value: 10

DisplayOnTimeOut

En secondes.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 8

DisplayOffTimeOut

En secondes.

Data type: UNSIGNED8

Authorized value: 0 to 60

Default value: 2

NbDisplayedHistoSetsNormalMode

Data type: UNSIGNED8

Authorized value: 0 to 18

Default value: 1

ExistenceOfEndOfText

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

EndOfTextString

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value:

NbDisplayedHistoSetsAltShort

Data type: UNSIGNED8

Authorized value: 0 to 18

Default value: 18

NbDisplayedHistoSetsAltLong

Data type: UNSIGNED8

Authorized value: 0 to 18

Default value: 1

TimeoutForAltMode

En minutes.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 10

AutorizedEOB

Data type: BOOLEAN

Authorized values:

0: FALSE
1: TRUE

Default value: 1: TRUE

TimeoutTestMode
En secondes.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 10

WeekDayDisplayed

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

DisplayingOfLPMenus
This parameter determines if the menus of Load profile are avaliable or not.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

DisplayingOfMIDMenu
This parameter determines if the menu of Mid datas is avaliable or not.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

DisplayingOfALTShortMenu
This parameter determines if the menu ALTShort is avaliable or not.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

DisplayButtonEmulationByOpticalHead
This parameter determines if Optical push button is available or not.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

9 Energy Registering

9.1 Cosem objects

9.1.1 EnergyChannelParameters

This object defines for each channel, the attributes relative to it, allowing its management.
See the resourcesIdParameter for the définition of the number of available channels.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;133;0;2;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EnergyChannelParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 7 elements
  {
    QuantityId
    Scaler
    Unit
    NumberOfRate
    ExcessEnergy
    Fluid
    QuantityType
  }
}
```

QuantityId

It defines which energy quantity is allocated to this channel :
- Default value for the first element : 3 (ImportActiveEnergyAgg)
- Default value for the others : 255 (No energy - No allocation)

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2

10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate
24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1
33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
40: Import External Energy 1
41: Import External Energy 2
42: Import External Energy 3
43: Import External Energy 4
44: Export External Energy 1
45: Export External Energy 2
46: Export External Energy 3
47: Export External Energy 4
48: Summation Energy 1
49: Summation Energy 2
50: Summation Energy 3
51: Summation Energy 4
255: No energy - No allocation

Default value: No energy - No allocation (255)

Scaler

It defines the scaler linked to this channel :
- The allowed discrete values are 0, 3 and 6

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

It defines the unit linked to this channel :
- Default value for the first element : 30 (Wh)
- Default value for the others : 255 (No unit)

Data type: UNSIGNED8

Authorized values:
30: Wh
31: VAh
32: VARh
255: No unit

Default value: No unit (255)

NumberOfRate

Defines how many rates are managed for this channel
- Default value for the first element : 1
- Default value for the others : 0

Data type: UNSIGNED8

Authorized value: 0 to 8

Default value: 0

ExcessEnergy

Excess energy function cannot be allowed to process for an energy channel.
=> La seule valeur autorisée est FALSE.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

Fluid

Default value for the first element : 0 (Electricity)
Default value for the others : 255 (No fluid)

Data type: UNSIGNED8

Authorized values:
0: Electricity
1: Heat
2: Gas
3: Water
255: No fluid

Default value: No fluid (255)

QuantityType

Value of the OBIS code field C :
- Default value for the first element : 1
- Default value for the others : 82

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 82

9.1.2 EnergyParameters

This cosem object defines the time integral relative to the energy. It applies to all relevant registers.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;133;0;1;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EnergyParametersOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`TimeIntegral`

TimeIntegral

The time integral defines the mode of management of the energies at the end of billing period. It can take discrete values 1 or 2 :
- Mode 1 : allows the cumulation of the energy at the end of the billing period without any reset of the registers. Energies in the register are those from the previous end of billing periods, added by energies cumulated in the actual period.
- Mode 2 : leads to the current billing period energies rate registers reset at the immediate of the billing period.

Data type: UNSIGNED8

Authorized values:
1: Mode 1
2: Mode 2

Default value: Mode 1 (1)

9.2 Cosem profiles

9.2.1 AllEnergyRates

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;1;255	7	1	7	0	RAM	0	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllEnergyRatesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

This object allows the reading of all energy rate registers as a whole.
One structure is included for each included register.

The real amount of included registers is calculated automatically through the configuration of the meter. The sort order is defined by the configuration of the meter (order of the channel configuration).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  CHOICE
  {
    SEQUENCE     // 1..32 elements ("Array Of" view as "Sequence")
    {
      SEQUENCE     // 5 elements
      {
        EnergyOBISCode
        EnergyRegisterValue
        SEQUENCE     // 2 elements
        {
          Scaler
          Unit
        }
        CHOICE
        {
          RateOperatingTime
          RateOperatingTime
        }
        Null
      }
    }
    Capture time
  }
}
```

EnergyOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

EnergyRegisterValue

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

Scaler

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized values:

30: Wh
31: VAh
32: varh

Default value: Wh (30)

RateOperatingTime

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

RateOperatingTime
RateOperating time is always equal to NULL in historical sets

Data type: NULL

Authorized value:

Default value:

Null

Data type: NULL

Authorized value:

Default value:

Capture time

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: capture_objects**

One structure is included for each included register.
 The real amount of included registers is calculated automatically through the configuration of the meter.
The sort order is defined by the configuration of the meter (order of the channel configuration).
The captured objects attribute is created automatically when configuring the meter.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 0..32 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    ConcernedQuantityOBISCode
    attribut_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ConcernedQuantityOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribut_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10 Event Manager

10.1 Cosem objects

10.1.1 AlarmParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;130;0;3;255	1	0	9	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 41 elements
{
  SEQUENCE      // 3 elements
  {
    IndicAlarmToEmitOnControlOutput
    IndicAlarmToDisplay
    PhoneNumberIdentifier
  }
}
```

IndicAlarmToEmitOnControlOutput

Specifies if the concerned alarm must be send to a control ouput or not.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

IndicAlarmToDisplay

Specifies if the concerned alarm is to be display when set or not.
Default value :
- TRUE for the following alarm : INTERNAL_RAM_ERROR, EXTERNAL_RAM_ERROR, INTERNAL_PROGRAM_MEMORY_ERROR, EXTERNAL_PROGRAM_MEMORY_ERROR, WATCHDOG_ACTIVITY, CONFIGURATION_INCOHERENCE, PROGRAMMING_INCOHERENCE, COVER_OPENING, NO_INTERNAL_CONSUMPTION, CLOCK_LOSS, VOLTAGE_CUT_PHASE_1, VOLTAGE_CUT_PHASE_2, VOLTAGE_CUT_PHASE_3, BATTERY, MAGNET_SENSOR
- FALSE for the other alarms

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

PhoneNumberIdentifier

It is the ID of the phone number in the phone number list.
Values 255, equal no phone number.

Data type: UNSIGNED8

Authorized value: 0 to 2 and 255

Default value: 255

10.1.2 AlarmsMeterRestartedRegister

This object contains one Alarm Meter restarted immediately. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;42;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmsMeterRestartedRegisterOBISCode
A5. capture_time	OCTETSTRING	See below

■ **Attribute 5: capture_time**

Date and time of the AlarmsMeterRestarted.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

capture_time

capture_time

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.3 AlarmsMeterRestartedSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;43;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmsMeterRestartedSummaryOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

`RestartMeterNumber`

RestartMeterNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.4 AlarmsMetrologyRestartedRegister

This object contains one Alarm Metrology restarted immediately. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;40;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmsMetrologyRestartedRegisterOBISCode
A5. capture_time	OCTETSTRING	See below

- ■ **Attribute 5: capture_time**

Date and time of the AlarmsMetrologyRestarted.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`capture_time`

capture_time

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.5 AlarmsMetrologyRestartedSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;41;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmsMetrologyRestartedSummaryOBISCode
A2. value	UNSIGNED16	See below

- ■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

`RestartMetrologyNumber`

RestartMetrologyNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.6 ApsParameter

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;130;0;6;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ApsParameterOBISCode
A2. value	UNSIGNED8	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`ApsParameters`

ApsParameters

Data type: UNSIGNED8

Authorized values:
0: Not connected
1: Connected

Default value: Not connected (0)

10.1.7 CalibrationSummary

This object contains the total number of calibrations and the last calibration date and time.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;2;5;255	4	0	5	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CalibrationSummaryOBISCode
A2. value	OCTETSTRING	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Last calibration date and time.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Last calibration date and time.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

■ **Attribute 3: scaler_unit**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Number of calibrations done

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

NumberOfCalibrations

NumberOfCalibrations

Number of calibrations done

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Last calibration date and time.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Last calibration date and time.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.8 ConfigurationSummary

This register holds the total number of 'Start measurement' script activation and the date and time of the last one.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;2;10;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ConfigurationSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	VISIBLESTRING	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Number of Configuration

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NbConfiguration`

NbConfiguration

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
ConfigurationId
```

ConfigurationId

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: conf id

■ **Attribute 5: capture_time**

Date and time of the last meter start measurement.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Last configuration date and time.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.9 CosemUserConnectionsRegister

This object contains information relative to one Cosem user connection. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;143;1;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CosemUserConnectionsRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Number of Configuration

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 3 elements
{
  Username
  Channel ID
  ClientType
}
```

Username

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: username

Channel ID

Data type: UNSIGNED8

Authorized values:
0: Undefined
1: Customer port
2: Utility port

Default value: Undefined (0)

ClientType

Data type: UNSIGNED8

Authorized values:
0: No_client
1: ElectricityUtilityLab
2: ElectricityUtilityField
3: ElectricityReader
4: GasReader
5: WaterReader
6: HeatReader
7: EndCustomer
16: Public
120: Manufacturer

121: ResourceUpgrader
122: Engineer

Default value: No_client (0)

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
LogbookId
```

<u>LogbookId</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
capture_time
```

<u>capture_time</u>

Date and time of user connection.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.10 CosemUserConnectionsSummary

This object contains the total number of Cosem user connections.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;12;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CosemUserConnectionsSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NumberOfUserConnections`

NumberOfUserConnections

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.11 CoverOpeningRegister

This object contains number of cover opening occurence. The date and the time of cover opening are stored in this object.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;12;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CoverOpeningRegisterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

This data contains the cover opening duration.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
Duration
```

Duration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookId`

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 5: capture_time**

This data contains the starting date and time of last cover opening.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`capture_time`

capture_time

Date description:
The 'year highbyte' field range from 7 to 8
The 'year lowbyte' field range from 0 to 254
The 'month' field range from 1 to 12
The 'day' field range from 1 to 31
The 'day of week' field range from 1 to 7

Time description:
The 'hour' field range from 0 to 23
The 'minute' field range from 0 to 59
The 'second' field range from 0 to 59
The 'hundredths' field is always equal to 0

Deviation description:
The 'deviation highbyte' field is equal to 128
The 'deviation lowbyte' field is equal to 0

The 'clock status' field give information about the activation of daylight saving time.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.12 CoverOpeningSummary

This object contains the total number of cover openings.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;13;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CoverOpeningSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NumberOfCoverOpening`

<u>NumberOfCoverOpening</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

No unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.13 CTVTRatioProgrammingRegister

This object contains information relative to one CT/VT ratio programming. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;51;50;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CTVTRatioProgrammingRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 5 elements
{
  ProgrammingSource
  CTNumerator
  CTDenominator
  VTNumerator
  VTDenominator
}
```

ProgrammingSource

Data type: UNSIGNED8

Authorized values:
0: By communication
1: By push button

Default value: By communication (0)

CTNumerator

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

CTDenominator

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

VTNumerator

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

VTDenominator

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```
Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
LogbookId
```
LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
capture_time
```
capture_time

Date and time of the last CT/VT ratio programming.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.14 CTVTRatioProgrammingSummary

This register contains the total number of CT/VT ratio programming. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;51;60;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CTVTRatioProgrammingSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	CHOICE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`CTVTRatioProgrammingNumber`

CTVTRatioProgrammingNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
CHOICE
{
  Scaler unit
  SEQUENCE     // 2 elements
  {
    Scaler
    Unit
  }
}
```

Scaler unit

NULL

Data type: NULL

Authorized value:

Default value:

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

No unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.15 CurrentReversalPhase1Summary

This register contains the total number of phase 1 current reversals. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;31;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalPhase1SummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CurrentReversalNumberPhase1`

CurrentReversalNumberPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.16 CurrentReversalPhase2Summary

This register contains the total number of phase 2 current reversals. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;32;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalPhase2SummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CurrentReversalNumberPhase2`

CurrentReversalNumberPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.17 CurrentReversalPhase3Summary

This register contains the total number of phase 3 current reversals. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;33;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalPhase3SummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CurrentReversalNumberPhase3`

CurrentReversalNumberPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.18 CurrentReversalRegister

This object contains one 'Current reversal' event. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;30;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  PhaseNumber
  Direction
}
```

PhaseNumber

Data type: UNSIGNED8

Authorized value: 0 to 2 and 255

Default value: 255

Direction

Always set to export : 1

Data type: UNSIGNED8

Authorized value: 1 and 255

Default value: 255

■ Attribute 3: scaler_unit

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookID`

<u>LogbookID</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

<u>EndingDateTime</u>

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.19 CurrentThdDefectNumber

This data provides the total number of THD defects on Current (defect detected using RelativeTHDThresholdParameters and THDRelativeCurrentValueAggregate).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;11;36;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentThdDefectNumberOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

CurrentThdDefectNumber

CurrentThdDefectNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.20 CurrentThdDefectRegister

This register provides the information related to a defect on Current THD. It's only available using a profile. The data format is the same than THD voltage defect register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;12;1;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentThdDefectRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Contains 26 elements :
- The duration of the defect with its unit (2 elements)
- For the 3 phases the Urms, Irms, Uhrms and Ihrms (h for harmonique) values and their units (2 elements * 4 quantities * 3 phases)

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 26 elements
{
  Duration
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UhrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UhrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UhrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
```

```
      unit
    }
    IhrmsPhase1
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
    IhrmsPhase2
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
    IhrmsPhase3
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
}
```

Duration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

unit

Data type: UNSIGNED8

Authorized value: 7: sec

Default value: sec (7)

UrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

IrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

UhrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UhrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UhrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

IhrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IhrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IhrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

■ **Attribute 3: scaler_unit**

no unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookId`

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`dateTimeDefectDisappearance`

dateTimeDefectDisappearance

date/time of defect disappearance

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

10.1.21 CurrentUnbalancePhase1Summary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;27;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentUnbalancePhase1SummaryOBISCode
A2. value	UNSIGNED16	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfCurrentUnbalanceDefectsPhases12`

NumberOfCurrentUnbalanceDefectsPhases12

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.22 CurrentUnbalancePhase2Summary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;28;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentUnbalancePhase2SummaryOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfCurrentUnbalanceDefectsPhases23`

NumberOfCurrentUnbalanceDefectsPhases23

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.23 CurrentUnbalancePhase3Summary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;29;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentUnbalancePhase3SummaryOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfCurrentUnbalanceDefectsPhases13`

NumberOfCurrentUnbalanceDefectsPhases13

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.24 CustomerSuccessfullCommunicationsSummary

This object holds the total number of successfull communication on the customer link and the date and time of the last one.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;2;129;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CustomerSuccessfullCommunicationsSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	INTEGER8	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NbOfCustomerSuccessfullCommunication`

NbOfCustomerSuccessfullCommunication

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`status`

status

Not used

Data type: INTEGER8

Authorized value: 0

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the last successfull customer communication.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.25 DayProfileRegister

This object contains one day profile change. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;7;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DayProfileRegisterOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
DayProfileNumber
```

<u>DayProfileNumber</u>

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
LogbookId
```

<u>LogbookId</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
capture_time
```

capture_time

Date and time of day profile change.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.26 DayProfilesSummary

This object contains the total number of day profile changes.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;8;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DayProfilesSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NumberOfDayProfilesChanges`

NumberOfDayProfilesChanges

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.27 EOBCategoryParameters

This object defines EOB configuration characteristics.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;130;0;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EOBCategoryParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

The EOB sources are classified in 4 categories, and in following order :
- 1 : by communication interface command
- 2 : by the EOB reset push button
- 3 : by control input
- 4 : by automatic end of billing period

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 4 elements
{
  SEQUENCE     // 2 elements
  {
    SEQUENCE     // 3 elements
    {
      IndicAvailableCategory
      IndicAvailableLockOutTime
      LockOutTime
    }
    SEQUENCE OF     // 4 elements
    {
      ActionOnLockOutTim
    }
  }
}
```

IndicAvailableCategory

Default value = TRUE, except for category 3.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 1: TRUE

IndicAvailableLockOutTime

Default value = FALSE, except for category 2.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

LockOutTime
LockOutTime is expressed in minutes.
Default value = 0, except for category 2 where Default value = 30.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ActionOnLockOutTim
It specifies the way to unlock.

Data type: UNSIGNED8

Authorized values:
0: No action
1: Cancel
2: Partial lock
3: Total lock

Default value: No action (0)

10.1.28 FatalAlarms

This object holds the fatal error status. The reset of the fatal alarms is performed with a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;97;97;1;255	3	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	FatalAlarmsOBISCode
A2. value	BITSTRING	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`FatalAlarms`

FatalAlarms

There are 4 fatal alarms. For each alarm, the value of the bit is :
- 0 : no alarm set
- 1 : this alarm is set.
Alarm description, functions detecting the alarm and activation conditions are defined in the document 'D2001006'.
As the data format given here is a bitstring, the first bit is the one which is at the most left side, and the last one is the one at the most right side (bitstring = B1 B2 B3 …. B8).

Example : Internal RAM error and External program memory error will give :
01234567
10010000

Data type: BITSTRING

Authorized values:
Size = 8
ViewAsType = BitString
BIT 0: INTERNAL_RAM_ERROR
BIT 1: EXTERNAL_RAM_ERROR
BIT 2: INTERNAL_PROGRAM_MEMORY_ERROR
BIT 3: EXTERNAL_PROGRAM_MEMORY_ERROR
BIT 4: NOT_USED
BIT 5: NOT_USED
BIT 6: NOT_USED
BIT 7: NOT_USED

Default value: 0;0;0;0;0;0;0;0;

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler.

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.29 IndexManagerParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;130;0;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IndexManagerParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  IndexActivationMode
  ClockLossDefaultIndex
}
```

IndexActivationMode

IndexActivationMode indicates if the mode programmed is an immediate or delayed to the end of integration period.

Data type: UNSIGNED8

Authorized values:
0: Immediate
1: Delayed

Default value: Immediate (0)

ClockLossDefaultIndex

ClockLossDefaultIndex specifies the default internal index number which has to be selected during clock loss.
If this parameter is set to 255, it is not significant and a clock loss does not trigger any index change.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

10.1.30 IndexParameters

Here is defined the index table. It allows the definition of the current registers for energy and demand.
The dimension of this table is 50 index. Each index defines :
- 10 energy register (one per channel)
- 24 demand rates
- 8 control outputs
See the resourcesIdParameter for the définition of the number of available channel, rates and control output.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;130;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IndexParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 50 elements
{
  SEQUENCE      // 3 elements
  {
    SEQUENCE OF     // 10 elements
    {
       EnergyCurrentRates
    }
    DemandCurrentRatesTable
    ControlOutputIndexPattern
  }
}
```

EnergyCurrentRates

EnergyCurrentRatesTable identifies the current rate number to apply to each energy channel.
Default value for the first element : 0
Default value for the others : 255 (channel is not configured).

Data type: UNSIGNED8

Authorized value: 0 to 7 and 255

Default value: 255

DemandCurrentRatesTable

The DemandCurrentRatesTable is the indicator of the selection for each demand rate. Up to 24 are defined.
 A bit set to 1 means that the corresponding rate is active.
Default value for the first element : '1;0;0;0;0;0;0;0; 0;0;0;0;0;0;0;0; 0;0;0;0;0;0;0;0;'
Default value for the others : '0;0;0;0;0;0;0;0; 0;0;0;0;0;0;0;0; 0;0;0;0;0;0;0;0;'

Data type: BITSTRING

Authorized values:
Size = 24
ViewAsType = BitString
BIT 0: Rate 1
BIT 1: Rate 2
BIT 2: Rate 3
BIT 3: Rate 4
BIT 4: Rate 5
BIT 5: Rate 6
BIT 6: Rate 7
BIT 7: Rate 8
BIT 8: Rate 9
BIT 9: Rate 10
BIT 10: Rate 11
BIT 11: Rate 12
BIT 12: Rate 13
BIT 13: Rate 14
BIT 14: Rate 15
BIT 15: Rate 16
BIT 16: Rate 17
BIT 17: Rate 18
BIT 18: Rate 19
BIT 19: Rate 20
BIT 20: Rate 21
BIT 21: Rate 22
BIT 22: Rate 23
BIT 23: Rate 24

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

ControlOutputIndexPattern

The ControlOutputIndexPattern is the pattern to apply to the control output group dedicated to the current rate indication. Up to 8 are defined.
A bit set to 1 means that the corresponding C.O. is active.
Default value : '0;0;0;0;0;0;0;0;'

Data type: BITSTRING

Authorized values:
Size = 8
ViewAsType = BitString
BIT 0: C.O. 1
BIT 1: C.O. 2
BIT 2: C.O. 3
BIT 3: C.O. 4
BIT 4: C.O. 5
BIT 5: C.O. 6
BIT 6: C.O. 7
BIT 7: C.O. 8

Default value: 0;0;0;0;0;0;0;0;

10.1.31 IndexRegister

This object contains one index change. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;9;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IndexRegisterOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
`IndexNumber`

IndexNumber

Data type: UNSIGNED8

Authorized value: 0 to 49 and 255

Default value: 255

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
LogBookId
```

LogBookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
DateTime
```

DateTime

Date and time of the index change.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.32 IndexSummary

This object contains the total number of index changes.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;10;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IndexSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

NumberOfIndexChanges

NumberOfIndexChanges

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.33 LogbookParameters

This parameter defines for each event if it is logged or not in the logbook.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;130;0;5;255	1	0	25	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LogbookParametersOBISCode
A2. value	BITSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`LogBookParameters`

LogBookParameters

Each event has a bit representative of its setting or not :
- 0 : event not to log
- 1 : event to log.
Default value : all events to log (value = 1, for each of n events) except :
EV_EVENT_PERIODICAL_EOI, EV_EVENT_PERIODICAL_EOB and
EV_EVENT_MANUFACTURER_ALARM_APPEARANCE.
Note: Whatever the value EV_EVENT_START_WAVE_FORM, the event will never be logged.

Data type: BITSTRING

Authorized values:
Size = 62
ViewAsType = BitString
BIT 0: EV_EVENT_PERIODICAL_EOI
BIT 1: EV_EVENT_ASYNCHRONOUS_EOI
BIT 2: EV_EVENT_PERIODICAL_EOB
BIT 3: EV_EVENT_PROGRAMMED_EOB
BIT 4: EV_EVENT_ASYNCHRONOUS_EOB
BIT 5: EV_EVENT_INDEX_DPM
BIT 6: EV_EVENT_RESTORE_INTERNAL_INDEX
BIT 7: EV_EVENT_INDEX_CI
BIT 8: EV_EVENT_DAY_PROFILE_CL
BIT 9: EV_EVENT_RESTORE_INTERNAL_DAY_PROFILE
BIT 10: EV_EVENT_DAY_PROFILE_CI
BIT 11: EV_EVENT_SEASON_SM
BIT 12: EV_EVENT_RESTORE_INTERNAL_SEASON
BIT 13: EV_EVENT_SEASON_CI
BIT 14: EV_EVENT_DST_WITH_SEASON
BIT 15: EV_EVENT_EXTERNAL_SYNCHRO_AND_DST_WITH_SEASON
BIT 16: EV_EVENT_ENTER_DOWNLOAD_MODE
BIT 17: EV_EVENT_EOR
BIT 18: EV_EVENT_ASSOCIATION_LN_PROGRAMMING
BIT 19: EV_EVENT_DATA_PUSH_ACTIVATION
BIT 20: EV_EVENT_SAVE_MANUFACTURER_PARAMETERS
BIT 21: EV_EVENT_RESET_TER
BIT 22: EV_EVENT_CLEAR_ONE_NON_FATAL_ALARM
BIT 23: EV_EVENT_NON_FATAL_ALARM_APPEARANCE
BIT 24: EV_EVENT_NON_FATAL_ALARM_DISAPPEARANCE
BIT 25: EV_EVENT_FATAL_ALARM_APPEARANCE
BIT 26: EV_EVENT_PARAMETERS_SAVING
BIT 27: EV_EVENT_CLEAR_NON_FATAL_ALARMS
BIT 28: EV_EVENT_CLEAR_FATAL_ALARMS
BIT 29: EV_EVENT_INTERNAL_CLOCK_SYNCHRO
BIT 30: EV_EVENT_EXTERNAL_CLOCK_SYNCHRO
BIT 31: EV_EVENT_CLOCK_SETTING
BIT 32: EV_EVENT_EXTERNAL_SYNCHRO_AND_DST_WITHOUT_SEASON
BIT 33: EV_EVENT_DST_WITHOUT_SEASON

BIT 34: EV_EVENT_AC_FAIL_APPEARANCE
BIT 35: EV_EVENT_AC_FAIL_DISAPPEARANCE
BIT 36: EV_EVENT_PWR_FAIL_APPEARANCE
BIT 37: EV_EVENT_POWER_UP
BIT 38: EV_EVENT_PROGRAMMING_CM
BIT 39: EV_EVENT_PROGRAMMING_DI
BIT 40: EV_EVENT_CANCEL_PROGRAMMING_DI
BIT 41: EV_EVENT_RESET_MEASUREMENT_DATA
BIT 42: EV_EVENT_START_MEASUREMENT
BIT 43: EV_EVENT_STOP_MEASUREMENT
BIT 44: EV_EVENT_START_TRIGGERED_TESTS
BIT 45: EV_EVENT_STOP_TRIGGERED_TESTS
BIT 46: EV_EVENT_END_OF_CURRENT_DATA_SAVING
BIT 47: EV_EVENT_LOAD_PROFILE_RESET
BIT 48: EV_EVENT_PASSWORD_RESTORATION
BIT 49: EV_EVENT_INDEX_CLOCK_LOSS
BIT 50: EV_EVENT_SUCCESSFUL_COMMUNICATION
BIT 51: EV_EVENT_COMMUNICATION_WITH_CONTRACT
BIT 52: EV_EVENT_PROGRAMMING_CM2
BIT 53: EV_EVENT_THD_DEFECT
BIT 54: EV_EVENT_START_WAVE_FORM
BIT 55: EV_EVENT_MANUFACTURER_ALARM_APPEARANCE
BIT 56: EV_EVENT_CLEAR_MANUFACTURER_ALARMS
BIT 57: EV_EVENT_TRACE_UFER
BIT 58: EV_EVENT_INDEX_PARAMETER
BIT 59: EV_EVENT_TEST_WATCHDOG
BIT 60: EV_EVENT_HW_RESET_NOT_PERFORMED_CAUSE_INHIBITION
BIT 61: EV_EVENT_RESET_DIPS_NUMBER

Default value:
0;1;0;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;1;0;1;
1;1;1;1;1;

10.1.34 LogbookRegister

This object contains one logbook entry. It is not available alone and is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;20;255	4	0	25	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LogbookRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  EventType
  EventParameters
}
```

EventType

Logged event.

Data type: UNSIGNED8

Authorized values:
0: EV_EVENT_PERIODICAL_EOI
1: EV_EVENT_ASYNCHRONOUS_EOI
2: EV_EVENT_PERIODICAL_EOB
3: EV_EVENT_PROGRAMMED_EOB
4: EV_EVENT_ASYNCHRONOUS_EOB
5: EV_EVENT_INDEX_DPM
6: EV_EVENT_RESTORE_INTERNAL_INDEX
7: EV_EVENT_INDEX_CI
8: EV_EVENT_DAY_PROFILE_CL
9: EV_EVENT_RESTORE_INTERNAL_DAY_PROFILE
10: EV_EVENT_DAY_PROFILE_CI
11: EV_EVENT_SEASON_SM
12: EV_EVENT_RESTORE_INTERNAL_SEASON
13: EV_EVENT_SEASON_CI
14: EV_EVENT_DST_WITH_SEASON
15: EV_EVENT_EXTERNAL_SYNCHRO_AND_DST_WITH_SEASON
16: EV_EVENT_ENTER_DOWNLOAD_MODE
17: EV_EVENT_NOT_USED
18: EV_EVENT_ASSOCIATION_LN_PROGRAMMING
19: EV_EVENT_DATA_PUSH_ACTIVATION
20: EV_EVENT_SAVE_MANUFACTURER_PARAMETERS
21: EV_EVENT_RESET_TER
22: EV_EVENT_CLEAR_ONE_NON_FATAL_ALARM
23: EV_EVENT_NON_FATAL_ALARM_APPEARANCE
24: EV_EVENT_NON_FATAL_ALARM_DISAPPEARANCE
25: EV_EVENT_FATAL_ALARM_APPEARANCE
26: EV_EVENT_PARAMETERS_SAVING
27: EV_EVENT_CLEAR_NON_FATAL_ALARMS
28: EV_EVENT_CLEAR_FATAL_ALARMS
29: EV_EVENT_INTERNAL_CLOCK_SYNCHRO
30: EV_EVENT_EXTERNAL_CLOCK_SYNCHRO
31: EV_EVENT_CLOCK_SETTING
32: EV_EVENT_EXTERNAL_SYNCHRO_AND_DST_WITHOUT_SEASON
33: EV_EVENT_DST_WITHOUT_SEASON
34: EV_EVENT_AC_FAIL_APPEARANCE
35: EV_EVENT_AC_FAIL_DISAPPEARANCE
36: EV_EVENT_PWR_FAIL_APPEARANCE
37: EV_EVENT_POWER_UP
38: EV_EVENT_PROGRAMMING_CM
39: EV_EVENT_PROGRAMMING_DI
40: EV_EVENT_CANCEL_PROGRAMMING_DI
41: EV_EVENT_RESET_MEASUREMENT_DATA
42: EV_EVENT_START_MEASUREMENT
43: EV_EVENT_STOP_MEASUREMENT
44: EV_EVENT_START_TRIGGERED_TESTS
45: EV_EVENT_STOP_TRIGGERED_TESTS
46: EV_EVENT_END_OF_CURRENT_DATA_SAVING
47: EV_EVENT_LOAD_PROFILE_RESET

48: EV_EVENT_PASSWORD_RESTORATION
49: EV_EVENT_INDEX_CLOCK_LOSS
50: EV_EVENT_SUCCESSFUL_COMMUNICATION
51: EV_EVENT_COMMUNICATION_WITH_CONTRACT
52: EV_EVENT_PROGRAMMING_CM2
53: EV_EVENT_THD_DEFECT
54: EV_EVENT_START_WAVE_FORM
55: EV_EVENT_MANUFACTURER_ALARM_APPEARANCE
56: EV_EVENT_CLEAR_MANUFACTURER_ALARMS
57: EV_EVENT_TRACE_UFER
58: EV_EVENT_INDEX_PARAMETER
59: EV_EVENT_TEST_WATCHDOG
60: EV_EVENT_HW_RESET_NOT_PERFORMED_CAUSE_INHIBITION
61: EV_EVENT_RESET_DIPS_NUMBER
255: Undefined

Default value: Undefined (255)

EventParameters

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
LogbookId
```

LogbookId

ID of the event in the logbook.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EventRecordDateAndTime`

EventRecordDateAndTime

Date and time stamp of the event.
Warning : The fields date (year high byte, year low byte, month, day of month, day of week) in UTC are set only once a day for the first event following midnight.
For all other elements in the same day, these fields are set to 0xFF.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

10.1.35 MagnetSensor

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;26;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MagnetSensorOBISCode
A4. status	OCTETSTRING	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 4: status**

Starting time stamp of the defect

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`StartingTime`

StartingTime

Starting date and time stamp of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

■ **Attribute 5: capture_time**

Ending date and time stamp of the defect

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingTime`

<u>EndingTime</u>

Ending time stamp of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

10.1.36 ManufacturerAlarms

This object holds the manufacturer error status.
The reset of the manufacturer alarms is performed with a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;97;97;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ManufacturerAlarmsOBISCode
A2. value	BITSTRING	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

`ManufacturerErrorStatus`

<u>ManufacturerErrorStatus</u>

0 : no alarm set
1 : this alarm is set.

Data type: BITSTRING

Authorized values:
Size = 2
ViewAsType = BitString
BIT 0: Metrology restarted error
BIT 1: Meter restarted error

Default value: 0;0;

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler.

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.37 MaximumPowerFailureDurationSummary

This object contains the maximum duration of long power failures.
It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;3;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MaximumPowerFailureDurationSummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED8	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

MaximumDuration

MaximumDuration

MaximumDuration of a long power failure

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
status
```

status

Not used

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
DateTime
```

DateTime

Starting date and time of the longest long power failure.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.38 MinimumPowerFailureDurationSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;2;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MinimumPowerFailureDurationSummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED8	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
MinimumDuration
```

MinimumDuration

Minimum Duration of a long power failure

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
Status
```

Status

Not used

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`DateTime`

<u>DateTime</u>

Starting date and time of the shortest long power failure.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.39 NonFatalAlarms

The reset of the non fatal alarms is performed with a script.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;97;97;2;255	3	0	13	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NonFatalAlarmsOBISCode
A2. value	BITSTRING	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NonFatalAlarms`

<u>NonFatalAlarms</u>

define in XMI

Data type: BITSTRING

Authorized values:
Size = 40
ViewAsType = BitString
BIT 0: WATCHDOG_ACTIVITY
BIT 1: EXTERNAL_CLOCK_INCOHERENCE
BIT 2: CONFIGURATION_INCOHERENCE
BIT 3: NON_VOLATILE_MEMORY_NON_FATAL_ERROR
BIT 4: NOT_USED
BIT 5: PROGRAMMING_INCOHERENCE
BIT 6: COVER_OPENING

BIT 7: NOT_USED
BIT 8: MAGNET_SENSOR
BIT 9: CURRENT_REVERSAL_AGGREGATE
BIT 10: ZERO_SEQUENCE_I_TRAPPED
BIT 11: NOT_USED
BIT 12: NOT_USED
BIT 13: NOT_USED
BIT 14: NO_INTERNAL_CONSUMPTION
BIT 15: NO_EXTERNAL_CONSUMPTION
BIT 16: ZERO_SEQUENCE_U
BIT 17: ZERO_SEQUENCE_I
BIT 18: CLOCK_LOSS
BIT 19: EXTERNAL_ALARM
BIT 20: CURRENT_REVERSAL_PHASE_1
BIT 21: CURRENT_REVERSAL_PHASE_2
BIT 22: CURRENT_REVERSAL_PHASE_3
BIT 23: TEMPERATURE_ALARM
BIT 24: VOLTAGE_CUT_PHASE_1
BIT 25: VOLTAGE_CUT_PHASE_2
BIT 26: VOLTAGE_CUT_PHASE_3
BIT 27: VOLTAGE_SAG_PHASE_1
BIT 28: VOLTAGE_SAG_PHASE_2
BIT 29: VOLTAGE_SAG_PHASE_3
BIT 30: VOLTAGE_SWELL_PHASE_1
BIT 31: VOLTAGE_SWELL_PHASE_2
BIT 32: VOLTAGE_SWELL_PHASE_3
BIT 33: BATTERY
BIT 34: EXCESS_DEMAND
BIT 35: NOT_USED
BIT 36: NOT_USED
BIT 37: NOT_USED
BIT 38: NOT_USED
BIT 39: NOT_USED

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler.

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.40 NumberOfLongPowerFailures

Indicates the number of long power failures

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;7;5;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NumberOfLongPowerFailuresOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfLongPowerFailures`

NumberOfLongPowerFailures

Indicates the number of long power failures

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.41 NumberOfShortPowerFailures

Indicates the number of short power failures

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;18;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	NumberOfShortPowerFailuresOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfShortPowerFailures`

NumberOfShortPowerFailures

Indicates the number of short power failures

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.42 PowerFailureRegister

This object contains one long power failure.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;1;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PowerFailureRegisterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
PowerFailureDuration
```

PowerFailureDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

no scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookId`

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`Starting date and time of the power failure`

Starting date and time of the power failure

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.43 SeasonRegister

This object contains one season change. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;5;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SeasonRegisterOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SeasonNumber
```

SeasonNumber

Data type: UNSIGNED8

Authorized value: 0 to 11 and 255

Default value: 255

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
LogbookId
```

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
DateTimeSeasonChange
```

DateTimeSeasonChange

Date and time of season change

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.44 SeasonsSummary

This object contains the total number of season changes.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;6;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SeasonsSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NumberOfSeasonChanges`

NumberOfSeasonChanges

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.45 SuccessfullProgrammingSummary

This register contains the total number of programming and its capture time is the date and time of last programming.
The number is incremented at each successful SET or ACTION access to an object, after actually accepting the parameters.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;2;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SuccessfullProgrammingSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	VISIBLESTRING	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

NbProgramming

NbProgramming

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
ProgrammingId
```

ProgrammingId

Data type: VISIBLESTRING

Authorized value: Size = 8

Default value: prog id

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Date and time of last programming

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.46 TEPProgrammingRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;51;70;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TEPProgrammingRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
```

```
    Unit
}
```

Scaler

Defines the scaler of active energy.
Default value = 3 (kilo)
When the meter is "MID compliant" (MIDComplianceParameters = TRUE), possible values for ACTIVE energy group are 3 and 6.

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: kilo (3)

Unit

Defines the unit of active energy.
Values shall always be Wh (30) for active energy

Data type: UNSIGNED8

Authorized values:
30: Wh
31: VAh
32: VARh
255: No unit

Default value: Wh (30)

■ **Attribute 3: scaler_unit**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookId`

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`capture_time`

capture_time

Date and time of the last CT/VT ratio programming.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.47 TEPProgrammingSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;51;71;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TEPProgrammingSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	CHOICE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`TEPProgrammingNumber`

TEPProgrammingNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
CHOICE
{
  Scaler unit
  SEQUENCE      // 2 elements
  {
    Scaler
    Unit
  }
}
```

<u>Scaler unit</u>

NULL

Data type: NULL

Authorized value:

Default value:

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

No unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.48 TotalDurationOfLongPowerFailuresSummary

This object contains the total duration of long power failures. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TotalDurationOfLongPowerFailuresSummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
TotalDurationOfLongPowerFailures
```

TotalDurationOfLongPowerFailures

Cumulated duration of long power failures.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

10.1.49 UtilitySuccessfullCommunicationsSummary

This object holds the total number of successfull communication on the utility link and the date and time of the last one.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;2;128;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UtilitySuccessfullCommunicationsSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	INTEGER8	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
NbOfUtilitySuccessfullCommunication
```

NbOfUtilitySuccessfullCommunication

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
status
```

status

Not used

Data type: INTEGER8

Authorized value: 0

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the last successfull utility communication.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.50 VoltageCutMaxPhase1Summary

This register holds the maximum value of phase 1 voltage cuts. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;17;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutMaxPhase1SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MaxCutDurationPhase1`

MaxCutDurationPhase1

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

CumulatedDuration

<u>CumulatedDuration</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

EndingDateTime

<u>EndingDateTime</u>

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.51 VoltageCutMaxPhase2Summary

This register holds the maximum value of phase 2 voltage cuts. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;19;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutMaxPhase2SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

MaxCutDurationPhase2

MaxCutDurationPhase2

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE     // 2 elements
{
  Scaler
  unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
CumulatedDuration
```
CumulatedDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
EndingDateTime
```
EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.52 VoltageCutMaxPhase3Summary

This register holds the maximum value of phase 3 voltage cuts. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;21;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutMaxPhase3SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MaxCutDurationPhase3`

MaxCutDurationPhase3

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CumulatedDuration`

<u>CumulatedDuration</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

<u>EndingDateTime</u>

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.53 VoltageCutMinPhase1Summary

This register holds the minimum value of phase 1 voltage cuts. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;16;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutMinPhase1SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinCutDurationPhase1`

<u>MinCutDurationPhase1</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE     // 2 elements
{
  Scaler
  unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
CutsNumber
```
CutsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
EndingDateTime
```
EndingDateTime
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.54 VoltageCutMinPhase2Summary

This register holds the minimum value of phase 2 voltage cuts. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;18;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutMinPhase2SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinCutDurationPhase2`

<u>MinCutDurationPhase2</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

<u>Scaler</u>

Data type: INTEGER8

Authorized value: -2

Default value: -2

<u>unit</u>

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CutsNumber`

CutsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

EndingDateTime
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.55 VoltageCutMinPhase3Summary

This register holds the minimum value of phase 3 voltage cuts. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;20;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutMinPhase3SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinCutDurationPhase3`

MinCutDurationPhase3

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE       // 2 elements
{
  Scaler
  unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
CutsNumber
```
CutsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
EndingDateTime
```
EndingDateTime
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.56 VoltageCutRegister

This object contains the duration of cutting on one phase, the phase(s) number in default and the starting date and time of this occurence.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;15;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageCutRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 6 elements
{
  PhaseNumber
  SEQUENCE      // 2 elements
  {
    scaler
    Unit
  }
  Duration
  SEQUENCE      // 2 elements
  {
    scaler
    Unit
  }
  Magnitude
  SEQUENCE      // 2 elements
  {
    scaler
    Unit
  }
}
```

PhaseNumber

Data type: UNSIGNED8

Authorized value: 0 to 2 and 255

Default value: 255

scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: UNSIGNED8

Authorized value: 255: No unit

Default value: No unit (255)

Duration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

<u>scaler</u>

Data type: INTEGER8

Authorized value: -2

Default value: -2

<u>Unit</u>

Data type: UNSIGNED8

Authorized value: 7: sec

Default value: sec (7)

<u>Magnitude</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>scaler</u>

Data type: INTEGER8

Authorized value: -1

Default value: -1

<u>Unit</u>

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

■ **Attribute 3: scaler_unit**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookID`

LogbookID

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.57 VoltageIsolationPhase1Summary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;23;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageIsolationPhase1SummaryOBISCode
A2. value	UNSIGNED16	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfVoltageIsolationDefectsPhase1`

NumberOfVoltageIsolationDefectsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.58 VoltageIsolationPhase2Summary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;24;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageIsolationPhase2SummaryOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfVoltageIsolationDefectsPhase2`

NumberOfVoltageIsolationDefectsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.59 VoltageIsolationPhase3Summary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;25;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageIsolationPhase3SummaryOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`NumberOfVoltageIsolationDefectsPhase3`

NumberOfVoltageIsolationDefectsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.1.60 VoltageIsolationRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;22;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageIsolationRegisterOBISCode
A2. value	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 4 elements
{
  VoltageIsolationPhaseNumber
  SEQUENCE      // 2 elements
  {
    Scaler
    Unit
  }
  VoltageIsolationDuration
  SEQUENCE      // 2 elements
  {
    Scaler
    Unit
  }
}
```

VoltageIsolationPhaseNumber

Data type: UNSIGNED8

Authorized values:
0: Phase 1
1: Phase 2
2: Phase 3
255: Undefined

Default value: Undefined (255)

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: UNSIGNED8

Authorized value: 255: No unit

Default value: No unit (255)

VoltageIsolationDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: UNSIGNED8

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`LogbookId`

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.61 VoltageSagMaxPhase1Summary

This register holds the maximum value of phase 1 voltage sags. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;3;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagMaxPhase1SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MaxSagDurationPhase1`

MaxSagDurationPhase1

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CumulatedDuration`

CumulatedDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.62 VoltageSagMaxPhase2Summary

This register holds the maximum value of phase 2 voltage sags. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;5;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagMaxPhase2SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MaxSagDurationPhase2`

MaxSagDurationPhase2

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

CumulatedDuration

CumulatedDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

EndingDateTime

EndingDateTime
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.63 VoltageSagMaxPhase3Summary

This register holds the maximum value of phase 3 voltage sags. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;7;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagMaxPhase3SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MaxSagDurationPhase3`

<u>MaxSagDurationPhase3</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  unit
}
```

<u>Scaler</u>

Data type: INTEGER8

Authorized value: -2

Default value: -2

<u>unit</u>

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CumulatedDuration`

<u>CumulatedDuration</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

EndingDateTime

<u>EndingDateTime</u>

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.64 VoltageSagMinPhase1Summary

This register holds the minimum value of phase 1 voltage sags. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;2;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagMinPhase1SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

MinSagDurationPhase1

<u>MinSagDurationPhase1</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`SagsNumber`

SagsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.65 VoltageSagMinPhase2Summary

This register holds the minimum value of phase 2 voltage sags. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;4;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagMinPhase2SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinSagDurationPhase2`

MinSagDurationPhase2

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`SagsNumber`

SagsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

<u>EndingDateTime</u>

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.66 VoltageSagMinPhase3Summary

This register holds the minimum value of phase 3 voltage sags. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;6;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagMinPhase3SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinSagDurationPhase3`

<u>MinSagDurationPhase3</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`SagsNumber`

SagsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.67 VoltageSagRegister

This object contains one 'Voltage sag' event.
It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;1;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSagRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 6 elements
{
  PhaseNumber
  SEQUENCE      // 2 elements
  {
    scaler
    Unit
  }
  Duration
  SEQUENCE      // 2 elements
  {
    scaler
    Unit
  }
  Magnitude
  SEQUENCE      // 2 elements
  {
    scaler
    Unit
  }
}
```

PhaseNumber

Data type: UNSIGNED8

Authorized value: 0 to 2 and 255

Default value: 255

scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: UNSIGNED8

Authorized value: 255: No unit

Default value: No unit (255)

Duration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: UNSIGNED8

Authorized value: 7: sec

Default value: sec (7)

Magnitude

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

■ **Attribute 3: scaler_unit**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

LogbookID

LogbookID

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

EndingDateTime

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.68 VoltageSwellMaxPhase1Summary

This register holds the maximum value of phase 1 voltage swells. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;10;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellMaxPhase1SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

MaxSwellDurationPhase1

MaxSwellDurationPhase1

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```
<u>Scaler</u>

Data type: INTEGER8

Authorized value: -2

Default value: -2

<u>unit</u>

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
CumulatedDuration
```
<u>CumulatedDuration</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
EndingDateTime
```
<u>EndingDateTime</u>
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.69 VoltageSwellMaxPhase2Summary

This register holds the maximum value of phase 2 voltage swells. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;12;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellMaxPhase2SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MaxSwellDurationPhase2`

MaxSwellDurationPhase2

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`CumulatedDuration`

CumulatedDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

EndingDateTime

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.70 VoltageSwellMaxPhase3Summary

This register holds the maximum value of phase 3 voltage swells. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;14;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellMaxPhase3SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED32	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

MaxSwellDurationPhase3

MaxSwellDurationPhase3

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
CumulatedDuration
```
CumulatedDuration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
EndingDateTime
```
EndingDateTime
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.71 VoltageSwellMinPhase1Summary

This register holds the minimum value of phase 1 voltage swells. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;9;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellMinPhase1SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
MinSwellDurationPhase1
```

MinSwellDurationPhase1

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SwellsNumber
```

SwellsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndingDateTime`

<u>EndingDateTime</u>

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.72 VoltageSwellMinPhase2Summary

This register holds the minimum value of phase 2 voltage swells. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;11;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellMinPhase2SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinSwellDurationPhase2`

<u>MinSwellDurationPhase2</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
   Scaler
```

```
    unit
}
```
Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SwellsNumber
```
SwellsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
EndingDateTime
```
EndingDateTime
Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.73 VoltageSwellMinPhase3Summary

This register holds the minimum value of phase voltage swells. It is used to allow capture into a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;13;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellMinPhase3SummaryOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`MinSwellDurationPhase3`

MinSwellDurationPhase3

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`SwellsNumber`

SwellsNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
EndingDateTime
```

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.74 VoltageSwellRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;51;8;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageSwellRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 6 elements
{
  PhaseNumber
  SEQUENCE     // 2 elements
  {
    scaler
    Unit
  }
  Duration
  SEQUENCE     // 2 elements
  {
    scaler
    Unit
  }
  Magnitude
  SEQUENCE     // 2 elements
  {
    scaler
    Unit
  }
}
```

PhaseNumber

Data type: UNSIGNED8

Authorized value: 0 to 2 and 255

Default value: 255

scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: UNSIGNED8

Authorized value: 255: No unit

Default value: No unit (255)

Duration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -2

Default value: -2

Unit

Data type: UNSIGNED8

Authorized value: 7: sec

Default value: sec (7)

Magnitude

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

■ **Attribute 3: scaler_unit**

Not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ Attribute 4: status

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
LogbookID
```

LogbookID

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
EndingDateTime
```

EndingDateTime

Ending date time of the defect

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.1.75 VoltageThdDefectNumber

This data provides the total number of THD defects on voltage (defect detected using RelativeTHDThresholdParameters and RelativeTHDVoltageValueAggregate).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;12;36;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageThdDefectNumberOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`VoltageThdDefectNumber`

VoltageThdDefectNumber

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

10.1.76 VoltageThdDefectRegister

This register provides the information related to a defect on Voltage THD.
It's only available using a profile.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;96;11;1;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageThdDefectRegisterOBISCode
A2. value	SEQUENCE	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED16	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Contains 26 elements :
- The duration of the defect with its unit (2 elements)
- For the 3 phases the Urms, Irms, Uhrms and Ihrms (h for harmonique) values and their units (2 elements * 4 quantities * 3 phases)

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 26 elements
{
  Duration
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
```

```
  IrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UhrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UhrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  UhrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IhrmsPhase1
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IhrmsPhase2
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
  IhrmsPhase3
  SEQUENCE      // 2 elements
  {
    scaler
    unit
  }
}
```

Duration

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

unit

Data type: UNSIGNED8

Authorized value: 7: sec

Default value: sec (7)

UrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

IrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

UhrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UhrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

UhrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: UNSIGNED8

Authorized value: 35: V

Default value: V (35)

IhrmsPhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IhrmsPhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

IhrmsPhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

scaler
-3 if the meter is a CT meter
-2 if the meter is a DC meter

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: UNSIGNED8

Authorized value: 33: A

Default value: A (33)

■ **Attribute 3: scaler_unit**

no unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
LogbookId
```

LogbookId

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
dateTimeDefectDisappearance
```

dateTimeDefectDisappearance

date/time of defect disappearance

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

10.1.77 WatchdogSummary

This object contains the total number of watchdog resets and the date and time of the last one.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;52;11;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WatchdogSummaryOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	UNSIGNED8	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
NbOfOccurrences
```

NbOfOccurrences

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

■ **Attribute 4: status**

not used

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

status

status

Not used

Data type: UNSIGNED8

Authorized value: 0

Default value: 0

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Date and time of the last occurence

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;0;0;0;255;128;0;255;

10.2 Cosem profiles

10.2.1 AlarmsMeterRestartedElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;7;255	7	1	1	0	ROM	1	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmsMeterRestartedElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE      // 1 elements
  {
    AlarmsMeterRestartedRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (AlarmsMeterRestartedRegister): Obis_code = 1;0;96;51;42;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.2 AlarmsMetrologyRestartedElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;6;255	7	1	1	0	ROM	1	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AlarmsMetrologyRestartedElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 1 elements
  {
    AlarmsMetrologyRestartedRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (AlarmsMetrologyRestartedRegister): Obis_code = 1;0;96;51;40;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get	-	-

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.3 CoverOpeningElements

version 1: elements are triggered in non chronological order
version 2: elements are triggered in chronological order

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;5;255	7	1	1	0	ROM	4	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CoverOpeningElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE      // 4 elements
  {
    CoverOpeningRegister (Att. Id: 2, Abs. Number: 1)
    CoverOpeningRegister (Att. Id: 3, Abs. Number: 1)
    CoverOpeningRegister (Att. Id: 4, Abs. Number: 1)
    CoverOpeningRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (CoverOpeningRegister): Obis_code = 0;0;96;52;12;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (CoverOpeningRegister): Obis_code = 0;0;96;52;12;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 3 (CoverOpeningRegister): Obis_code = 0;0;96;52;12;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 4 (CoverOpeningRegister): Obis_code = 0;0;96;52;12;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 4 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
```

```
        Attribute_index
        Data_index
    }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.4 CTVTRatioProgrammingElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;8;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CTVTRatioProgrammingElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 10 elements
{
  SEQUENCE     // 3 elements
  {
    CTVTRatioProgrammingRegister (Att. Id: 2, Abs. Number: 1)
    CTVTRatioProgrammingRegister (Att. Id: 4, Abs. Number: 1)
    CTVTRatioProgrammingRegister (Att. Id: 5, Abs. Number: 1)
```

```
    }
  }
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (CTVTRatioProgrammingRegister): Obis_code = 0;0;96;51;50;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (CTVTRatioProgrammingRegister): Obis_code = 0;0;96;51;50;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (CTVTRatioProgrammingRegister): Obis_code = 0;0;96;51;50;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

<u>Class_id</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>Obis_code</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

<u>Attribute_index</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

<u>Data_index</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.5 CurrentReversalElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;128;34;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 3 elements
  {
    CurrentReversalRegister (Att. Id: 2, Abs. Number: 1)
    CurrentReversalRegister (Att. Id: 4, Abs. Number: 1)
    CurrentReversalRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (CurrentReversalRegister): Obis_code = 1;0;96;51;30;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (CurrentReversalRegister): Obis_code = 1;0;96;51;30;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (CurrentReversalRegister): Obis_code = 1;0;96;51;30;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.6 CurrentReversalSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;98;129;35;25 5	7	1	1	0	ROM	3	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentReversalSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 3 elements
  {
    CurrentReversalPhase1Summary (Att. Id: 2, Abs. Number: 1)
    CurrentReversalPhase2Summary (Att. Id: 2, Abs. Number: 1)
    CurrentReversalPhase3Summary (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (CurrentReversalPhase1Summary): Obis_code = 1;0;96;51;31;255, Class_id = 3, Attribute_index = 2, Data_index = 0
Index 2 (CurrentReversalPhase2Summary): Obis_code = 1;0;96;51;32;255, Class_id = 3, Attribute_index = 2, Data_index = 0
Index 3 (CurrentReversalPhase3Summary): Obis_code = 1;0;96;51;33;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

<u>Class_id</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>Obis_code</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

<u>Attribute_index</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

<u>Data_index</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.7 CurrentThdDefectHistory

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;12;124;255	7	1	2	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentThdDefectHistoryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 3 elements
  {
    CurrentThdDefectRegister (Att. Id: 2, Abs. Number: 2)
    CurrentThdDefectRegister (Att. Id: 4, Abs. Number: 2)
    CurrentThdDefectRegister (Att. Id: 5, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (CurrentThdDefectRegister): Obis_code = 1;0;96;12;1;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (CurrentThdDefectRegister): Obis_code = 1;0;96;12;1;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (CurrentThdDefectRegister): Obis_code = 1;0;96;12;1;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.8 CurrentUnbalanceSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;98;129;33;255	7	1	1	0	ROM	3	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentUnbalanceSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 3 elements
  {
    CurrentUnbalancePhase1Summary (Att. Id: 2, Abs. Number: 1)
    CurrentUnbalancePhase2Summary (Att. Id: 2, Abs. Number: 1)
    CurrentUnbalancePhase3Summary (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (CurrentUnbalancePhase1Summary): Obis_code = 1;0;96;51;27;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 2 (CurrentUnbalancePhase2Summary): Obis_code = 1;0;96;51;28;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 3 (CurrentUnbalancePhase3Summary): Obis_code = 1;0;96;51;29;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.9 CutElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;10;3;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CutElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE      // 3 elements
  {
    VoltageCutRegister (Att. Id: 2, Abs. Number: 1)
    VoltageCutRegister (Att. Id: 4, Abs. Number: 1)
    VoltageCutRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (VoltageCutRegister): Obis_code = 1;0;96;51;15;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (VoltageCutRegister): Obis_code = 1;0;96;51;15;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 3 (VoltageCutRegister): Obis_code = 1;0;96;51;15;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.10 CutSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;98;129;20;255	7	1	1	0	ROM	24	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CutSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 24 elements
  {
    VoltageCutMinPhase1Summary (Att. Id: 2, Abs. Number: 1)
    VoltageCutMinPhase1Summary (Att. Id: 3, Abs. Number: 1)
    VoltageCutMinPhase1Summary (Att. Id: 4, Abs. Number: 1)
    VoltageCutMinPhase1Summary (Att. Id: 5, Abs. Number: 1)
    VoltageCutMaxPhase1Summary (Att. Id: 2, Abs. Number: 1)
    VoltageCutMaxPhase1Summary (Att. Id: 3, Abs. Number: 1)
    VoltageCutMaxPhase1Summary (Att. Id: 4, Abs. Number: 1)
    VoltageCutMaxPhase1Summary (Att. Id: 5, Abs. Number: 1)
    VoltageCutMinPhase2Summary (Att. Id: 2, Abs. Number: 1)
    VoltageCutMinPhase2Summary (Att. Id: 3, Abs. Number: 1)
    VoltageCutMinPhase2Summary (Att. Id: 4, Abs. Number: 1)
    VoltageCutMinPhase2Summary (Att. Id: 5, Abs. Number: 1)
    VoltageCutMaxPhase2Summary (Att. Id: 2, Abs. Number: 1)
    VoltageCutMaxPhase2Summary (Att. Id: 3, Abs. Number: 1)
    VoltageCutMaxPhase2Summary (Att. Id: 4, Abs. Number: 1)
    VoltageCutMaxPhase2Summary (Att. Id: 5, Abs. Number: 1)
    VoltageCutMinPhase3Summary (Att. Id: 2, Abs. Number: 1)
    VoltageCutMinPhase3Summary (Att. Id: 3, Abs. Number: 1)
    VoltageCutMinPhase3Summary (Att. Id: 4, Abs. Number: 1)
    VoltageCutMinPhase3Summary (Att. Id: 5, Abs. Number: 1)
    VoltageCutMaxPhase3Summary (Att. Id: 2, Abs. Number: 1)
    VoltageCutMaxPhase3Summary (Att. Id: 3, Abs. Number: 1)
    VoltageCutMaxPhase3Summary (Att. Id: 4, Abs. Number: 1)
    VoltageCutMaxPhase3Summary (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (VoltageCutMinPhase1Summary): Obis_code = 1;0;96;51;16;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (VoltageCutMinPhase1Summary): Obis_code = 1;0;96;51;16;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 3 (VoltageCutMinPhase1Summary): Obis_code = 1;0;96;51;16;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 4 (VoltageCutMinPhase1Summary): Obis_code = 1;0;96;51;16;255, Class_id = 4, Attribute_index = 5, Data_index = 0
Index 5 (VoltageCutMaxPhase1Summary): Obis_code = 1;0;96;51;17;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 6 (VoltageCutMaxPhase1Summary): Obis_code = 1;0;96;51;17;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 7 (VoltageCutMaxPhase1Summary): Obis_code = 1;0;96;51;17;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 8 (VoltageCutMaxPhase1Summary): Obis_code = 1;0;96;51;17;255, Class_id = 4, Attribute_index = 5, Data_index = 0
Index 9 (VoltageCutMinPhase2Summary): Obis_code = 1;0;96;51;18;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 10 (VoltageCutMinPhase2Summary): Obis_code = 1;0;96;51;18;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 11 (VoltageCutMinPhase2Summary): Obis_code = 1;0;96;51;18;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 12 (VoltageCutMinPhase2Summary): Obis_code = 1;0;96;51;18;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 13 (VoltageCutMaxPhase2Summary): Obis_code = 1;0;96;51;19;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 14 (VoltageCutMaxPhase2Summary): Obis_code = 1;0;96;51;19;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 15 (VoltageCutMaxPhase2Summary): Obis_code = 1;0;96;51;19;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 16 (VoltageCutMaxPhase2Summary): Obis_code = 1;0;96;51;19;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 17 (VoltageCutMinPhase3Summary): Obis_code = 1;0;96;51;20;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 18 (VoltageCutMinPhase3Summary): Obis_code = 1;0;96;51;20;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 19 (VoltageCutMinPhase3Summary): Obis_code = 1;0;96;51;20;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 20 (VoltageCutMinPhase3Summary): Obis_code = 1;0;96;51;20;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 21 (VoltageCutMaxPhase3Summary): Obis_code = 1;0;96;51;21;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 22 (VoltageCutMaxPhase3Summary): Obis_code = 1;0;96;51;21;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 23 (VoltageCutMaxPhase3Summary): Obis_code = 1;0;96;51;21;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 24 (VoltageCutMaxPhase3Summary): Obis_code = 1;0;96;51;21;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 24 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.11 DayProfileElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;3;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DayProfileElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 3 elements
  {
    DayProfileRegister (Att. Id: 2, Abs. Number: 1)
    DayProfileRegister (Att. Id: 4, Abs. Number: 1)
    DayProfileRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (DayProfileRegister): Obis_code = 0;0;96;52;7;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (DayProfileRegister): Obis_code = 0;0;96;52;7;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (DayProfileRegister): Obis_code = 0;0;96;52;7;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.12 IndexElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;4;255	7	1	1	0	ROM	3	0	100	100	100

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	IndexElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 100 elements
{
  SEQUENCE     // 3 elements
  {
    IndexRegister (Att. Id: 2, Abs. Number: 1)
    IndexRegister (Att. Id: 4, Abs. Number: 1)
    IndexRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (IndexRegister): Obis_code = 0;0;96;52;9;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (IndexRegister): Obis_code = 0;0;96;52;9;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 3 (IndexRegister): Obis_code = 0;0;96;52;9;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE       // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.13 Logbook

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;98;0;255	7	1	24	701C	ROM	3	0	0	0	600

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LogbookOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 0..600 elements
{
  SEQUENCE      // 3 elements
  {
    LogbookRegister (Att. Id: 2, Abs. Number: 25)
    LogbookRegister (Att. Id: 4, Abs. Number: 25)
    LogbookRegister (Att. Id: 5, Abs. Number: 25)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (LogbookRegister): Obis_code = 0;0;96;52;20;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (LogbookRegister): Obis_code = 0;0;96;52;20;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 3 (LogbookRegister): Obis_code = 0;0;96;52;20;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.14 MagnetSensorElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;128;2;255	7	1	1	0	ROM	2	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MagnetSensorElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 2 elements
  {
    MagnetSensor (Att. Id: 4, Abs. Number: 1)
    MagnetSensor (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (MagnetSensor): Obis_code = 1;0;96;51;26;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 2 (MagnetSensor): Obis_code = 1;0;96;51;26;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 2 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.15 PowerFailureElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;0;255	7	1	1	0	ROM	4	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PowerFailureElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 4 elements
  {
    PowerFailureRegister (Att. Id: 2, Abs. Number: 1)
    PowerFailureRegister (Att. Id: 3, Abs. Number: 1)
    PowerFailureRegister (Att. Id: 4, Abs. Number: 1)
    PowerFailureRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (PowerFailureRegister): Obis_code = 0;0;96;52;1;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (PowerFailureRegister): Obis_code = 0;0;96;52;1;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 3 (PowerFailureRegister): Obis_code = 0;0;96;52;1;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 4 (PowerFailureRegister): Obis_code = 0;0;96;52;1;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 4 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.16 PowerFailureSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;130;1;255	7	1	2	0	ROM	12	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PowerFailureSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 12 elements
  {
    MinimumPowerFailureDurationSummary (Att. Id: 2, Abs. Number: 1)
    MinimumPowerFailureDurationSummary (Att. Id: 3, Abs. Number: 1)
    MinimumPowerFailureDurationSummary (Att. Id: 4, Abs. Number: 1)
    MinimumPowerFailureDurationSummary (Att. Id: 5, Abs. Number: 1)
    MaximumPowerFailureDurationSummary (Att. Id: 2, Abs. Number: 1)
    MaximumPowerFailureDurationSummary (Att. Id: 3, Abs. Number: 1)
    MaximumPowerFailureDurationSummary (Att. Id: 4, Abs. Number: 1)
    MaximumPowerFailureDurationSummary (Att. Id: 5, Abs. Number: 1)
    TotalDurationOfLongPowerFailuresSummary (Att. Id: 2, Abs. Number: 1)
    TotalDurationOfLongPowerFailuresSummary (Att. Id: 3, Abs. Number: 1)
    NumberOfLongPowerFailures (Att. Id: 2, Abs. Number: 1)
    NumberOfShortPowerFailures (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (MinimumPowerFailureDurationSummary): Obis_code = 0;0;96;52;2;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (MinimumPowerFailureDurationSummary): Obis_code = 0;0;96;52;2;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 3 (MinimumPowerFailureDurationSummary): Obis_code = 0;0;96;52;2;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 4 (MinimumPowerFailureDurationSummary): Obis_code = 0;0;96;52;2;255, Class_id = 4, Attribute_index = 5, Data_index = 0
Index 5 (MaximumPowerFailureDurationSummary): Obis_code = 0;0;96;52;3;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 6 (MaximumPowerFailureDurationSummary): Obis_code = 0;0;96;52;3;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 7 (MaximumPowerFailureDurationSummary): Obis_code = 0;0;96;52;3;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 8 (MaximumPowerFailureDurationSummary): Obis_code = 0;0;96;52;3;255, Class_id = 4, Attribute_index = 5, Data_index = 0
Index 9 (TotalDurationOfLongPowerFailuresSummary): Obis_code = 0;0;96;52;4;255, Class_id = 3, Attribute_index = 2, Data_index = 0
Index 10 (TotalDurationOfLongPowerFailuresSummary): Obis_code = 0;0;96;52;4;255, Class_id = 3, Attribute_index = 3, Data_index = 0
Index 11 (NumberOfLongPowerFailures): Obis_code = 0;0;96;7;5;255, Class_id = 1, Attribute_index = 2, Data_index = 0
Index 12 (NumberOfShortPowerFailures): Obis_code = 0;0;96;52;18;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 12 elements
{
  SEQUENCE      // 4 elements
  {
```

```
        Class_id
        Obis_code
        Attribute_index
        Data_index
    }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.17 SagElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;10;1;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SagElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE      // 3 elements
  {
    VoltageSagRegister (Att. Id: 2, Abs. Number: 1)
    VoltageSagRegister (Att. Id: 4, Abs. Number: 1)
```

```
      VoltageSagRegister (Att. Id: 5, Abs. Number: 1)
   }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (VoltageSagRegister): Obis_code = 1;0;96;51;1;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (VoltageSagRegister): Obis_code = 1;0;96;51;1;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (VoltageSagRegister): Obis_code = 1;0;96;51;1;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.18 SagSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;98;129;0;255	7	1	1	0	ROM	24	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SagSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 24 elements
  {
    VoltageSagMinPhase1Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSagMinPhase1Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSagMinPhase1Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSagMinPhase1Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSagMaxPhase1Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSagMaxPhase1Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSagMaxPhase1Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSagMaxPhase1Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSagMinPhase2Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSagMinPhase2Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSagMinPhase2Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSagMinPhase2Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSagMaxPhase2Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSagMaxPhase2Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSagMaxPhase2Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSagMaxPhase2Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSagMinPhase3Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSagMinPhase3Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSagMinPhase3Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSagMinPhase3Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSagMaxPhase3Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSagMaxPhase3Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSagMaxPhase3Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSagMaxPhase3Summary (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (VoltageSagMinPhase1Summary): Obis_code = 1;0;96;51;2;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (VoltageSagMinPhase1Summary): Obis_code = 1;0;96;51;2;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 3 (VoltageSagMinPhase1Summary): Obis_code = 1;0;96;51;2;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 4 (VoltageSagMinPhase1Summary): Obis_code = 1;0;96;51;2;255, Class_id = 4, Attribute_index = 5, Data_index = 0
Index 5 (VoltageSagMaxPhase1Summary): Obis_code = 1;0;96;51;3;255, Class_id = 4, Attribute_index = 2,

Data_index = 0

Index 6 (VoltageSagMaxPhase1Summary): Obis_code = 1;0;96;51;3;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 7 (VoltageSagMaxPhase1Summary): Obis_code = 1;0;96;51;3;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 8 (VoltageSagMaxPhase1Summary): Obis_code = 1;0;96;51;3;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 9 (VoltageSagMinPhase2Summary): Obis_code = 1;0;96;51;4;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 10 (VoltageSagMinPhase2Summary): Obis_code = 1;0;96;51;4;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 11 (VoltageSagMinPhase2Summary): Obis_code = 1;0;96;51;4;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 12 (VoltageSagMinPhase2Summary): Obis_code = 1;0;96;51;4;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 13 (VoltageSagMaxPhase2Summary): Obis_code = 1;0;96;51;5;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 14 (VoltageSagMaxPhase2Summary): Obis_code = 1;0;96;51;5;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 15 (VoltageSagMaxPhase2Summary): Obis_code = 1;0;96;51;5;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 16 (VoltageSagMaxPhase2Summary): Obis_code = 1;0;96;51;5;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 17 (VoltageSagMinPhase3Summary): Obis_code = 1;0;96;51;6;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 18 (VoltageSagMinPhase3Summary): Obis_code = 1;0;96;51;6;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 19 (VoltageSagMinPhase3Summary): Obis_code = 1;0;96;51;6;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 20 (VoltageSagMinPhase3Summary): Obis_code = 1;0;96;51;6;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 21 (VoltageSagMaxPhase3Summary): Obis_code = 1;0;96;51;7;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 22 (VoltageSagMaxPhase3Summary): Obis_code = 1;0;96;51;7;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 23 (VoltageSagMaxPhase3Summary): Obis_code = 1;0;96;51;7;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 24 (VoltageSagMaxPhase3Summary): Obis_code = 1;0;96;51;7;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 24 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.19 SeasonElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;2;255	7	1	1	0	ROM	3	0	2	2	2

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SeasonElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 2 elements
{
  SEQUENCE      // 3 elements
  {
    SeasonRegister (Att. Id: 2, Abs. Number: 1)
    SeasonRegister (Att. Id: 4, Abs. Number: 1)
    SeasonRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (SeasonRegister): Obis_code = 0;0;96;52;5;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (SeasonRegister): Obis_code = 0;0;96;52;5;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 3 (SeasonRegister): Obis_code = 0;0;96;52;5;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.20 SwellElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;10;2;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SwellElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 3 elements
  {
    VoltageSwellRegister (Att. Id: 2, Abs. Number: 1)
    VoltageSwellRegister (Att. Id: 4, Abs. Number: 1)
    VoltageSwellRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (VoltageSwellRegister): Obis_code = 1;0;96;51;8;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (VoltageSwellRegister): Obis_code = 1;0;96;51;8;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (VoltageSwellRegister): Obis_code = 1;0;96;51;8;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.21 SwellSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;98;129;10;255	7	1	1	0	ROM	24	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SwellSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 24 elements
  {
    VoltageSwellMinPhase1Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSwellMinPhase1Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSwellMinPhase1Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSwellMinPhase1Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSwellMaxPhase1Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSwellMaxPhase1Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSwellMaxPhase1Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSwellMaxPhase1Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSwellMinPhase2Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSwellMinPhase2Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSwellMinPhase2Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSwellMinPhase2Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSwellMaxPhase2Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSwellMaxPhase2Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSwellMaxPhase2Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSwellMaxPhase2Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSwellMinPhase3Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSwellMinPhase3Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSwellMinPhase3Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSwellMinPhase3Summary (Att. Id: 5, Abs. Number: 1)
    VoltageSwellMaxPhase3Summary (Att. Id: 2, Abs. Number: 1)
    VoltageSwellMaxPhase3Summary (Att. Id: 3, Abs. Number: 1)
    VoltageSwellMaxPhase3Summary (Att. Id: 4, Abs. Number: 1)
    VoltageSwellMaxPhase3Summary (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (VoltageSwellMinPhase1Summary): Obis_code = 1;0;96;51;9;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (VoltageSwellMinPhase1Summary): Obis_code = 1;0;96;51;9;255, Class_id = 4, Attribute_index = 3, Data_index = 0
Index 3 (VoltageSwellMinPhase1Summary): Obis_code = 1;0;96;51;9;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 4 (VoltageSwellMinPhase1Summary): Obis_code = 1;0;96;51;9;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 5 (VoltageSwellMaxPhase1Summary): Obis_code = 1;0;96;51;10;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 6 (VoltageSwellMaxPhase1Summary): Obis_code = 1;0;96;51;10;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 7 (VoltageSwellMaxPhase1Summary): Obis_code = 1;0;96;51;10;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 8 (VoltageSwellMaxPhase1Summary): Obis_code = 1;0;96;51;10;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 9 (VoltageSwellMinPhase2Summary): Obis_code = 1;0;96;51;11;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 10 (VoltageSwellMinPhase2Summary): Obis_code = 1;0;96;51;11;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 11 (VoltageSwellMinPhase2Summary): Obis_code = 1;0;96;51;11;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 12 (VoltageSwellMinPhase2Summary): Obis_code = 1;0;96;51;11;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 13 (VoltageSwellMaxPhase2Summary): Obis_code = 1;0;96;51;12;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 14 (VoltageSwellMaxPhase2Summary): Obis_code = 1;0;96;51;12;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 15 (VoltageSwellMaxPhase2Summary): Obis_code = 1;0;96;51;12;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 16 (VoltageSwellMaxPhase2Summary): Obis_code = 1;0;96;51;12;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 17 (VoltageSwellMinPhase3Summary): Obis_code = 1;0;96;51;13;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 18 (VoltageSwellMinPhase3Summary): Obis_code = 1;0;96;51;13;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 19 (VoltageSwellMinPhase3Summary): Obis_code = 1;0;96;51;13;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 20 (VoltageSwellMinPhase3Summary): Obis_code = 1;0;96;51;13;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Index 21 (VoltageSwellMaxPhase3Summary): Obis_code = 1;0;96;51;14;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 22 (VoltageSwellMaxPhase3Summary): Obis_code = 1;0;96;51;14;255, Class_id = 4, Attribute_index = 3, Data_index = 0

Index 23 (VoltageSwellMaxPhase3Summary): Obis_code = 1;0;96;51;14;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 24 (VoltageSwellMaxPhase3Summary): Obis_code = 1;0;96;51;14;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 24 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.22 TEPProgrammingElement

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;130;10;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TEPProgrammingElementOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 3 elements
  {
    TEPProgrammingRegister (Att. Id: 2, Abs. Number: 1)
    TEPProgrammingRegister (Att. Id: 4, Abs. Number: 1)
    TEPProgrammingRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (TEPProgrammingRegister): Obis_code = 0;0;96;51;70;255, Class_id = 4, Attribute_index = 2,

Data_index = 0

Index 2 (TEPProgrammingRegister): Obis_code = 0;0;96;51;70;255, Class_id = 4, Attribute_index = 4,
Data_index = 0

Index 3 (TEPProgrammingRegister): Obis_code = 0;0;96;51;70;255, Class_id = 4, Attribute_index = 5,
Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.23 UserConnectionsElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;12;0;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UserConnectionsElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 3 elements
  {
    CosemUserConnectionsRegister (Att. Id: 2, Abs. Number: 1)
    CosemUserConnectionsRegister (Att. Id: 4, Abs. Number: 1)
    CosemUserConnectionsRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (CosemUserConnectionsRegister): Obis_code = 0;0;143;1;0;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (CosemUserConnectionsRegister): Obis_code = 0;0;143;1;0;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (CosemUserConnectionsRegister): Obis_code = 0;0;143;1;0;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.24 VoltageIsolationElements

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;128;1;255	7	1	1	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageIsolationElementsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF     // 10 elements
{
  SEQUENCE     // 3 elements
  {
    VoltageIsolationRegister (Att. Id: 2, Abs. Number: 1)
    VoltageIsolationRegister (Att. Id: 4, Abs. Number: 1)
    VoltageIsolationRegister (Att. Id: 5, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (VoltageIsolationRegister): Obis_code = 1;0;96;51;22;255, Class_id = 4, Attribute_index = 2, Data_index = 0
Index 2 (VoltageIsolationRegister): Obis_code = 1;0;96;51;22;255, Class_id = 4, Attribute_index = 4, Data_index = 0
Index 3 (VoltageIsolationRegister): Obis_code = 1;0;96;51;22;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF     // 3 elements
{
  SEQUENCE     // 4 elements
  {
```

```
        Class_id
        Obis_code
        Attribute_index
        Data_index
    }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.25 VoltageIsolationSummary

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;98;129;31;255	7	1	1	0	ROM	3	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageIsolationSummaryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 3 elements
  {
    VoltageIsolationPhase1Summary (Att. Id: 2, Abs. Number: 1)
```

```
      VoltageIsolationPhase2Summary (Att. Id: 2, Abs. Number: 1)
      VoltageIsolationPhase3Summary (Att. Id: 2, Abs. Number: 1)
   }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (VoltageIsolationPhase1Summary): Obis_code = 1;0;96;51;23;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 2 (VoltageIsolationPhase2Summary): Obis_code = 1;0;96;51;24;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 3 (VoltageIsolationPhase3Summary): Obis_code = 1;0;96;51;25;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

10.2.26 VoltageThdDefectHistory

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;99;11;124;25 5	7	1	2	0	ROM	3	0	10	10	10

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VoltageThdDefectHistoryOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 10 elements
{
  SEQUENCE      // 3 elements
  {
    VoltageThdDefectRegister (Att. Id: 2, Abs. Number: 2)
    VoltageThdDefectRegister (Att. Id: 4, Abs. Number: 2)
    VoltageThdDefectRegister (Att. Id: 5, Abs. Number: 2)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (VoltageThdDefectRegister): Obis_code = 1;0;96;11;1;255, Class_id = 4, Attribute_index = 2, Data_index = 0

Index 2 (VoltageThdDefectRegister): Obis_code = 1;0;96;11;1;255, Class_id = 4, Attribute_index = 4, Data_index = 0

Index 3 (VoltageThdDefectRegister): Obis_code = 1;0;96;11;1;255, Class_id = 4, Attribute_index = 5, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 3 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

11 Load Profile

11.1 Cosem objects

11.1.1 LoadProfile1ChannelParameters

This object defines all the attributes needed for the load profile (type 1) management.
See the resourcesIdParameter for the définition of the number of available channels.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;136;0;2;255	1	0	17	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1ChannelParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

The Load profile channel number authorized is defined in the field "Load profile channel" of ResourcesIdParameters.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 8 elements
{
  SEQUENCE      // 7 elements
  {
    QuantityId
    Scaler
    Unit
    ExcessEnergyChannel
    WorkingMode
    Fluid
    QuantityType
  }
}
```

QuantityId

Defines the type of quantity to process :
- Default value for the first element : 3 (Import Active Energy Aggregate)
- Default value for the other one : 255 (No quantity - No allocation)

Alarm status definition:
bit 0 : EXTERNAL_CLOCK_INCOHERENCE
bit 1 : NON_VOLATILE_MEMORY_NON_FATAL_ERROR
bit 2 : COVER_OPENING
bit 3 : CLOCK_LOSS
bit 4 : EXTERNAL_ALARM
bit 5 : CURRENT_REVERSAL_PHASE_1
bit 6 : CURRENT_REVERSAL_PHASE_2
bit 7 : CURRENT_REVERSAL_PHASE_3
bit 8 : TEMPERATURE_ALARM

bit 9 : VOLTAGE_CUT_PHASE_1
bit 10 : VOLTAGE_CUT_PHASE_2
bit 11 : VOLTAGE_CUT_PHASE_3
bit 12 : BATTERY
bit 13 : EXCESS_DEMAND
bit 14 : MAGNET SENSOR
bit 15 : Undefined

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2
10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate
24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1
33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
40: Import External Energy 1
41: Import External Energy 2
42: Import External Energy 3
43: Import External Energy 4
44: Export External Energy 1
45: Export External Energy 2
46: Export External Energy 3

47: Export External Energy 4
48: Summation Energy 1
49: Summation Energy 2
50: Summation Energy 3
51: Summation Energy 4
52: Power Factor Aggregate
53: Current RMS value Phase 1
54: Current RMS value Phase 2
55: Current RMS value Phase 3
56: Voltage RMS value Phase 1
57: Voltage RMS value Phase 2
58: Voltage RMS value Phase 3
59: Frequency
60: Alarm Status
61: Ambient Temperature
255: No quantity - No allocation

Default value: Import Active Energy Aggregate (3)

Scaler

Allowed discrete values are the following :
- ENERGY TYPE QUANTITIES (QuantityId from Import Active Energy Phase1 (0) to Summation Energy 4 (51) : scaler from :
 –1 to 6 for energy recording in Base_10
 0 to 23 for energy recording in Base_2
- for IRMS QUANTITIES : scaler from –3(CT) to -2(DC)
- for URMS QUANTITIES : scaler = –1
- for POWER FACTOR QUANTITY : scaler = –4
- for FREQUENCY QUANTITY : scaler = –2
- for ALARM STATUS QUANTITY : scaler = 0
- for AMBIENT TEMPERATURE QUANTITY : scaler = 0

Data type: INTEGER8

Authorized value: -4 to 23

Default value: 0

Unit

Default value for the first element : Wh (30)
Default value for the other one : No unit (255)

Data type: UNSIGNED8

Authorized values:
9: °C
27: W
28: VA
29: VAR
30: Wh
31: VAh
32: VARh
33: A
35: V
44: Hz
255: No unit

Default value: Wh (30)

ExcessEnergyChannel

Specifies if the concerned channel processes an excess energy or not.
This parameter must be set to FALSE for RMS values, power factor, frequency, ambient temperature quantities and alarm status quantity.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

WorkingMode

Defines the way the selected channel profile is processed.
It may be averaging (like demand) or cumulative (like energy).
If channel quantity is not an energy, working mode must be averaging.

Data type: UNSIGNED8

Authorized values:
0: Averaging
1: Cumulative

Default value: Cumulative (1)

Fluid

Default value for the first element : 0 (Electricity)
Default value for the others : 255 (No fluid)

Data type: UNSIGNED8

Authorized values:
0: Electricity
1: Heat
2: Gas
3: Water
255: No fluid

Default value: Electricity (0)

QuantityType

Value of the OBIS code field C :
- Default value for the first element : 1
- Default value for the others : 82

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 1

11.1.2 LoadProfile1EndingRecord

This register holds the ending date of the load profile (type 1).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;6;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1EndingRecordOBISCode
A5. capture_time	OCTETSTRING	See below

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndRecordDateAndTime`

EndRecordDateAndTime

Date and time of the ending of the load profile of type 1. It is either the stop measurement date or current date.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.3 LoadProfile1EndOfIntervalDate

This object holds the end of interval date for the load profile (type 1) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1EndOfIntervalDateOBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndOfIntervalTime`

EndOfIntervalTime

Time of the end of interval date for the load profile of type 1.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.4 LoadProfile1EndOfRecordingData

This object holds the end of recording data for the load profile (type 1) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;7;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1EndOfRecordingDataOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

The format is the following :

First, the 4 structures date+status are provided :

- Start of interval and linked status, or NULL data if not significative

- End date and linked status, or NULL data if not significative

- Time 1 and linked status, or NULL data if not significative

- Time 2 and linked status, or NULL data if not significative

Then, UP TO 8 values of CONFIGURED channels are provided (value = integer16 or integer32 or unsigned16).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE OF     // 4..12 elements ("Array Of" view as "Sequence" in get only)
{
  CHOICE
  {
    SEQUENCE     // 2 elements
    {
      Start of interval or End interval or Time1 or Time2
      Status
    }
    Null data
    Value of LP channel data
    Value of LP data
    Value of LP data
  }
}
```

Start of interval or End interval or Time1 or Time2

START OF INTERVAL DATE :
Used to record new time when interval stopped unusually
New time of long clock setting (including EOR or greater than the threshold)
New time of long power failure – power up- (including EOR)
New time of long external clock synchro
New time of DST

END OF INTERVAL DATE :
Used to record old time when interval stopped unusually
 Old time of long clock setting (including EOR or greater than the threshold)
Old time of long power failure – power up- (including EOR)
 Old time of long external clock synchro
 Old time of DST

TIME1 :
Used to record old time in case of short disruptions inside the EOR
 Old time of short clock setting (smaller than the threshold)
Old time of power failure – power down
Old time of DST

TIME2 :

Used to record new time in case of short disruptions inside the EOR
 New time of short clock setting (smaller than the threshold)
New time of power failure – power down
New time of DST

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

Status

Data type: BITSTRING

Authorized values:
Size = 6
ViewAsType = BitString
BIT 0: Start of measurement
BIT 1: Power failure
BIT 2: Clock setting
BIT 3: External clock synchro
BIT 4: DST
BIT 5: Watchdog reset

Default value: 0;0;0;0;0;0;

Null data
If first element of array : Start of interval not significative.
If second element of array : End of interval not significative.
If third element of array : Time1 not significative.
If fourth element of array : Time2 not significative.

Data type: NULL

Authorized value:

Default value:

Value of LP channel data
Element (4+N) in array corresponds to data of channel N.

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

Value of LP data
Element (4+N) in array corresponds to data of channel N.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Value of LP data
Element (4+N) in array corresponds to data of channel N.
This format corresponds to energies in base 2.

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 0

11.1.5 LoadProfile1RecordingIntervalDuration

This parameter holds the interval recording duration for the load profile (type 1) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;8;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1RecordingIntervalDurationOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RecordingIntervalDuration
```

RecordingIntervalDuration

It is the period of one element insertion in the file.
This interval domain is from 1 to 60 minutes (value sub multiple of 60), or 1440 minutes for a daily recording interval (24*60minutes).

Data type: UNSIGNED16

Authorized values:
1: 1 min
2: 2 min
3: 3 min
4: 4 min
5: 5 min
6: 6 min
10: 10 min
12: 12 min
15: 15 min
20: 20 min
30: 30 min
60: 60 min
1440: Daily recording

Default value: 15 min (15)

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 6: min

Default value: min (6)

11.1.6 LoadProfile1StartingRecord

This register holds the starting date of the load profile (type 1).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;5;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1StartingRecordOBISCode
A5. capture_time	OCTETSTRING	See below

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`StartRecordDateAndTime`

StartRecordDateAndTime

Date and time of the starting date for the load profile of type 1.
This date is either the start measurement date or the date of the oldest entry in the load profile array.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.7 LoadProfile1StartOfIntervalDate

This object holds the start of interval date for the load profile (type 1) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1StartOfIntervalDateOBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
`StartOfIntervalDateAndTime`
<u>StartOfIntervalDateAndTime</u>
Date and time of the start of interval date for the load profile of type 1.
Data type: OCTETSTRING
Authorized value: Decoded as Decimal (Size = 12)
Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.8 LoadProfile1Time1

This object holds the time1 for the load profile (type 1) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1Time1OBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
`Time1`
<u>Time1</u>
Time of time1 for the load profile of type 1.
Data type: OCTETSTRING
Authorized value: Decoded as Decimal (Size = 12)
Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.9 LoadProfile1Time2

This object holds the time2 for the load profile (type 1) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;55;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1Time2OBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`Time2`

Time2

Time of time2 for the load profile of type 1.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.10 LoadProfile2ChannelParameters

This object defines all the attributes needed for the load profile (type 2) management.
See the resourcesIdParameter for the définition of the number of available channels.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;136;1;2;255	1	0	17	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2ChannelParametersOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

The Load profile channel number authorized is defined in the field "Load profile channel" of ResourcesIdParameters.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 8 elements
{
  SEQUENCE      // 7 elements
  {
    QuantityId
    Scaler
    Unit
    ExcessEnergyChannel
    WorkingMode
    Fluid
    QuantityType
  }
}
```

<u>QuantityId</u>

Defines the type of quantity to process :
Default value : 255 (No energy - No allocation)

Alarm status definition:
bit 0 : EXTERNAL_CLOCK_INCOHERENCE
bit 1 : NON_VOLATILE_MEMORY_NON_FATAL_ERROR
bit 2 : COVER_OPENING
bit 3 : CLOCK_LOSS
bit 4 : EXTERNAL_ALARM
bit 5 : CURRENT_REVERSAL_PHASE_1
bit 6 : CURRENT_REVERSAL_PHASE_2
bit 7 : CURRENT_REVERSAL_PHASE_3
bit 8 : TEMPERATURE_ALARM
bit 9 : VOLTAGE_CUT_PHASE_1
bit 10 : VOLTAGE_CUT_PHASE_2
bit 11 : VOLTAGE_CUT_PHASE_3
bit 12 : BATTERY
bit 13 : EXCESS_DEMAND
bit 14 : MAGNET_SENSOR
bit 15 : Undefined

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2
10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate
24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1

33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
40: Import External Energy 1
41: Import External Energy 2
42: Import External Energy 3
43: Import External Energy 4
44: Export External Energy 1
45: Export External Energy 2
46: Export External Energy 3
47: Export External Energy 4
48: Summation Energy 1
49: Summation Energy 2
50: Summation Energy 3
51: Summation Energy 4
52: Power Factor Aggregate
53: Current RMS value Phase 1
54: Current RMS value Phase 2
55: Current RMS value Phase 3
56: Voltage RMS value Phase 1
57: Voltage RMS value Phase 2
58: Voltage RMS value Phase 3
59: Frequency
60: Alarm Status
61: Ambient Temperature
255: No energy - No allocation

Default value: No energy - No allocation (255)

Scaler

Allowed discrete values are the following :
- ENERGY TYPE QUANTITIES (QuantityId from Import Active Energy Phase1 (0) to Summation Energy 4 (51) : scaler from :
 –1 to 6 for energy recording in Base_10
 0 to 23 for energy recording in Base_2
- for IRMS QUANTITIES : scaler from –3(CT) to -2(DC)
- for URMS QUANTITIES : scaler = –1
- for POWER FACTOR QUANTITY : scaler = –4
- for FREQUENCY QUANTITY : scaler = –2
- for ALARM STATUS QUANTITY : scaler = 0
- for AMBIENT TEMPERATURE QUANTITY : scaler = 0

Data type: INTEGER8

Authorized value: -4 to 23

Default value: 0

Unit

Data type: UNSIGNED8

Authorized values:
9: °C
27: W
28: VA
29: VAR
30: Wh

31: VAh
32: VARh
33: A
35: V
44: Hz
255: No unit

Default value: No unit (255)

<u>ExcessEnergyChannel</u>

Specifies if the concerned channel processes an excess energy or not.
This parameter must be set to FALSE for RMS values, power factor, frequency, ambient temperature quantities and alarm status quantity.

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

<u>WorkingMode</u>

Defines the way the selected channel profile is processed.
It may be averaging (like demand) or cumulative (like energy).
If channel quantity is not an energy, working mode must be averaging.

Data type: UNSIGNED8

Authorized values:
0: Averaging
1: Cumulative

Default value: Cumulative (1)

<u>Fluid</u>

Data type: UNSIGNED8

Authorized values:
0: Electricity
1: Heat
2: Gas
3: Water
255: No fluid

Default value: No fluid (255)

<u>QuantityType</u>

Value of the OBIS code field C :
- Default value : 82

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 82

11.1.11 LoadProfile2EndingRecord

This register holds the ending date of the load profile (type 2).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;6;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2EndingRecordOBISCode
A5. capture_time	OCTETSTRING	See below

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndRecordDateAndTime`

EndRecordDateAndTime

Date and time of the ending of the load profile of type 2. It is either the stop measurement date or current date.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.12 LoadProfile2EndOfIntervalDate

This object holds the end of interval date for the load profile (type 2) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2EndOfIntervalDateOBISCode
A2. value	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`EndOfIntervalTime`

EndOfIntervalTime

Time of the end of interval date for the load profile of type 2.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.13 LoadProfile2EndOfRecordingData

This object holds the end of recording data for the load profile (type 2) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;7;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2EndOfRecordingDataOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

The format is the following :
First, the 4 structures date+status are provided :
- Start of interval and linked status, or NULL data if not significative
- End date and linked status, or NULL data if not significative
- Time 1 and linked status, or NULL data if not significative
- Time 2 and linked status, or NULL data if not significative
Then, UP TO 8 values of CONFIGURED channels are provided (value = integer16 or integer32 or unsigned16).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
SEQUENCE OF     // 4..12 elements ("Array Of" view as "Sequence" in get only)
{
  CHOICE
  {
    SEQUENCE     // 2 elements
    {
      Start of interval or End interval or Time1 or Time2
      Status
    }
    Null data
    Value of LP channel data
    Value of LP data
    Value of LP data
  }
}
```

Start of interval or End interval or Time1 or Time2

START OF INTERVAL DATE :
Used to record new time when interval stopped unusually
New time of long clock setting (including EOR or greater than the threshold)
New time of long power failure – power up- (including EOR)
New time of long external clock synchro
New time of DST

END OF INTERVAL DATE :
Used to record old time when interval stopped unusually
 Old time of long clock setting (including EOR or greater than the threshold)
Old time of long power failure – power up- (including EOR)
 Old time of long external clock synchro
 Old time of DST

TIME1 :

Used to record old time in case of short disruptions inside the EOR
 Old time of short clock setting (smaller than the threshold)
Old time of power failure – power down
Old time of DST

TIME2 :

Used to record new time in case of short disruptions inside the EOR
 New time of short clock setting (smaller than the threshold)
New time of power failure – power down
New time of DST

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

Status

Data type: BITSTRING

Authorized values:
Size = 6
ViewAsType = BitString
BIT 0: Start of measurement
BIT 1: Power failure
BIT 2: Clock setting
BIT 3: External clock synchro
BIT 4: DST
BIT 5: Watchdog reset

Default value: 0;0;0;0;0;0;

Null data

If first element of array : Start of interval not significative.
If second element of array : End of interval not significative.
If third element of array : Time1 not significative.
If fourth element of array : Time2 not significative.

Data type: NULL

Authorized value:

Default value:

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

Value of LP data

Element (4+N) in array corresponds to data of channel N.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Value of LP data

Element (4+N) in array corresponds to data of channel N.
This format corresponds to energies in base 2.

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 0

11.1.14 LoadProfile2RecordingIntervalDuration

This parameter holds the interval recording duration for the load profile (type 2) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;8;5;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2RecordingIntervalDurationOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RecordingIntervalDuration`

RecordingIntervalDuration

It is the period of one element insertion in the file.
This interval domain is from 1 to 60 minutes (value sub multiple of 60), or 1440 minutes for a daily recording interval (24*60minutes).

Data type: UNSIGNED16

Authorized values:
1: 1 min
2: 2 min
3: 3 min
4: 4 min
5: 5 min
6: 6 min
10: 10 min
12: 12 min
15: 15 min
20: 20 min
30: 30 min
60: 60 min
1440: Daily recording

Default value: 15 min (15)

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 6: min

Default value: min (6)

11.1.15 LoadProfile2StartingRecord

This register holds the starting date of the load profile (type 2).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;5;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2StartingRecordOBISCode
A5. capture_time	OCTETSTRING	See below

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description
```
StartRecordDateAndTime
```

StartRecordDateAndTime

Date and time of the starting date for the load profile of type 2.
This date is either the start measurement date or the date of the oldest entry in the load profile array.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.16 LoadProfile2StartOfIntervalDate

This object holds the start of interval date for the load profile (type 2) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2StartOfIntervalDateOBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`StartOfIntervalDateAndTime`

StartOfIntervalDateAndTime

Date and time of the start of interval date for the load profile of type 2.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.17 LoadProfile2Time1

This object holds the time1 for the load profile (type 2) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2Time1OBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`Time1`

Time1

Time of time1 for the load profile of type 2.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.18 LoadProfile2Time2

This object holds the time2 for the load profile (type 2) management.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;56;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2Time2OBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

`Time2`

Time2

Time of time2 for the load profile of type 2.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

11.1.19 LoadProfiling1Parameters

This object defines time parameters for the management of the load profile (type 1).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;136;0;1;255	1	0	2	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfiling1ParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 4 elements
{
  RecordingInterval
  ClockModificationThreshold
  SecondIRRatio
  EnergyRecordingFormat
}
```

RecordingInterval

It is the period of one element insertion in the file.

This interval domain is from 1 to 60 minutes (value sub multiple of 60), or 1440 minutes for a daily recording interval (24*60minutes).

Data type: UNSIGNED16

Authorized values:
1: 1 min
2: 2 min
3: 3 min
4: 4 min
5: 5 min
6: 6 min
10: 10 min
12: 12 min
15: 15 min
20: 20 min
30: 30 min
60: 60 min
1440: daily recording

Default value: 15 min (15)

ClockModificationThreshold

It is a percentage of the interval recording. When the clock is modified and the delta between the old and the new value is above this threshold, the current interval recording is closed.
 The specific threshold value of 100% avoids from any period closing due to clock setting within the period.
Range : 0 .. 5, or 100 (%)

Data type: UNSIGNED8

Authorized values:
0: 0 %
1: 1 %
2: 2 %
3: 3 %
4: 4 %
5: 5 %
100: 100 %

Default value: 1 % (1)

SecondIRRatio

It is a parameter used only in GenIEC1+.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 1

EnergyRecordingFormat

It indicates which format is used for all energy channels of load profile (type 1).

Data type: UNSIGNED8

Authorized values:
0: BASE 10
1: BASE 2

Default value: BASE 10 (0)

11.1.20 LoadProfiling2Parameters

This object defines time parameters for the management of the load profile (type 2).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;136;1;1;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfiling2ParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 4 elements
{
  RecordingInterval
  ClockModificationThreshold
  SecondIRRatio
  EnergyRecordingFormat
}
```

RecordingInterval

It is the period of one element insertion in the file.
This interval domain is from 1 to 60 minutes (value sub multiple of 60), or 1440 minutes for a daily recording
 interval (24*60minutes).

For meters which integrate DataPush functionnality :
If Push is activated : Period is reduced from 5 to 60 minutes (value sub multiple of 60)
If Push is deactivated : Period is the normal interval described at the top of the comment

Data type: UNSIGNED16

Authorized values:
1: 1 min
2: 2 min
3: 3 min
4: 4 min
5: 5 min
6: 6 min
10: 10 min
12: 12 min
15: 15 min
20: 20 min
30: 30 min
60: 60 min
1440: daily recording

Default value: 15 min (15)

ClockModificationThreshold

It is a percentage of the interval recording. When the clock is modified and the delta between the old and
the new value is above this threshold, the current interval recording is closed.
 The specific threshold value of 100% avoids from any period closing due to clock setting within the period.
Range : 0 .. 5, or 100 (%)

Data type: UNSIGNED8

Authorized values:
0: 0 %
1: 1 %
2: 2 %
3: 3 %
4: 4 %
5: 5 %
100: 100 %

Default value: 1 % (1)

SecondIRRatio

It is a parameter used only in GenIEC1+.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 1

EnergyRecordingFormat

It indicates which format is used for all energy channels of load profile (type 1).

Data type: UNSIGNED8

Authorized values:
0: BASE 10
1: BASE 2

Default value: BASE 10 (0)

11.2 Cosem profiles

11.2.1 LoadProfile1Data

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;1;0;255	7	1	2	7073	RAM	4	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1DataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

The format is the following for each element of load profile :
First, the 4 structures date+status are provided :
- Start of interval and linked status, or NULL data if not significative
- End date and linked status, or NULL data if not significative
- Time 1 and linked status, or NULL data if not significative
- Time 2 and linked status, or NULL data if not significative
Then, UP TO 8 values of CONFIGURED channels are provided (value = integer16 or integer32 or unsigned16).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE OF      // 5..12 elements ("Array Of" view as "Sequence" in get only)
  {
    CHOICE
    {
      SEQUENCE     // 2 elements
      {
        Start of interval or End interval or Time1 or Time2
        Status
      }
      Null data
      Value of LP channel data
      Value of LP channel data
      Value of LP channel data
    }
  }
}
```

Start of interval or End interval or Time1 or Time2

START OF INTERVAL DATE :
Used to record new time when interval stopped unusually
New time of long clock setting (including EOR or greater than the threshold)
New time of long power failure – power up- (including EOR)
New time of long external clock synchro
New time of DST

END OF INTERVAL DATE :
Used to record old time when interval stopped unusually
 Old time of long clock setting (including EOR or greater than the threshold)
Old time of long power failure – power up- (including EOR)
 Old time of long external clock synchro
 Old time of DST

TIME1 :
Used to record old time in case of short disruptions inside the EOR
 Old time of short clock setting (smaller than the threshold)
Old time of power failure – power down
Old time of DST

TIME2 :
Used to record new time in case of short disruptions inside the EOR
 New time of short clock setting (smaller than the threshold)
New time of power failure – power down
New time of DST

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

Status

Data type: BITSTRING

Authorized values:
Size = 6
ViewAsType = BitString
BIT 0: Start of measurement
BIT 1: Power failure
BIT 2: Clock setting

BIT 3: External clock synchro
BIT 4: DST
BIT 5: Watchdog reset

Default value: 0;0;0;0;0;0;

Null data

If first element of array : Start of interval not significative.
If second element of array : End of interval not significative.
If third element of array : Time1 not significative.
If fourth element of array : Time2 not significative.

Data type: NULL

Authorized value:

Default value:

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.
This format corresponds to energies in base 2.

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 0

■ **Attribute 3: capture_objects**

- Sequence 1 = LoadProfileObisCode is LoadProfile1StartOfIntervalDateObisCode
- Sequence 2 = LoadProfileObisCode is LoadProfile1EndOfIntervalDateObisCode
- Sequence 3 = LoadProfileObisCode is LoadProfile1Time1ObisCode
- Sequence 4 = LoadProfileObisCode is LoadProfile1Time2ObisCode
Up to n=8, one per selected LP1 (configured) channel :
- Sequence 4+n = LoadProfileObisCode is BaseRegisterObisCode

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5..12 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    LoadProfileObisCode
    attribute_index
    data_index
```

```
    }
  }
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

LoadProfileObisCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

11.2.2 LoadProfile1DataCondensed

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;1;2;255	7	1	2	7073	ROM	1	0	1	0	65535

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1DataCondensedOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 0..65535 elements
{
  SEQUENCE      // 1 elements
  {
    LoadProfile1EndOfRecordingData (Att. Id: 2, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (LoadProfile1EndOfRecordingData): Obis_code = 0;0;96;55;7;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

11.2.3 LoadProfile1Information

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;128;1;255	7	1	2	0	RAM	2	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile1InformationOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

This object specifies the start date and the end date of data inside one load profile,
the scaler and unit of each channel and the quantity each channel is based on.
Logical name and scaler/unit of each CONFIGURED channel are first provided,
and then Start and End date (last elements of array).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE OF      // 4..18 elements ("Array Of" view as "Sequence" in get only)
  {
    CHOICE
    {
      Logical name channel N
      SEQUENCE      // 2 elements
      {
        Scaler channel N
        Unit channel N
      }
      StartRecordDate or EndRecordDate
    }
  }
}
```

Logical name channel N

Channel N corresponds to elements (2N-1) and 2N of array, if configured.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Scaler channel N

Channel N corresponds to elements (2N-1) and 2N of array, if configured.

Data type: INTEGER8

Authorized value: -4 to 23

Default value: 0

Unit channel N

Channel N corresponds to elements (2N-1) and 2N of array, if configured.

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
30: Wh
31: VAh
32: varh
33: A
35: V
44: Hz
255: No unit

Default value: No unit (255)

StartRecordDate or EndRecordDate

Start date or End date of data inside one load profile.
Start date is placed before End date in array.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;255;255;255;255;128;0;255;

■ Attribute 3: capture_objects

For each channel, we take its logical name and scaler-unit
up to 8
StartRecordDate
EndRecordDate

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 4..18 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    LoadProfileObisCode
    attribute_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

LoadProfileObisCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

11.2.4 LoadProfile2Data

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;2;0;255	7	1	2	7073	RAM	4	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2DataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

The format is the following for each element of load profile :

First, the 4 structures date+status are provided :

- Start of interval and linked status, or NULL data if not significative

- End date and linked status, or NULL data if not significative

- Time 1 and linked status, or NULL data if not significative

- Time 2 and linked status, or NULL data if not significative

Then, UP TO 8 values of CONFIGURED channels are provided (value = integer16 or integer32 or unsigned16).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE OF      // 5..12 elements ("Array Of" view as "Sequence" in get only)
  {
    CHOICE
    {
      SEQUENCE      // 2 elements
      {
        Start of interval or End interval or Time1 or Time2
        Status
      }
      Null data
      Value of LP channel data
      Value of LP channel data
      Value of LP channel data
    }
  }
}
```

Start of interval or End interval or Time1 or Time2

START OF INTERVAL DATE :
Used to record new time when interval stopped unusually
New time of long clock setting (including EOR or greater than the threshold)
New time of long power failure – power up- (including EOR)
New time of long external clock synchro
New time of DST

END OF INTERVAL DATE :
Used to record old time when interval stopped unusually
 Old time of long clock setting (including EOR or greater than the threshold)
Old time of long power failure – power up- (including EOR)
 Old time of long external clock synchro
 Old time of DST

TIME1 :
Used to record old time in case of short disruptions inside the EOR
 Old time of short clock setting (smaller than the threshold)

Old time of power failure – power down
Old time of DST

TIME2 :
Used to record new time in case of short disruptions inside the EOR
 New time of short clock setting (smaller than the threshold)
New time of power failure – power down
New time of DST

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

Status

Data type: BITSTRING

Authorized values:
Size = 6
ViewAsType = BitString
BIT 0: Start of measurement
BIT 1: Power failure
BIT 2: Clock setting
BIT 3: External clock synchro
BIT 4: DST
BIT 5: Watchdog reset

Default value: 0;0;0;0;0;0;

Null data

If first element of array : Start of interval not significative.
If second element of array : End of interval not significative.
If third element of array : Time1 not significative.
If fourth element of array : Time2 not significative.

Data type: NULL

Authorized value:

Default value:

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Value of LP channel data

Element (4+N) in array corresponds to data of channel N.
This format corresponds to energies in base 2.

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 0

■ **Attribute 3: capture_objects**

- Sequence 1 = LoadProfileObisCode is LoadProfile2StartOfIntervalDateObisCode
- Sequence 2 = LoadProfileObisCode is LoadProfile2EndOfIntervalDateObisCode
- Sequence 3 = LoadProfileObisCode is LoadProfile2Time1ObisCode
- Sequence 4 = LoadProfileObisCode is LoadProfile2Time2ObisCode
Up to n=8, one per selected LP2 (configured) channel :
- Sequence 4+n = LoadProfileObisCode is BaseRegisterObisCode

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 5..12 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    LoadProfileObisCode
    attribute_index
    data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

LoadProfileObisCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

11.2.5 LoadProfile2DataCondensed

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;2;2;255	7	1	2	7073	ROM	1	0	1	0	65535

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2DataCondensedOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE      // 1 elements
  {
    LoadProfile2EndOfRecordingData (Att. Id: 2, Abs. Number: 2)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (LoadProfile2EndOfRecordingData): Obis_code = 0;0;96;56;7;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

11.2.6 LoadProfile2Information

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;99;129;1;255	7	1	2	0	RAM	2	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LoadProfile2InformationOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

This object specifies the start date and the end date of data inside one load profile,
the scaler and unit of each channel and the quantity each channel is based on.
Logical name and scaler/unit of each CONFIGURED channel are first provided,
and then Start and End date (last elements of array).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..65535 elements
{
  SEQUENCE OF     // 4..18 elements ("Array Of" view as "Sequence" in get only)
  {
    CHOICE
    {
      Logical name channel N
      SEQUENCE      // 2 elements
      {
        Scaler channel N
        Unit channel N
      }
      StartRecordDate or EndRecordDate
    }
  }
}
```

Logical name channel N

Channel N corresponds to elements (2N-1) and 2N of array, if configured.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Scaler channel N

Channel N corresponds to elements (2N-1) and 2N of array, if configured.

Data type: INTEGER8

Authorized value: -4 to 23

Default value: 0

Unit channel N

Channel N corresponds to elements (2N-1) and 2N of array, if configured.

Data type: ENUMERATED

Authorized values:
27: W
28: VA
29: var
30: Wh
31: VAh
32: varh
33: A
35: V
44: Hz
255: No unit

Default value: No unit (255)

StartRecordDate or EndRecordDate

Start date or End date of data inside one load profile.
Start date is placed before End date in array.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;255;255;255;255;255;128;0;255;

■ **Attribute 3: capture_objects**

For each channel, we take its logical name and scaler-unit
up to 8
StartRecordDate
EndRecordDate

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 4..18 elements
{
  SEQUENCE     // 4 elements
  {
    class_id
    LoadProfileObisCode
    attribute_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

LoadProfileObisCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12 Metrology Qualimetry

12.1 Cosem objects

12.1.1 ActiveEnergyMetrologicalLEDPulseConstant

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;3;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ActiveEnergyMetrologicalLEDPulseConstantOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Value
```

Value

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler
0 for DC
-1 for CT

Data type: INTEGER8

Authorized value: -1 to 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

12.1.2 AngleU1I1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;81;7;40;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AngleU1I1OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`AngleU1I1`

AngleU1I1

Data type: INTEGER16

Authorized value: -1800 to 1800

Default value: 1200

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

1 décimale.

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 8: °

Default value: ° (8)

12.1.3 AngleU1U3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;81;7;2;255	3	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AngleU1U3OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`AngleU1U3`

AngleU1U3

Data type: INTEGER16

Authorized value: -1800 to 1800

Default value: 1200

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

1 décimale.

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 8: °

Default value: ° (8)

12.1.4 AngleU2I2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;81;7;51;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AngleU2I2OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`AngleU2I2`

AngleU2I2

Data type: INTEGER16

Authorized value: -1800 to 1800

Default value: 1200

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

1 décimale.

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 8: °

Default value: ° (8)

12.1.5 AngleU2U1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;81;7;10;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AngleU2U1OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`AngleU2U1`

AngleU2U1

Data type: INTEGER16

Authorized value: -1800 to 1800

Default value: 1200

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

1 décimale.

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 8: °

Default value: ° (8)

12.1.6 AngleU3I3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;81;7;62;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AngleU3I3OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
AngleU3I3
```

AngleU3I3

Data type: INTEGER16

Authorized value: -1800 to 1800

Default value: 1200

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

1 décimale.

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 8: °

Default value: ° (8)

12.1.7 AngleU3U2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;81;7;21;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AngleU3U2OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
AngleU3U2
```

<u>AngleU3U2</u>

Data type: INTEGER16

Authorized value: -1800 to 1800

Default value: 1200

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

1 décimale.

Data type: INTEGER8

Authorized value: -1

Default value: -1

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 8: °

Default value: ° (8)

12.1.8 CTDenominatorParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;4;5;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CTDenominatorParametersOBISCode
A2. value	UNSIGNED8	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DenCTRatio
```

DenCTRatio

Defines the current ratio denominator.

Data type: UNSIGNED8

Authorized value: 1 to 10

Default value: 1

12.1.9 CTNumeratorParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;4;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CTNumeratorParametersOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

NumCTRatio

NumCTRatio

Defines the current ratio numerator.
Acceptance rules : NumCTRatio * current NumVTRatio <= CT*VT numerator limit (3 600 000 000).

Data type: UNSIGNED16

Authorized value: 1 to 45000

Default value: 1

12.1.10 CurrentConnectionParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;6;0;255	1	0	1	0	True	False	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentConnectionParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

`CurrentConnectionParameters`

<u>CurrentConnectionParameters</u>

Direct connection : FALSE
Transformer connection : TRUE

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

12.1.11 DipsNumber_n00

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n00OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n00`

<u>DipsNumber_n00</u>

Number of dip voltage which have a duration between 40 to 100ms, and a depth between 10 to 20% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.12 DipsNumber_n01

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n01OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n01

DipsNumber_n01

Number of dip voltage which have a duration between 100 to 500ms, and a depth between 10 to 20% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.13 DipsNumber_n02

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n02OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n02

DipsNumber_n02

Number of dip voltage which have a duration between 500 to 1000ms, and a depth between 10 to 20% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.14 DipsNumber_n03

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n03OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n03

DipsNumber_n03

Number of dip voltage which have a duration between 1 to 3s, and a depth between 10 to 20% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.15 DipsNumber_n04

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n04OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n04

DipsNumber_n04

Number of dip voltage which have a duration between 3 to 20s, and a depth between 10 to 20% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.16 DipsNumber_n05

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;5;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n05OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n05`

DipsNumber_n05

Number of dip voltage which have a duration between 20 to 60s, and a depth between 10 to 20% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.17 DipsNumber_n10

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;10;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n10OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n10`

DipsNumber_n10

Number of dip voltage which have a duration between 40 to 100ms, and a depth between 20 to 30% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.18 DipsNumber_n11

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;11;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n11OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n11`

DipsNumber_n11

Number of dip voltage which have a duration between 100 to 500ms, and a depth between 20 to 30% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.19 DipsNumber_n12

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;12;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n12OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n12`

DipsNumber_n12

Number of dip voltage which have a duration between 500 to 1000ms, and a depth between 20 to 30% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.20 DipsNumber_n13

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;13;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n13OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n13

DipsNumber_n13

Number of dip voltage which have a duration between 1 to 3s, and a depth between 20 to 30% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.21 DipsNumber_n14

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;14;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n14OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n14

DipsNumber_n14

Number of dip voltage which have a duration between 3 to 20s, and a depth between 20 to 30% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.22 DipsNumber_n15

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;15;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n15OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n15`

DipsNumber_n15

Number of dip voltage which have a duration between 20 to 60s, and a depth between 20 to 30% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.23 DipsNumber_n20

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;20;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n20OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n20`

DipsNumber_n20

Number of dip voltage which have a duration between 40 to 100ms, and a depth between 30 to 60% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.24 DipsNumber_n21

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;21;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n21OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n21`

DipsNumber_n21

Number of dip voltage which have a duration between 100 to 500ms, and a depth between 30 to 60% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.25 DipsNumber_n22

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;22;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n22OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n22`

DipsNumber_n22

Number of dip voltage which have a duration between 500 to 1000ms, and a depth between 30 to 60% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.26 DipsNumber_n23

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;23;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n23OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n23`

DipsNumber_n23

Number of dip voltage which have a duration between 1 to 3s, and a depth between 30 to 60% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.27 DipsNumber_n24

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;24;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n24OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n24`

DipsNumber_n24

Number of dip voltage which have a duration between 3 to 20s, and a depth between 30 to 60% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.28 DipsNumber_n25

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;25;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n25OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n25

DipsNumber_n25

Number of dip voltage which have a duration between 20 to 60s, and a depth between 30 to 60% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.29 DipsNumber_n30

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;30;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n30OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n30

DipsNumber_n30

Number of dip voltage which have a duration between 40 to 100ms, and a depth between 60 to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.30 DipsNumber_n31

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;31;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n31OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n31`

DipsNumber_n31

Number of dip voltage which have a duration between 100 to 500ms, and a depth between 60 to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.31 DipsNumber_n32

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;32;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n32OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n32`

DipsNumber_n32

Number of dip voltage which have a duration between 500 to 1000ms, and a depth between 60 to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.32 DipsNumber_n33

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;33;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n33OBISCode
A2. value	UNSIGNED16	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n33`

DipsNumber_n33

Number of dip voltage which have a duration between 1 to 3s, and a depth between 60 to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.33 DipsNumber_n34

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;34;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n34OBISCode
A2. value	UNSIGNED16	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n34`

DipsNumber_n34

Number of dip voltage which have a duration between 3 to 20s, and a depth between 60 to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.34 DipsNumber_n35

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;35;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n35OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n35`

DipsNumber_n35

Number of dip voltage which have a duration between 20 to 60s, and a depth between 60 to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.35 DipsNumber_n40

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;40;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n40OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n40`

DipsNumber_n40

Number of dip voltage which have a duration between 40 to 100ms, and a depth superior to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.36 DipsNumber_n41

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;41;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n41OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n41

DipsNumber_n41

Number of dip voltage which have a duration between 100 to 500ms, and a depth superior to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.37 DipsNumber_n42

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;42;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n42OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DipsNumber_n42

DipsNumber_n42

Number of dip voltage which have a duration between 500 to 1000ms, and a depth superior to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.38 DipsNumber_n43

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;43;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n43OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DipsNumber_n43`

DipsNumber_n43

Number of dip voltage which have a duration between 1 to 3s, and a depth superior to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.39 DipsNumber_n44

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;44;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n44OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DipsNumber_n44
```

<u>DipsNumber_n44</u>

Number of dip voltage which have a duration between 3 to 20s, and a depth superior to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.40 DipsNumber_n45

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;32;45;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumber_n45OBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DipsNumber_n45
```

<u>DipsNumber_n45</u>

Number of dip voltage which have a duration between 20 to 60s, and a depth superior to 95% Un.

Data type: UNSIGNED16

Authorized value: 0 to 9999

Default value: 0

12.1.41 DipsNumberParameters

The thresholds are defined with a resolution of 0.1V.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;4;0;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DipsNumberParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

The thresholds are defined with a resolution of 0.1V.

Acceptance rules :

DipsThreshold1 > DipsThreshold2 > DipsThreshold3 > DipsThreshold4 > DipsThreshold5

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 5 elements
{
  DipsThreshold1
  DipsThreshold2
  DipsThreshold3
  DipsThreshold4
  DipsThreshold5
}
```

DipsThreshold1

default value 90% of 240 V = 216V (resolution of 0.1V)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 2160

DipsThreshold2

default value 80% of 240 V = 192V (resolution of 0.1V)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 1920

DipsThreshold3

default value 70% of 240 V = 168V (resolution of 0.1V)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 1680

DipsThreshold4

default value 40% of 240 V = 96V (resolution of 0.1V)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 960

DipsThreshold5

default value 5% of 240 V = 12V (resolution of 0.1V)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 120

12.1.42 EnergyStatus

This internal data is represented by a register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;5;0;255	3	0	5	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EnergyStatusOBISCode
A2. value	BITSTRING	See below
A3. scaler_unit	NULL	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Status

Status

The bit meaning are :
Status : Bit 1 to 8
- 0 the phase is blocked (creep condition)
- 1 the phase has started counting

DirectionActive : Bit 9 to 16
- 0 the phase is importing (+)
- 1 the phase is exporting (-)
In case of blocked phases the result is not valid.

DirectionReactive : Bit 17 to 24
- bit 17,18 : Quadrant for phase 1 (0..3 represents quadrant 1..4)
- bit 19,20 : Quadrant for phase 2 (0..3 represents quadrant 1..4)
- bit 21,22 : Quadrant for phase 3 (0..3 represents quadrant 1..4)

DirectionExternal : Bit 25 to 32
The booleans meaning of direction are :
- 0 the input is importing (+)
- 1 the input is exporting (-)
The booleans meaning of electrical fluid are :
- 0 the input is electrical
- 1 the input is not electrical

Data type: BITSTRING

Authorized values:
Size = 32
ViewAsType = BitString
BIT 0: Phase 1 active
BIT 1: Phase 2 active
BIT 2: Phase 3 active
BIT 3: Not used
BIT 4: Phase 1 reactive
BIT 5: Phase 2 reactive
BIT 6: Phase 3 reactive
BIT 7: Not used
BIT 8: Direction phase 1
BIT 9: Direction phase 2
BIT 10: Direction phase 3
BIT 11: Not used
BIT 12: Not used
BIT 13: Not used

BIT 14: Not used
BIT 15: Not used
BIT 16: Quadrant for phase 1
BIT 17: Quadrant for phase 1
BIT 18: Quadrant for phase 2
BIT 19: Quadrant for phase 2
BIT 20: Quadrant for phase 3
BIT 21: Quadrant for phase 3
BIT 22: Not used
BIT 23: Not used
BIT 24: Direction input 1
BIT 25: Input 1 electrical fluid
BIT 26: Direction input 2
BIT 27: Input 2 electrical fluid
BIT 28: Direction input 3
BIT 29: Input 3 electrical fluid
BIT 30: Direction input 4
BIT 31: Input 4 electrical fluid

Default value: 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;

■ Attribute 3: scaler_unit

not implemented

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

12.1.43 ExportActivePowerAggregate

This object defines the aggregate of export active power.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;2;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePowerAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ExportActivePowerAggregate

ExportActivePowerAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.44 ExportActivePowerPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;22;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePowerPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportActivePowerPhase1
```

ExportActivePowerPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```
Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.45 ExportActivePowerPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;42;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePowerPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
ExportActivePowerPhase2
```
ExportActivePowerPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.46 ExportActivePowerPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;62;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePowerPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportActivePowerPhase3
```

ExportActivePowerPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.47 ExportApparentPowerAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;10;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPowerAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentPowerAggregate
```

<u>ExportApparentPowerAggregate</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.48 ExportApparentPowerPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;30;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPowerPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentPowerPhase1
```

ExportApparentPowerPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
SEQUENCE      // 2 elements
{
   Scaler
   Unit
}
```
Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.49 ExportApparentPowerPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;50;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPowerPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
ExportApparentPowerPhase2
```
ExportApparentPowerPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.50 ExportApparentPowerPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;70;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPowerPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportApparentPowerPhase3`

ExportApparentPowerPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.51 ExportReactivePowerAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;4;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePowerAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePowerAggregate
```

ExportReactivePowerAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.52 ExportReactivePowerPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;24;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePowerPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePowerPhase1
```

ExportReactivePowerPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
```

```
    Scaler
    Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.53 ExportReactivePowerPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;44;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePowerPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePowerPhase2
```

ExportReactivePowerPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
    Scaler
```

```
    Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.54 ExportReactivePowerPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;64;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePowerPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePowerPhase3
```

ExportReactivePowerPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.55 ImportActivePowerAggregate

This object defines the aggregate of import active power.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;1;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePowerAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePowerAggregate
```

ImportActivePowerAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.56 ImportActivePowerPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;21;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePowerPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePowerPhase1
```

ImportActivePowerPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.57 ImportActivePowerPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;41;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePowerPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePowerPhase2
```

ImportActivePowerPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.58 ImportActivePowerPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;61;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePowerPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePowerPhase3
```

ImportActivePowerPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

12.1.59 ImportApparentPowerAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;9;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPowerAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentPowerAggregate
```

<u>ImportApparentPowerAggregate</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Following the meter connexion and the CT*VT ratio :

- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.60 ImportApparentPowerPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;29;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPowerPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportApparentPowerPhase1`

ImportApparentPowerPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.61 ImportApparentPowerPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;49;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPowerPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentPowerPhase2
```

ImportApparentPowerPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.62 ImportApparentPowerPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;69;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPowerPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentPowerPhase3
```

ImportApparentPowerPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 28: VA

Default value: VA (28)

12.1.63 ImportReactivePowerAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;3;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePowerAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactivePowerAggregate
```

ImportReactivePowerAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.64 ImportReactivePowerPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;23;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePowerPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactivePowerPhase1
```

ImportReactivePowerPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.65 ImportReactivePowerPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;43;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePowerPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactivePowerPhase2
```

ImportReactivePowerPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.66 ImportReactivePowerPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;63;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePowerPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportReactivePowerPhase3`

ImportReactivePowerPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.67 InputPulseParameters

This parameter allows the setting of the pulse input configuration.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;5;1;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InputPulseParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

4 elements, one for each pulse input.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 4 elements
{
  SEQUENCE     // 3 elements
  {
    ActivePulseLevel
    InputQuantityId
    InputDirection
  }
}
```

ActivePulseLevel

Positive or negative logic.

Data type: UNSIGNED8

Authorized values:
0: Negative
1: Positive

Default value: Positive (1)

InputQuantityId

identifer of the quantity dedicated to this input. See XMI (limited to internal quantities : values from 0 to 39)
Default : no quantity allocated (255)

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2
10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate
24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1
33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
255: No energy - No allocation

Default value: No energy - No allocation (255)

InputDirection

InputDirection : quantity direction.

Data type: UNSIGNED8

Authorized values:
0: Import
1: export
2: control Input direction

Default value: Import (0)

12.1.68 InputPulseWeightParameters

This variable defines the weight of each input pulse (in 0.1Wh, Vah or varh per pulse, primary values).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;5;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InputPulseWeightParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

4 elements, one for each pulse input.
This variable defines the weight of each input pulse (in 0.1Wh, Vah or varh per pulse, primary values).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF       // 4 elements
{
  SEQUENCE      // 2 elements
  {
    WeigthNumerator
    WeigthDenominator
  }
}
```

WeigthNumerator

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 1

WeigthDenominator

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 1

12.1.69 InstantaneousPowerFactorAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;13;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InstantaneousPowerFactorAggregateOBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
PowerFactor
```

PowerFactor

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -4

Default value: -4

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.70 InstantaneousPowerFactorPhase1

This carries power factor on phase 1 with reference to neutral for a 4 wires meter and main phase
with reference to neutral for a 2 wires meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;33;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InstantaneousPowerFactorPhase1OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
PowerFactor
```

<u>PowerFactor</u>

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Data type: INTEGER8

Authorized value: -4

Default value: -4

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.71 InstantaneousPowerFactorPhase2

This carries power factor on phase 2 with reference to neutral for a 4 wires meter.
It is not used for a 2 wires meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;53;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InstantaneousPowerFactorPhase2OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
PowerFactor
```

PowerFactor

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -4

Default value: -4

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.72 InstantaneousPowerFactorPhase3

This carries power factor on phase 3 with reference to neutral for a 4 wires meter.
It is not used for a 2 wires meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;73;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InstantaneousPowerFactorPhase3OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
PowerFactor
```

PowerFactor

Data type: INTEGER16

Authorized value: -10000 to 10000

Default value: 10000

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -4

Default value: -4

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.73 LedOutputParameters

This parameter allows the setting of the led output configuration programming. Two leds are available. Their configuration is set here.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;3;1;255	1	0	1	0	False	False	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LedOutputParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Led1QuantityId
  Led2QuantityId
}
```

Led1QuantityId

Quantity dedicated to the led (active or reactive aggregate energy).

Data type: UNSIGNED8

Authorized values:
0: Active energy
1: Reactive energy

Default value: Reactive energy (1)

Led2QuantityId

Quantity dedicated to the led (active or reactive aggregate energy).

Data type: UNSIGNED8

Authorized values:
0: Active energy
1: Reactive energy

Default value: Active energy (0)

12.1.74 OffsetCurrentPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;50;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OffsetCurrentPhase1OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

`OffsetCurrentPhase1`

OffsetCurrentPhase1

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
   Scaler
```

```
    Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.75 OffsetCurrentPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;50;2;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OffsetCurrentPhase2OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
OffsetCurrentPhase2
```

OffsetCurrentPhase2

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.76 OffsetCurrentPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;50;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OffsetCurrentPhase3OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
OffsetCurrentPhase3
```

OffsetCurrentPhase3

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.77 OffsetVoltagePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;50;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OffsetVoltagePhase1OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
OffsetVoltagePhase1
```

OffsetVoltagePhase1

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.78 OffsetVoltagePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;50;5;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OffsetVoltagePhase2OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
OffsetVoltagePhase2
```

OffsetVoltagePhase2

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.79 OffsetVoltagePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;96;50;6;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OffsetVoltagePhase3OBISCode
A2. value	INTEGER16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

`OffsetVoltagePhase3`

OffsetVoltagePhase3

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

12.1.80 OutputPulseParameters

This parameter allows the configuration of the pulse output function.
6 elements, one for each pulse output

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;4;1;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OutputPulseParametersOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 6 elements
{
  SEQUENCE     // 4 elements
  {
    PulseOutputDurationTon
    PulseOutputDurationToff
    ActiveOutputLevel
    OutputQuantityId
  }
}
```

PulseOutputDurationTon

Active state duration expressed in (x10ms).

Data type: UNSIGNED8

Authorized value: 3 to 255

Default value: 3

PulseOutputDurationToff

Minimum inactive state duration expressed in (x10ms).

Data type: UNSIGNED8

Authorized value: 3 to 255

Default value: 3

ActiveOutputLevel

It defines the positive or negative logic of the pulse and if the pulse must be emitted on a control output.
Can take following discrete values :
PO_NEGATIVE = 0,
PO_POSITIVE = 1,
PO_to_CO_NEG_1 = 0x10, // negative logic and emission on CO1
PO_to_CO_NEG_2 = 0x20, // negative logic and emission on CO2
PO_to_CO_NEG_3 = 0x30, //……..
PO_to_CO_NEG_4 = 0x40,
PO_to_CO_NEG_5 = 0x50,
PO_to_CO_NEG_6 = 0x60,
PO_to_CO_NEG_7 = 0x70,
PO_to_CO_NEG_8 = 0x80,
PO_to_CO_POS_1 = 0x11, // positive logic and emission on CO1
PO_to_CO_POS_2 = 0x21, // positive logic and emission on CO2
PO_to_CO_POS_3 = 0x31, // ………..

PO_to_CO_POS_4 = 0x41,
PO_to_CO_POS_5 = 0x51,
PO_to_CO_POS_6 = 0x61,
PO_to_CO_POS_7 = 0x71,
PO_to_CO_POS_8 = 0x81

Data type: UNSIGNED8

Authorized values:
1: PO_POSITIVE
16: PO_to_CO_NEG_1
17: PO_to_CO_POS_1
32: PO_to_CO_NEG_2
33: PO_to_CO_POS_2
48: PO_to_CO_NEG_3
49: PO_to_CO_POS_3
64: PO_to_CO_NEG_4
65: PO_to_CO_POS_4
80: PO_to_CO_NEG_5
81: PO_to_CO_POS_5
96: PO_to_CO_NEG_6
97: PO_to_CO_POS_6
112: PO_to_CO_NEG_7
113: PO_to_CO_POS_7
128: PO_to_CO_NEG_8
129: PO_to_CO_POS_8

Default value: PO_POSITIVE (1)

OutputQuantityId

Quantity dedicated to the concerned output.
It can be any of the different meter processed internal or external energy quantity.

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2
10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate

24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1
33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
40: Import External Energy 1
41: Import External Energy 2
42: Import External Energy 3
43: Import External Energy 4
44: Export External Energy 1
45: Export External Energy 2
46: Export External Energy 3
47: Export External Energy 4
48: Summation Energy 1
49: Summation Energy 2
50: Summation Energy 3
51: Summation Energy 4
255: No energy - No allocation

Default value: No energy - No allocation (255)

12.1.81 OutputPulseWeightParameters

This variable defines the weight of each output pulse (in 0.1Wh, VAh or varh per pulse, primary values).
n elements, one for each pulse output

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;4;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	OutputPulseWeightParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 6 elements
{
  SEQUENCE      // 2 elements
  {
```

```
    WeightNumerator
    WeightDenominator
  }
}
```

WeightNumerator

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 1

WeightDenominator

Data type: UNSIGNED16

Authorized value: 1 to 65535

Default value: 1

12.1.82 PrimaryMetrologyCustomerCalibrationParameters

Acceptance rules :
Customer calibration parameters programming is authorised only for CT meters.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;0;3;255	1	0	4	0	True	True	True

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PrimaryMetrologyCustomerCalibrationParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	-	Get/Set	-	Get

Attribute description

```
SEQUENCE    // 9 elements
{
  PhaseGainPh1
  PhaseGainPh2
  PhaseGainPh3
  VoltageGainPh1
  VoltageGainPh2
  VoltageGainPh3
  CurrentGainPh1
  CurrentGainPh2
  CurrentGainPh3
}
```

PhaseGainPh1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 60912

PhaseGainPh2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 60912

PhaseGainPh3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 60912

VoltageGainPh1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 54809

VoltageGainPh2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 54809

VoltageGainPh3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 54809

CurrentGainPh1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 51266

CurrentGainPh2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 51266

CurrentGainPh3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 51266

12.1.83 PrimaryMetrologyReferenceCalibrationParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;0;1;255	1	0	4	0	True	False	True

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PrimaryMetrologyReferenceCalibrationParametersOBISCode
A2. value	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	-	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 9 elements
{
  PhaseGainPh1
  PhaseGainPh2
  PhaseGainPh3
  VoltageGainPh1
  VoltageGainPh2
  VoltageGainPh3
  CurrentGainPh1
  CurrentGainPh2
  CurrentGainPh3
}
```

PhaseGainPh1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 60912

PhaseGainPh2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 60912

PhaseGainPh3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 60912

VoltageGainPh1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 54809

VoltageGainPh2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 54809

VoltageGainPh3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 54809

CurrentGainPh1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 51266

CurrentGainPh2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 51266

CurrentGainPh3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 51266

12.1.84 PrimaryMetrologyThresholdParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;0;2;255	1	0	15	0	True	False	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PrimaryMetrologyThresholdParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Threshold calculated for SK7K which implement autoranging full connection topology(3 and 4 wires)

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	-	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 8 elements
{
  ActiveLedPulseThreshold
  ActiveEnergyStartingThreshold
  ActiveEnergyBlockingThreshold
  ActiveEnergyQuantumThreshold
  ReactiveLedPulseThreshold
  ReactiveEnergyStartingThreshold
  ReactiveEnergyBlockingThreshold
  ReactiveEnergyQuantumThreshold
}
```

ActiveLedPulseThreshold

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 47664980

ActiveEnergyStartingThreshold

Data type: INTEGER32

Authorized value: 1 to 4000000

Default value: 21185

ActiveEnergyBlockingThreshold

Data type: INTEGER32

Authorized value: 1 to 4000000

Default value: 21185

ActiveEnergyQuantumThreshold
The default values are intended for DC meter.
To set these parameters for a CT meter, ActiveEnergyQuantumThreshold must be set to 4766498.

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 476650

ReactiveLedPulseThreshold

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 11916245

ReactiveEnergyStartingThreshold

Data type: INTEGER32

Authorized value: 1 to 4000000

Default value: 5297

ReactiveEnergyBlockingThreshold

Data type: INTEGER32

Authorized value: 1 to 4000000

Default value: 5297

ReactiveEnergyQuantumThreshold
The default values are intended for DC meter.
To set these parameters for a CT meter, ReactiveEnergyQuantumThreshold must be set to 1191625.

Data type: INTEGER32

Authorized value: -2147483648 to 2147483647

Default value: 119162

12.1.85 QualimetryDefaultParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;1;1;255	1	0	3	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	QualimetryDefaultParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

ConnectionTopology

ConnectionTopology

Data type: ENUMERATED

Authorized values:
3: 3_Wires
4: 4_Wires

Default value: 4_Wires (4)

12.1.86 QualimetryFrequencyParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;1;4;255	1	0	1	0	True	True	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	QualimetryFrequencyParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

NominalFrequency

NominalFrequency

Data type: ENUMERATED

Authorized values:
50: 50 Hz
60: 60 Hz

Default value: 50 Hz (50)

12.1.87 QualimetryNominalCurrentAndVoltageParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;1;3;255	1	0	1	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	QualimetryNominalCurrentAndVoltageParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  NominalVoltage
  NominalCurrent
}
```

NominalVoltage

NominalVoltage : Value of the nominal voltage.
Exprimé en 1/10 Volts.

Data type: UNSIGNED16

Authorized value: 577 to 4150

Default value: 2400

NominalCurrent

NominalCurrent : Value of the nominal current expressed in 1/10A
Max value : 1200 (120.0A) for DC, 100 (10.0A) for CT meter
Note: Because NominalCurrent max value depends on meter connection (CT or DC), no check is done by the meter for this value

Data type: UNSIGNED16

Authorized value: 10 to 1200

Default value: 100

12.1.88 QualimetryVoltageThresholdParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;1;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	QualimetryVoltageThresholdParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

The thresholds are defined with a resolution of 0.1V.

Acceptance rules :

VoltSwellHighThreshold > VoltSwellLowThreshold > VoltSagHighThreshold >
VoltSagLowThreshold > VoltCutHighThreshold > VoltCutLowThreshold

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE    // 6 elements
{
  VoltCutHighThreshold
  VoltCutLowThreshold
  VoltSagHighThreshold
  VoltSagLowThreshold
  VoltSwellHighThreshold
  VoltSwellLowThreshold
}
```

VoltCutHighThreshold

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 150

VoltCutLowThreshold

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 120

VoltSagHighThreshold

default value 1680 (168.0V) = 70% 2400

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 1680

VoltSagLowThreshold

default value 1632 (163.2V) = 68% 2400

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 1632

VoltSwellHighThreshold

default value 3168 (316.8V) = 132% 2400

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 3168

VoltSwellLowThreshold

default value 3120 (312.0V) = 130% 2400

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 3120

12.1.89 ReactiveEnergyMetrologicalLEDPulseConstant

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;3;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveEnergyMetrologicalLEDPulseConstantOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveEnergyMetrologicalLedConstant`

ReactiveEnergyMetrologicalLedConstant

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

0 for DC
-1 for CT

Data type: INTEGER8

Authorized value: -1 to 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

12.1.90 ReactivePowerAggregateQ1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;5;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactivePowerAggregateQ1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactivePowerAggregateQ1`

ReactivePowerAggregateQ1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.91 ReactivePowerAggregateQ2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;6;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactivePowerAggregateQ2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactivePowerAggregateQ2
```

ReactivePowerAggregateQ2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.92 ReactivePowerAggregateQ3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;7;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactivePowerAggregateQ3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactivePowerAggregateQ3
```

ReactivePowerAggregateQ3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.93 ReactivePowerAggregateQ4

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;8;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactivePowerAggregateQ4OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactivePowerAggregateQ4`

ReactivePowerAggregateQ4

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Following the meter connexion and the CT*VT ratio :
- If DC meter, Scaler = 0
- If CT meter, Scaler = -1 if CT*VT ratio < 10.000, Scaler = 3 for others CT*VT ratio

Data type: INTEGER8

Authorized value: -1 to 3

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 29: VAR

Default value: VAR (29)

12.1.94 RelativeTHDCurrentValueAggregate

The aggregate relative current value is provided in percent.
Same computing than THD Relative Voltage Aggregate.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;11;7;125;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDCurrentValueAggregateOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDCurrentValueAggregate
```

RelativeTHDCurrentValueAggregate

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.95 RelativeTHDCurrentValuePhase1

The relative voltage THD on phase 1 is provided in percent.
Computed according the meter configuration.
See object §3.1.23 RMS THD Calculation Algorithm.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;31;7;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDCurrentValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDVoltageValuePhase1
```

RelativeTHDVoltageValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.96 RelativeTHDCurrentValuePhase2

The relative voltage THD on phase 2 is provided in percent.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;51;7;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDCurrentValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDVoltageValuePhase2
```

RelativeTHDVoltageValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.97 RelativeTHDCurrentValuePhase3

The relative voltage THD on phase 3 is provided in percent.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;71;7;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDCurrentValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDVoltageValuePhase3
```

RelativeTHDVoltageValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.98 RelativeTHDThresholdParameters

These parameters allow to configure the thresholds used to record TDH current and voltage defects history.

Acceptance rules :
VoltageHighThreshold >= VoltageLowThreshold + 3
CurrentHighThreshold >= CurrentLowThreshold + 3
With default values, meter will not detect THD alarm.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;6;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDThresholdParametersOBISCode
A2. value	SEQUENCE	See below

■ Attribute 2: value

The thresholds are defined in percent (%).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 4 elements
{
  VoltageRelativeTHDHighThreshold
  VoltageRelativeTHDLowThreshold
  CurrentRelativeTHDHighThreshold
  CurrentRelativeTHDLowThreshold
}
```

VoltageRelativeTHDHighThreshold

defined in percent (%).

Data type: UNSIGNED16

Authorized value: 6 to 100

Default value: 100

VoltageRelativeTHDLowThreshold

defined in percent (%).

Data type: UNSIGNED16

Authorized value: 3 to 97

Default value: 3

CurrentRelativeTHDHighThreshold

defined in percent (%).

Data type: UNSIGNED16

Authorized value: 6 to 100

Default value: 100

CurrentRelativeTHDLowThreshold

defined in percent (%).

Data type: UNSIGNED16

Authorized value: 3 to 97

Default value: 3

12.1.99 RelativeTHDVoltageValueAggregate

The aggregate relative voltage value is provided in percent.
The aggregate value is computed as follow :

$XTHDagg = (Xhrms1 + Xhrms2 + Xhrms3) * 100 / (3 * Xnom)$

with X = V or I

where:

Vnom is the nominal voltage as configured in the 'QualimetryDefaultParameters' object.

Inom is a new parameter added to the QualimetryDefaultParameter object.

It represents the current value for which a THD control is required

(thus is the 'real' current is low, but with a high distortion magnitude, the aggregate relative THD will not indicate a high value).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;12;7;125;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDVoltageValueAggregateOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDVoltageValueAggregate
```

RelativeTHDVoltageValueAggregate

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.100 RelativeTHDVoltageValuePhase1

The relative voltage THD on phase 1 is provided in percent.
Computed according the meter configuration.
See object §3.1.23 RMS THD Calculation Algorithm.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;32;7;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDVoltageValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDVoltageValuePhase1
```

RelativeTHDVoltageValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.101 RelativeTHDVoltageValuePhase2

The relative voltage THD on phase 2 is provided in percent.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;52;7;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDVoltageValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RelativeTHDVoltageValuePhase2
```

RelativeTHDVoltageValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE       // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.102 RelativeTHDVoltageValuePhase3

The relative voltage THD on phase 3 is provided in percent.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;72;7;124;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RelativeTHDVoltageValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RelativeTHDVoltageValuePhase3`

RelativeTHDVoltageValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 56: %

Default value: % (56)

12.1.103 RmsCurrentValuePhase1

This carries current on phase 1 with reference to neutral for a three phase meter and single phase meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;31;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsCurrentValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsCurrentValuePhase1`

RmsCurrentValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.104 RmsCurrentValuePhase2

This carries current on phase 2 with reference to neutral for a three phase meter. There is not any significance for a single phase meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;51;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsCurrentValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsCurrentValuePhase2`

RmsCurrentValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.105 RmsCurrentValuePhase3

This carries current on phase 3 with reference to neutral for a three phase meter. There is not any significance for a single phase meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;71;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsCurrentValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsCurrentValuePhase3
```

RmsCurrentValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.106 RmsFundamentalCurrentValuePhase1

The RMS current of the fundamental on phase 1.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;31;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsFundamentalCurrentValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsFundamentalCurrentValuePhase1`

RmsFundamentalCurrentValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.107 RmsFundamentalCurrentValuePhase2

The RMS current of the fundamental on phase 2.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;51;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsFundamentalCurrentValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsFundamentalCurrentValuePhase2`

RmsFundamentalCurrentValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.108 RmsFundamentalCurrentValuePhase3

The RMS current of the fundamental on phase 3.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;71;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsFundamentalCurrentValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsFundamentalCurrentValuePhase3`

RmsFundamentalCurrentValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.109 RmsFundamentalVoltageValuePhase1

The RMS voltage of the fundamental on phase 1.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;32;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsFundamentalVoltageValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsFundamentalVoltageValuePhase1`

RmsFundamentalVoltageValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.110 RmsFundamentalVoltageValuePhase2

The RMS voltage of the fundamental on phase 2.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;52;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsFundamentalVoltageValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

RmsFundamentalVoltageValuePhase2

RmsFundamentalVoltageValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.111 RmsFundamentalVoltageValuePhase3

The RMS voltage of the fundamental on phase 3.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;72;7;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsFundamentalVoltageValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsFundamentalVoltageValuePhase3`

RmsFundamentalVoltageValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.112 RmsHarmonicsCurrentValuePhase1

The RMS current value of all the sub harmonics (harmonics 2 to 13) on the phase 1.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;31;7;126;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsHarmonicsCurrentValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsHarmonicsCurrentValuePhase1
```

RmsHarmonicsCurrentValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.113 RmsHarmonicsCurrentValuePhase2

The RMS current value of all the sub harmonics (harmonics 2 to 13) on the phase 2.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;51;7;126;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsHarmonicsCurrentValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsHarmonicsCurrentValuePhase2
```

RmsHarmonicsCurrentValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.114 RmsHarmonicsCurrentValuePhase3

The RMS current value of all the sub harmonics (harmonics 2 to 13) on the phase 3.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;71;7;126;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsHarmonicsCurrentValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsHarmonicsCurrentValuePhase3
```

RmsHarmonicsCurrentValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE       // 2 elements
{
  Scaler
  Unit
}
```

Scaler

2 decimals for DC meters,
3 decimals for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

Unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.115 RmsHarmonicsVoltageValuePhase1

The RMS voltage value of all the sub harmonics (harmonics 2 to 13) on the phase 1.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;32;7;126;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsHarmonicsVoltageValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsHarmonicsVoltageValuePhase1
```

RmsHarmonicsVoltageValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.116 RmsHarmonicsVoltageValuePhase2

The RMS voltage value of all the sub harmonics (harmonics 2 to 13) on the phase 2.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;52;7;126;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsHarmonicsVoltageValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsHarmonicsVoltageValuePhase2
```

RmsHarmonicsVoltageValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.117 RmsHarmonicsVoltageValuePhase3

The RMS voltage value of all the sub harmonics (harmonics 2 to 13) on the phase 3.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;72;7;126;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsHarmonicsVoltageValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsHarmonicsVoltageValuePhase3`

RmsHarmonicsVoltageValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.118 RmsPrimaryCurrentValuePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;2;31;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsPrimaryCurrentValuePhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Iprms
```

Iprms

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

0.001A resolution for a CT meter and 0.01 A for a DC one.

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -3

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.119 RmsPrimaryCurrentValuePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;2;51;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsPrimaryCurrentValuePhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Uprms
```

Uprms

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  scaler
  unit
}
```

scaler

0.001A resolution for a CT meter and 0.01 A for a DC one.

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -3

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.120 RmsPrimaryCurrentValuePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;2;71;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsPrimaryCurrentValuePhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Iprms
```

Iprms

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

0.001A resolution for a CT meter and 0.01 A for a DC one.

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -3

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.121 RmsPrimaryVoltageValuePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;2;32;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsPrimaryVoltageValuePhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Uprms
```

Uprms

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

if VT ratio < 330 000 : Uprms will be provided in 0.1V
if VT ratio >= 330 000 : Uprms will be provided in V

Data type: INTEGER8

Authorized value: -1 to 0

Default value: -1

unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.122 RmsPrimaryVoltageValuePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;2;52;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsPrimaryVoltageValuePhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Uprms
```

<u>Uprms</u>

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

<u>scaler</u>

if VT ratio < 330 000 : Uprms will be provided in 0.1V
if VT ratio >= 330 000 : Uprms will be provided in V

Data type: INTEGER8

Authorized value: -1 to 0

Default value: -1

<u>unit</u>

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.123 RmsPrimaryVoltageValuePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;2;72;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsPrimaryVoltageValuePhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Uprms
```

Uprms

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

if VT ratio < 330 000 : Uprms will be provided in 0.1V
if VT ratio >= 330 000 : Uprms will be provided in V

Data type: INTEGER8

Authorized value: -1 to 0

Default value: -1

unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.124 RMSTHDCalculationAlgoParameters

This parameter is used to define the method to compute all the relative THD values (for Voltage and Current and for all 3 phases).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;8;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RMSTHDCalculationAlgoParametersOBISCode
A2. value	ENUMERATED	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`Algo`

Algo

According ANSI: (relative to RMS value) :
$$RTHDansi = (Xhrmsi / Xrmsi) * 100$$
According IEC61000-4-7: (relative to fundamental value) :
$$RTHDiec = (Xhrmsi / Xfrmsi) * 100$$
where:
Xrmsi : the RMS value (X can be U or I) including the full range of harmonics on the line i (1to 3)
Xfrmsi : The RMS value (X can be U or I) of the fundamental (harmonic 1) on the line i (1 to 3)
Xhrmsi : The RMS value (X can be U or I) of all the sub harmonics (harmonics 2 to 13) on the line i(1 to 3)

Data type: ENUMERATED

Authorized values:
0: THD_ANSI
1: THD_IEC

Default value: THD_ANSI (0)

12.1.125 RmsVoltageValuePhase1

This carries voltage on phase 1 with reference to neutral for a three phase meter and single phase meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;32;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsVoltageValuePhase1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RmsVoltageValuePhase1`

RmsVoltageValuePhase1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.126 RmsVoltageValuePhase2

This carries voltage on phase 2 with reference to neutral for a three phase meter. There is not any significance for a single phase meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;52;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsVoltageValuePhase2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsVoltageValuePhase2
```

RmsVoltageValuePhase2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.127 RmsVoltageValuePhase3

This carries voltage on phase 2 with reference to neutral for a three phase meter. There is not any significance for a single phase meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;72;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RmsVoltageValuePhase3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
RmsVoltageValuePhase3
```

RmsVoltageValuePhase3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

Unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.1.128 SecondaryMetrologyInstallationParameters

This object holds the CT*VT ratio as numerator and denominator.
Acceptance rules :
NumCtRatio * NumVtRatio <= CT*VT numerator limit (3 600 000 000)

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;2;2;255	1	0	1	0	False	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SecondaryMetrologyInstallationParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Acceptance rules :
NumCtRatio * NumVtRatio <= CT*VT numerator limit (3 600 000 000)

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 4 elements
{
  NumCtRatio
  DenCtRatio
  NumVtRatio
  DenVtRatio
}
```

NumCtRatio

current ratio numerator

Data type: UNSIGNED16

Authorized value: 1 to 45000

Default value: 1

DenCtRatio

current ratio denominator

Data type: UNSIGNED8

Authorized value: 1 to 10

Default value: 1

NumVtRatio

voltage ratio numerator

Data type: UNSIGNED32

Authorized value: 1 to 800000

Default value: 1

DenVtRatio

voltage ratio denominator

Data type: UNSIGNED16

Authorized value: 1 to 400

Default value: 1

12.1.129 SecondaryMetrologyParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;2;1;255	1	0	2	0	True	True	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SecondaryMetrologyParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  AggEnergiesCalculationMethod
  AppPowerCalculationMethod
}
```

AggEnergiesCalculationMethod

Complementary informations :
- Algo 1 : Net result as long as it is positive
- Algo 2 : Positive aggregate : data is just the sum of positive phases (only the bigger one between import

and export is counted)
- Algo 3 : Aggregate are calculated simultaneously in different directions (default value)
- Algo 4 : Anti-fraud calculation : import aggregate is the absolute sum of import and export energy.

Data type: UNSIGNED8

Authorized values:
0: Algo 1
1: Algo 2
2: Algo 3
3: Algo 4

Default value: Algo 3 (2)

AppPowerCalculationMethod

Data type: UNSIGNED8

Authorized values:
0: Vectoriel value
1: Arithmetic value

Default value: Vectoriel value (0)

12.1.130 SecondaryMetrologySummationParameters

This object allows the programming of the summation configuration : it allows to sum up to 5 internal energy quantities in a same summation register.
    SEQUENCE OF 4 elements : one for each Summation register
        SEQUENCE OF 5 elements : one for each quantity to sum

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;2;3;255	1	0	2	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SecondaryMetrologySummationParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 4 elements
{
  SEQUENCE OF      // 5 elements
  {
    SEQUENCE      // 2 elements
    {
      QuantityId
      IndicQuantityToSubstract
    }
  }
}
```

QuantityId

QuantityId specifies internal or external energy summated by this register.

Data type: UNSIGNED8

Authorized values:
0: Import Active Energy Phase 1
1: Import Active Energy Phase 2
2: Import Active Energy Phase 3
3: Import Active Energy Aggregate
4: Export Active Energy Phase 1
5: Export Active Energy Phase 2
6: Export Active Energy Phase 3
7: Export Active Energy Aggregate
8: Import Reactive Energy Phase 1
9: Import Reactive Energy Phase 2
10: Import Reactive Energy Phase 3
11: Import Reactive Energy Aggregate
12: Export Reactive Energy Phase 1
13: Export Reactive Energy Phase 2
14: Export Reactive Energy Phase 3
15: Export Reactive Energy Aggregate
16: Q1 Energy Phase 1
17: Q1 Energy Phase 2
18: Q1 Energy Phase 3
19: Q1 Energy Aggregate
20: Q2 Energy Phase 1
21: Q2 Energy Phase 2
22: Q2 Energy Phase 3
23: Q2 Energy Aggregate
24: Q3 Energy Phase 1
25: Q3 Energy Phase 2
26: Q3 Energy Phase 3
27: Q3 Energy Aggregate
28: Q4 Energy Phase 1
29: Q4 Energy Phase 2
30: Q4 Energy Phase 3
31: Q4 Energy Aggregate
32: Import Apparent Energy Phase 1
33: Import Apparent Energy Phase 2
34: Import Apparent Energy Phase 3
35: Import Apparent Energy Aggregate
36: Export Apparent Energy Phase 1
37: Export Apparent Energy Phase 2
38: Export Apparent Energy Phase 3
39: Export Apparent Energy Aggregate
40: Import External Energy 1
41: Import External Energy 2
42: Import External Energy 3
43: Import External Energy 4
44: Export External Energy 1
45: Export External Energy 2
46: Export External Energy 3
47: Export External Energy 4
255: No energy - No allocation

Default value: No energy - No allocation (255)

IndicQuantityToSubstract

It defines if the quantity has to be substracted from the other quantities or to be summated :
FALSE : the quantity is summated to the other quantities
TRUE : the quantity is substracted from the other quantities

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

12.1.131 THDActivationParameters

This parameter allows to activate and desactivate the THD computing (THD computing is only avalaible with the resource 'qualimetry').
This parameter allows to reduce the processor load if THD is not used

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;148;9;0;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	THDActivationParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`ThdEnabled`

ThdEnabled

Defines if THD functionality is enabled (TRUE) or disabled (FALSE).

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

12.1.132 VTDenominatorParameters

voltage ratio denominator

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;4;6;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VTDenominatorParametersOBISCode
A2. value	UNSIGNED16	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DenVtRatio`

DenVtRatio

Defines the voltage ratio denominator.

Data type: UNSIGNED16

Authorized value: 1 to 400

Default value: 1

12.1.133 VTNumeratorParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;0;4;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	VTNumeratorParametersOBISCode
A2. value	UNSIGNED32	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`NumVtRatio`

NumVtRatio

Defines the voltage ratio numerator.
Acceptance rules :
NumVtRatio * current NumCtRatio <= CT/VT numerator limit (3 600 000 000)

Data type: UNSIGNED32

Authorized value: 1 to 800000

Default value: 1

12.1.134 WaveFormCurrentPhase1

This object provides the current samples from phase 1
The samples are taken after calibration correction.

SL7K and ACE6K
The sample frequency is 1953Hz (means each sample is separated by 512µs)
So the wave form provides a signal on 1024*512µs = 524ms

ACE8K

The sample frequency is 3906.25Hz (means each sample is separated by 256µs)
So the wave form provides a signal on 1024*256µs = 262ms

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;149;1;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormCurrentPhase1OBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1024 elements
{
  Value
}
```

Value

One calibrated sample is :
- 110.77606 lsb (DC version) 1A (50Hz)
- 1107.7606 lsb (CT version)
That means :
- 1 bit = 9mA with DC version
- 1 bit = 0.9mA with CT version

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

12.1.135 WaveFormCurrentPhase2

This object provides the current samples from phase 2
The samples are taken after calibration correction.

SL7K and ACE6K
The sample frequency is 1953Hz (means each sample is separated by 512µs)
So the wave form provides a signal on 1024*512µs = 524ms

ACE8K
The sample frequency is 3906.25Hz (means each sample is separated by 256µs)
So the wave form provides a signal on 1024*256µs = 262ms

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;149;2;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormCurrentPhase2OBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1024 elements
{
  Value
}
```

Value

One calibrated sample is :
- 110.77606 lsb (DC version) 1A (50Hz)
- 1107.7606 lsb (CT version)
That means :
- 1 bit = 9mA with DC version
- 1 bit = 0.9mA with CT version

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

12.1.136 WaveFormCurrentPhase3

This object provides the current samples from phase 3
The samples are taken after calibration correction.

SL7K and ACE6K
The sample frequency is 1953Hz (means each sample is separated by 512µs)
So the wave form provides a signal on 1024*512µs = 524ms

ACE8K
The sample frequency is 3906.25Hz (means each sample is separated by 256µs)
So the wave form provides a signal on 1024*256µs = 262ms

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;149;3;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormCurrentPhase3OBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1024 elements
{
  Value
}
```

Value

One calibrated sample is :
- 110.77606 lsb (DC version) 1A (50Hz)
- 1107.7606 lsb (CT version)
That means :
- 1 bit = 9mA with DC version
- 1 bit = 0.9mA with CT version

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

12.1.137 WaveFormSamplingPeriod

The sampling period of the wave form acquisition is available for reading only.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;0;8;2;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormSamplingPeriodOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
Value
```

Value

It is always constant (512).

Data type: UNSIGNED16

Authorized value: 512

Default value: 512

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
```

```
   Unit
}
```

<u>Scaler</u>

Data type: INTEGER8

Authorized value: -6

Default value: -6

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 7: sec

Default value: sec (7)

12.1.138 WaveFormStatus

This object provides the wave form acquisition status.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;148;7;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormStatusOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

`WaveFormStatus`

<u>WaveFormStatus</u>

Data type: UNSIGNED8

Authorized values:
0: IDLE
1: REQUIRED
2: IN PROGRESS
3: OVER

Default value: IDLE (0)

12.1.139 WaveFormVoltagePhase1

This object provides the voltage samples from phase 1
The samples are taken after calibration correction.

SL7K and ACE6K
The sample frequency is 1953Hz (means each sample is separated by 512µs)
So the wave form provides a signal on 1024*512µs = 524ms

ACE8K

The sample frequency is 3906.25Hz (means each sample is separated by 256µs)

So the wave form provides a signal on 1024*256µs = 262ms

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;149;4;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormVoltagePhase1OBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1024 elements
{
  Value
}
```

Value

One calibrated sample is : 31.332201 lsb (DC and CT version) 1V (50Hz).

Means one bit = 0.0319V

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

12.1.140 WaveFormVoltagePhase2

This object provides the voltage samples from phase 2

The samples are taken after calibration correction.

SL7K and ACE6K

The sample frequency is 1953Hz (means each sample is separated by 512µs)

So the wave form provides a signal on 1024*512µs = 524ms

ACE8K

The sample frequency is 3906.25Hz (means each sample is separated by 256µs)

So the wave form provides a signal on 1024*256µs = 262ms

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;149;5;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormVoltagePhase2OBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1024 elements
{
  Value
}
```

Value

One calibrated sample is : 31.332201 lsb (DC and CT version) 1V (50Hz).
Means one bit = 0.0319V

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

12.1.141 WaveFormVoltagePhase3

This object provides the voltage samples from phase 3
The samples are taken after calibration correction.

SL7K and ACE6K
The sample frequency is 1953Hz (means each sample is separated by 512µs)
So the wave form provides a signal on 1024*512µs = 524ms

ACE8K:
The sample frequency is 3906.25Hz (means each sample is separated by 256µs)
So the wave form provides a signal on 1024*256µs = 262ms

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;149;6;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WaveFormVoltagePhase3OBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1024 elements
{
  Value
}
```

Value

One calibrated sample is : 31.332201 lsb (DC and CT version) 1V (50Hz).
Means one bit = 0.0319V

Data type: INTEGER16

Authorized value: -32768 to 32767

Default value: 0

12.1.142 ZeroSequenceI

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;91;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ZeroSequenceIOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ZeroSequenceI
```

ZeroSequenceI

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

-2 for DC
-3 for CT

Data type: INTEGER8

Authorized value: -3 to -2

Default value: -2

unit

Data type: ENUMERATED

Authorized value: 33: A

Default value: A (33)

12.1.143 ZeroSequenceU

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;92;7;0;255	3	0	3	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ZeroSequenceUOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ZeroSequenceU`

ZeroSequenceU

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  scaler
  unit
}
```

scaler

Data type: INTEGER8

Authorized value: -1

Default value: -1

unit

Data type: ENUMERATED

Authorized value: 35: V

Default value: V (35)

12.2 Cosem profiles

12.2.1 AllDipsNumber

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;0;182;0;0;255	7	1	1	0	ROM	30	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllDipsNumberOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 30 elements
  {
    DipsNumber_n00 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n01 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n02 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n03 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n04 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n05 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n10 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n11 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n12 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n13 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n14 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n15 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n20 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n21 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n22 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n23 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n24 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n25 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n30 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n31 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n32 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n33 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n34 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n35 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n40 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n41 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n42 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n43 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n44 (Att. Id: 2, Abs. Number: 1)
    DipsNumber_n45 (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (DipsNumber_n00): Obis_code = 1;1;12;32;0;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 2 (DipsNumber_n01): Obis_code = 1;1;12;32;1;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 3 (DipsNumber_n02): Obis_code = 1;1;12;32;2;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 4 (DipsNumber_n03): Obis_code = 1;1;12;32;3;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 5 (DipsNumber_n04): Obis_code = 1;1;12;32;4;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 6 (DipsNumber_n05): Obis_code = 1;1;12;32;5;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 7 (DipsNumber_n10): Obis_code = 1;1;12;32;10;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 8 (DipsNumber_n11): Obis_code = 1;1;12;32;11;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 9 (DipsNumber_n12): Obis_code = 1;1;12;32;12;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 10 (DipsNumber_n13): Obis_code = 1;1;12;32;13;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 11 (DipsNumber_n14): Obis_code = 1;1;12;32;14;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 12 (DipsNumber_n15): Obis_code = 1;1;12;32;15;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 13 (DipsNumber_n20): Obis_code = 1;1;12;32;20;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 14 (DipsNumber_n21): Obis_code = 1;1;12;32;21;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 15 (DipsNumber_n22): Obis_code = 1;1;12;32;22;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 16 (DipsNumber_n23): Obis_code = 1;1;12;32;23;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 17 (DipsNumber_n24): Obis_code = 1;1;12;32;24;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 18 (DipsNumber_n25): Obis_code = 1;1;12;32;25;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 19 (DipsNumber_n30): Obis_code = 1;1;12;32;30;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 20 (DipsNumber_n31): Obis_code = 1;1;12;32;31;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 21 (DipsNumber_n32): Obis_code = 1;1;12;32;32;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 22 (DipsNumber_n33): Obis_code = 1;1;12;32;33;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 23 (DipsNumber_n34): Obis_code = 1;1;12;32;34;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 24 (DipsNumber_n35): Obis_code = 1;1;12;32;35;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 25 (DipsNumber_n40): Obis_code = 1;1;12;32;40;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 26 (DipsNumber_n41): Obis_code = 1;1;12;32;41;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 27 (DipsNumber_n42): Obis_code = 1;1;12;32;42;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 28 (DipsNumber_n43): Obis_code = 1;1;12;32;43;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 29 (DipsNumber_n44): Obis_code = 1;1;12;32;44;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Index 30 (DipsNumber_n45): Obis_code = 1;1;12;32;45;255, Class_id = 1, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 30 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12.2.2 AllInstantaneousPowerFactors

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;128;5;255	7	1	1	0	ROM	4	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllInstantaneousPowerFactorsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 4 elements
  {
    InstantaneousPowerFactorPhase1 (Att. Id: 0, Abs. Number: 1)
    InstantaneousPowerFactorPhase2 (Att. Id: 0, Abs. Number: 1)
    InstantaneousPowerFactorPhase3 (Att. Id: 0, Abs. Number: 1)
    InstantaneousPowerFactorAggregate (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (InstantaneousPowerFactorPhase1): Obis_code = 1;1;33;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (InstantaneousPowerFactorPhase2): Obis_code = 1;1;53;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (InstantaneousPowerFactorPhase3): Obis_code = 1;1;73;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (InstantaneousPowerFactorAggregate): Obis_code = 1;1;13;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 4 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12.2.3 AllInstantaneousPowers

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;128;3;255	7	1	1	0	ROM	28	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllInstantaneousPowersOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 1 elements
{
  SEQUENCE     // 28 elements
  {
    ImportActivePowerPhase1 (Att. Id: 0, Abs. Number: 1)
    ImportActivePowerPhase2 (Att. Id: 0, Abs. Number: 1)
    ImportActivePowerPhase3 (Att. Id: 0, Abs. Number: 1)
    ImportActivePowerAggregate (Att. Id: 0, Abs. Number: 1)
    ExportActivePowerPhase1 (Att. Id: 0, Abs. Number: 1)
    ExportActivePowerPhase2 (Att. Id: 0, Abs. Number: 1)
    ExportActivePowerPhase3 (Att. Id: 0, Abs. Number: 1)
    ExportActivePowerAggregate (Att. Id: 0, Abs. Number: 1)
    ImportReactivePowerPhase1 (Att. Id: 0, Abs. Number: 1)
    ImportReactivePowerPhase2 (Att. Id: 0, Abs. Number: 1)
    ImportReactivePowerPhase3 (Att. Id: 0, Abs. Number: 1)
    ImportReactivePowerAggregate (Att. Id: 0, Abs. Number: 1)
    ExportReactivePowerPhase1 (Att. Id: 0, Abs. Number: 1)
    ExportReactivePowerPhase2 (Att. Id: 0, Abs. Number: 1)
    ExportReactivePowerPhase3 (Att. Id: 0, Abs. Number: 1)
    ExportReactivePowerAggregate (Att. Id: 0, Abs. Number: 1)
    ReactivePowerAggregateQ1 (Att. Id: 0, Abs. Number: 1)
    ReactivePowerAggregateQ2 (Att. Id: 0, Abs. Number: 1)
    ReactivePowerAggregateQ3 (Att. Id: 0, Abs. Number: 1)
    ReactivePowerAggregateQ4 (Att. Id: 0, Abs. Number: 1)
    ImportApparentPowerPhase1 (Att. Id: 0, Abs. Number: 1)
    ImportApparentPowerPhase2 (Att. Id: 0, Abs. Number: 1)
    ImportApparentPowerPhase3 (Att. Id: 0, Abs. Number: 1)
    ImportApparentPowerAggregate (Att. Id: 0, Abs. Number: 1)
    ExportApparentPowerPhase1 (Att. Id: 0, Abs. Number: 1)
    ExportApparentPowerPhase2 (Att. Id: 0, Abs. Number: 1)
    ExportApparentPowerPhase3 (Att. Id: 0, Abs. Number: 1)
    ExportApparentPowerAggregate (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (ImportActivePowerPhase1): Obis_code = 1;1;21;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (ImportActivePowerPhase2): Obis_code = 1;1;41;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (ImportActivePowerPhase3): Obis_code = 1;1;61;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (ImportActivePowerAggregate): Obis_code = 1;1;1;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (ExportActivePowerPhase1): Obis_code = 1;1;22;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (ExportActivePowerPhase2): Obis_code = 1;1;42;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 7 (ExportActivePowerPhase3): Obis_code = 1;1;62;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 8 (ExportActivePowerAggregate): Obis_code = 1;1;2;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 9 (ImportReactivePowerPhase1): Obis_code = 1;1;23;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 10 (ImportReactivePowerPhase2): Obis_code = 1;1;43;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 11 (ImportReactivePowerPhase3): Obis_code = 1;1;63;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 12 (ImportReactivePowerAggregate): Obis_code = 1;1;3;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 13 (ExportReactivePowerPhase1): Obis_code = 1;1;24;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 14 (ExportReactivePowerPhase2): Obis_code = 1;1;44;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 15 (ExportReactivePowerPhase3): Obis_code = 1;1;64;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 16 (ExportReactivePowerAggregate): Obis_code = 1;1;4;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 17 (ReactivePowerAggregateQ1): Obis_code = 1;1;5;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 18 (ReactivePowerAggregateQ2): Obis_code = 1;1;6;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 19 (ReactivePowerAggregateQ3): Obis_code = 1;1;7;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 20 (ReactivePowerAggregateQ4): Obis_code = 1;1;8;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 21 (ImportApparentPowerPhase1): Obis_code = 1;1;29;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 22 (ImportApparentPowerPhase2): Obis_code = 1;1;49;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 23 (ImportApparentPowerPhase3): Obis_code = 1;1;69;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 24 (ImportApparentPowerAggregate): Obis_code = 1;1;9;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 25 (ExportApparentPowerPhase1): Obis_code = 1;1;30;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 26 (ExportApparentPowerPhase2): Obis_code = 1;1;50;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 27 (ExportApparentPowerPhase3): Obis_code = 1;1;70;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 28 (ExportApparentPowerAggregate): Obis_code = 1;1;10;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 28 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12.2.4 AllOffsets

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;128;6;255	7	1	1	0	ROM	6	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllOffsetsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE     // 6 elements
  {
    OffsetCurrentPhase1 (Att. Id: 0, Abs. Number: 1)
    OffsetCurrentPhase2 (Att. Id: 0, Abs. Number: 1)
    OffsetCurrentPhase3 (Att. Id: 0, Abs. Number: 1)
    OffsetVoltagePhase1 (Att. Id: 0, Abs. Number: 1)
    OffsetVoltagePhase2 (Att. Id: 0, Abs. Number: 1)
    OffsetVoltagePhase3 (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (OffsetCurrentPhase1): Obis_code = 1;1;96;50;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (OffsetCurrentPhase2): Obis_code = 1;1;96;50;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (OffsetCurrentPhase3): Obis_code = 1;1;96;50;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (OffsetVoltagePhase1): Obis_code = 1;1;96;50;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (OffsetVoltagePhase2): Obis_code = 1;1;96;50;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (OffsetVoltagePhase3): Obis_code = 1;1;96;50;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 6 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12.2.5 AllPhaseAngles

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;128;1;255	7	1	1	0	ROM	6	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllPhaseAnglesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 6 elements
  {
    AngleU1I1 (Att. Id: 0, Abs. Number: 1)
    AngleU2I2 (Att. Id: 0, Abs. Number: 1)
    AngleU3I3 (Att. Id: 0, Abs. Number: 1)
    AngleU2U1 (Att. Id: 0, Abs. Number: 2)
    AngleU1U3 (Att. Id: 0, Abs. Number: 2)
    AngleU3U2 (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (AngleU1I1): Obis_code = 1;1;81;7;40;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 2 (AngleU2I2): Obis_code = 1;1;81;7;51;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 3 (AngleU3I3): Obis_code = 1;1;81;7;62;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 4 (AngleU2U1): Obis_code = 1;1;81;7;10;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 5 (AngleU1U3): Obis_code = 1;1;81;7;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 6 (AngleU3U2): Obis_code = 1;1;81;7;21;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 6 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

<u>Class_id</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

<u>Obis_code</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

<u>Attribute_index</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

<u>Data_index</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12.2.6 AllRmsValues

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;128;4;255	7	1	1	0	ROM	6	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllRmsValuesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 6 elements
  {
    RmsCurrentValuePhase1 (Att. Id: 0, Abs. Number: 2)
    RmsCurrentValuePhase2 (Att. Id: 0, Abs. Number: 2)
    RmsCurrentValuePhase3 (Att. Id: 0, Abs. Number: 2)
    RmsVoltageValuePhase1 (Att. Id: 0, Abs. Number: 2)
    RmsVoltageValuePhase2 (Att. Id: 0, Abs. Number: 2)
    RmsVoltageValuePhase3 (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (RmsCurrentValuePhase1): Obis_code = 1;1;31;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (RmsCurrentValuePhase2): Obis_code = 1;1;51;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (RmsCurrentValuePhase3): Obis_code = 1;1;71;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (RmsVoltageValuePhase1): Obis_code = 1;1;32;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (RmsVoltageValuePhase2): Obis_code = 1;1;52;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (RmsVoltageValuePhase3): Obis_code = 1;1;72;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 6 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

12.2.7 ZeroSequence

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;128;2;25 5	7	1	3	0	ROM	2	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ZeroSequenceOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE     // 2 elements
  {
    ZeroSequenceI (Att. Id: 0, Abs. Number: 2)
    ZeroSequenceU (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:
Index 1 (ZeroSequenceI): Obis_code = 1;1;91;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 2 (ZeroSequenceU): Obis_code = 1;1;92;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 2 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

13 Miscellaneous

13.1 Cosem objects

13.1.1 BatteryVoltage

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;6;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	BatteryVoltageOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`BatteryVoltage`

BatteryVoltage

Remark : This value will have to be converted in Volts by the software :
--> Battery Voltage in Volts = BatteryVoltage * 6,3 / 255.

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.2 ControlOutputState

This data allows, for testing purpose, to set the control output to a specific value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;3;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ControlOutputStateOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`ControlOutputState`

ControlOutputState

Each bit is relative to a specific physical control output :
- bit 0..3 not used
- bit 4 CO4 for full IO board (not used in light IO)
- bit 5 CO3 for full IO board (not used in light IO)
- bit 6 CO2
- bit 7 CO1
To speed up the output test, the pattern is applied on the output immediately by the meter (no validate needed).
sample :
CO1 = 128
CO1 & CO2 = 192
CO1 & CO2 & CO3 = 224
CO1 & CO2 & CO3 & CO4 = 240

Data type: UNSIGNED8

Authorized value: 0 to 240

Default value: 0

13.1.3 CoverOpeningState

This data provides the state of the meter cover.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CoverOpeningStateOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`CoverOpeningState`

CoverOpeningState

Data type: UNSIGNED8

Authorized values:
0: CLOSED
1: OPEN

Default value: CLOSED (0)

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.4 DisplayPushButtonState

This data provides the state of the display push button.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;7;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DisplayPushButtonStateOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DisplayPushButtonState
```

<u>DisplayPushButtonState</u>

Data type: UNSIGNED8

Authorized values:
0: PUSHED
1: RELEASED

Default value: PUSHED (0)

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.5 I2CErrorNumber

This data gives the number of errors detected on the I2C link.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;6;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	I2CErrorNumberOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
I2CerrorNumber
```

I2CerrorNumber

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.6 InputPhysicalStatus

This data contains the state of all physical inputs.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;3;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InputPhysicalStatusOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
InputState
```

InputState

For each bit :
- 0 : low level
- 1 : high level

For the light IO board :
- Bit 0..4 : not used
- Bit 5 : Control input 1
- Bit 6 : Pulse input 1
- Bit 7 : Pulse input 2

For the full IO board :
- Bit 0..1 : not used
- Bit 2 : Control input 1
- Bit 3 : Control input 2
- Bit 4 : Pulse input 1
- Bit 5 : Pulse input 2
- Bit 6 : Pulse input 3
- Bit 7 : Pulse input 4
Inputs not used are read with a high level (corresponding bit = 1).

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.7 LaboratorySwitchLogicalState

This data provides the logical state of the laboratory switch.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;61;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LaboratorySwitchLogicalStateOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`LaboratorySwitchLogicalState`

LaboratorySwitchLogicalState

Data type: UNSIGNED8

Authorized values:
0: Pushed
1: Released

Default value: Released (1)

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.8 LaboratorySwitchState

This data provides the state of the laboratory switch.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;9;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LaboratorySwitchStateOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
LaboratorySwitchState
```

LaboratorySwitchState

Data type: UNSIGNED8

Authorized values:
0: Pushed
1: Released

Default value: Released (1)

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.9 PowerSupplyVoltage

This data gives the value of the power supply voltage (value read on the ADC).
It is the voltage of the Vsave.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PowerSupplyVoltageOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
PowerSupplyVoltageValue
```

PowerSupplyVoltageValue

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.10 PulseOutputState

This data allows, for testing purpose, to set the control output to a specific value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;62;0;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PulseOutputStateOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
PulseOutputState
```

PulseOutputState

Each bit is relative to a specific physical pulse output :
- bit 0..1 not used
- bit 2 PO6 for full IO board (not used in light IO)
- bit 3 PO5 for full IO board (not used in light IO)
- bit 4 PO4 for full IO board (not used in light IO)
- bit 5 PO3 for full IO board (not used in light IO)
- bit 6 PO2
- bit 7 PO1
To speed up the output test, the pattern is applied on the output immediately by the meter (no validate needed).
sample :
PO1 = 128
PO1 & PO2 = 192
PO1 & PO2 & PO3 = 224
PO1 & PO2 & PO3 & PO4 = 240
PO1 & PO2 & PO3 & PO4 & PO5 = 248
PO1 & PO2 & PO3 & PO4 & PO5 & PO6 = 252

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 0

13.1.11 ResetPushButtonState

This data provide the state of the reset push button.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;8;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResetPushButtonStateOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ResetPushButtonState`

<u>ResetPushButtonState</u>

Data type: UNSIGNED8

Authorized values:
0: Pushed
1: Released

Default value: Pushed (0)

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.12 RTCCorrectionValue

This data gives the value of the RTC correction.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	RTCCorrectionValueOBISCode
A2. value	INTEGER8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`RTCCorrectionValue`

<u>RTCCorrectionValue</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.13 TemperatureVoltage

This data gives the value of the temperature voltage (value read on the ADC).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;2;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Logical devices

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Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TemperatureVoltageOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
TemperatureVoltageValue
```

<u>TemperatureVoltageValue</u>

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 127

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.1.14 WorkingMode

This data gives the working mode of the meter.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;60;5;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

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Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	WorkingModeOBISCode
A2. value	UNSIGNED8	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
WorkingMode
```

WorkingMode

Data type: UNSIGNED8

Authorized values:
7: NON OPERATIONAL
56: OPERATIONAL
192: MICRO FAILURE

Default value: NON OPERATIONAL (7)

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

No scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 255: No unit

Default value: No unit (255)

13.2 Cosem profiles

13.2.1 ENELCurrentData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;142;0;5;255	7	1	12	0	ROM	4	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ENELCurrentDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 4 elements
  {
    MeterInfos (Att. Id: 2, Abs. Number: 12)
    LightTotalEnergies (Att. Id: 2, Abs. Number: 2)
    AllEnergyRates (Att. Id: 2, Abs. Number: 7)
    AllMaximumDemands (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (MeterInfos): Obis_code = 0;0;142;0;4;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 2 (LightTotalEnergies): Obis_code = 0;0;98;133;3;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 3 (AllEnergyRates): Obis_code = 0;0;98;133;1;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Index 4 (AllMaximumDemands): Obis_code = 0;0;98;133;6;255, Class_id = 7, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 4 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

13.2.2 InternalControlSignals

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;96;4;0;255	7	1	1	0	ROM	4	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	InternalControlSignalsOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE      // 4 elements
  {
    DisplayPushButtonState (Att. Id: 2, Abs. Number: 1)
    ResetPushButtonState (Att. Id: 2, Abs. Number: 1)
    LaboratorySwitchState (Att. Id: 2, Abs. Number: 1)
    CoverOpeningState (Att. Id: 2, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (DisplayPushButtonState): Obis_code = 0;0;96;60;7;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 2 (ResetPushButtonState): Obis_code = 0;0;96;60;8;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 3 (LaboratorySwitchState): Obis_code = 0;0;96;60;9;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Index 4 (CoverOpeningState): Obis_code = 0;0;96;60;1;255, Class_id = 3, Attribute_index = 2, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 4 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

13.2.3 MeterInfos

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;142;0;4;255	7	1	12	0	ROM	5	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MeterInfosOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1 elements
{
  SEQUENCE     // 5 elements
  {
    SapAssignment (Att. Id: 0, Abs. Number: 5)
    CurrentDateAndTime (Att. Id: 1, Abs. Number: 2)
    CurrentDateAndTime (Att. Id: 2, Abs. Number: 2)
    NonFatalAlarms (Att. Id: 0, Abs. Number: 13)
    FatalAlarms (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (SapAssignment): Obis_code = 0;0;41;0;0;255, Class_id = 17, Attribute_index = 0, Data_index = 0

Index 2 (CurrentDateAndTime): Obis_code = 0;0;1;0;0;255, Class_id = 8, Attribute_index = 1, Data_index = 0

Index 3 (CurrentDateAndTime): Obis_code = 0;0;1;0;0;255, Class_id = 8, Attribute_index = 2, Data_index = 0

Index 4 (NonFatalAlarms): Obis_code = 0;0;97;97;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (FatalAlarms): Obis_code = 0;0;97;97;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 5 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

14 Scripts

14.1 Cosem objects

14.1.1 AsynchronousEOBScriptTable

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;1;255	9	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AsynchronousEOBScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

- Script 1: EOB Reset
- Script 2 : Data Push

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	Action	Action	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : EOB Reset script execution allows the user to copy to historic array the current billing registers and reset MDI.
Data(2) : Data Push script execution involves the meter to send the data at the next minute.

Data type: UNSIGNED16

Authorized values:
1: EOB Reset
2: Data Push

Default value: EOB Reset (1)

14.1.2 EndTestScriptTable

The script described here stops all triggered tests. The output state are restored to their « normal » value meter and resume normal operation.
This script shall be executed automatically at logical logoff when a test was activated.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;102;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EndTestScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ Method 1: scripts

This object contains implicitely 1 script which stops all active tests.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	Action	-	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : EndTriggeredTest

Data type: UNSIGNED16

Authorized value: 1: End Triggered Test

Default value: End Triggered Test (1)

14.1.3 EnterInDownloadMode

This script must be sent alone in a Cosem session.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;103;255	9	0	1	0	False	True	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EnterInDownloadModeOBISCode
M1. scripts	UNSIGNED16	See below

■ Method 1: scripts

This object contains 1 script that allows the user to enter in Download mode.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	-	-	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : EnterIndownloadMode script execution allows the user to enter in Download mode
This script must be sent alone in a Cosem session.

Data type: UNSIGNED16

Authorized value: 1: Enter in download mode

Default value: Enter in download mode (1)

14.1.4 GlobalDeviceScriptTable

by identifying one of the above listed numbers for DATA, the relevant script is executed.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;0;255	9	0	3	0	False	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	GlobalDeviceScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ Method 1: scripts

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	-	-	-	Action	-	-

Attribute description

```
Data
```

Data

Data(1) : Device Reset script execution, allows erasing of all the working data of the meter. (excepted TER registers, other than UFER/DMCR total registers and Magnet sensor TER which are reset).
Data(2) : Start Measurement script execution, starts the processing of all metering objects.
Data(3) : Stop Measurement script execution, stops the processing of all metering objects.
Data(4) : Load Profile Reset script execution, reset the load profile data. The load profile array is flushed.
Data(5) : Restore Default Passwords script execution, replaces all the client current passwords by their default password.
Data(6) : Clear Fatal Alarms script execution, clears the fatal alarms detected by the meter.

For scripts Device Reset , Load Profile Reset and Clear Fatal Alarms, the meter must be in NON_OPERATIONNEL mode

Data type: UNSIGNED16

Authorized values:
1: Device Reset
2: Start Measurement
3: Stop Measurement
4: Load Profile Reset
5: Restore Default Passwords
6: Clear Fatal Alarms

Default value: Start Measurement (2)

14.1.5 ResetDipsNumber

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;2;0;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResetDipsNumberOBISCode
M1. scripts	UNSIGNED16	See below

■ Method 1: scripts

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	Action	-	-	Action	-	-

Attribute description

```
Data
```
Data

Data(1) : Reset Dips Number script execution allows the user to reset every dips number at once.

Data type: UNSIGNED16

Authorized value: 1: Reset Dips Number

Default value: Reset Dips Number (1)

14.1.6 ResetManufacturerAlarmsScriptTable

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;128;106;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResetManufacturerAlarmsScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Action	-	-

Attribute description
```
Data
```
Data

Data(1) : ClearManufacturerAlarm script execution allows the user to reset the status of the manufacturer alarms.

Data type: UNSIGNED16

Authorized value: 1: Clear Manufacturer Alarms

Default value: Clear Manufacturer Alarms (1)

14.1.7 ResetNonFatalAlarmScriptTable

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;1;0;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResetNonFatalAlarmScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	Action	Action	-	Action	-	-

Attribute description

Data

Data

Data(1) : ClearNonFatalAlarm script execution allows the user to reset the current status of the non fatal alarms.

Data type: UNSIGNED16

Authorized value: 1: Clear Non Fatal Alarms

Default value: Clear Non Fatal Alarms (1)

14.1.8 ResetTERScript

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;128;109;255	9	0	1	0	True	True	True

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResetTERScriptOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	-	-	-	Action	-	-

Attribute description

Data

Data

Data(1) : ResetTER script execution allows the user to reset the TER data (UFER/DMCR total energy are NOT concerned).

Data type: UNSIGNED16

Authorized value: 1: Reset TER Data

Default value: Reset TER Data (1)

14.1.9 SaveManufacturerParameters

This script must be sent alone in a Cosem session.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;104;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SaveManufacturerParametersOBISCode
M1. scripts	UNSIGNED16	See below

■ Method 1: scripts

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	-	-	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : SaveManufacturerParameter script execution triggers a saveguard of manufacturer parameters. This script must be sent alone in a Cosem session.

Data type: UNSIGNED16

Authorized value: 1: SaveManufacturerParameters

Default value: SaveManufacturerParameters (1)

14.1.10 StartMeasurementScript

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;128;107;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	StartMeasurementScriptOBISCode
M1. scripts	UNSIGNED16	See below

■ Method 1: scripts

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	-	-	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : Start Measurement script execution, starts the processing of all metering objects.

Data type: UNSIGNED16

Authorized value: 1: Start Measurement

Default value: Start Measurement (1)

14.1.11 StartTestWatchdogScript

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;128;111;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	StartTestWatchdogScriptOBISCode
M1. execute	UNSIGNED16	See below

■ **Method 1: execute**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Action	-	-

Attribute description

Execute a watchdog

Data type: UNSIGNED16

Authorized value: 1: Start watchdog script

Default value: Start watchdog script (1)

14.1.12 StartWaveFormScriptTable

This script allows to start the Voltage and Current wave form acquisition on the 3 phases.
The object WaveFormStatus indicates the end of acquisition.
This script is taken into account at programming (it is not necessary to validate the programming).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;105;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	StartWaveFormScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	Action	Action	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : StartWaveForm script execution, starts the filling of waveform arrays, by the meter.

Data type: UNSIGNED16

Authorized value: 1: Start Wave Form Acquisition

Default value: Start Wave Form Acquisition (1)

14.1.13 StopMeasurementScript

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;128;108;255	9	0	1	0	False	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	StopMeasurementScriptOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	-	-	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : Stop Measurement script execution, stop the processing of all metering objects.

Data type: UNSIGNED16

Authorized value: 1: Stop Measurement

Default value: Stop Measurement (1)

14.1.14 TriggeredTestScriptTable

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;10;0;101;255	9	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TriggeredTestScriptTableOBISCode
M1. scripts	UNSIGNED16	See below

■ **Method 1: scripts**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Action	Action	-	-	Action	-	-

Attribute description

`Data`

Data

Data(1) : TriggeredTest execution allows the user to test the concerned device whose identifier is given in data parameter.
This object contains implicitely 10 scripts which perform special tests.

Data type: UNSIGNED16

Authorized value: 1: Start IO Triggered Tests

Default value: Start IO Triggered Tests (1)

15 Time Of Use

15.1 Cosem objects

15.1.1 ActivityCalendar

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;13;0;0;255	20	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ActivityCalendarOBISCode
A2. calendar_name_active	OCTETSTRING	See below
A3. season_profile_active	ARRAY	See below
A4. week_profile_table_active	ARRAY	See below
A5. day_profile_table_active	ARRAY	See below
A6. calendar_name_passive	OCTETSTRING	See below
A7. season_profile_passive	ARRAY	See below
A8. week_profile_table_passive	ARRAY	See below
A9. day_profile_table_passive	ARRAY	See below
A10. activate_passive_calendar_time	OCTETSTRING	See below

■ Attribute 2: calendar_name_active

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`calendar_name_active`

calendar_name_active

Name of the current calendar.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 3: season_profile_active

This array of 12 elements contains the beginning date for each current season and the week profile defined for this current season.
Acceptance rules :
- If there is at least one defined season, the first season must begin at 01 january.
- Seasons must be defined in chronological order.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 12 elements
{
  SEQUENCE      // 3 elements
  {
    SeasonName
    SeasonStart
```

```
            WeekName
        }
    }
}
```

SeasonName

This parameter is significative only when reading (value from 0 to 11). It is not taken in account when programmed in the meter.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 1)

Default value: 0;

SeasonStart

Fields 'day' and 'month' only are significative :
- field 'month' : range 1 .. 12, or 255 (for unused season)
- field 'day' : range 1 .. 31, or 255 (for unused season)
Other fields in UTC are not significative :
- when programmed, they are not taken into account
- when read, they take a fixed value : 255 for all these non significativefields, excepted for 'deviation highbyte' (=128) and 'deviation
lowbyte' (=0).
For unused seasons, fields 'month' and 'day' (at least) must be set to 255.
Default values :
- Season 1 : {255;255;1;1;255;255;255;255;255;128;0;255}
- Season 2 .. 12: {255;255;255;255;255;255;255;255;255;128;0;255}

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;128;0;255;

WeekName

Equal to SeasonName (same format and same value).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 1)

Default value: 0;

■ **Attribute 4: week_profile_table_active**

This data is an array of 12 elements. Each element defines the day profile which must be applied for each current weekday.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 12 elements
{
  SEQUENCE     // 8 elements
  {
    WeekName
    Monday
    Tuesday
    Wednesday
    Thursday
    Friday
    Saturday
    Sunday
  }
}
```

WeekName

This parameter is significative only when reading (value from 0 to 11). It is not taken in account when programmed in the meter.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 1)

Default value: 0;

Monday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Tuesday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Wednesday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Thursday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Friday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Saturday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Sunday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

■ **Attribute 5: day_profile_table_active**

This table is a sequence of up to 24 elements, one element for one current day profile.
A day profile table element contains up to 16 switching elements, but the maximum number of switching elements is only 100 (and not 16 * 24).
Acceptance rules :
- The first switching element of each day profile must be equal to 00:00 (StartTime).
- Switching elements must be sorted in chronological order.
Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 1..24 elements
{
  SEQUENCE      // 2 elements
  {
    day_profile_name
    SEQUENCE OF     // 1..16 elements
    {
      SEQUENCE      // 3 elements
      {
        StartTime
        script_logical_name
        script_selector
      }
    }
  }
}
```

day_profile_name

This parameter is significative only when reading (value from 0 to 23). It is not taken in account when programmed in the meter.

Data type: UNSIGNED8

Authorized value: 0 to 23

Default value: 0

StartTime

The two first fields only (hour and minute) are significative.
The third field (second) is always equal to 0 and the fourth field is not used.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 4)

Default value: 0;0;0;255;

script_logical_name

This element is not used.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

script_selector
This element defines the index number linked to this switching.

Data type: UNSIGNED16

Authorized value: 0 to 49

Default value: 0

■ Attribute 6: calendar_name_passive

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
calendar_name_passive
```

calendar_name_passive
Name of the latent calendar.

Data type: OCTETSTRING

Authorized value: Decoded as ASCII (Size = 8)

Default value: 48;48;48;48;48;48;48;48; (00000000)

■ Attribute 7: season_profile_passive

This array of 12 elements contains the beginning date for each latent season and the week profile defined for this latent season.
Acceptance rules :
- If there is at least one defined season, the first season must begin at 01 january.
- Seasons must be defined in chronological order.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 12 elements
{
  SEQUENCE      // 3 elements
  {
    SeasonName
    SeasonStart
    WeekName
  }
}
```

SeasonName

This parameter is significative only when reading (value from 0 to 11). It is not taken in account when programmed in the meter.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 1)

Default value: 0;

SeasonStart

Fields 'day' and 'month' only are significative :
- field 'month' : range 1 .. 12, or 255 (for unused season)
- field 'day' : range 1 .. 31, or 255 (for unused season)
Other fields in UTC are not significative :
- when programmed, they are not taken into account
- when read, they take a fixed value : 255 for all these non significativefields, excepted for 'deviation highbyte' (=128) and 'deviation
lowbyte' (=0).
For unused seasons, fields 'month' and 'day' (at least) must be set to 255.
Default values :
- Season 1: {255;255;1;1;255;255;255;255;255;128;0;255}
- Season 2 .. 12: {255;255;255;255;255;255;255;255;255;128;0;255}

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;128;0;255;

WeekName

Equal to SeasonName (same format and same value).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 1)

Default value: 0;

■ Attribute 8: week_profile_table_passive

This data is an array of 12 elements. Each element defines the day profile which must be applied for each latent weekday.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 12 elements
{
  SEQUENCE       // 8 elements
  {
    WeekName
    Monday
    Tuesday
    Wednesday
    Thursday
    Friday
    Saturday
    Sunday
  }
}
```

WeekName

This parameter is significative only when reading (value from 0 to 11). It is not taken in account when programmed in the meter.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 1)

Default value: 0;

Monday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Tuesday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Wednesday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Thursday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Friday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Saturday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

Sunday

Allowed values are 0 .. 23, and 255 (not significative).
Default value for the first element: 0
Default value for the other one: 255

Data type: UNSIGNED8

Authorized value: 0 to 23 and 255

Default value: 255

■ **Attribute 9: day_profile_table_passive**

This table is a sequence of up to 24 elements, one element for one latent day profile. A day profile table element contains up to 16 switching elements.

Acceptance rules :

- The first switching element of each day profile must be equal to 00:00 (StartTime).
- Switching elements must be sorted in chronological order.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1..24 elements
{
  SEQUENCE      // 2 elements
  {
    day_profile_name
    SEQUENCE OF     // 1..16 elements
    {
      SEQUENCE      // 3 elements
      {
        StartTime
        script_logical_name
        script_selector
      }
    }
  }
}
```

day_profile_name

This parameter is significative only when reading (value from 0 to 23). It is not taken in account when programmed in the meter.

Data type: UNSIGNED8

Authorized value: 0 to 23

Default value: 0

StartTime

The two first fields only (hour and minute) are significative.
The third field (second) is always equal to 0 and the fourth field is not used.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 4)

Default value: 0;0;0;255;

script_logical_name

This element is not used.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

script_selector

This element defines the index number linked to this switching.

Data type: UNSIGNED16

Authorized value: 0 to 49

Default value: 0

■ **Attribute 10: activate_passive_calendar_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`activate_passive_calendar_time`

activate_passive_calendar_time

It is the latent calendar due date parameter :
- field 'year highbyte' : when programmed, this field is not taken into account (it is calculated by the meter according to the year lowbyte).
- field 'year lowbyte' : range 0 .. 99
- field 'month' : range 1 .. 12
- field 'day' : range 1 .. 31
- field 'day of week' : is not taken into account when programmed (it is calculated by the meter according to the current date).
- other fields are not significative :
  -> when programmed, they are not taken into account.
  -> when read, they are equal to a fixed value (=255), excepted for, 'deviation highbyte' (=128) and 'deviation lowbyte' (=0).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;3;255;255;255;255;128;0;255;

15.1.2 BatteryUseTimeCounter

This register contains the battery use time, expressed in hours. This counter is reset when a new battery end of life date is programmed.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;6;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	BatteryUseTimeCounterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`BatteryUseTime`

BatteryUseTime

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 5: hour

Default value: hour (5)

15.1.3 ClockSettingParameters

This object defines the clock setting limitations (Italian behavior).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;131;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ClockSettingParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  ThresholdPerMinute
  ThresholdPerBP
}
```

ThresholdPerMinute

Defines the clock correction (it is limited to a certain amount per minute).
The Unit is "second". Value 0 means no limit.

Data type: UNSIGNED16

Authorized value: 0 to 29

Default value: 0

ThresholdPerBP

Defines the clock correction (it is limited to a certain amount per billing period).
The Unit is "minute". Value 0 means no limit.

Data type: UNSIGNED16

Authorized value: 0 to 60

Default value: 0

15.1.4 CurrentDateAndTime

This object models the device clock managing all information related to date and time.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;1;0;0;255	8	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	CurrentDateAndTimeOBISCode
A2. time	OCTETSTRING	See below
A3. time_zone	NULL	See below
A4. status	NULL	See below
A5. daylight_savings_begin	OCTETSTRING	See below
A6. daylight_savings_end	OCTETSTRING	See below
A7. daylight_savings_deviation	INTEGER8	See below
A8. daylight_savings_enabled	BOOLEAN	See below
A9. clock_base	ENUMERATED	See below

■ **Attribute 2: time**

This data contains the device actual date and time expressed in UTC.
Wait 500 ms before reading after programming

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Time`

Time

Year highbyte :
- When programmed, this field is not taken into account (it is calculated by the meter according to the year lowbyte).
Year lowbyte :
- Range : 0 .. 99.
Month :
- Range : 1 .. 12.
Day :
- Range : 1 .. 31.
Day of week :
- Range : 1 .. 7. When programmed, this field is not taken into account (it is calculated by the meter according to the current date).
Hour :
- Range : 0 .. 23.
Minute :
- Range : 0 .. 59.
Second :

- Range : 0 .. 59.
Hundredth of sec :
This field is not significative :
- when programmed, it is not taken into account.
- when read, it is always equal to 255, which means not specified.
Deviation highbyte & deviation lowbyte :
These fields are not significative :
- when programmed, they are not taken into account.
- when read, they are always equal to {128;0} (= 0x80), which means not specified.
Clock status :
Can take following discrete values :
- 128 : daylight savings function is active (the transmitted time contains the daylight savings deviation -> summer time).
- 0 : daylight savings function is inactive (-> normal time).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;3;0;0;0;255;128;0;0;

■ Attribute 3: time_zone

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 4: status

Not used (the information is already inside the time attribute).

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: daylight_savings_begin

This data contains the current year summer season begin. Another structure is used for programming.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`daylight_savings_begin`

daylight_savings_begin
Some fields have a fixed value :
- field 'hundredth of sec' = 255

- field 'deviation highbyte' = 128
- field 'deviation lowbyte' = 0
- field 'clock status' = 0 (normal time).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;3;0;0;0;255;128;0;0;

■ Attribute 6: daylight_savings_end

This data contains the current year summer season end. Another structure is used for programming.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
daylight_savings_end
```

daylight_savings_end

Some fields have a fixed value :
- field 'hundredth of sec' = 255
- field 'deviation highbyte' = 128
- field 'deviation lowbyte' = 0
- field 'clock status' = 128 (summer time).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;3;0;0;0;255;128;0;128;

■ Attribute 7: daylight_savings_deviation

This data contains the deviation to apply to the normal date, expressed in minutes. Another structure is used for programming.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
daylight_savings_deviation
```

daylight_savings_deviation

This data contains the deviation to apply to the normal date, expressed in minutes. Another structure is used for programming.

Data type: INTEGER8

Authorized value: 0 to 120

Default value: 0

■ Attribute 8: daylight_savings_enabled

This data specifies if the daylight savings function is used or not. Another structure is used for programming.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
daylight_savings_enabled
```

daylight_savings_enabled

This data specifies if the daylight savings function is used or not :
- Enabled = TRUE
- Disabled = FALSE

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

■ Attribute 9: clock_base

It contains the hard clock parameters.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`clock_base`

clock_base

It contains the hard clock parameters.
The 2 first values only can be programmed in the meter (external clock or mains frequency).
When reading, if hard clock = mains frequency, returned values are 'mains frequency 50 Hz' or 'mains frequency 60 Hz',
according to configured nominal frequency.

Data type: ENUMERATED

Authorized values:
1: Internal cristal
2: Mains frequency 50 Hz
3: Mains frequency 60 Hz

Default value: Internal cristal (1)

15.1.5 DSTParameters

This object defines the working mode of the daylight saving.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;131;0;4;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DSTParametersOBISCode
A2. value	UNSIGNED8	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`DSTWorkingMode`

DSTWorkingMode

Data type: UNSIGNED8

Authorized values:
0: No DST
1: Generic DST
2: Programmed DST
3: Generic DST with season
4: Programmed DST with season

Default value: No DST (0)

15.1.6 EOBSingleActionScheduleParameters

This data allows the programming of generic EOB dates and the programmed ones, depending on the value of the attribute 'type'.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;15;0;0;255	22	0	4	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	EOBSingleActionScheduleParametersOBISCode
A2. executed_script	NULL	See below
A3. type	ENUMERATED	See below
A4. execution_time	ARRAY	See below

■ **Attribute 2: executed_script**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	-	-	-

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 3: type**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

`Type`

Type

Type 1 : generic dates . It indicates that wildcard use in the date are allowed, permitting to define the generic date of EOB.
Type 4 : programmed dates. It indicates that wildcard use in the date are not allowed. This permits to define preprogrammed dates.

Data type: ENUMERATED

Authorized values:

1: Type 1
4: Type 4

Default value: Type 1 (1)

■ **Attribute 4: execution_time**

It contains 1 element for generic dates, up to 24 elements for programmed dates :
- When Type = 1, only one date is allowed.
- When Type = 4, up to 24 dates are programmed and 24 dates are read.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 1..24 elements
{
   SEQUENCE      // 2 elements
   {
     Time
     Date
   }
}
```

Time

The time format is : hour ; minut ; second ; 1/10s.
The field '1/10s' is not significative (always equal to 255).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 4)

Default value: 0;0;0;255;

Date

The date format is : high year ; year ; month ; day ; day of week.
Default value is :
- 255;255;255;1;255, for generic dates
- 7;200;1;1;3, for programmed dates

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 5)

Default value: 255;255;255;1;255;

15.1.7 GenericDSTParameters

This variable allows the programming of the daylight saving data in the case of periodical change at the same date.
The data structure is a sequence which contains 2 elements :
- one element to define the time shift
- the other to define a sequence of 2 elements :
    - one for going into summer time
    - the other to come back to normal time and event to execute
The dates must be programmed in chronological order.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;131;0;6;255	1	0	3	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	GenericDSTParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  DSTvalue
  SEQUENCE OF     // 2 elements
  {
    SEQUENCE      // 3 elements
    {
      DateAndTime
      Direction
      SEQUENCE      // 2 elements
      {
        EventType
        EventTypeParameter
      }
    }
  }
}
```

DSTvalue

In minutes.

Data type: UNSIGNED8

Authorized value: 1 to 120

Default value: 60

DateAndTime

// year, month, monthday, weekday, hour
DateAndTime : 5 bytes (to be read as binary values) :
- year this field must be generic : value = 127
- month this field must no be generic : value 01 .. 12
- day of month -15 .. 00 .. 31 , (127 for wildcard is rejected)
Negative date means the number of days before the end of the month (e.g. : -10 May means 21st May).
If day of month is negative, day of week must be set to wildcard.
- day of week 0 .. 6 , 127 for wildcard (0 is Sunday)
- hour 00 .. 23
Example : last Sunday in march :
- year : 127
- month : 03
- day of month : 00 (the last)
- day of week :0 (Sunday)
The date is the date where the event needs to be executed.
Default value : reference date = 1/1/92, weekday = wildcard (127), hour = 0
If the 2 programmed dates correspond to reference dates (92;1;1;127) , programming is accepted.
If one programmed date (among 2) correponds to reference date(, programming is rejected.
If any programmed date correspond to reference date, dates are checked by applying conditions above.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 5)

Default value: 92;1;1;127;0;

Direction

Direction specifies if the clock has to go to summer (value 0), or back to the normal time (value 1).

Data type: UNSIGNED8

Authorized values:
0: ToSummer
1: ToNormal

Default value: ToNormal (1)

EventType

EventType indicates if DST is linked to a season or not.
DST not linked to season : Event type : 33
DST linked to season : Event type : 14

Data type: UNSIGNED8

Authorized values:
14: EV_EVENT_DST_WITH_SEASON
33: EV_EVENT_DST_WITHOUT_SEASON
255: EV_EVENT_NON_SIGNIFICATIVE

Default value: EV_EVENT_NON_SIGNIFICATIVE (255)

EventTypeParameter

If DST is linked to a season (Event type = EV_EVENT_DST_WITH_SEASON), EventTypeParameter gives the linked season number (0 to 11).
If DST is not linked to a season (Event type = EV_EVENT_DST_WITHOUT_SEASON), any value can be set for EventTypeParameter (not used by the meter).

Data type: UNSIGNED8

Authorized value: 0 to 11 and 255

Default value: 255

15.1.8 GenericEOBParameters

This object defines the generic dates on which the end of billing period data have to be frozen.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;132;0;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	GenericEOBParametersOBISCode
A2. value	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

`GenericDate`

GenericDate

// year, month, day, weekday, hour, minute and second
Year :
Allowed values are between 0 and 99, 127 for wildcard and 255.
When year = 255, the generic date is set to reference date (01/01/92 00:00:00). Other fields in octet string are not used.
Month :
Allowed values are between 1 and 12, 127 for wildcard.
When month = 127, day and weekday cannot be set both to wildcard too (every day is prohibited).
Day : allowed values are between 1 and 31
   or 0 for last day of month
   or 255 2nd last day of month (-1)
   or 254 3th last day of month (-2)
   or ... (-15).
   or 127 for Wilcard
Weekday :
Allowed values are between 0 and 6 (0: Sunday), 127 for wildcard.
Hour :
Allowed values are between 0 and 23, 127 for wildcard.
Minute :
Allowed values are between 0 and 59, 127 for wildcard.
Second :
Second is not used in the meter (always set to 0).
See the DGS for the definition of the generic dates capabilities.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 7)

Default value: 127;127;1;127;0;0;0;

15.1.9 PowerFailureParameters

This object defines the threshold of the long outages.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;131;0;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	PowerFailureParametersOBISCode
A2. value	UNSIGNED8	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

`LongPowerFailureThreshold`

LongPowerFailureThreshold
The value contains the threshold of long outage, expressed in seconds.
Default value = 30 (all power failures processed as long power failure, including a clock loss)

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 30

15.1.10 ProgrammedDSTParameters

Non generic DST parameters COSEM Object.

Acceptance rules :
- A DST must not pass a daily top in the future (if DST to summer) or in the past (if DST
back to normal time) => field hour in UTC and DST value has to be set according to this constraint.

Example : if DST to summer and Hour = 20, DST value must be < (4*60)mn.
- Only 2 dates with opposite direction in a year.
- Two successive DST must be of opposite direction.
- The dates must be in chronological order.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;131;0;5;255	1	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ProgrammedDSTParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  DSTValueProg
  SEQUENCE OF     // 10 elements
  {
    SEQUENCE     // 3 elements
    {
      DateAndTimeProg
      DirectionProg
      SEQUENCE     // 2 elements
      {
        EventTypeProg
        EventTypeParameterProg
      }
    }
  }
}
```

DSTValueProg

Exprimé en minutes

Data type: UNSIGNED8

Authorized value: 1 to 120

Default value: 60

DateAndTimeProg

The DateAndTime is the date and time (round hour) where the event needs to be executed.
It is in UTC :
- field 'year highbyte' : when programmed, this field is not taken into account (it is
calculated by the meter according to the year lowbyte).
- field 'year lowbyte' : range 0 .. 99 or 255 (not specified)
- field 'month' : range 1 .. 12 or 255 (not specified)
- field 'day' : range 1 .. 31 or 255 (not specified)
- field 'day of week' : is not taken into account when programmed (it is
calculated by the meter according to the current date).
- field 'hour' : range 0 .. 23 or 255 (not specified)
- fields 'minute' and 'second' are not significative :
- when programmed, they are not taken into account (round hour).
- when read, they are always equal to 0.
- fields 'hundredth of sec', 'deviation highbyte', 'deviation lowbyte' and 'clock status' are
not significative :
- when programmed, they are not taken into account.
- when read, 'hundredth of sec' = 255, 'deviation highbyte' = 128, 'deviation
lowbyte' = 0 and 'clock status = 255.
For unused dates, fields 'year lowbyte' and 'hour' (at least) have to be set to 255.
Default value : reference date {7;200;1;1;3;0;0;0;255;128;0;255}.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;3;0;0;0;255;128;0;255;

DirectionProg

The Direction specifies if the clock has to go to summer (value 0), or back to the normal time
(value 1). For unused programmed DST dates, direction must be set to 255 (means not
specified).

Data type: UNSIGNED8

Authorized values:
0: ToSummer
1: ToNormal
255: NotSpecified

Default value: ToNormal (1)

EventTypeProg

it indicates if DST is linked to a season or not.
DST not linked to season : Event type : 33
DST linked to season : Event type : 14.
. Default value :
        Event type : 255 (EV_EVENT_NOT_SIGNIFICATIVE)

Data type: UNSIGNED8

Authorized values:
14: EV_EVENT_DST_WITH_SEASON
33: EV_EVENT_DST_WITHOUT_SEASON
255: EV_EVENT_NON_SIGNIFICATIVE

Default value: EV_EVENT_NON_SIGNIFICATIVE (255)

EventTypeParameterProg

If DST is linked to a season (Event type = EV_EVENT_DST_WITH_SEASON), EventTypeParameter gives
the linked season number (0 to 11).
If DST is not linked to a season (Event type = EV_EVENT_DST_WITHOUT_SEASON), any value can be
set for EventTypeParameter (not used by the meter).

Data type: UNSIGNED8

Authorized value: 0 to 11 and 255

Default value: 255

15.1.11 ProgrammedEOBParameters

This object defines the programmed dates on which the end of billing period data have to be frozen.
24 elements, one for each programmed EOB

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;132;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ProgrammedEOBParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 24 elements
{
   ProgrammedEOBDate
}
```

ProgrammedEOBDate

Fields of UTC date are the following :
- 'year highbyte' : when programmed, this field is not taken into account (it is calculated by the meter according to the year lowbyte).
- 'year lowbyte' : range 0 .. 99
- 'day of week' : is not taken into account when programmed (it is calculated by the meter according to the current date).

For unused dates, field 'month' (at least) must be set to 255. In that case, the programmed EOB date is set to reference date (01/01/92 00:00:00).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 7;200;1;1;3;0;0;0;255;128;0;255;

15.1.12 SpecialDayParameters

This object defines the special days in the calendar. It is an array, size 100. (for 100 special days).
Two kinds of special days can be defined : repetitive and not repetitive.
 Is is the field 'year' in the 'special_day_date' which defines the kind os special day.

Acceptance rules :
- The not repetitive special days must be inserted in the table before the repetitive days.
- Both set of special days must be sorted in chronological order.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;11;0;0;255	11	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SpecialDayParametersOBISCode
A2. entries	ARRAY	See below

■ Attribute 2: entries

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 100 elements
{
  SEQUENCE      // 3 elements
  {
    Index
    SpecialDayDate
    SpecialId
  }
}
```

Index

This parameter is significative only when reading.
It holds the day profile number (value from 0 to 23, or 255 when not defined).
It is not taken in account when programmed in the meter.

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 255

SpecialDayDate

Special_day_date // high year ; year ; month ; day ; day of week ;
- The field 'high year' is significative only when reading (calculated from the field 'year'). It is not taken into account when programmed in the meter.
- Values of field 'year' from 00 to 99 for non repetitive exclusion days, and 255 for repetitive exclusion days.
- Values of field 'month' from 01 to 11 (TBC).
- Values of field 'day' from 01 to 31.
- Value of field 'day of week' is always equal to 255 when reading in the meter.
It is not taken into account when programmed in the meter.

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 5)

Default value: 19;92;1;1;255;

SpecialId

It holds the day profile number to apply.
The values allowed are between 0 and 23, or 255 (not defined).

Data type: UNSIGNED8

Authorized value: 0 to 255

Default value: 255

15.1.13 SynchronizationParameters

This object defines the synchronization acceptance rules (daily or hourly).

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;131;0;1;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	SynchronizationParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  SynchronizationOption
  SynchronizationHour
}
```

SynchronizationOption

Data type: UNSIGNED8

Authorized values:
0: Daily
1: Hourly

Default value: Hourly (1)

SynchronizationHour

Data type: UNSIGNED8

Authorized value: 0 to 23

Default value: 0

15.1.14 TotalMeterOperatingTime

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;96;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TotalMeterOperatingTimeOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
TotalMeterOperatingDuration
```

TotalMeterOperatingDuration

This register contains the working time of the device. It is expressed in hours.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Data type: INTEGER8

Authorized value: 0

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 5: hour

Default value: hour (5)

16 Total Energy Registering

16.1 Cosem objects

16.1.1 AuthorisationImaxInTERParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;140;0;8;255	1	0	2	0	True	True	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AuthorisationImaxInTERParametersOBISCode
A2. value	BOOLEAN	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
-	-	-	-	Get/Set	-	Get

Attribute description

`AuthorisationImaxInTERParameters`

AuthorisationImaxInTERParameters

Authorisation (TRUE) or Inhibition (FALSE) when Magnet sensor detection.
If MIDComplianceParameters = TRUE, AuthorisationImaxInTERParameters is not authorized (FALSE).

Data type: BOOLEAN

Authorized values:
0: FALSE
1: TRUE

Default value: 0: FALSE

16.1.2 ExportActiveAggregate

This object defines the total of export active energy.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;2;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActiveAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ExportActiveAggregate

ExportActiveAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.3 ExportActivePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;22;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ExportActivePhase1

ExportActivePhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.4 ExportActivePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;42;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportActivePhase2
```

ExportActivePhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE       // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.5 ExportActivePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;62;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActivePhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportActivePhase3`

ExportActivePhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE       // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.6 ExportActiveSnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;2;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActiveSnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportActiveSnapshotAggregate`

ExportActiveSnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.7 ExportActiveSnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;22;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActiveSnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ExportActiveSnapshotPhase1

ExportActiveSnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.8 ExportActiveSnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;42;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActiveSnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ExportActiveSnapshotPhase2

ExportActiveSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.9 ExportActiveSnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;62;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportActiveSnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportActiveSnapshotPhase3`

ExportActiveSnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
`capture_time`

capture_time
Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.10 ExportApparentAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;10;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentAggregate
```

ExportApparentAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.11 ExportApparentPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;30;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentPhase1
```

ExportApparentPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.12 ExportApparentPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;50;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentPhase2
```

ExportApparentPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.13 ExportApparentPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;70;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentPhase3
```

ExportApparentPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.14 ExportApparentSnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;10;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentSnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentSnapshotAggregate
```

ExportApparentSnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.15 ExportApparentSnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;30;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentSnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportApparentSnapshotPhase1
```

ExportApparentSnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.16 ExportApparentSnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;50;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentSnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportApparentSnapshotPhase2`

ExportApparentSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.17 ExportApparentSnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;70;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportApparentSnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportApparentSnapshotPhase2`

ExportApparentSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.18 ExportReactiveAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;4;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactiveAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
`ExportReactiveAggregate`
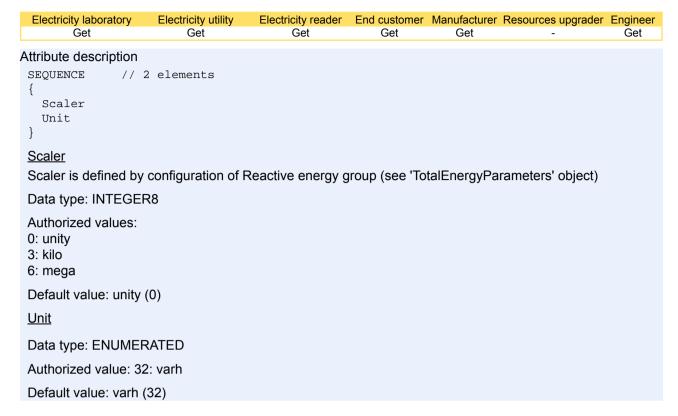
ExportReactiveAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.19 ExportReactivePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;24;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePhase1
```

ExportReactivePhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.20 ExportReactivePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;44;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePhase2
```

ExportReactivePhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.21 ExportReactivePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;64;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactivePhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactivePhase3
```

ExportReactivePhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.22 ExportReactiveSnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;4;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactiveSnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactiveSnapshotAggregate
```

ExportReactiveSnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.23 ExportReactiveSnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;24;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactiveSnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ExportReactiveSnapshotPhase1
```

ExportReactiveSnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.24 ExportReactiveSnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;44;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactiveSnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ExportReactiveSnapshotPhase2
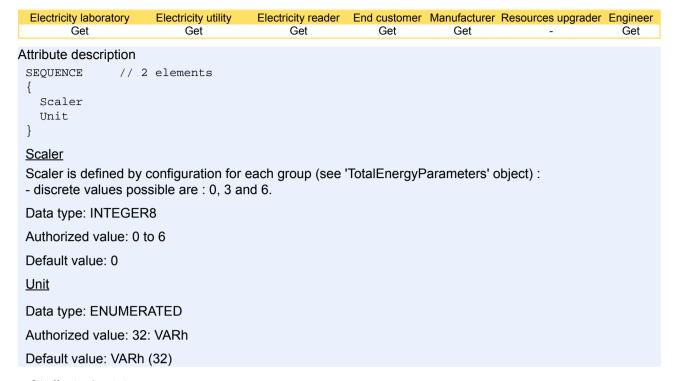
ExportReactiveSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.25 ExportReactiveSnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;64;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ExportReactiveSnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ExportReactiveSnapshotPhase3`

ExportReactiveSnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.26 FractionalEnergies

This object allows the reading of the remainding of all energies as a whole.
The remainding is the result of the real energy quantity measured minus the value of the total energy register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;98;133;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	FractionalEnergiesOBISCode
A2. value	ARRAY	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	-	-	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 52 elements
{
  FractionRegister
}
```

FractionRegister

This object is manufacturer specific and contents only the fractional value of the 52 total energy registers.
Sort order is the same as in 'All total energy registers' object.
 The number is independent of the configuration.
The unit is always 1/10th of unit of corresponding total energy register group :
0.1 kWh for active registers, 0.1 varh for reactive and 0.1 VAh for apparent.

Example : suppose the real energy measured is 5896.3528kWh.
The total energy register will be 5896kWh and the fractional energy will be 3528 (352.8Wh).

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 0

16.1.27 ImportActiveAggregate

This object defines the total of import active energy.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;1;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActiveAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActiveAggregate
```

ImportActiveAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.28 ImportActivePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;21;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePhase1
```

ImportActivePhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.29 ImportActivePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;41;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePhase2
```

ImportActivePhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.30 ImportActivePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;61;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActivePhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActivePhase3
```

ImportActivePhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Active energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.31 ImportActiveSnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;1;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActiveSnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActiveSnapshotAggregate
```

ImportActiveSnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.32 ImportActiveSnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;21;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActiveSnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActiveSnapshotPhase1
```

ImportActiveSnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.33 ImportActiveSnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;41;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActiveSnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportActiveSnapshotPhase2
```

ImportActiveSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.34 ImportActiveSnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;61;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportActiveSnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportActiveSnapshotPhase3`

ImportActiveSnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE       // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.35 ImportApparentAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;9;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentAggregate
```

ImportApparentAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.36 ImportApparentPhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;29;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentPhase1
```

ImportApparentPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.37 ImportApparentPhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;49;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentPhase2
```

ImportApparentPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.38 ImportApparentPhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;69;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportApparentPhase3`

ImportApparentPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Apparent energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

16.1.39 ImportApparentSnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;9;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentSnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentSnapshotAggregate
```

ImportApparentSnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.40 ImportApparentSnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;29;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentSnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportApparentSnapshotPhase1`

ImportApparentSnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.41 ImportApparentSnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;49;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentSnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportApparentSnapshotPhase2
```

ImportApparentSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.42 ImportApparentSnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;69;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportApparentSnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportApparentSnapshotPhase3`

ImportApparentSnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 31: VAh

Default value: VAh (31)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.43 ImportReactiveAggregate

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;3;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactiveAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactiveAggregate
```

ImportReactiveAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.44 ImportReactivePhase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;23;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactivePhase1
```

ImportReactivePhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.45 ImportReactivePhase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;43;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactivePhase2
```

ImportReactivePhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.46 ImportReactivePhase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;63;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactivePhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactivePhase3
```

ImportReactivePhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.47 ImportReactiveSnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;3;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactiveSnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ImportReactiveSnapshotAggregate
```

ImportReactiveSnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.48 ImportReactiveSnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;23;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactiveSnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ImportReactiveSnapshotPhase1

ImportReactiveSnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.49 ImportReactiveSnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;43;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactiveSnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ImportReactiveSnapshotPhase2
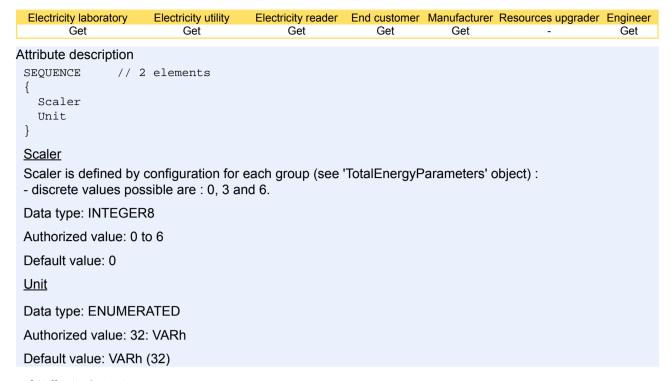
ImportReactiveSnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.50 ImportReactiveSnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;63;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ImportReactiveSnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ImportReactiveSnapshotPhase3`

ImportReactiveSnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.51 MagnetSensorRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;134;0;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	MagnetSensorRegisterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`Register`

Register

The register value shall be modelled by Unsigned32

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler according CT*VT.
 Scaler = 0 if, 1<=NumCT/DenCT*NumVT/DenVT < 250
 Scaler = 3 if, 250 <=NumCT/DenCT*NumVT/DenVT < 250 000
 Scaler = 6 if, 250 000 <=NumCT/DenCT*NumVT/DenVT.

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Unit

always Wh.

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

16.1.52 ReactiveQ1Aggregate

This object defines the total of reactive energy aggregate in the case of the reactive energy is positive and active energy is positive.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;5;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1AggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ1Aggregate`

ReactiveQ1Aggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.53 ReactiveQ1Phase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;25;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1Phase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ1Phase1`

<u>ReactiveQ1Phase1</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.54 ReactiveQ1Phase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;45;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1Phase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ1Phase2
```

ReactiveQ1Phase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.55 ReactiveQ1Phase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;65;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1Phase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ1Phase3
```

ReactiveQ1Phase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.56 ReactiveQ1SnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;5;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1SnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ1SnapshotAggregate
```

ReactiveQ1SnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.57 ReactiveQ1SnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;25;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1SnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ReactiveQ1SnapshotPhase1

ReactiveQ1SnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

<u>capture_time</u>

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.58 ReactiveQ1SnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;45;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1SnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ1SnapshotPhase2
```

ReactiveQ1SnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.59 ReactiveQ1SnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;65;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ1SnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ1SnapshotPhase3`
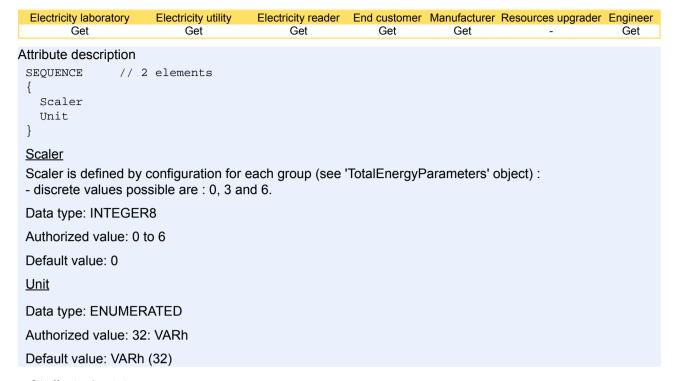
ReactiveQ1SnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.60 ReactiveQ2Aggregate

This object defines the total of reactive energy aggregate in the case of the reactive energy is positive and active energy are negative.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;6;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2AggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ2Aggregate
```

ReactiveQ2Aggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.61 ReactiveQ2Phase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;26;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2Phase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

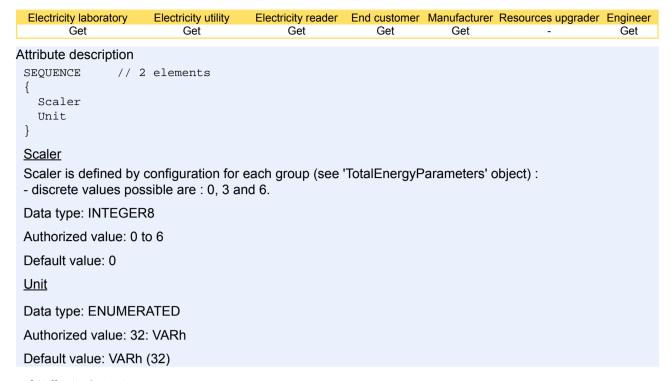| Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ2Phase1
```

ReactiveQ2Phase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.62 ReactiveQ2Phase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;46;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2Phase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ2Phase2`

ReactiveQ2Phase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.63 ReactiveQ2Phase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;66;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2Phase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ2Phase3`

ReactiveQ2Phase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.64 ReactiveQ2SnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;6;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2SnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ2SnapshotAggregate`

ReactiveQ2SnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.65 ReactiveQ2SnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;26;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2SnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ2SnapshotPhase1`

ReactiveQ2SnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.66 ReactiveQ2SnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;46;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2SnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ2SnapshotPhase2
```

ReactiveQ2SnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.67 ReactiveQ2SnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;66;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ2SnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ2SnapshotPhase3`
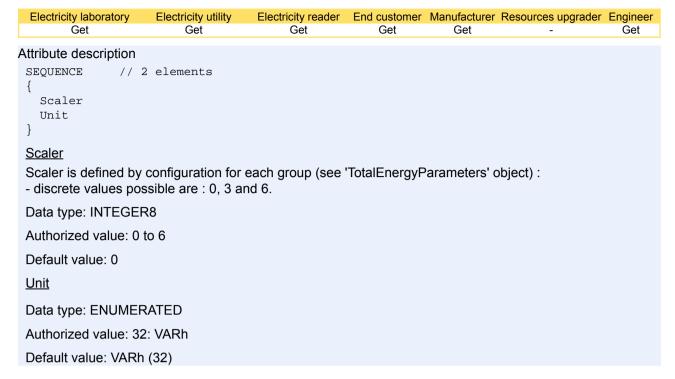
ReactiveQ2SnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

<u>capture_time</u>
Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.68 ReactiveQ3Aggregate

This object defines the total of reactive energy aggregate in the case of the reactive energy is negative and active energy are negative.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;7;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3AggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ3Aggregate`

ReactiveQ3Aggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.69 ReactiveQ3Phase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;27;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3Phase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

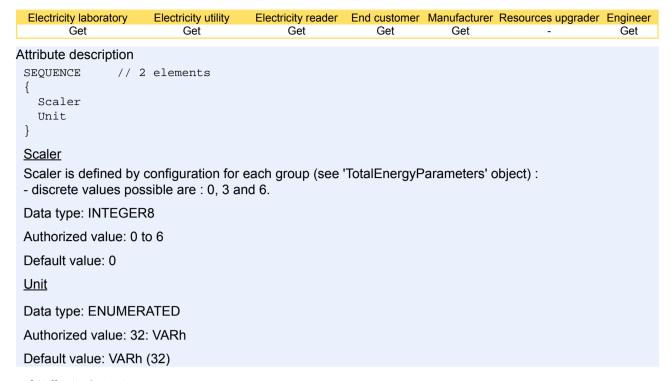| Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ3Phase1`

ReactiveQ3Phase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.70 ReactiveQ3Phase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;47;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3Phase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ3Phase2`

ReactiveQ3Phase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.71 ReactiveQ3Phase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;67;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3Phase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ3Phase3
```

ReactiveQ3Phase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.72 ReactiveQ3SnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;7;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3SnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ3SnapshotAggregate`

ReactiveQ3SnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.73 ReactiveQ3SnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;27;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3SnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ3SnapshotPhase1`

ReactiveQ3SnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE    // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.74 ReactiveQ3SnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;47;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3SnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ3SnapshotPhase2
```

ReactiveQ3SnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.75 ReactiveQ3SnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;67;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ3SnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ3SnapshotPhase3`
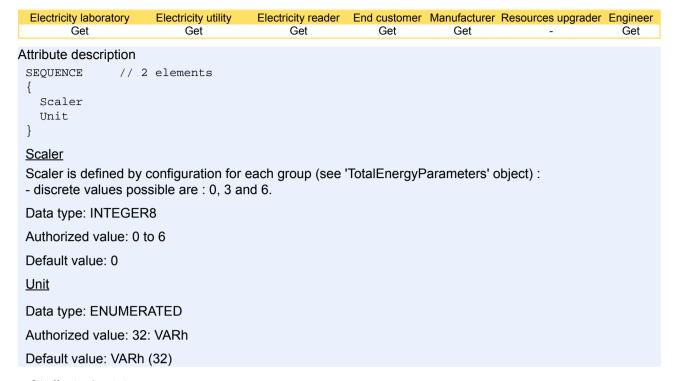
ReactiveQ3SnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.76 ReactiveQ4Aggregate

This object defines the total of reactive energy aggregate in the case of the reactive energy is negative and active energy are positive.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;8;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4AggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ4Aggregate
```

ReactiveQ4Aggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.77 ReactiveQ4Phase1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;28;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4Phase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ4Phase1`

ReactiveQ4Phase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.78 ReactiveQ4Phase2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;48;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4Phase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

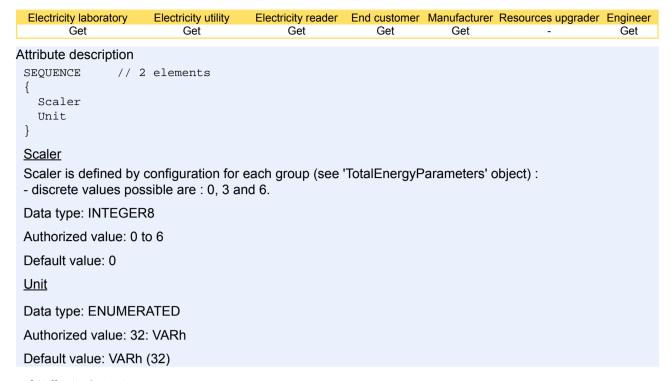| Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ4Phase2`

ReactiveQ4Phase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.79 ReactiveQ4Phase3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;68;8;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4Phase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
ReactiveQ4Phase3
```

ReactiveQ4Phase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration of Reactive energy group (see 'TotalEnergyParameters' object)

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Data type: ENUMERATED

Authorized value: 32: varh

Default value: varh (32)

16.1.80 ReactiveQ4SnapshotAggregate

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;8;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4SnapshotAggregateOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ReactiveQ4SnapshotAggregate

ReactiveQ4SnapshotAggregate

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`capture_time`

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.81 ReactiveQ4SnapshotPhase1

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;28;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4SnapshotPhase1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ4SnapshotPhase1`

ReactiveQ4SnapshotPhase1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.82 ReactiveQ4SnapshotPhase2

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;48;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4SnapshotPhase2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`ReactiveQ4SnapshotPhase2`

ReactiveQ4SnapshotPhase2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ **Attribute 4: status**

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

capture_time

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.83 ReactiveQ4SnapshotPhase3

When Load Profile 1 end of recording occurs, each total energy register is copied into a snapshot register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;1;68;17;0;255	4	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ReactiveQ4SnapshotPhase3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below
A4. status	NULL	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

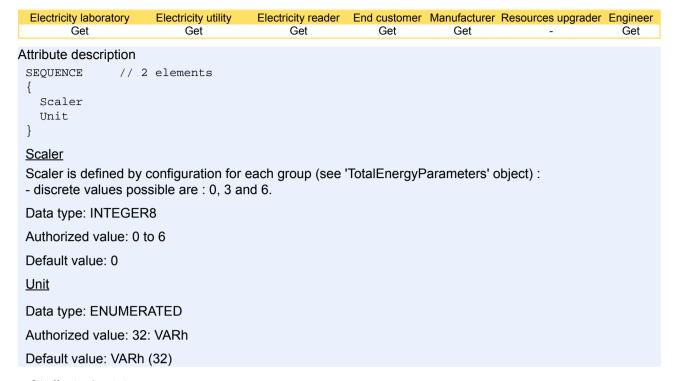| Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

ReactiveQ4SnapshotPhase3

ReactiveQ4SnapshotPhase3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is defined by configuration for each group (see 'TotalEnergyParameters' object) :
- discrete values possible are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 32: VARh

Default value: VARh (32)

■ Attribute 4: status

Not used.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

Data type: NULL

Authorized value:

Default value:

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
capture_time
```

capture_time

Date and time of the snapshot (synchronized on load profile 1).

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

16.1.84 ResetTerAlwaysAuthorizedParameters

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;134;0;5;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	ResetTerAlwaysAuthorizedParametersOBISCode
A2. value	ENUMERATED	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get/Set	-	Get

Attribute description

`ResetTerAlwaysAuthorized`

ResetTerAlwaysAuthorized

Data type: ENUMERATED

Authorized values:
0: RESET_TER_NOT_ALLOW
1: RESET_TER_ALLOW

Default value: RESET_TER_NOT_ALLOW (0)

16.1.85 TotalEnergyOBISCodeParameters

This object transmits the data for the energy identification relative to the OBIS code for external and summation energies.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;134;0;2;255	1	0	1	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TotalEnergyOBISCodeParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

The 12 elements in the sequence are ordered in the following way :
- TER external 1 import
- TER external 2 import
- TER external 3 import
- TER external 4 import
- TER external 1 export
- TER external 2 export
- TER external 3 export
- TER external 4 export
- TER summation 1
- TER summation 2
- TER summation 3
- TER summation 4

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 12 elements
{
  SEQUENCE     // 2 elements
  {
    Fluid
    QuantityType
  }
}
```

Fluid

Data type: UNSIGNED8

Authorized values:
0: Electricity
1: Heat
2: Gas
3: Water
255: No fluid

Default value: Electricity (0)

QuantityType

it defines the value of the third field DEVELOPMENT in the OBIS code of the concerned total energy register.
 Quantilyless value is 82.

Data type: UNSIGNED8

Authorized values:
1: Import Active Energy Aggregate
2: Export Active Energy Aggregate
3: Import Reactive Energy Aggregate
4: Export Reactive Energy Aggregate
5: Q1 Energy Aggregate
6: Q2 Energy Aggregate
7: Q3 Energy Aggregate
8: Q4 Energy Aggregate
9: Import Apparent Energy Aggregate
10: Export Apparent Energy Aggregate
21: Import Active Energy Phase 1
22: Export Active Energy Phase 1
23: Import Reactive Energy Phase 1
24: Export Reactive Energy Phase 1
25: Q1 Energy Phase 1
26: Q2 Energy Phase 1
27: Q3 Energy Phase 1
28: Q4 Energy Phase 1
29: Import Apparent Energy Phase 1
30: Export Apparent Energy Phase 1
41: Import Active Energy Phase 2
42: Export Active Energy Phase 2
43: Import Reactive Energy Phase 2
44: Export Reactive Energy Phase 2
45: Q1 Energy Phase 2
46: Q2 Energy Phase 2
47: Q3 Energy Phase 2
48: Q4 Energy Phase 2
49: Import Apparent Energy Phase 2
50: Export Apparent Energy Phase 2
61: Import Active Energy Phase 3

62: Export Active Energy Phase 3
63: Import Reactive Energy Phase 3
64: Export Reactive Energy Phase 3
65: Q1 Energy Phase 3
66: Q2 Energy Phase 3
67: Q3 Energy Phase 3
68: Q4 Energy Phase 3
69: Import Apparent Energy Phase 3
70: Export Apparent Energy Phase 3
82: Unitless quantity

Default value: Unitless quantity (82)

16.1.86 TotalEnergyParameters

This object contains the total energy registering configuration : type of energy, ratio and unit.

SL7K (till 4.60 for 761)
It is a sequence of 7 elements. Order of the sequence :
- active energy
- reactive energy
- apparent energy
- external energy and summation 1
- external energy and summation 2
- external energy and summation 3
- external energy and summation 4

SL7K (from 4.61 for 761)
It is a sequence of 11 elements. Order of the sequence :
- active energy
- reactive energy
- apparent energy
- external energy 1
- external energy 2
- external energy 3
- external energy 4
- summation energy 1
- summation energy 2
- summation energy 3
- summation energy 4

ACE8K
It is a sequence of 13 elements. Order of the sequence :
- active energy
- reactive energy
- apparent energy
- external energy 1
- external energy 2
- external energy 3
- external energy 4
- summation energy 1
- summation energy 2
- summation energy 3
- summation energy 4
- V²h energy
- I²h energy

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;134;0;1;255	1	0	15	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	False	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TotalEnergyParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Here is defined a sequence of 11 elements which will apply to group of energies.
Order of the sequence :
-active energy
- reactive energy
- apparent energy
- external energy 1
- external energy 2
- external energy 3
- external energy 4
- summation energy 1
- summation energy 2
- summation energy 3
-summation energy 4

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF     // 11 elements
{
  SEQUENCE      // 2 elements
  {
    Scaler
    Unit
  }
}
```

Scaler

Defines for each of 11 elements (energy groups) the scaler linked to it.
Default value :
- for active energy group : scaler = 3 (kilo)
- for other groups : scaler = 0 (unity)
When the meter is "MID compliant" (MIDComplianceParameters = TRUE), allowed values for ACTIVE energy group are 3 and 6 only.

Data type: INTEGER8

Authorized values:
0: unity
3: kilo
6: mega

Default value: unity (0)

Unit

Defines for each of 11 elements (energy groups) the unit linked to it.
Default values :

Wh (30) for active energy ,varh (32) for reactive energy ,VAh (31) for apparent energy ,no unit (255) for other energy types

Data type: UNSIGNED8

Authorized values:
30: Wh
31: VAh
32: VARh
255: No unit

Default value: Wh (30)

16.1.87 TotalEnergyRegisterInitParameters

The total energy registers defined for external input and summation must be available for initialization with Cosem.
These TER have got variable logical name because they are configuration dependent.
Programming of a TER value triggers the reset of its fraction register.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;134;0;3;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	TotalEnergyRegisterInitParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

In order to avoid the programming of variable logical name object, this specific object is defined.

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Set	Set	-	-	Set	-	-

Attribute description
```
SEQUENCE      // 12 elements
{
  ExternalInput1TERImportValue
  ExternalInput2TERImportValue
  ExternalInput3TERImportValue
  ExternalInput4TERImportValue
  ExternalInput1TERExportValue
  ExternalInput2TERExportValue
  ExternalInput3TERExportValue
  ExternalInput4TERExportValue
  Summation1TERValue
  Summation2TERValue
  Summation3TERValue
  Summation4TERValue
}
```

ExternalInput1TERImportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput2TERImportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput3TERImportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput4TERImportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput1TERExportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput2TERExportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput3TERExportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

ExternalInput4TERExportValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

Summation1TERValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

Summation2TERValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

Summation3TERValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

Summation4TERValue

Range : 0 … 999 999 999 and 0xFFFFFFFF (4294967295).
The value 0xFFFFFFFF means no initialization.

Data type: UNSIGNED32

Authorized value: 0 to 4294967295

Default value: 4294967295

16.2 Cosem profiles

16.2.1 AllTotalEnergies

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;2;255	7	1	4	0	RAM	40	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	AllTotalEnergiesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Total energy registers are ordered as following :
- ImportActivePhase1
- ImportActivePhase2
- ImportActivePhase3
- ImportActiveAggregate

- ExportActivePhase1
- ExportActivePhase2
- ExportActivePhase3
- ExportActiveAggregate
- ImportReactivePhase1
- ImportReactivePhase2
- ImportReactivePhase3
- ImportReactiveAggregate
- ExportReactivePhase1
- ExportReactivePhase2
- ExportReactivePhase3
- ExportReactiveAggregate
- ReactiveQ1Phase1
- ReactiveQ1Phase2
- ReactiveQ1Phase3
- ReactiveQ1Aggregate
- ReactiveQ2Phase1
- ReactiveQ2Phase2
- ReactiveQ2Phase3
- ReactiveQ2Aggregate
- ReactiveQ3Phase1
- ReactiveQ3Phase2
- ReactiveQ3Phase3
- ReactiveQ3Aggregate
- ReactiveQ4Phase1
- ReactiveQ4Phase2
- ReactiveQ4Phase3
- ReactiveQ4Aggregate
- ImportApparentPhase1
- ImportApparentPhase2
- ImportApparentPhase3
- ImportApparentAggregate
- ExportApparentPhase1
- ExportApparentPhase2
- ExportApparentPhase3
- ExportApparentAggregate
- ImportExternal 1
- ImportExternal 2
- ImportExternal 3
- ImportExternal 4
- ExportExternal 1
- ExportExternal 2
- ExportExternal 3
- ExportExternal 4
- Summation 1
- Summation 2
- Summation 3
- Summation 4

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 52 elements
  {
    SEQUENCE      // 3 elements
```

```
      {
        ImportActivePhase1
        Value
        SEQUENCE      // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE      // 3 elements
      {
        ImportActivePhase2
        Value
        SEQUENCE      // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE      // 3 elements
      {
        ImportActivePhase3
        Value
        SEQUENCE      // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE      // 3 elements
      {
        ImportActiveAggregate
        Value
        SEQUENCE      // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE      // 3 elements
      {
        ExportActivePhase1
        Value
        SEQUENCE      // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE      // 3 elements
      {
        ExportActivePhase2
        Value
        SEQUENCE      // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE      // 3 elements
      {
        ExportActivePhase3
        Value
        SEQUENCE      // 2 elements
```

```
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportActiveAggregate
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ImportReactivePhase1
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ImportReactivePhase2
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ImportReactivePhase3
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ImportReactiveAggregate
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportReactivePhase1
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
```

```
    }
    SEQUENCE      // 3 elements
    {
      ExportReactivePhase2
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportReactivePhase3
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportReactiveAggregate
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ReactiveQ1Phase1
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ReactiveQ1Phase2
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ReactiveQ1Phase3
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ReactiveQ1Aggregate
```

```
    Value
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
  }
  SEQUENCE     // 3 elements
  {
    ReactiveQ2Phase1
    Value
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
  }
  SEQUENCE     // 3 elements
  {
    ReactiveQ2Phase2
    Value
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
  }
  SEQUENCE     // 3 elements
  {
    ReactiveQ2Phase3
    Value
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
  }
  SEQUENCE     // 3 elements
  {
    ReactiveQ2Aggregate
    Value
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
  }
  SEQUENCE     // 3 elements
  {
    ReactiveQ3Phase1
    Value
    SEQUENCE     // 2 elements
    {
      scaler
      unit
    }
  }
  SEQUENCE     // 3 elements
  {
    ReactiveQ3Phase2
    Value
    SEQUENCE     // 2 elements
    {
      scaler
```

```
            unit
          }
        }
        SEQUENCE     // 3 elements
        {
          ReactiveQ3Phase3
          Value
          SEQUENCE     // 2 elements
          {
            scaler
            unit
          }
        }
        SEQUENCE     // 3 elements
        {
          ReactiveQ3Aggregate
          Value
          SEQUENCE     // 2 elements
          {
            scaler
            unit
          }
        }
        SEQUENCE     // 3 elements
        {
          ReactiveQ4Phase1
          Value
          SEQUENCE     // 2 elements
          {
            scaler
            unit
          }
        }
        SEQUENCE     // 3 elements
        {
          ReactiveQ4Phase2
          Value
          SEQUENCE     // 2 elements
          {
            scaler
            unit
          }
        }
        SEQUENCE     // 3 elements
        {
          ReactiveQ4Phase3
          Value
          SEQUENCE     // 2 elements
          {
            scaler
            unit
          }
        }
        SEQUENCE     // 3 elements
        {
          ReactiveQ4Aggregate
          Value
          SEQUENCE     // 2 elements
          {
            scaler
            unit
          }
        }
        SEQUENCE     // 3 elements
```

```
    {
      ImportApparentPhase1
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ImportApparentPhase2
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ImportApparentPhase3
      Value
      SEQUENCE      // 2 elements
      {
        scaler


      }
    }
    SEQUENCE      // 3 elements
    {
      ImportApparentAggregate
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportApparentPhase1
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportApparentPhase2
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
    SEQUENCE      // 3 elements
    {
      ExportApparentPhase3
      Value
      SEQUENCE      // 2 elements
```

```
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ExportApparentAggregate
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ImportExternal1
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ImportExternal2
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ImportExternal3
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ImportExternal4
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ExportExternal1
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
```

```
      }
      SEQUENCE     // 3 elements
      {
        ExportExternal2
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ExportExternal3
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        ExportExternal4
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        Summation1
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        Summation2
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        Summation3
        Value
        SEQUENCE     // 2 elements
        {
          scaler
          unit
        }
      }
      SEQUENCE     // 3 elements
      {
        Summation4
```

```
      Value
      SEQUENCE      // 2 elements
      {
        scaler
        unit
      }
    }
  }
}
```

ImportActivePhase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportActivePhase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportActivePhase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportActiveAggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportActivePhase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportActivePhase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportActivePhase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportActiveAggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportReactivePhase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportReactivePhase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportReactivePhase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportReactiveAggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportReactivePhase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportReactivePhase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportReactivePhase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportReactiveAggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ1Phase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ1Phase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ1Phase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ1Aggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ2Phase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ2Phase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ2Phase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ2Aggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ3Phase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ3Phase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ3Phase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ3Aggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ4Phase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ4Phase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ4Phase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ReactiveQ4Aggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportApparentPhase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportApparentPhase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportApparentPhase3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportApparentAggregate

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportApparentPhase1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportApparentPhase2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value:

Default value: (0)

<u>ExportApparentPhase3</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

<u>Value</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

<u>scaler</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value:

Default value: (0)

<u>ExportApparentAggregate</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

<u>Value</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

<u>scaler</u>

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value:

Default value: (0)

<u>ImportExternal1</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportExternal2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportExternal3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ImportExternal4

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportExternal1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportExternal2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportExternal3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

ExportExternal4

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

Summation1

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

Summation2

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

Summation3

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

Summation4

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

Value

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

scaler

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

unit

Data type: ENUMERATED

Authorized value:

Default value: (0)

■ **Attribute 3: capture_objects**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 52 elements
{
  SEQUENCE      // 4 elements
  {
    class_id
    ConcernedQuantityOBISCode
    attribut_index
    data_index
  }
}
```

class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

ConcernedQuantityOBISCode

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 255;255;255;255;255;255;

attribut_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

16.2.2 LightTotalEnergies

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;98;133;3;255	7	1	2	0	ROM	6	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	LightTotalEnergiesOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 1 elements
{
  SEQUENCE    // 6 elements
  {
    ExportActiveAggregate (Att. Id: 0, Abs. Number: 1)
    ImportActiveAggregate (Att. Id: 0, Abs. Number: 1)
    ReactiveQ1Aggregate (Att. Id: 0, Abs. Number: 1)
    ReactiveQ2Aggregate (Att. Id: 0, Abs. Number: 1)
    ReactiveQ3Aggregate (Att. Id: 0, Abs. Number: 1)
    ReactiveQ4Aggregate (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (ExportActiveAggregate): Obis_code = 1;1;2;8;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (ImportActiveAggregate): Obis_code = 1;1;1;8;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (ReactiveQ1Aggregate): Obis_code = 1;1;5;8;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (ReactiveQ2Aggregate): Obis_code = 1;1;6;8;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (ReactiveQ3Aggregate): Obis_code = 1;1;7;8;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (ReactiveQ4Aggregate): Obis_code = 1;1;8;8;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF    // 6 elements
{
  SEQUENCE    // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

17 UFER_DMCR Registering

17.1 Cosem objects

17.1.1 DmcrCumulativeRateRegister1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;11;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrCumulativeRateRegister1`

DmcrCumulativeRateRegister1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DateTime

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.2 DmcrCumulativeRateRegister2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;12;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DmcrCumulativeRateRegister2

DmcrCumulativeRateRegister2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.3 DmcrCumulativeRateRegister3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;13;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

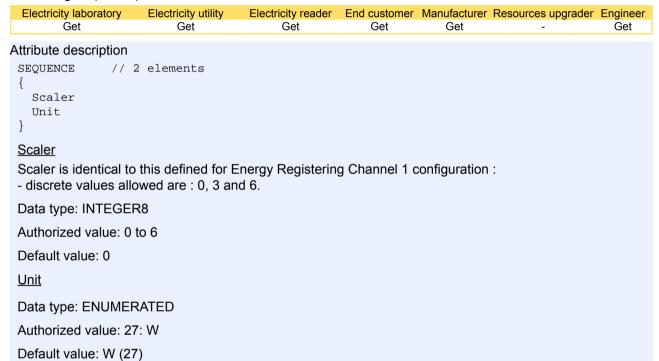| Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrCumulativeRateRegister3`

DmcrCumulativeRateRegister3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.4 DmcrCumulativeRateRegister4

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;14;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister4OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DmcrCumulativeRateRegister4
```

DmcrCumulativeRateRegister4

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.5 DmcrCumulativeRateRegister5

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;15;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister5OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrCumulativeRateRegister5`

<u>DmcrCumulativeRateRegister5</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

<u>DateTime</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.6 DmcrCumulativeRateRegister6

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;16;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister6OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DmcrCumulativeRateRegister6
```

<u>DmcrCumulativeRateRegister6</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.7 DmcrCumulativeRateRegister7

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;17;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister7OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrCumulativeRateRegister7`

DmcrCumulativeRateRegister7

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DateTime
```

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.8 DmcrCumulativeRateRegister8

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;18;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeRateRegister8OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DmcrCumulativeRateRegister8
```

DmcrCumulativeRateRegister8

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ **Attribute 5: capture_time**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description
```
DateTime
```

DateTime

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.9 DmcrCumulativeTotalRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;10;255	4	0	2	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrCumulativeTotalRegisterOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below
A5. capture_time	OCTETSTRING	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrCumulativeTotalRegister`

<u>DmcrCumulativeTotalRegister</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

■ Attribute 5: capture_time

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DateTime`

<u>DateTime</u>

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 12)

Default value: 255;255;255;255;255;255;255;255;255;255;255;255;

17.1.10 DmcrInstantaneousRegister

This Cosem register object carries the DMCR Instantaneous register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrInstantaneousRegisterOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrInstantaneousRegister`

DmcrInstantaneousRegister

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.11 DmcrMaxGenRateRegister1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister1OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrMaxGenRateRegister1`

DmcrMaxGenRateRegister1

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.12 DmcrMaxGenRateRegister2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;2;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister2OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrMaxGenRateRegister2`

DmcrMaxGenRateRegister2

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.13 DmcrMaxGenRateRegister3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister3OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrMaxGenRateRegister3`

DmcrMaxGenRateRegister3

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.14 DmcrMaxGenRateRegister4

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister4OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrMaxGenRateRegister4`

DmcrMaxGenRateRegister4

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.15 DmcrMaxGenRateRegister5

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;5;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister5OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrMaxGenRateRegister5`

DmcrMaxGenRateRegister5

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.16 DmcrMaxGenRateRegister6

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;6;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister6OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DmcrMaxGenRateRegister6
```

DmcrMaxGenRateRegister6

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.17 DmcrMaxGenRateRegister7

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;7;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister7OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`DmcrMaxGenRateRegister7`

<u>DmcrMaxGenRateRegister7</u>

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

<u>Scaler</u>

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>Unit</u>

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.18 DmcrMaxGenRateRegister8

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;8;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenRateRegister8OBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
DmcrMaxGenRateRegister8
```

DmcrMaxGenRateRegister8

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.19 DmcrMaxGenTotalRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;181;0;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	DmcrMaxGenTotalRegisterOBISCode
A2. value	UNSIGNED16	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

DmcrMaxGenTotalRegister

DmcrMaxGenTotalRegister

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  Unit
}
```

Scaler

Scaler is identical to this defined for Energy Registering Channel 1 configuration :
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 27: W

Default value: W (27)

17.1.20 UferCumulativeRateRegister1

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;11;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferCumulativeRateRegister1
```

UferCumulativeRateRegister1

Summation of all UferRateRegister1.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.21 UferCumulativeRateRegister2

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;12;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferCumulativeRateRegister2`

UferCumulativeRateRegister2

Summation of all UferRateRegister2.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.22 UferCumulativeRateRegister3

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;13;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferCumulativeRateRegister3
```

UferCumulativeRateRegister3

Summation of all UferRateRegister3.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.23 UferCumulativeRateRegister4

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;14;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister4OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferCumulativeRateRegister4`

UferCumulativeRateRegister4

Summation of all UferRateRegister4

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.24 UferCumulativeRateRegister5

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;15;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister5OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

UferCumulativeRateRegister5

UferCumulativeRateRegister5

Summation of all UferRateRegister5.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.25 UferCumulativeRateRegister6

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;16;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister6OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferCumulativeRateRegister6`

UferCumulativeRateRegister6

Summation of all UferRateRegister6

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.26 UferCumulativeRateRegister7

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;17;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister7OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferCumulativeRateRegister7`

<u>UferCumulativeRateRegister7</u>

Summation of all UferRateRegister7

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

<u>Scaler</u>

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.27 UferCumulativeRateRegister8

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;18;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeRateRegister8OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferCumulativeRateRegister8
```

<u>UferCumulativeRateRegister8</u>

Summation of all UferRateRegister8.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

<u>Scaler</u>

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.28 UferCumulativeTotalRegister

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;10;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferCumulativeTotalRegisterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferCumulativeTotalRegister`

UferCumulativeTotalRegister

Summation of all UferTotalRegister.

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration
- discrete values allowed are : 0, 3 and 6.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.29 UferDmcrParameters

A new COSEM object "UFERDMCRParameters" has to be written in the meter to program UFER/DMCR configuration parameters.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;0;1;255	1	0	3	0	True	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferDmcrParametersOBISCode
A2. value	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get	Get	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE     // 3 elements
{
  PowerFactorThreshold
  EOILimit
  SEQUENCE OF     // 12 elements
  {
    SEQUENCE OF     // 2 elements
    {
      SEQUENCE     // 2 elements
      {
        CapacitivePeriodStartTime
        CapacitivePeriodEndTime
      }
    }
  }
}
```

PowerFactorThreshold

It defines if the UFER/DMCR calculation algorithm is validated or not, and if validated, the limit power factor (decimal part).
Allowed values are :
- 0 : algorithm is inhibited (default value)
- 80 .. 99 : algorithm is validated (in that case default value : 92) and power factor value is : 0,80 to 0,99

Data type: UNSIGNED8

Authorized value: 0 to 99

Default value: 0

EOILimit

It defines the amount of Global EOI that represents the maximum period for a UFER Period :
UFER interval = EOILimit * Demand integration period.
This limit has its value configured to have an UFER interval of 1 hour of time representing the sum of multiples EOI.

Data type: UNSIGNED8

Authorized value: 1 to 60

Default value: 4

CapacitivePeriodStartTime

CapacitivePeriodStartTime : // hour ; minut ;
Allowed values are from (0;0) up to (23;45),
with minut field multiple of 15.

Default values for all capacitive periods and for all seasons : 0;0;

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 2)

Default value: 0;0;

CapacitivePeriodEndTime

CapacitivePeriodEndTime : // hour ; minut ;
Allowed values are from (0;0) up to (24;0),
with minut field multiple of 15.

Default values for first season and for first capacitive period : 6;0;
Default values for first season and for second capacitive period : 0;0;
Default values for all other seasons (for 2 capacitive periods) : 0;0;

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 2)

Default value: 0;0;

17.1.30 UferDmcrRateParameters

A new COSEM object "UFERDMCRRateParameters" has to be written in the meter to program DMCR Excess demand threshold parameters.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
0;0;144;0;2;255	1	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferDmcrRateParametersOBISCode
A2. value	ARRAY	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get/Set	Get/Set	Get/Set	Get	Get/Set	-	Get

Attribute description

```
SEQUENCE OF      // 8 elements
{
   DMCRExcessDemandThreshold
}
```

DMCRExcessDemandThreshold

It defines the threshold used for DMCR excess demand.

Default value : 65535 (no action)

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 65535

17.1.31 UferInstantaneousRegister

The Cosem register object below carries the UFER Instantaneous register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;7;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferInstantaneousRegisterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferInstantaneousRegister`

UferInstantaneousRegister

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE     // 2 elements
{
  Scaler
  Unit
}
```

Scaler

It is the scaler defined by Energy Registering Channel 1 configuration.

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

Unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.32 UferRateRegister1

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;1;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister1OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferRateRegister1`

UferRateRegister1

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.33 UferRateRegister2

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;2;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister2OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

UferRateRegister2

UferRateRegister2

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.34 UferRateRegister3

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;3;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister3OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferRateRegister3
```

UferRateRegister3

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.35 UferRateRegister4

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;4;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister4OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferRateRegister4
```

<u>UferRateRegister4</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

<u>Scaler</u>

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.36 UferRateRegister5

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;5;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister5OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferRateRegister5
```

<u>UferRateRegister5</u>

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

<u>Scaler</u>

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

<u>unit</u>

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.37 UferRateRegister6

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;6;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister6OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ **Attribute 2: value**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferRateRegister6`

UferRateRegister6

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ **Attribute 3: scaler_unit**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.38 UferRateRegister7

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;7;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister7OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
UferRateRegister7
```

UferRateRegister7

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.39 UferRateRegister8

For each of the UFER rate registers (today the maximum is 8), a Cosem register is defined to allow access to register value.

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;8;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferRateRegister8OBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferRateRegister8`

UferRateRegister8

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.1.40 UferTotalRegister

The Cosem register object below carries the UFER total register value..

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Configuration parameter	Restrictive programming	MID compliance
1;0;180;0;0;255	3	0	1	0	False	False	False

Logical devices :

Management	Electricity	End customer
True	True	False

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferTotalRegisterOBISCode
A2. value	UNSIGNED32	See below
A3. scaler_unit	SEQUENCE	See below

■ Attribute 2: value

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

`UferTotalRegister`

UferTotalRegister

Data type: UNSIGNED32

Authorized value: 0 to 999999999

Default value: 0

■ Attribute 3: scaler_unit

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE      // 2 elements
{
  Scaler
  unit
}
```

Scaler

Scaler defined by Energy Registering Channel 1 configuration

Data type: INTEGER8

Authorized value: 0 to 6

Default value: 0

unit

Data type: ENUMERATED

Authorized value: 30: Wh

Default value: Wh (30)

17.2 Cosem profiles

17.2.1 UferDmcrCompleteCurrentData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;144;0;4;255	7	1	2	0	ROM	38	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferDmcrCompleteCurrentDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 38 elements
  {
    UferInstantaneousRegister (Att. Id: 0, Abs. Number: 1)
    DmcrInstantaneousRegister (Att. Id: 0, Abs. Number: 1)
    UferTotalRegister (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenTotalRegister (Att. Id: 0, Abs. Number: 1)
    UferCumulativeTotalRegister (Att. Id: 0, Abs. Number: 1)
    DmcrCumulativeTotalRegister (Att. Id: 0, Abs. Number: 2)
    UferRateRegister1 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister2 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister3 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister4 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister5 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister6 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister7 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister8 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister1 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister2 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister3 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister4 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister5 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister6 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister7 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister8 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister1 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister2 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister3 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister4 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister5 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister6 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister7 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister8 (Att. Id: 0, Abs. Number: 1)
    DmcrCumulativeRateRegister1 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister2 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister3 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister4 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister5 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister6 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister7 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister8 (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (UferInstantaneousRegister): Obis_code = 1;0;180;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (DmcrInstantaneousRegister): Obis_code = 1;0;181;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (UferTotalRegister): Obis_code = 1;0;180;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (DmcrMaxGenTotalRegister): Obis_code = 1;0;181;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (UferCumulativeTotalRegister): Obis_code = 1;0;180;0;10;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (DmcrCumulativeTotalRegister): Obis_code = 1;0;181;0;10;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 7 (UferRateRegister1): Obis_code = 1;0;180;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 8 (UferRateRegister2): Obis_code = 1;0;180;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 9 (UferRateRegister3): Obis_code = 1;0;180;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 10 (UferRateRegister4): Obis_code = 1;0;180;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 11 (UferRateRegister5): Obis_code = 1;0;180;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 12 (UferRateRegister6): Obis_code = 1;0;180;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 13 (UferRateRegister7): Obis_code = 1;0;180;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 14 (UferRateRegister8): Obis_code = 1;0;180;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 15 (DmcrMaxGenRateRegister1): Obis_code = 1;0;181;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 16 (DmcrMaxGenRateRegister2): Obis_code = 1;0;181;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 17 (DmcrMaxGenRateRegister3): Obis_code = 1;0;181;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 18 (DmcrMaxGenRateRegister4): Obis_code = 1;0;181;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 19 (DmcrMaxGenRateRegister5): Obis_code = 1;0;181;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 20 (DmcrMaxGenRateRegister6): Obis_code = 1;0;181;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 21 (DmcrMaxGenRateRegister7): Obis_code = 1;0;181;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 22 (DmcrMaxGenRateRegister8): Obis_code = 1;0;181;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 23 (UferCumulativeRateRegister1): Obis_code = 1;0;180;0;11;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 24 (UferCumulativeRateRegister2): Obis_code = 1;0;180;0;12;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 25 (UferCumulativeRateRegister3): Obis_code = 1;0;180;0;13;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 26 (UferCumulativeRateRegister4): Obis_code = 1;0;180;0;14;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 27 (UferCumulativeRateRegister5): Obis_code = 1;0;180;0;15;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 28 (UferCumulativeRateRegister6): Obis_code = 1;0;180;0;16;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 29 (UferCumulativeRateRegister7): Obis_code = 1;0;180;0;17;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 30 (UferCumulativeRateRegister8): Obis_code = 1;0;180;0;18;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 31 (DmcrCumulativeRateRegister1): Obis_code = 1;0;181;0;11;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 32 (DmcrCumulativeRateRegister2): Obis_code = 1;0;181;0;12;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 33 (DmcrCumulativeRateRegister3): Obis_code = 1;0;181;0;13;255, Class_id = 4, Attribute_index = 0,
Data_index = 0
Index 34 (DmcrCumulativeRateRegister4): Obis_code = 1;0;181;0;14;255, Class_id = 4, Attribute_index = 0,
Data_index = 0
Index 35 (DmcrCumulativeRateRegister5): Obis_code = 1;0;181;0;15;255, Class_id = 4, Attribute_index = 0,
Data_index = 0
Index 36 (DmcrCumulativeRateRegister6): Obis_code = 1;0;181;0;16;255, Class_id = 4, Attribute_index = 0,
Data_index = 0
Index 37 (DmcrCumulativeRateRegister7): Obis_code = 1;0;181;0;17;255, Class_id = 4, Attribute_index = 0,
Data_index = 0
Index 38 (DmcrCumulativeRateRegister8): Obis_code = 1;0;181;0;18;255, Class_id = 4, Attribute_index = 0,
Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 38 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

17.2.2 UferDmcrCompleteEOBData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;2;3;255	7	1	1	7fff	ROM	36	0	18	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferDmcrCompleteEOBDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 18 elements
{
  SEQUENCE      // 36 elements
  {
    UferTotalRegister (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenTotalRegister (Att. Id: 0, Abs. Number: 1)
    UferCumulativeTotalRegister (Att. Id: 0, Abs. Number: 1)
    DmcrCumulativeTotalRegister (Att. Id: 0, Abs. Number: 2)
    UferRateRegister1 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister2 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister3 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister4 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister5 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister6 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister7 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister8 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister1 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister2 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister3 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister4 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister5 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister6 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister7 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister8 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister1 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister2 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister3 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister4 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister5 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister6 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister7 (Att. Id: 0, Abs. Number: 1)
    UferCumulativeRateRegister8 (Att. Id: 0, Abs. Number: 1)
    DmcrCumulativeRateRegister1 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister2 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister3 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister4 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister5 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister6 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister7 (Att. Id: 0, Abs. Number: 2)
    DmcrCumulativeRateRegister8 (Att. Id: 0, Abs. Number: 2)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:
Index 1 (UferTotalRegister): Obis_code = 1;0;180;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0
Index 2 (DmcrMaxGenTotalRegister): Obis_code = 1;0;181;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (UferCumulativeTotalRegister): Obis_code = 1;0;180;0;10;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (DmcrCumulativeTotalRegister): Obis_code = 1;0;181;0;10;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 5 (UferRateRegister1): Obis_code = 1;0;180;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (UferRateRegister2): Obis_code = 1;0;180;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 7 (UferRateRegister3): Obis_code = 1;0;180;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 8 (UferRateRegister4): Obis_code = 1;0;180;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 9 (UferRateRegister5): Obis_code = 1;0;180;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 10 (UferRateRegister6): Obis_code = 1;0;180;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 11 (UferRateRegister7): Obis_code = 1;0;180;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 12 (UferRateRegister8): Obis_code = 1;0;180;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 13 (DmcrMaxGenRateRegister1): Obis_code = 1;0;181;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 14 (DmcrMaxGenRateRegister2): Obis_code = 1;0;181;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 15 (DmcrMaxGenRateRegister3): Obis_code = 1;0;181;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 16 (DmcrMaxGenRateRegister4): Obis_code = 1;0;181;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 17 (DmcrMaxGenRateRegister5): Obis_code = 1;0;181;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 18 (DmcrMaxGenRateRegister6): Obis_code = 1;0;181;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 19 (DmcrMaxGenRateRegister7): Obis_code = 1;0;181;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 20 (DmcrMaxGenRateRegister8): Obis_code = 1;0;181;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 21 (UferCumulativeRateRegister1): Obis_code = 1;0;180;0;11;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 22 (UferCumulativeRateRegister2): Obis_code = 1;0;180;0;12;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 23 (UferCumulativeRateRegister3): Obis_code = 1;0;180;0;13;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 24 (UferCumulativeRateRegister4): Obis_code = 1;0;180;0;14;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 25 (UferCumulativeRateRegister5): Obis_code = 1;0;180;0;15;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 26 (UferCumulativeRateRegister6): Obis_code = 1;0;180;0;16;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 27 (UferCumulativeRateRegister7): Obis_code = 1;0;180;0;17;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 28 (UferCumulativeRateRegister8): Obis_code = 1;0;180;0;18;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 29 (DmcrCumulativeRateRegister1): Obis_code = 1;0;181;0;11;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 30 (DmcrCumulativeRateRegister2): Obis_code = 1;0;181;0;12;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 31 (DmcrCumulativeRateRegister3): Obis_code = 1;0;181;0;13;255, Class_id = 4, Attribute_index = 0, Data_index = 0

Index 32 (DmcrCumulativeRateRegister4): Obis_code = 1;0;181;0;14;255, Class_id = 4, Attribute_index = 0,
Data_index = 0

Index 33 (DmcrCumulativeRateRegister5): Obis_code = 1;0;181;0;15;255, Class_id = 4, Attribute_index = 0,
Data_index = 0

Index 34 (DmcrCumulativeRateRegister6): Obis_code = 1;0;181;0;16;255, Class_id = 4, Attribute_index = 0,
Data_index = 0

Index 35 (DmcrCumulativeRateRegister7): Obis_code = 1;0;181;0;17;255, Class_id = 4, Attribute_index = 0,
Data_index = 0

Index 36 (DmcrCumulativeRateRegister8): Obis_code = 1;0;181;0;18;255, Class_id = 4, Attribute_index = 0,
Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 36 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

17.2.3 UferDmcrCurrentData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
0;0;144;0;3;255	7	1	2	0	ROM	20	0	1	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferDmcrCurrentDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ Attribute 2: buffer

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 1 elements
{
  SEQUENCE      // 20 elements
  {
    UferInstantaneousRegister (Att. Id: 0, Abs. Number: 1)
    DmcrInstantaneousRegister (Att. Id: 0, Abs. Number: 1)
    UferTotalRegister (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenTotalRegister (Att. Id: 0, Abs. Number: 1)
    UferRateRegister1 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister2 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister3 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister4 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister5 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister6 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister7 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister8 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister1 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister2 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister3 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister4 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister5 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister6 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister7 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister8 (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ Attribute 3: capture_objects

Here below, the details of each index in the array:

Index 1 (UferInstantaneousRegister): Obis_code = 1;0;180;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (DmcrInstantaneousRegister): Obis_code = 1;0;181;7;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (UferTotalRegister): Obis_code = 1;0;180;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (DmcrMaxGenTotalRegister): Obis_code = 1;0;181;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (UferRateRegister1): Obis_code = 1;0;180;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (UferRateRegister2): Obis_code = 1;0;180;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 7 (UferRateRegister3): Obis_code = 1;0;180;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 8 (UferRateRegister4): Obis_code = 1;0;180;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 9 (UferRateRegister5): Obis_code = 1;0;180;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 10 (UferRateRegister6): Obis_code = 1;0;180;0;6;255, Class_id = 3, Attribute_index = 0, Data_index =

0

Index 11 (UferRateRegister7): Obis_code = 1;0;180;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 12 (UferRateRegister8): Obis_code = 1;0;180;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 13 (DmcrMaxGenRateRegister1): Obis_code = 1;0;181;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 14 (DmcrMaxGenRateRegister2): Obis_code = 1;0;181;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 15 (DmcrMaxGenRateRegister3): Obis_code = 1;0;181;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 16 (DmcrMaxGenRateRegister4): Obis_code = 1;0;181;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 17 (DmcrMaxGenRateRegister5): Obis_code = 1;0;181;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 18 (DmcrMaxGenRateRegister6): Obis_code = 1;0;181;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 19 (DmcrMaxGenRateRegister7): Obis_code = 1;0;181;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 20 (DmcrMaxGenRateRegister8): Obis_code = 1;0;181;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 20 elements
{
  SEQUENCE     // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

17.2.4 UferDmcrEOBData

Interface

Logical name	Class Id	Class version	Absolute number	Local Id	Object table	Max object	Periode	Entries	Min Ent.	Max Ent.
1;1;98;2;2;255	7	1	2	7fff	ROM	18	0	18	1	1

Logical devices :

Management	Electricity	End customer
True	True	True

Attributes / Methods

Attribute (A) / Method (M)	Data type	Content
A1. logical_name	OCTETSTRING	UferDmcrEOBDataOBISCode
A2. buffer	ARRAY	See below
A3. capture_objects	ARRAY	See below

■ **Attribute 2: buffer**

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF     // 18 elements
{
  SEQUENCE      // 18 elements
  {
    UferTotalRegister (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenTotalRegister (Att. Id: 0, Abs. Number: 1)
    UferRateRegister1 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister2 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister3 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister4 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister5 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister6 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister7 (Att. Id: 0, Abs. Number: 1)
    UferRateRegister8 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister1 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister2 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister3 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister4 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister5 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister6 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister7 (Att. Id: 0, Abs. Number: 1)
    DmcrMaxGenRateRegister8 (Att. Id: 0, Abs. Number: 1)
  }
}
```

■ **Attribute 3: capture_objects**

Here below, the details of each index in the array:

Index 1 (UferTotalRegister): Obis_code = 1;0;180;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 2 (DmcrMaxGenTotalRegister): Obis_code = 1;0;181;0;0;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 3 (UferRateRegister1): Obis_code = 1;0;180;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 4 (UferRateRegister2): Obis_code = 1;0;180;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 5 (UferRateRegister3): Obis_code = 1;0;180;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 6 (UferRateRegister4): Obis_code = 1;0;180;0;4;255, Class_id = 3, Attribute_index = 0, Data_index =

0

Index 7 (UferRateRegister5): Obis_code = 1;0;180;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 8 (UferRateRegister6): Obis_code = 1;0;180;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 9 (UferRateRegister7): Obis_code = 1;0;180;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 10 (UferRateRegister8): Obis_code = 1;0;180;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 11 (DmcrMaxGenRateRegister1): Obis_code = 1;0;181;0;1;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 12 (DmcrMaxGenRateRegister2): Obis_code = 1;0;181;0;2;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 13 (DmcrMaxGenRateRegister3): Obis_code = 1;0;181;0;3;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 14 (DmcrMaxGenRateRegister4): Obis_code = 1;0;181;0;4;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 15 (DmcrMaxGenRateRegister5): Obis_code = 1;0;181;0;5;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 16 (DmcrMaxGenRateRegister6): Obis_code = 1;0;181;0;6;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 17 (DmcrMaxGenRateRegister7): Obis_code = 1;0;181;0;7;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Index 18 (DmcrMaxGenRateRegister8): Obis_code = 1;0;181;0;8;255, Class_id = 3, Attribute_index = 0, Data_index = 0

Access rights (clients)

Electricity laboratory	Electricity utility	Electricity reader	End customer	Manufacturer	Resources upgrader	Engineer
Get	Get	Get	Get	Get	-	Get

Attribute description

```
SEQUENCE OF      // 18 elements
{
  SEQUENCE      // 4 elements
  {
    Class_id
    Obis_code
    Attribute_index
    Data_index
  }
}
```

Class_id

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Obis_code

Data type: OCTETSTRING

Authorized value: Decoded as Decimal (Size = 6)

Default value: 0;0;0;0;0;0;

Attribute_index

Data type: INTEGER8

Authorized value: -128 to 127

Default value: 0

Data_index

Data type: UNSIGNED16

Authorized value: 0 to 65535

Default value: 0

Data_index

Data type: UNSIGNED16