# myTEM SmartHome

**myTEM Modbus Modul
MTMOD-100**

The myTEM Modbus module is used to extend your Smart Home system with Modbus RTU products.

The Modbus module is connected to the CAN bus of the Smart Server or Radio Server, while the Modbus device is connected to the Modbus terminals.

Further information can be found on our website:
www.mytem-smarthome.com/web/en/downloads/

## Warning and safety instructions

**WARNING!**
This word indicates a hazard with a risk that, if not avoided, can result in death or serious injury. Work on the device must only be carried out by persons with the necessary training or instruction.

**CAUTION!**
This word warns of possible damage to property.

## SAFETY INSTRUCTIONS

- Operate this device only as described in the manual.
- Do not operate this device if it has obvious damage.
- This device shall not be altered, modified or opened.
- This device is intended for use in buildings in a dry, dust-free location.
- This device is intended for installation in a control cabinet. After installation, it must not be openly accessible.

## DISCLAIMER

## Trademarks

## Product description

The myTEM Modbus module is used to extend your Smart Home system with Modbus RTU products. The myTEM Modbus module can be configured as a client or as a server.

The Modbus module is supplied with 24 VDC and the CAN bus is connected to a Smart Server or Radio Server.

### Applications:

- Central interface between myTEM Smart Home and Modbus devices.
- Wiring in bus topology (RS-485).
- Operation via the central server

### Function:

- Supply voltage device 24 VDC ± 10%
- CAN bus for communication with a smart server or radio server. Several Modbus modules are possible on the CAN bus, e.g. to be able to wire different floors or apartments separately.
- Adjustable function: Client / Server
- Adjustable baud rate: 2'400, 4'800, 9'600, 19'200, 38400, 57600, 115200
- Adjustable parity: even / odd / none
- Adjustable stop bits: 1 / 2
- Addressing: single cast
- Bus topology: line, terminated at both ends
- Line length: recommended max. 800 meters. Prerequisite is the use of a shielded Modbus cable, as well as terminating resistors (usually 120 Ohm).
- The terminating resistor can be set by means of DIP switch (all 3 DIP on ON)
- Per Modbus module up to 32 Modbus slave devices can be controlled. Up to 32 extension modules can be connected to the myTEM server. Thus several myTEM Modbus modules can be used.

## Installation

**WARNING!** Depending on national safety standards, only authorized and/or trained technicians may be allowed to make electrical installations on the power supply. Please inform yourself about the legal situation before installation.
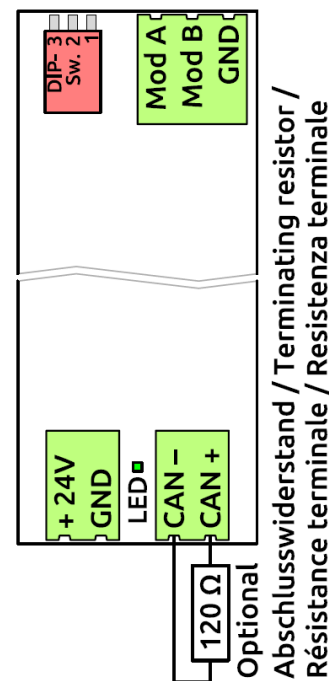
**WARNING!** The myTEM Modbus module should be installed in a control cabinet in compliance with relevant national safety standards.

**WARNING!** The device may only be connected according to the wiring diagram.

**WARNING!** To avoid electrical shock and/or equipment damage, disconnect power to the main fuse or circuit breaker before installation or maintenance. Prevent the fuse from being accidentally switched on again and check that the installation is voltage-free.

Please install the device according to the following steps:

1. Switch off the mains voltage during installation (break the fuse). Make sure that wires are not short-circuited during and after installation, as this may cause damage to the device.
2. Connect the device according to the wiring diagram of the myTEM ProgTool or the pinout below. To be able to use the device, a connection via the CAN bus to a Smart Server or Radio Server is necessary.
3. **CAUTION!** Operate the device only with stabilized power supply (24 VDC). Connecting to higher voltages will damage the unit. Use wires up to 2.5 mm², stripped by 7 mm, for the power supply and for the CAN bus.
4. Check the wiring and switch on the mains voltage.
5. Connect the device to the server using the myTEM ProgTool.



DIP-Sw. 3 2 1 / Mod A / Mod B / GND / + 24V / GND / LED / CAN − / CAN + / 120 Ω Optional / Abschlusswiderstand / Terminating resistor / Résistance terminale / Resistenza terminale

## LED-display

The LED next to the power supply connector shows the following states:

**LED green:** Device started and connection to Smart Server or Radio Server OK

**LED red:** Device started, but no connection to Smart Server or Radio Server

**LED red flashing:** Device started, but no connection to Modbus (or e.g. wrong address)

**LED off:** Device not powered, not started or broken

## DIP Switch

Dip Switch 1-3 serve as terminating resistor for the Modbus. If all three are ON, the bus is terminated.

## Quick trouble shooting

The following hints may help solving trouble:

1. Make sure that the power supply is connected with the correct polarity. With wrong polarity the device does not start.
2. Make sure that the voltage of the supply is not below the allowed operating voltage.
3. If a device cannot establish communication to the myTEM Smart Server or myTEM Radio Server, check if the CAN bus (+/−) is correctly wired and the ground (GND) is connected. A missing ground connection (usually available via power supply) can affect the communication.
4. If a device cannot establish communication to the myTEM Smart Server or myTEM Radio Server, check whether the terminating resistor of 120 Ω at the last device is connected to the CAN bus. If missing, please add it via terminals (CAN +/−).
5. If a device cannot establish a connection to another Modbus device, check whether the terminating resistor is set (DIP 1, 2 and 3 to ON).

## Technical specifications

| | |
|---|---|
| Dimensions (W × H × D) | 37.3 × 101.1 × 62.5 mm   (height with connectors at bottom 101.8 mm) |
| Installation / mounting | On 35 mm DIN rail |
| Operating voltage | 24 VDC ± 10% |
| Power consumption in standby | Continuous operation, therefore no standby operation |
| Power consumption in operation | 0.58 W |
| Ambient temperature for operation | 0 °C – 50 °C |
| Ambient temperature for storage | -20 °C – 60 °C |
| Ambient humidity | 5 %RH – 85 %RH (non condensing) |
| Wire cross-section connectors | 0.25 mm² – 2.5 mm² |
| Stripping length for connectors | ca. 7 mm |
| Tightening torque for connectors | 0.5 Nm |
| Degree of protection provided by enclosure | IP 20 (after installation) (according to EN 60529) |
| Protection class | III (according to EN 60730-1) |
| Overvoltage category | I (according to EN 60730-1, resp. EN 60664-1) |
| Pollution degree | 2 (according to EN 60730-1) |
| Electrical safety | EN 60730-1:2016 + A1:2019 |
| EMC | EN 60730-1:2016 + A1:2019 EN IEC 61000-6-2:2019    EN IEC 61000-6-3:2021 |
| RoHS | EN IEC 63000:2018 |
| CE - Konformität  CE | 2014/30/EU   (EMC)    2011/65/EU   (RoHS) |