



myTEM SmartHome MTIOS-100 IO Modul Small Instruction Manual

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myTEM
SmartHome



**myTEM IO Modul Small
MTIOS-100**

The IO module MTIOS-100 is a universal module from the system for extending your smart home system with additional inputs and outputs. For this, the device is connected to your central system Smart Server via the CAN bus system.

The programmable behavior allows flexible use of the device in the house.

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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.
- Electrical equipment may only be installed and fitted by qualified electricians who are familiar with and comply with the applicable regulations and standards.
- Analog inputs/outputs, digital inputs, CAN bus and device supply must comply with the ELV requirements. Do not connect ELV and mains voltage together. (ELV = extra-low voltage)
- If several motors are to be connected in parallel at one output, be sure to observe the manufacturer's instructions and, if necessary, use isolating relays. Otherwise, the device may be damaged.
- Only use blind motors with mechanical or electronic limit switches. Limit switches must be checked for correct adjustment. Otherwise, the device may be damaged.
- Do not connect three-phase motors, the device may be damaged.

Applications:

- Switching of lights
- Switching of single-phase fan motors
- Switching of electric blinds or similar shading devices
- Operation by means of buttons, sensors via the central server

Functions:

- Supply voltage 24 VDC \pm 10% with support terminals for further wiring
- CAN bus
- 6 digital inputs 24 VDC (DI1 – DI6) for e.g. external switches
- 24 VDC power supply, 100 mA, for digital inputs DI1 – DI6 (VDIout)
- 2 analog inputs (AI1, AI2) for 0-10 VDC, NTC, PTC, or PT1000 sensors. The analog inputs can also be used as digital inputs 24 VDC. They must then be connected to VDIout.
- 2 analog outputs 0-10 VDC, 20 mA (AO1, AO2)
- 4 digital outputs with potential-free relays 8 A, 250 VAC or 30 VDC (DO1 – DO4)

- Manual positions of the outputs via DIP switch for easy commissioning
- The device is installed in a control cabinet, mounted on a 35 mm DIN rail

Installation

WARNING! Depending on national safety standards, only authorized and/or trained technicians may be allowed to perform electrical installations on the power grid. Please inform yourself about the legal situation before installation.

WARNING! Different voltages (e.g. 24 VDC, 230 VAC L1, or 230 VAC L2) may only be connected to the digital outputs (relays) if one output is left out between them.

Please install the device according to the following steps:

1. **WARNING!** Make sure that the device is disconnected from the power supply or that the devices in the control cabinet are disconnected from the mains.
2. **WARNING!** Connect the device according to the circuit diagram of the system ProgTool or the terminal assignment from the picture above. Incorrect wiring can result in injury or death or damage to the device.
3. **CAUTION!** The device shall only be operated with stabilized power supplies (24 VDC). Connecting to higher voltages will damage the device.
4. The last device on the CAN bus requires the terminating resistor of 120 Ω enclosed with the myTEM Smart Server via terminals (CAN +/-).
5. **WARNING!** Switch on the power supply and, if necessary, check the wiring with the manual positions via the DIP switch. Take care of your safety as the devices are live.

LED display

The LED next to the CAN connector may show the following states:

LED green: Device started and connected to the system Smart Server or system Radio Server working

LED flashing green: The device is in the manual position

LED red: Device started but no connection with the system Smart Server or system Radio Server

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

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



ATTENTION:

This device is not a toy. Please keep it away from children and animals!

Please read the manual before attempting to install the device!

These instructions are part of the product and must remain with the end-user.

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.

DISCLAIMER

All rights reserved. This is a translation from the original version in German.

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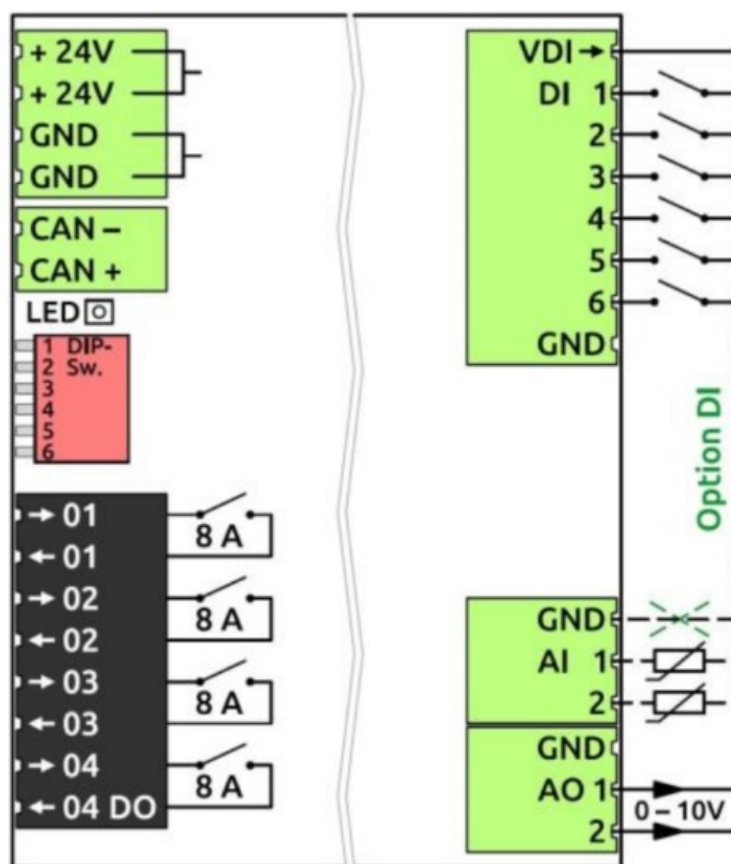
The manufacturer, TEM AG, is not liable for any loss or damage caused by failure to follow the instructions in the manual.

Typographical and printing errors cannot be excluded.

However, the information contained in this manual is reviewed on a regular basis and any necessary corrections will be implemented in the next edition. We accept no liability for technical or typographical errors or the consequences thereof. Changes may be made without prior notice as a result of technological advances. TEM AG reserves the right to make changes to product design, layout, and driver revisions without notice to its users. This version of the manual supersedes all previous versions.

Trademarks

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Manual positions via DIP switch

With the aid of the DIP switch, the outputs can be checked after installation.

- **CAUTION!** While manual settings are used, the control commands from the system Smart Server or system Radio Server are ignored.
- **CAUTION!** Before starting, set all DIP switches to position OFF, i.e. upwards. This avoids that e.g. OPEN / CLOSE commands are set at the same time.
- To check the digital outputs (relays) set DIP switch 6 down to ON. With the DIP switches 1 – 4 you can now switch the relays DO1 – DO4 on and off.
- To check the analog outputs set DIP switches 5 and 6 down to ON. With the DIP switches 1 and 2 you can now

set the analog outputs AO1 and AO2 from 0 VDC (position OFF) to 10 VDC (position ON).

Behavior after power failure

After a power failure, all outputs are switched off until the new settings are received from the system Smart Server or system Radio Server.

Quick troubleshooting

The following hints may help solve trouble:

1. Make sure that the power supply is connected with the correct polarity. With the wrong polarity, the device does not start.
2. If a device cannot establish communication to the system Smart Server or system 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 communication.
3. If a device cannot establish communication to the system Smart Server or system Radio Server, check whether the terminating resistor of 120Ω at the last device is connected to the CAN bus. If missing, please add it via terminals (CAN +/-).

Configuration

The products can be used immediately after being added to the Smart Home network. However, depending on the function, a configuration may be helpful or required. After setting the parameters, further optional corrections such as offset, etc. are sometimes possible.


CAUTION! Depending on the function, the server may change some settings.

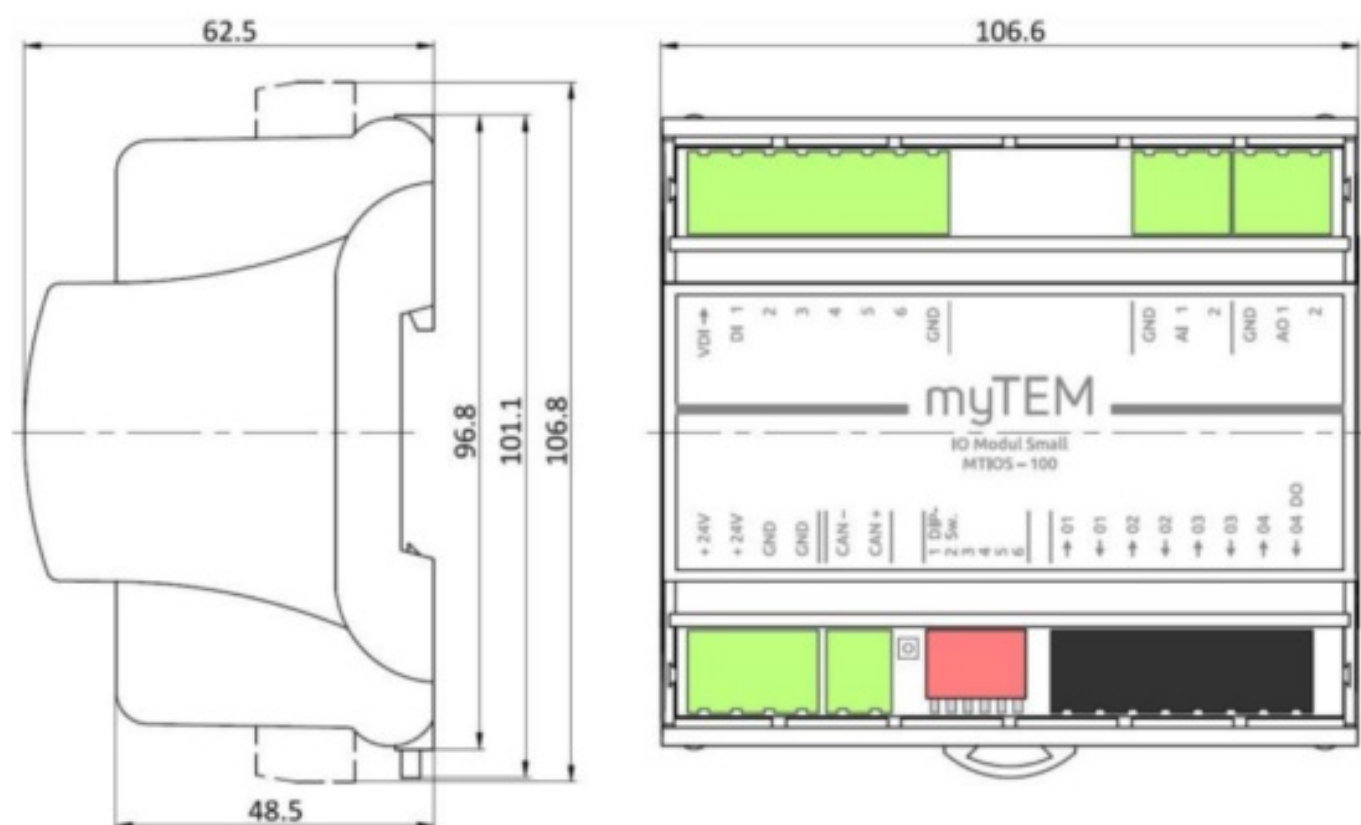
Description	Settings					
	Analog 0 – 10V	Digital	NTC 5k	NTC 10k	PT 1000	PTC (KTY81/110)
Analog inputs						
Analog outputs	0 – 100%			0 – 10V		

Technical specifications

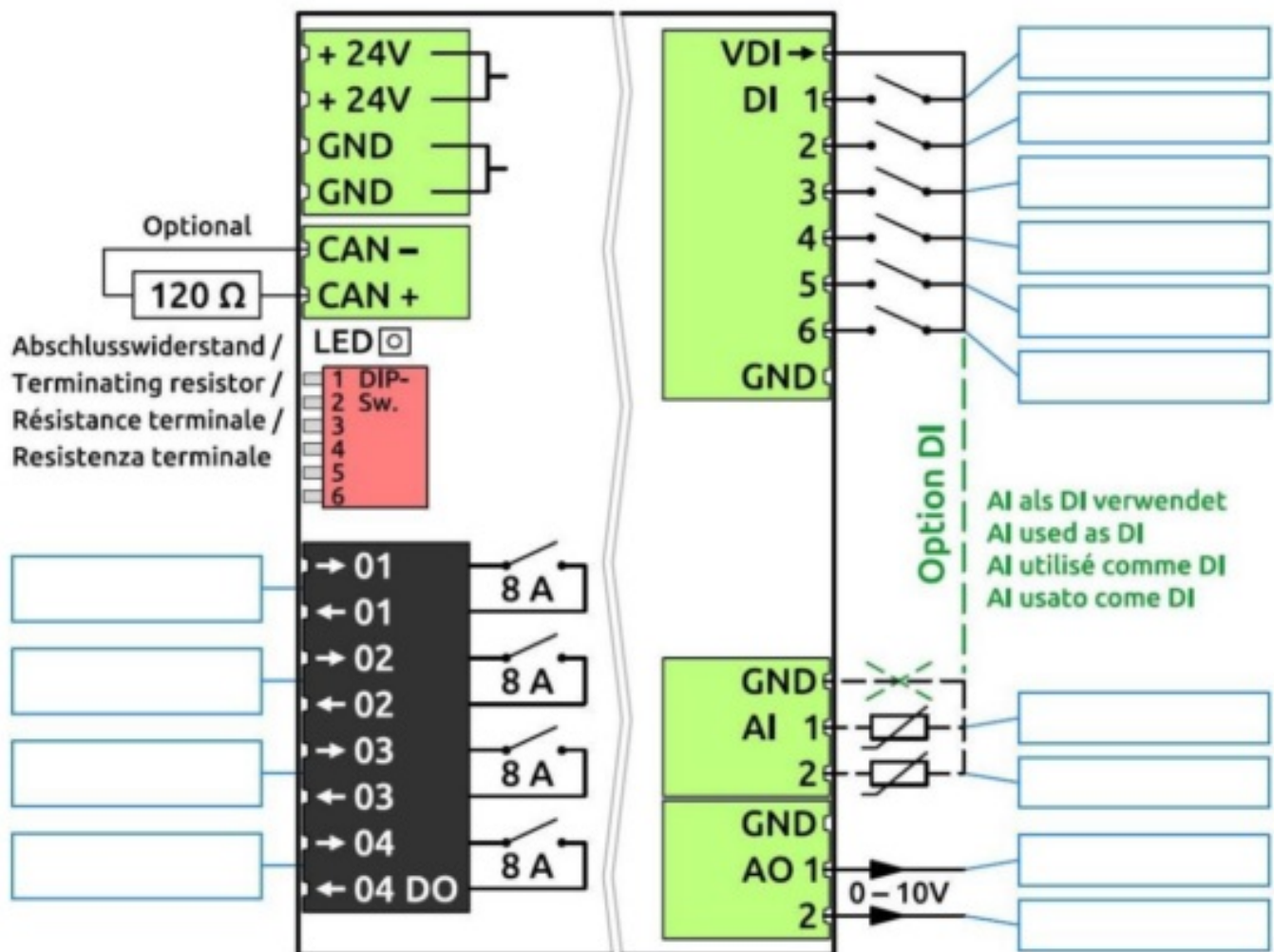
Dimensions (W × H × D)	106.6 × 101.1 × 62.5 mm (height with connectors 106.8 mm)
Installation / mounting	On 35 mm DIN rail
Operating voltage	24 VDC ± 10%
Power consumption in standby	Device for continuous operation, no standby mode

Power consumption in operation	0.4 W, if the inputs are open and the outputs are turned off 2.5 W, if the inputs are short-circuited to VDIout and the outputs are turned on	
Switchable load	4× 8 A, 250 VAC or 30 VDC, $\cos(\varphi) = 1.0$; minimum switchable load 300 mW (5 VDC, 5 mA)	
Analog outputs	2× 0-10 VDC, 20 mA	
Power supply for digital inputs	24 VDC, 100 mA	
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 mm ² – 2.5 mm ²	
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	II	(according to EN 60730-1)
Overvoltage category	II	(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	EN IEC 60730-2-9:2019 + A1:2019


EMC		EN 60730-1:2016 + A1:2019 EN IEC 61000-6-2:2019	EN IEC 60730-2-9:2019 + A1:2019 EN 61000-6-3:2007 + A1:2011 / AC:2012
RoHS		EN IEC 63000:2018	
CE conformity		2014/35/EU (LVD) 2014/30/EU (EMC)	2011/65/EU (RoHS)



Belegungsplan / Assignment plan / Plan d'affectation / Piano di assegnazione



Documents / Resources

	myTEM SmartHome MTIOS-100 IO Modul Small [pdf] Instruction Manual MTIOS-100 IO Modul Small, MTIOS-100, IO Modul Small
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References

- [FAQ | myTEM smart automations](#)