1. Safety Information

Ensure ESD protection.

Avoid short-circuits on the PCB.

Always route connecting cables through the grommets of the meter.

Do not cut the grommets shorter than necessary since this may lower the degree of protection.

Disconnect the M-bus voltage during connection work.

Touch the module only on its plastic holder.

The meter has no lightning protection. Ensure lightning protection via the house installation.

2. Description of functions

The M-Bus module T45-MBUS enables the meter to communicate with an M-bus center in order to transmit measured values.

3. Installation and assembly

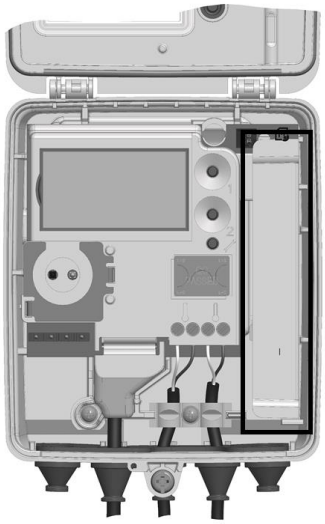


Fig. 1: Module slot

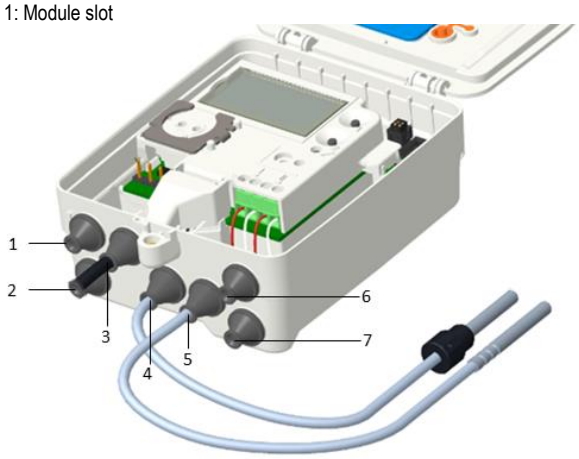


Fig. 2: Bush sleeves

Installing the communication

The communication modules are connected via a non-reactive plug to enable installation or conversion at any time. All cables must be routed through the existing bush sleeves 6 or 7 in the meter.

Note: To connect an external cable, open the cable sleeves so that they tightly enclose the cable.

Proceed as follows to install a communication module:

- If necessary, open the housing cover by loosening the screw.
- Run the cable from the outside through the grommet.
- Strip and connect the cable.
- Secure the cable with the strain relief clamp.
- Connect the cables to one of the terminals (24 and 25) of the module. Another M-Bus meter can be connected to the free terminals (24 and 25).
- Pull the cables out through the housing while inserting the module.
- First attach the contact surfaces of the module to the module slot.
- Gently push the module in.
- Close the housing cover by tightening the screw (see chapter Torque, Installation Instruction) and press the housing cover tightly into place.

Depending on the design of the housing, please also observe the following points:

- For IP 68 versions of the housing, tighten the cable gland.
- For the IP 54 version of the housing, make sure that the grommet is seated correctly.

Note: No later than 60 seconds after installation, the meter automatically detects the inserted modules and is ready for communication.

4. LCD

Note: Depending on the device parameterization, both the display scope and the displayed data may deviate from this description.

LOOP 2 “LOOP 2”

Loop head

M-Bus module

M-Bus primary address

M-Bus secondary address

5. Adjustable parameters directly on the meter

5.1 Calling the parametrizing function

Proceed as follows to parameterize the meter:

- Press the service button for 3 sec. until the LCD displays

.

- Press button 2 to adjust the parametrization.

5.2 Enter M-Bus primary address

To enter the M-Bus primary address, proceed as follows:

1. Press button 1 repeatedly until the LCD displays

.

2. Press button 2 repeatedly until the digit you want to be modified flashes.

3. Press button 1 repeatedly until the required value is being displayed on the LCD.

You can repeat steps **2.** and **3.** as many times as you want until the required value appears.

4. To confirm the entered value, press the button 1, making sure that no more digits are flashing.

5.3 Enter M-Bus secondary address

To enter the M-Bus secondary address, proceed as follows:

1. Press button 1 repeatedly until the LCD displays

.

2. Press button 2 repeatedly until the digit you want to be modified flashes.

3. Press button 1 repeatedly until the required value is being displayed on the LCD.

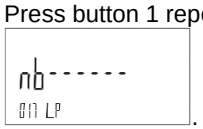
You can repeat steps **2.** and **3**. as many times as you want until the required value appears.

4. To confirm the entered value, press the button 1, making sure that no more digits are flashing.

5.4 Completing parameterization

To complete the parameterization proceeds as follows:

- Press button 1 repeatedly until the LCD displays



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- To switch into normal operation switch button 2.

6. Adjustable parameters via M-Bus

The parameters, as

- M-Bus primary address
- M-Bus secondary address
- Date and time

can be parameterized via M-Bus.

7. M-Bus data telegram

Following data are available in the M-Bus data telegram by default:

- Block number and application number
- Refreshment interval
- Current energy
- Current volume
- Current value tariff register 1
- Current value tariff register 2
- Current value tariff register 3
- Pulse input 1 meter number
- Current volume pulse input 1
- Pulse input 2 meter number
- Current volume pulse input 2
- Current power
- Current flow
- Current temperature hot side
- Current temperature cold side
- Current temperature difference
- Serial number
- Customer number
- Current value error time
- Current value operating time
- Error flags
- Prev. year value energy
- Prev. year value volume
- Prev. year value tariff register 1
- Prev. year value tariff register 2
- Prev. year value tariff register 3
- Prev. year storage day
- Prev. month value energy
- Prev. month value volume
- Prev. month value tariff register 1
- Prev. month value tariff register 2
- Prev. month value tariff register 3
- Prev. month storage day
- Meter time

8. Technical data

Standard	EN 13757-2
Conformity	OMS
Separation / Connection	Galvanically coupled
Power consumption	Max. 1 M-Bus load (1.5 mA)
Addressing meter	Primary or secondary
Addressing pulse inputs	Primary or secondary
Readout speed	300 baud, 2400 baud and 9600 baud (from FW 20.05) with automatic baud rate detection
Readout frequency	4 times per minute at 9600 baud (from FW 20.05) 1 time per minute at 2400 baud 1 time per hour at 300 baud
Recommended cable diameter	4 – 6 mm
Recommended wire cross section	0.25 – 0.75 mm²

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