# Aidon

Sends data as three different lists, but the payload is formatted in the same way for all list, just containing a different number of items. The following example is «List 3» which has the most items.

7E

A1 8A 41 08 83 13 EB FD E6 E7 00 0F 40 00 00 00 00

01 12

02 02 09 06 01 01 00 02 81 FF 0A 0B 41 49 44 4F 4E 5F 56 30 30 30 31

02 02 09 06 00 00 60 01 00 FF 0A 10 37 33 35 39 39 39 32 38 39 30 34 39 37 39 39 37

02 02 09 06 00 00 60 01 07 FF 0A 04 36 35 33 34

02 03 09 06 01 00 01 07 00 FF 06 00 00 09 6D 02 02 0F 00 16 1B

02 03 09 06 01 00 02 07 00 FF 06 00 00 00 00 02 02 0F 00 16 1B

02 03 09 06 01 00 03 07 00 FF 06 00 00 00 00 02 02 0F 00 16 1D

02 03 09 06 01 00 04 07 00 FF 06 00 00 02 5B 02 02 0F 00 16 1D

02 03 09 06 01 00 1F 07 00 FF 10 00 11 02 02 0F FF 16 21

02 03 09 06 01 00 33 07 00 FF 10 00 03 02 02 0F FF 16 21

02 03 09 06 01 00 47 07 00 FF 10 00 5A 02 02 0F FF 16 21

02 03 09 06 01 00 20 07 00 FF 12 09 04 02 02 0F FF 16 23

02 03 09 06 01 00 34 07 00 FF 12 09 02 02 02 0F FF 16 23

02 03 09 06 01 00 48 07 00 FF 12 08 EC 02 02 0F FF 16 23

02 02 09 06 00 00 01 00 00 FF 09 0C 07 E5 0A 1F 00 14 00 00 FF 00 00 00

02 03 09 06 01 00 01 08 00 FF 06 00 56 9F 52 02 02 0F 01 16 1E

02 03 09 06 01 00 02 08 00 FF 06 00 00 00 00 02 02 0F 01 16 1E

02 03 09 06 01 00 03 08 00 FF 06 00 00 22 D0 02 02 0F 01 16 20

02 03 09 06 01 00 04 08 00 FF 06 00 0A F5 EC 02 02 0F 01 16 20

51 D7

7E

The general structure of this data is composed from a header and a payload, wrapped with 0x7E in each in which is both start and stop tag for HDLC framing. The HDLC header is fairly standard, but it can be noted that timestamp in the header is always 0x00 (null) for all data from Aidon.

The start of the payload defines a list with 18 items.

Each following item is a structure of either two or three items. This way of reporting data is consistent with the definition in «Blue book» chapter 4.3

In «List 3» which is sent once per hour, the meter date and time is included, but is lacking proper time zone information. Defined in «Blue book» chapter 4.1.6.1

After the payload we find the checksum (0x517D)

If we have a look at the first item in the list, it consist of a OBIS code and a string.

02 02 – Structure (0x02) with two items (0x02)

09 06 01 01 00 02 81 FF – Octet (0x09) with six (0x06) items: 1.1.0.2.129.255

0A 0B 41 49 44 4F 4E 5F 56 30 30 30 31 – String (0x0A) with 11 (0x0B) characters: AIDON\_V0001

Breaking down the OBIS code into its respective groups, we have:

Group A (Medium): 1 – Electricity

Group B (Channel): 1 – Channel 1

Group C, D, E: 0.2.129 – List version ID

Group F (Data index): 255 – Default/current value

Now lets have a look at the 8th item in the list, which contains a numeric value.

02 03 – Structure (0x02) with three items (0x03)

09 06 01 00 1F 07 00 FF – Octet (0x09) with six (0x06) items: 1.0.31.7.0.255

10 00 11 – int16 (0x10), value 17 (0x0011)

02 02 0F FF 16 21 – Structure with two items, first is a int8 (0x0F), the second is an enum (0x16).

The first of these two items defines the scaling of the previous number, in this case -1 (0xFF). The second defines the physical unit of the value, in this case 33 (0x21) which translates to «current, A».

From this we can determine that the current for phase L1 (OBIS 31.7.0) is 1.7A (17 \* 10-1)

# Kamstrup

Sends data as two different lists, but the payload is formatted in the same way for both list, just containing a different number of items. The following example is «List 1» which is sent every 10s.

7E

A0 E2 2B 21 13 23 9A E6 E7 00 0F 00 00 00 00 0C 07 E5 0B 11 03 0B 32 00 FF 80 00 00

02 19

0A 0E 4B 61 6D 73 74 72 75 70 5F 56 30 30 30 31

09 06 01 01 00 00 05 FF 0A 10 XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX

09 06 01 01 60 01 01 FF 0A 12 36 38 34 31 31 33 31 42 4E 32 34 33 31 30 31 30 34 30

09 06 01 01 01 07 00 FF 06 00 00 05 E6

09 06 01 01 02 07 00 FF 06 00 00 00 00

09 06 01 01 03 07 00 FF 06 00 00 00 00

09 06 01 01 04 07 00 FF 06 00 00 01 92

09 06 01 01 1F 07 00 FF 06 00 00 00 A1

09 06 01 01 33 07 00 FF 06 00 00 00 C1

09 06 01 01 47 07 00 FF 06 00 00 01 8E

09 06 01 01 20 07 00 FF 12 00 EB

09 06 01 01 34 07 00 FF 12 00 EC

09 06 01 01 48 07 00 FF 12 00 EC

EF 5F

7E

The general structure of this data is composed from a header and a payload, wrapped with 0x7E in each in which is both start and stop tag for HDLC framing. The HDLC header is fairly standard, but it can be noted that timestamp in the header is present, but is lacking proper time zone information.

The start of the payload defines a structure with 25 items.

The first item is the list version ID (OBIS 0.2.129): Kamstrup\_V0001

All the following items can be paired as a list of OBIS and value with a total of 12 items. None of the items contain any data regarding scaling of the value.

In «List 2» which is sent once per hour, the meter date and time is included, but is lacking proper time zone information. Defined in «Blue book» chapter 4.1.6.1

After the payload we find the checksum (0xEF5F)

# Kaifa

Sends data as three different lists with a proprietary format. The following example is «List 3» which has the most items.

7E

A0 9A 01 02 01 10 AA A5 E6 E7 00 0F 40 00 00 00 09 0C 07 E8 0A 01 02 13 00 0A FF 80 00 00 02 12

09 07 4B 46 4D 5F 30 30 31

09 10 36 39 37 30 36 33 31 34 30 37 32 36 32 39 38 36

09 07 4D 41 33 30 34 48 34

06 00 00 13 C0

06 00 00 00 00

06 00 00 00 00

06 00 00 01 D5

06 00 00 4C DD

06 00 00 05 0E

06 00 00 03 90

06 00 00 09 34

06 00 00 09 69

06 00 00 09 59

09 0C 07 E8 0A 01 02 13 00 0A FF 80 00 00

06 02 8E 4B 5E

06 00 00 00 00

06 00 97 35 DE

06 00 08 97 2F

FA E5

7E

The general structure of this data is composed from a header and a payload, wrapped with 0x7E in each in which is both start and stop tag for HDLC framing. The HDLC header is fairly standard, but it can be noted that timestamp in the header is present, but is lacking proper time zone information. The timestamp is also prepended with its data type (0x09 – Octet), whjch I am unsure if is correct or not.

The start of the payload defines a structure with 18 items.

Since this is a proprietary format, you have to know in advance what OBIS code belongs to each item. None of the items contain any data regarding scaling of the value.

In «List 3» which is sent once per hour, the meter date and time is included, but is lacking proper time zone information. Defined in «Blue book» chapter 4.1.6.1

After the payload we find the checksum (0xEF5F)

OBIS codes for this list is:

0.2.129 – List version ID

0.0.5 – Meter ID

96.1.1 – Meter model

1.7.0 – Active import power

2.7.0 – Active export power

3.7.0 – Reactive import power

4.7.0 – Reactive export power

31.7.0 – L1 current

51.7.0 – L2 current

71.7.0 – L3 current

32.7.0 – L1 voltage

52.7.0 – L2 voltage

72.7.0 – L3 voltage

1.0.0 – Meter date and time

1.8.0 – Active import energy

2.8.0 – Active export energy

3.8.0 – Reactive import energy

4.8.0 – Reactive export energy