

Driver M-bus

Description

- Protocol implementation according to EN 13757-2 and EN 13757-3
- connection of M-bus devices through local M-Bus converter
- connection of M-bus devices through unlimited number of remote M-Bus/TCP converters
- driver for reading M-Bus devices uses primary addressing
- configuring basic M-Bus device parameters:
 - primary address
 - secondary address
 - transfer speed
 - reading basic parameters:
 - manufacturer
 - medium
 - primary address
 - secondary address
- integrated M-Bus telegram analyzer, which can be used to create read profile from unknown device
- creating M-Bus telegram with command (e.g. command to disable button) and its sending through associated Bacnet point
- it is possible to assign mathematical operations to each M-Bus point:
 - add value
 - subtract value
 - multiply by value
 - divide by value
 - mathematical operations are computed with double precision float numbers
- each M-bus device has created point containing state value of last reading
- active reading profile can be tested and its return results displayed
- Bacnet point for manual start of M-Bus devices reading
- virtual M-bus/TCP converter:
 - allows direct device configuration with manufacturers software on device
 - slave mode - paralel sensor reading with packet insertion from TCP client
 - master mód - disables devices reading and master client gains exclusive access to M-Bus converter



Knowledge of [M-bus](#) protocol is required to work with this driver.

Virtual gateway M-bus/TCP

Enables direct configuration of M-Bus devices with manufacturers software.

Virtual COM port emulator is required to use this function. For Windows we recommend to use [VSPE](#), 32-bit version is free.

Master connection

Enables exclusive access to M-Bus converter. All M-Bus functions of M-Bus/Bacnet converter are disabled while connection is active.



Connection is established with **TCP** protocol on port **2001**.

Slave connection

Retains M-bus/Bacnet converter functions and adds received telegrams from TCP client to telegrams sent to converters software. Responses on these telegrams are returned on open TCP connection.



Connection is established with **TCP** protocol on port **2000**.

Bacnet implementation

M-bus	Bacnet
Value from telegram	AnalogInput
Manual M-bus read	BinaryValue
State of last read	AnalogInput
M-bus command	AnalogValue

Properties:

- objectName
- objectType
- presentValue
- statusFlags
- outOfService
- covIncrement
- priorityArray
- relinquishDefault
- units

Values of state point of M-bus device

- **0** - OK
- **1** - No response
- **2** - Failed to open port
- **3** - CRC error
- **4** - Failed to decode telegram
- Writing any value through Bacnet starts manual reading of device

Bacnet point of M-bus command

Written value will be used as M-bus address when command is sent to M-Bus.

Bacnet point for manual devices reading

Writing any value will start manual reading of all devices.

Driver settings

Drivers settings

Bacnet IP settings Bacnet BBMD B-Port settings C-Bus settings **M-Bus settings**

Communication speed:
Transfer speed of local port.

Communication speed:

COM port:
Selection of local COM port.

COM port:

COM port:
Selection of local COM port.

Manual read Bacnet point name:

Manual reading - point name:
Name of Bacnet point to start devices reading. Reading starts after writing any value to this Bacnet point.

Master client: not connected

Status of master M-Bus connection:
Displays status of master M-Bus connection.

Virtual COM ports

Selection	IP address	Port	Connection type	OK
192.168.0.202	192.168.0.202	2,000	TPC	<input type="radio"/>
a110	10.0.1.145	2,000	TPC	<input type="radio"/>



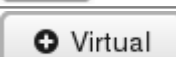
M-Bus functions of converter are blocked while connection is active.



Disconnect master client


Disconnects master client.

Virtual COM ports

Virtual ports manager.

Button	Description
	Save settings
	Undo
	Add virtual COM port

Button	Description
	Delete selected
	Check availability of virtual ports

 Only TCP connection is supported currently.

M-bus devices settings

M-Bus

Configure M-Bus devices
M-Bus device profiles
M-bus devices configuration
M-Bus commands configuration
M-Bus TCP Proxy

Baud rate:

COM port selection:

Primary address:

Timeout [s]:

Received

Primary address:

Secondary address:

Manufacturer model:


Medium:

Log MBAD48

Port configuration

Transfer speed Currently set transfer speed of local M-Bus converter. Changes

Prenosová rýchlosť:

are applied immediately.  Warning!

Výber COM portu:

Transfer speed also affects reading algorithm of M-bus/Bacnet driver.

Select COM port

Selection of used port for devices configuration

Commands sending

Primary address

Primary address of configured device:

Primárna adresa	<input type="text" value="254"/>
Timeout [s]	<input type="text" value="1"/>
<input type="button" value="snd_nke"/>	<input type="button" value="req_ud2"/>
<input type="button" value="Slave select"/>	<input type="button" value="Zmeniť primárnu adresu"/>
<input type="button" value="Zmeniť sekundárnu adresu"/>	
<input type="button" value="Zmeniť prenosovú rýchlosť"/>	

- **254** - command for all devices (broadcast)
- **253** - command for secondary addressed device through **Slave select**

snd_nke

Sends telegram snd_nke

req_ud2

Sends telegram req_ud2

Slave select

Select device with secondary address

Change primary address

Changes primary address of device

Change secondary address

Changes secondary address of device

Change transfer speed

Changes transfer speed

Decoded req_ud2 response

In this part will be displayed decoded response to req_ud2 telegram.

Prijaté	
Primárna adresa	<input type="text"/>
Sekundárna adresa	<input type="text"/>
Kód výrobcu	<input type="text"/>
Médium	<input type="text"/>

M-bus device profiles

Profile is template configuration for converting M-Bus telegrams to Bacnet points.

M-Bus

Configure M-Bus devices | **M-Bus device profiles** | M-bus devices configuration | M-Bus commands configuration | M-Bus TCP Proxy

Profile name

- INFOCAL-5
- PadPulz**
- ista-SensonicII

Bacnet object name:

REQ_UD2: ▼

Timeout [s]:

Description:

Commentary:

Telegram	ID	Object name	VIF	DIF
0	0	@0EnergyWh	00	0c
0	1	@1TimPoint	8d	04
0	2	@2TimPoint	6c	42
0	3	@3EnergyWh	00	4c
0	4	@4TimPoint	ec7e	42

Bacnet object name:

Bacnet units: ▼

Telegram number:

Position in telegram:

VIF+VIFE:

DIF+DIFE:

Search by: ▼

Function 1: ▼

Value 1:

Function 2: ▼

Value 2:


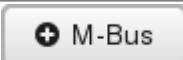

Telegram data





```
Telegram #0:  
68 2f 68 08 05 72 01 86 11 02 ac 48 41 00 d3 00 00 00 0c 00 89 58 06  
01 04 8d ac 07f2 11 42 6c df 1c 4c 00 97 41 06 01 42 ec 7e ff 1c 0f c0 01  
01 0c b4 16
```

Editor for M-bus device profiles

In top part of the screen is located list of current profiles.



Button	Description
	Create profile
	Create profile from M-Bus device
	Delete selected profiles

Button	Description
	Save profile settings.  Warning, only this option saves changes permanently to file. Other save options will save changes in memory. Remember to use this option at the end of your work!
	Undo
	Test profile on M-Bus device

Editor for M-bus device profile

Bacnet object name:

Name of M-Bus status point on Bacnet
 Symbol @ will be replaced with given text on profile upload to M-Bus read configuration.

REQ_UD2:

“C Field” of sent telegram.

Timeout [s]:

Telegram reading timeout in seconds.

Data from TCP converters will be processed after time limit. M-bus device needs to send all data or CRC errors can occur.

Description:

Notes:

User description and notes.

Bacnet object name:

REQ_UD2:

Timeout [s]:

Description:





Commentary:

Telegram	ID	Object name	VIF	DIF
0	0	@0EnergyWh	00	0c
0	1	@1TimPoint	6d	04
0	2	@2TimPoint	6c	42
0	3	@3EnergyWh	00	4c
0	4	@4TimPoint	ec7e	42

Button	Description
	Save settings
	Undo

List of telegram entries

These entries are exported as Bacnet points

Button	Description
	Add entry
	Delete selected entries
	Save entries settings
	Undo

M-Bus telegram records editor

Bacnet object name:

Name of M-Bus point on Bacnet. Symbol @ will be replaced with given text on profile upload to M-Bus read configuration.

Bacnet units:

Units accessible through Bacnet

Telegram number:

Position in telegram:

Informative value on automatic read from M-Bus device

VIF+VIFE:

VIF+VIFE value

DIF+DIFE:

DIF+DIFE value

Search by:

Entry in telegram is searched by VIF+VIFE, or by VIF+VIFE and at the same time by DIF+DIFE. You can find more informations about structure of M-Bus telegram [here](#).

Mathematical functions and their values

Allows modification of decoded values before they are written to Bacnet point.

Bacnet object name:

Bacnet units:

Telegram number:

Position in telegram:

VIF+VIFE:

DIF+DIFE:

Search by:

Function 1:



Value 1:

Function 2:

Value 2:

Telegram data

Telegram #0:
68 2f 2f 68 08 05 72 01 86 11 02 ac 48 41 00 d3 00 00 00 0c 00 89 58 06
01 04 6d ac 07 12 11 42 8c df 1c 4c 00 97 41 06 01 42 ec 7e ff 1c 0f c0 01
01 0c b4 16

Button	Description
	Save settings
	Undo

Telegram data

Hexadecimal representation of recieved telegram on automatic profile generation.

Generate profile from M-Bus device

+ M-Bus

Load profile from M-Bus device

Start site:

COM port selection:

Timeout (s):

Primary address:

REQ_UD2:

Result: OK

Received telegrams count: 1

Detected points count: 30

Telegram ID	Object name	SP	DP	Value
0	@0UnkownVP	78	0x	81,148,708
0	@1TimePoint	8a	0a	4,121,817
0	@2Time3	15	04	6,108.4
0	@3Time3	15	44	4,544.0
0	@4Time3	15	8411	5,071.1
0	@5Time3	15	8410	0
0	@6Time3	15	u410	0
0	@7Time3	15	8411	0
0	@8EnergykWh	05	04	31,884
0	@9EnergykWh	05	44	22,353
0	@10EnergykWh	05	8411	30,987
0	@11EnergykWh	05	8410	0
0	@12EnergykWh	05	u410	0
0	@13EnergykWh	05	8411	0
0	@14TimePoint	8a	42	1,231

Button	Description
	Read M-Bus device on specified COM port and req_ud2
OK	Generate profile from received data
CANCEL	Cancel profile generation

Test profile on M-Bus device

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Test M-Bus device profile

Start site:

COM port selection:

Timeout (s):

Primary address:

REQ_UD2:

Result: OK

Received telegrams count: 1

Detected points count: 30

Object name	SP	DP	Found	Value
@0UnkownVP	78	0x	✔	81,148,708
@1TimePoint	8a	0a	✔	4,121,831
@2Time3	15	04	✔	6,108.4
@3Time3	15	44	✔	6,108.4
@4Time3	15	8411	✔	6,108.4
@5Time3	15	8410	✔	6,108.4
@6Time3	15	u410	✔	6,108.4
@7Time3	15	8411	✔	6,108.4
@8EnergykWh	05	04	✔	31,884
@9EnergykWh	05	44	✔	31,884
@10EnergykWh	05	8411	✔	31,884
@11EnergykWh	05	8410	✔	31,884
@12EnergykWh	05	u410	✔	31,884
@13EnergykWh	05	8411	✔	31,884
@14TimePoint	8a	42	✔	1,231

Button	Description
	Test profile on specified COM port and req_ud2
OK	Close window

M-Bus device settings

M-Bus

Configure M-Bus devices | M-Bus device profiles | **M-bus devices configuration** | M-Bus commands configuration | M-Bus TCP Proxy

Device name	A	Enabled
INFOCAL-5	1	<input checked="" type="checkbox"/>
Merac1	1	<input checked="" type="checkbox"/>

Primary address:

Bacnet object name:

Reading interval [min]:

Enable reading:

REQ_UD2:

COM port selection:

Timeout [s]:

Object name	VIF	DIF
XXX0UnrecVIF	fd11	0c
XXX1EnergyMJ	0e	0c
XXX2VolTm3	13	0c
XXX3PowerW	2d	0c
XXX4Vlowm3h	3c	0c
XXX5FlowtempC	5a	0b
XXX6RetTempC	5e	0b
XXX7TmDifC	61	0b

Bacnet object name:

Bacnet units:

VIF+VIFE:

DIF+DIFE:

Search by:

Function 1:

Value 1:

Function 2:

Value 2:







M-Bus devices editor

In top part of the screen is located list of currently configured devices.

Device name	A	Enabled
INFOCAL-5	1	
Merac1	1	



Button	Description
	Create M-Bus device

Button	Description
	Create M-Bus device from profile
	Update selected device from profile
	Remove selected devices
	Save devices settings. Warning, only this option saves changes permanently to file. Other save options will save changes in memory. Remember to use this option at the end of your work!
	Undo
	Test current settings on M-Bus device.

M-Bus device editor

Primary address:

Primary address of M-Bus device

Bacnet object name:

Name of M-Bus status point in Bacnet

REQ_UD2:

“C Field” of send telegram.

COM port selection:

Port of connected device

Timeout [s]:

Telegram reading time limit in seconds. Data from TCP converters will be processed after time limit. M-bus device needs to send all data or CRC errors can occur.

Primary address:

Bacnet object name:

Reading interval [min]:



Enable reading:

REQ_UD2:

COM port selection:





Timeout [s]:

Object name	VIF	DIF
XXX0UnrecVIF	fd11	0c
XXX1EnergyMJ	0e	0c
XXX2VolTm3	13	0c
XXX3PowerW	2d	0c
XXX4Vflowm3h	3c	0c
XXX5FlowtempC	5a	0b
XXX6RetTempC	5e	0b
XXX7TmDiffC	61	0b

Button	Description
	Save settings
	Undo

List of telegram entries

These entries are exported as Bacnet points

Button	Description
	Add entry
	Delete selected entries
	Save entries settings
	Undo

M-Bus telegram entry editor

Name of Bacnet point:

Name of M-Bus entry on Bacnet.

Bacnet units:

Units accessible from Bacnet

VIF+VIFE:

VIF+VIFE value

DIF+DIFE:

DIF+DIFE value

Search by:

Entry in telegram is searched by VIF+VIFE, or by VIF+VIFE and at the same time by DIF+DIFE. You can find more informations about structure of M-Bus telegram [here](#).

Mathematical functions and their values

Allows modification of decoded values before they are written to Bacnet point.

Bacnet object name:

Bacnet units:

VIF+VIFE:

DIF+DIFE:



Search by:

Function 1:

Value 1:

Function 2:

Value 2:

Button	Description
	Save settings
	Undo

M-bus commands settings

M-Bus

Configure M-Bus devices | M-Bus device profiles | M-bus devices configuration | **M-Bus commands configuration** | M-Bus TCP Proxy

Device name	Description	Enabled
Padpulz_freeze		<input checked="" type="checkbox"/>

Bacnet object name:

Enabled

COM port selection:

Timeout [s]:

Command data:

<0x68><len><len><0x68>

<C>

<Adr>

<Cl>

<data>






<crc><0x16>

M-bus commands editor

In top part of the screen is located list of current commands.

Device name	Description	Enabled
Padpulz_freeze		<input checked="" type="checkbox"/>



Button	Description
	Add M-Bus command
	Add predefined command
	Delete selected commands
	Save commands configuration
	Undo

M-bus command editor

Bacnet object name:

Name of the Bacnet object

Enabled

Exports command to Bacnet

COM port:

COM port on which will be command sent

Timeout [s]

Response time limit, used to clear RX buffer

<C>

Telegrams "C-field"

<CI>

Telegrams "CI-field"

<DATA>

Hexadecimal representation of telegrams data

Telegram address will be included from defined value in Bacnet object. Length and CRC will be calculated before telegram is sent.

Bacnet object name:

Enabled

COM port selection:

Timeout [s]:

Command data:

<0x68><len><len><0x68>



<C>

<Adr>

<CI>

<data>

<crc><0x16>

Button	Description
	Save settings
	Undo

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