M-Bus manufacturer specific DIFE

# Frame Count Bit

Separate Frame Count Bits are used for SND\_UD and REQ\_UD2.

# Commands

Manufacturer specific DIF = 0F/1F

Only one function per telegram is allowed. The DIF 1F is never used when data is sent to the meter.

DIFE1 = 0x80

DIEF2

Description Function Parameters Data

NoOperation 0x00

ROMread 0x01 offset, length

EEPROMwrite 0x02 offset xx

ContinueEEPROMwrite 0x03 xx

EEPROMread 0x04 offset, length

RAMwrite 0x05 offset xx

ContinueRAMwrite 0x06 xx

RAMread 0x07 offset, length

BlockWrite 0x08 blockID xx

ContinueBlockWrite 0x09 xx

BlockRead 0x0A blockID

Calibrate 0x0B L3,L2,L1,k,pf,G2,G1,G0, temp, freq,0kWh, time

SwReset 0x0C

SetMode 0x0D xx

SetLCDmode 0x0E xx

SetSerialNumber 0x0F xx xx xx xx

LockCom 0x10

CreateBlocks 0x11

CalibrateEnergyOffset 0x12 time

CalibrateCrystal 0x13 time, frequency

ReadTemp 0x14

SetTestDate 0x15 date

SetCalibrationDate 0x16 date

ReadProductionStatus 0x17

SetOptoPulseFrequency 0x18 freqyency xx xx xx xx

SetOptoPulseLength 0x19 pulseLength xx

SetBlockLoadState 0x1A state

TariffStructureWrite 0x1B datablock

ContinueTariffStructureWrite 0x1C datablock

TariffStructureRead 0x1D

StoreADValues 0x1E

LoadProfileSettingsWrite 0x1F datablock

LoadProfileSettingsRead 0x20

MaxDemandSettingsWrite 0x21 datablock

MaxDemandSettingsRead 0x22

PreviousValueSettingsWrite 0x23 datablock

PreviousValueSettingsRead 0x24

EventLog1SettingsWrite 0x25 datablock

EventLog1SettingsRead 0x26

UserConfigSettingsWrite 0x27 datablock

UserConfigSettingsRead 0x28

EventLog2SettingsWrite 0x29 datablock

EventLog2SettingsRead 0x2A

DlmsTariffSettingsWrite 0x2B DLMS coded data

DlmsContinueTariffSettingsWrite 0x2C DLMS coded data

DlmsTariffSettingsRead 0x2E DLMS coded data

DlmsLoadProfileSettingsWrite 0x2F DLMS coded data

DlmsContinueLoadProfileSettingsWrite 0x30 DLMS coded data

DlmsLoadProfileSettingsRead 0x32 DLMS coded data

DlmsDemandSettingsWrite 0x33 DLMS coded data

DlmsContinueDemandSettingsWrite 0x34 DLMS coded data

DlmsDemandSettingsRead 0x36 DLMS coded data

DlmsPreviousValuesSettingsWrite 0x37 DLMS coded data

DlmsContinuePreviousValuesSettingsWrite 0x38 DLMS coded data

DlmsPreviousValuesSettingsRead 0x3A DLMS coded data

DlmsAlarmSettingsWrite 0x3B DLMS coded data

DlmsContinueAlarmSettingsWrite 0x3C DLMS coded data

DlmsAlarmSettingsRead 0x3E DLMS coded data

DlmsIoSettingsWrite 0x3F DLMS coded data

DlmsIoSettingsRead 0x40 DLMS coded data

DlmsDstSettingsWrite 0x41 DLMS coded data

DlmsContinueDstSettingsWrite 0x42 DLMS coded data

DlmsDstSettingsRead 0x44 DLMS coded data

RSP\_UD SND\_UD

DIF DIF

DIFE1 DIFE1

DIFE2 DIFE2

ACK/NAK parameters

Data Data

DlmsWrite 0x45 DLMS coded data

DlmsContinueWrite 0x46 DLMS coded data

DlmsRead 0x48 DLMS coded data

The meter will respond with E5 to each SND\_UD telegram it receives. After this it prepares an answer that can be ready by using REQ\_UD2. The answer can only be read once. The first byte in the answer is a result code indicating if the processing of the command was successful or not. If the processing of the command generates data the data will follow the result code.

No Operation, 80 00

Functional description: Does nothing

Parameters: None

ROM Read, 80 01

Functional description: Reading of the program memory.

Parameters: Offset, 32-bit integer. First byte to read

Length, 32-bit integer. Number of bytes to read

EEPROM Write, 80 02

Functional description: Write to EEPROM in meter.

Parameters: Offset, 32-bit integer. First address to write.

n \* Data, 8-bit integer. Bytes to write.

Continue EEPROM Write, 80 03

Functional description: Additional data to write to EEPROM in meter. The command can only follow a EEPROM Write command.

Parameters: n \* Data, 8-bit integer. Bytes to write.

EEPROM Read, 80 04

Functional description: Reading of the EEPROM memory.

Parameters: Offset, 32-bit integer. First address to read.

Length, 32-bit integer. Number of bytes to read.

RAM Write, 80 05

Functional description: Write to RAM in meter.

Parameters: Offset, 32-bit integer. First address to write.

n \* Data, 8-bit integer. Bytes to write.

Continue RAM Write, 80 06

Functional description: Additional data to write to RAM in meter. The command can only follow a RAM Write command.

Parameters: n \* Data, 8-bit integer. Bytes to write.

RAM Read, 80 07

Functional description: Reading of the RAM memory.

Parameters: Offset, 32-bit integer. First address to read.

Length, 32-bit integer. Number of bytes to read.

Block Write, 80 08

Functional description: Writing of a block in meter.

Parameters: Id, 8-bit integer. Block number.

n \* Data, 8-bit integer. Bytes to write.

Continue Block Write, 80 09

Functional description: Additional block data to write to meter. This command can only follow a Block Write command.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Block Read, 80 0A

Functional description: Reading of a block from meter.

Parameters: Id, 8-bit integer. Block number.

Calibrate, 80 0B

Functional description: Initiates the calibration of the meter.

Parameters: Bit masked 16-bit integer (xxxx W,T,F,Z, L3, L2, L1, k, pf, G2, G1, G0)

W = 1, create blocks

T = 1, read temperature value

F = 1, calibrate crystal frequency

Z = 1, calibrate zero energy

L3 = 1, calibrate L3

L2 = 1, calibrate L2

L1 = 1, calibrate L1

k = 1, calibrate absolute value

pf = 1, calibrate cos ϕ 0.5

G2 = 1, calibrate low range

G1 = 1, calibrate middle range

G0 = 1, calibrate high range

time, 8-bit integer, 0-255 seconds. Length of calibration.

SwReset, 80 0C

Functional description: Software reset of the meter.

Parameters: None.

Set Mode, 80 0D

Functional description: Sets the mode of the meter. It is only possible to change from test mode to normal mode.

Parameters: Mode, 8-bit integer. 0 = normal mode

1 = test mode

Set LCD Mode, 80 0E

Functional description: Sets the mode of the LCD.

Parameters: Mode, 8-bit integer. 0 = normal mode

1 = all segments on

2 = all segments off

3 = test pattern 1

4 = test pattern 2

Set Serial Number, 80 0F

Functional description: Sets the serial number in the meter.

Parameters: Serial Number, 8 digits BCD. The new serial number.

Lock Com, 80 10

Functional description: Locks the communication for test and maintenance commands.

Parameters: None.

Create Blocks, 80 11

Functional description: Tells the meter to (re)create its set of blocks.

Parameters: None.

Calibrate Energy Offset, 80 12

Functional description: Calibration of energy at no current.

Parameters: time, 8-bit integer. Length of calibration.

Calibrate Crystal, 80 13

Functional description: Calibration of system crystal.

Parameters: time, 8-bit integer. Length of calibration.

frequency, 8-bit integer. Network frequency with 2 decimals.

Read Temp, 80 14

Functional description: Reads the temperature value and stores it.

Parameters: None.

Set Test Date, 80 15

Functional description: sets the date of functional test

Parameters: year, 2 digits BCD. Year of functional test

month, 2 digits BCD. Month of functional test

day, 2 digits BCD. Day of functional test

Set Calibration Date, 80 16

Functional description: sets the date of calibration

Parameters: year, 2 digits BCD. Year of calibration

month, 2 digits BCD. Month of calibration

day, 2 digits BCD. Day of calibration

Read Production Status, 80 17

Functional description: reads the fifth byte in block 5.

Set Opto Pulse Frequency, 80 18

Functional description: sets the pulse frequency for the optical port

Parameters: frequency, 32-bit integer, pulses / kWh

Set Opto Pulse Length, 8019

Functional description: sets the pulse length on the optical port

Parameters: pulse length, 8-bit integer, pulse length in milliseconds

Set Block Load State, 80 1A

Functional description: Disables block loading in meter.

Parameters: state, 8-bit integer

0 = Block load enabled

1 = Block load disabled

Tariff Structure Write, 80 1B

Functional description: Writing of a tariff structure in meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Continue Tariff Structure Write, 80 1C

Functional description: Additional tariff structure data to write to meter. This command can only follow a Tariff Structure Write command.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Tariff Structure Read, 80 1D

Functional description: Reading of tariff structure block from meter.

Parameters: None.

Store AD values, 80 1E

Store values from AD converters in a block.

Parameters: None.

Load Profile Settings Write, 80 1F

Functional description: Writing of load profile settings to meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Load Profile Settings Read, 80 20

Functional description: Reading of load profile settings from meter.

Parameters: None.

Maximum Demand Settings Write, 80 21

Functional description: Writing of maximum demand settings to meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Maximum Demand Settings Read, 80 22

Functional description: Reading of maximum demand settings from meter.

Parameters: None.

Previous Value Settings Write, 80 23

Functional description: Writing of previous value settings to meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Previous Value Settings Read, 80 24

Functional description: Reading of previous value settings from meter.

Parameters: None.

Event Log 1 Settings Write, 80 25

Functional description: Writing of event log 1 settings to meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Event Log 1 Settings Read, 80 26

Functional description: Reading of event log 1 settings from meter.

Parameters: None.

User Configuration Settings Write, 80 27

Functional description: Writing of user configuration settings to meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

User Configuration Settings Read, 80 28

Functional description: Reading of user configuration settings from meter.

Parameters: None.

Event Log 2 Settings Write, 80 29

Functional description: Writing of event log 2 settings to meter.

Parameters: n \* Data, 8-bit integer. Bytes to write.

Event Log 2 Settings Read, 80 2A

Functional description: Reading of event log 2 settings from meter.

Parameters: None.

Dlms Tariff Settings Write, 80 2B

Functional description: Writing tariff settings to meter.

Parameters: DLMS coded setting data.

Dlms Tariff Settings Continue Write, 80 2C

Functional description: Continue writing tariff settings to meter.

Parameters: DLMS coded setting data.

Dlms Tariff Settings Read, 80 2E

Functional description: Writing tariff settings to meter.

Parameters: DLMS coded specification of what to read.

Dlms Load Profile Settings Write, 80 2F

Functional description: Writing load profile settings to meter.

Parameters: DLMS coded setting data.

Dlms Load Profile Settings Continue Write, 80 30

Functional description: Continue Writing load profile settings to meter.

Parameters: DLMS coded setting data.

Dlms Load Profile Settings Read, 80 32

Functional description: Read load profile settings from meter.

Parameters: DLMS coded specification of what to read.

Dlms Demand Settings Write, 80 33

Functional description: Writing demand settings to meter.

Parameters: DLMS coded setting data.

Dlms Demand Settings Continue Write, 80 34

Functional description: Continue Writing demand settings to meter.

Parameters: DLMS coded setting data.

Dlms Demand Settings Read, 80 36

Functional description: Read demand settings from meter.

Parameters: DLMS coded specification of what to read.

Dlms Previous Value Settings Write, 80 37

Functional description: Writing previous value settings to meter.

Parameters: DLMS coded setting data.

Dlms Previous Value Settings Continue Write, 80 38

Functional description: Continue Writing previous value settings to meter.

Parameters: DLMS coded setting data.

Dlms Previous Value Settings Read, 80 3A

Functional description: Read previous value settings from meter.

Parameters: DLMS coded specification of what to read.

Dlms Alarm Settings Write, 80 3B

Functional description: Writing alarm settings to meter.

Parameters: DLMS coded setting data.

Dlms Alarm Settings Continue Write, 80 3C

Functional description: Continue Writing alarm settings to meter.

Parameters: DLMS coded setting data.

Dlms Alarm Settings Read, 80 3E

Functional description: Read alarm settings from meter.

Parameters: DLMS coded specification of what to read.

Dlms IO Settings Write, 80 3F

Functional description: Writing IO settings to meter.

Parameters: DLMS coded setting data.

Dlms IO Settings Read, 80 40

Functional description: Read IO settings from meter.

Parameters: DLMS coded specification of what to read.

Dlms DST Settings Write, 80 41

Functional description: Writing DST settings to meter.

Parameters: DLMS coded setting data.

Dlms DST Settings Continue Write, 80 42

Functional description: Continue Writing DST settings to meter.

Parameters: DLMS coded setting data.

Dlms Alarm DST Read, 80 44

Functional description: Read DST settings from meter.

Parameters: DLMS coded specification of what to read.

Dlms Write, 80 45

Functional description: Writing to meter.

Parameters: DLMS coded data.

Dlms Continue Write, 80 46

Functional description: Continue Writing to meter.

Parameters: DLMS coded data.

Dlms Read, 80 48

Functional description: Read DLMS coded data from meter.

Parameters: DLMS coded specification of what to read.

# Result codes

00 Command processed successfully

01 Command not known

02 Unexpected command

03 Syntax error

04 Error during execution of command

05 Write protected

FF No reply from meter

Use of Result codes

04, Error during processing of command

This error is used when...

* too many bytes received in the command

REVISION

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| --- | --- | --- | --- |
| Rev. ind. | Page (P) Chapt. (C) | Description | Date Dept./Init. |
| A |  | First version, based on original document by BJN | 2005/03/21 |
| B |  | Added commands 0x1A, 0x1B, 0x1C, 0x1D | 2005/05/05 JON |
| C |  | Added command 0x1E | 2005/05/31 JON |
| D |  | Added commands 0x1F-0x28 | 2007/05/10 UEM |
| E |  | Added commands 0x29-0x2A | 2008/12/10 UEM |
| F |  | Added commands 0x2B-0x48 | 2015/06/25 UEM |
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