

EWIO₂-M

Mounting note for the installer

Variants

EWIO₂-M | 110930

(M-Bus)

EWIO₂-M-BM | 110935

(M-Bus / BACnet / Modbus)



1. Description

The EWIO₂-M is a powerful data logger for the energy consumption monitoring and energy monitoring in buildings, on machines, plants and systems. Two Ethernet ports with a Daisy Chain function for the further Data logger are available for the connection to the LAN network. The EWIO₂-M* can be integrated into a Modbus TCP or BACnet/IP network to perform control tasks. The system is parameterised, configured and commissioned through a platform-independent web browser. The M-Bus and Modbus RTU interfaces enable to read different meters: e.g. electricity, water, gas and heat. Optionally, the measured values can either be sent from the data base (push) or read out (pull) via mail (SMTP) or FTP (SSL), from a BACnet or Modbus controller. *With the integrated graphic programming interface „Node-RED“, small applications and visualizations can also be created via drag & drop. An integrated µSD memory card expands the range of functions of the EWIO₂-M for save settings, data and applications.

*depending on variant

2. Important Notes

Declaration of conformity

The device was tested according to the applicable standards. Conformity was proved. The declaration of conformity is available at the manufacturer METZ CONNECT GmbH.

Notes Regarding Device Description

These instructions include indications for use and mounting of the device. In case of questions that cannot be answered with these instructions please consult supplier or manufacturer. The indicated installation directions or rules are applicable to the Federal Republic of Germany. If the device is used in other countries it applies to the equipment installer or the user to meet the national directions.

DANGER

Danger means that non-observance may cause risk of life, grievous bodily harm or heavy material damage.

WARNING

Follow the applicable country-specific safety at work rules, the regulations for the prevention of accidents and safety regulations when mounting, bringing into service and using the device and observe the following:

- Technicians and/or installers are informed that they have to electrically discharge themselves as prescribed before installation or maintenance of the devices.
- Only qualified personnel is allowed to do mounting, maintenance and installation work on the devices.
- Qualified personnel in the sense of these instructions are persons who are well versed in the use and installation of such devices and who possess the necessary qualification for their job.
- Use only undamaged goods.

3. Technical Data

Interfaces

Network 2 Port Ethernet 10/100BaseT
Daisy Chain
EWIO₂-M: TCP/IP
EWIO₂-M-BM: TCP/IP, BACnet/IP, Modbus TCP
Connection 2x RJ45 jack
Modbus RTU for 32 RS485 charges
M-Bus for 80 M-Bus charges
USB only for memory sticks
Memory card slot microSD (4 GB integrated)
expandable to max. 32 GB.

Controller Unit

Processor NXP i.MX7D Dual Core
ARM-A7, 1 GHz
RAM 512 MB / Flash 4 GB
Linux embedded
Operating system
RealTimeClock
clock accuracy 1 s/day
power failure bridging 10 h

Supply

Operating voltage U_g 24 V DC (SELV) +/- 10 %
Current consumption max. 500 mA
Power loss 12 W
Power supply optional

Inputs and outputs (I/Os)

Digital inputs 8x Inputs or 8x 50 Inputs,
of it 4 contact inputs for potential-free switches
switching voltage 15 V DC +/- 10 %
switching threshold 5 V +/- 10 %
switching current ≥ 1 mA
Digital outputs 4x switchable with current
transistor outputs
switching voltage 24 V (operating voltage)
switching current max. 20 mA
Relay contacts 4x
changeover relay AgSnO₂
contact material max. 6 A/230 V ohmic load
switching current

Continuation Technical Data

Analog inputs 3x configurable for:
Resistance range 40 Ohms to 4 MOhms
power range 0 to 10 V DC
voltage range 0 to 20 mA
resolution 15 Bit

Analog outputs

Analog outputs 3x
power range 0 to 10 V DC
output current max. 5 mA, load 2 kOhm
resolution 14 Bit
Error < 1 %

Housing

Dimensions (WxHxD) 125 x 93 x 66 mm
Housing 45 mm cover size / 7 HP
Weight 410 g
Mounting position any, horizontally recommended
rail TH35 as per IEC 60715 possible without distance

Mounting Side-by-side mounting
Type of protection (IEC 60529) IP20
Housing IP20
Terminal blocks impact resistance (IEC 62262) IK06

Material

Upper part of housing PC polycarbonate
Housing PA polyamide
Color
Upper housing part translucent
Lower housing part black
Housing cover light gray

Terminal blocks

Device connection 0.33 to 2.5 mm²
Inputs/outputs AWG 22 to 12
Wire diameter 0.3 to max. 2.7 mm

Indication

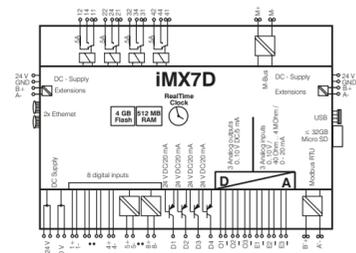
Operation indicator LED

Active/Boot
Power on - ok green
Boot sequence/error red
Ethernet link green
10/100 MBit yellow

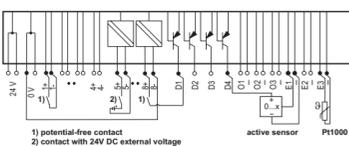
Status indicator LED

Switching status yellow
Cable length adjustment yellow
One-man operation yellow

4. Wiring diagram



5. Wiring sample

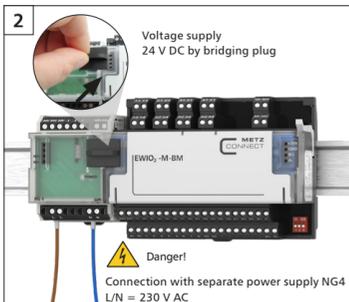
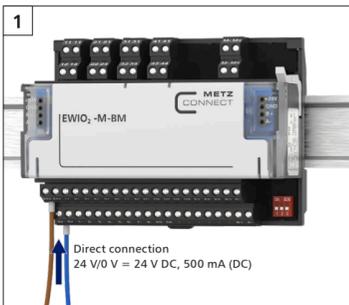


6. Mounting

Power down the equipment.
Mount the device on standard rail (TH35 per IEC 60715 in junction boxes and/or on distribution panels).

Installation

Electric installation and device termination shall be done by qualified persons only, by respecting the VDE specifications and local regulations.



When the power supply is switched-on the boot sequence of the EWIO₂-M starts.

The LED „Boot“ is lighting red during the boot sequence. When the boot process is completed, the „Boot“ LED changes its color from red to green. The LED „Boot“ is located to the right of the flap.

7. Connection to the ethernet network

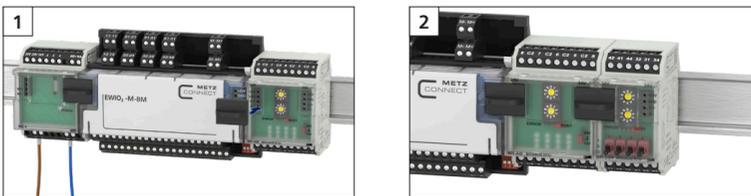


Connect the EWIO₂-M with a standard RJ45 patch cable to the ethernet network.

8. Availability of the EWIO₂-M via LAN

Example: EWIO₂-M with MAC address MAC: E8:78:29:A3:06:00 makes the host name ewio2-a30600, that you enter in the address line of the browser in the following way: <http://ewio2-a30600>
If no DHCP server is found enter the IP address 192.168.0.111.
If your network is in the same IP address range enter the IP address in the address line of the browser as follows: <http://192.168.0.111>
Otherwise you have to enter this address on your PC by route add. Open a cmd box in Windows and enter the following command:
route ADD 192.168.0.111
netmask 255.255.255.255 xxx.xxx.xxx.xxx
(IP-Adresse of the PC).

9. Side-by-side mounting of extension modules



Note!

A maximum of 6 extension modules series MR-xxx can be mounted side-by-side to the EWIO₂-M and be connected by jumper plug. The jumper plug connects supply voltage and bus to the aligned extension modules. Each extension module connected to the EWIO₂-M has to be set to an own address between 1 to 6. If one address is assigned twice the function of the extension modules is not assured. Settings of the extension modules can be done by the web interface of the EWIO₂-M. All active I/O modules are listed in the menu item „IO“ automatically and are marked as I/O of the extension modules.

For more information about configuration and setting of the EWIO₂-M and the extension modules see the manual at www.metz-connect.com

10. Connection of Modbus slaves

The EWIO₂-M has a RS485 interface, its baud rate can be set to max. 115200 bit/s. Modbus slaves can be connected to this interface at contacts "A-" and "B+". The allowed address range for external Modbus slaves is 1 to 247.

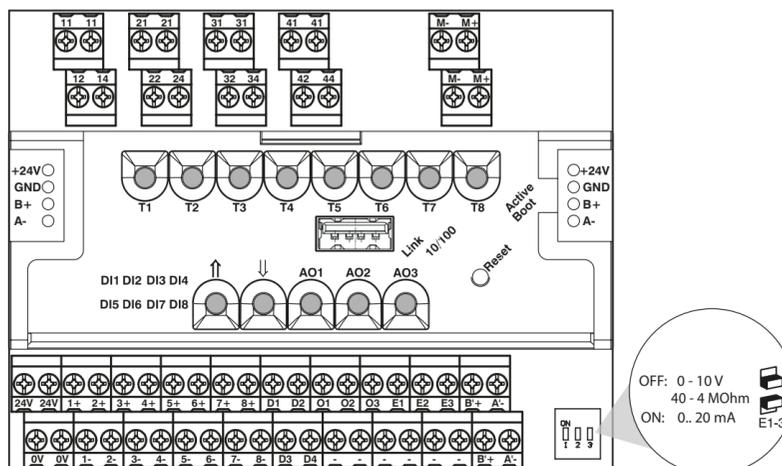
Only for EWIO₂-M-BM | 110935)

The EWIO₂-M works as a Modbus gateway: Modbus RTU devices connected to the terminal blocks can be queried via Modbus TCP. In addition, it is possible to access the I/Os of the EWIO₂-M via Modbus TCP. (See also documents on www.metz-connect.com: EWIO₂ Manual and EWIO₂ Modbus Server)

11. Connection of M-Bus modules

Max. 80 M-Bus loads (one standard load = 1.5 mA) can be connected to the EWIO₂-M.
For that purpose connect contacts "M-" and "M+" with the bus contacts of the M-Bus device. In case of a short-circuit on the M-Bus the LED "Active/Boot" is flashing green/red. The short-circuit is automatically documented in the Webbrowser. Attention! Be aware of polarity! The two terminal blocks (M- und M+) are internally connected with each other. (See also EWIO₂-M user manual, section M-Bus.)

12. Contacts, indicator and operating elements



OFF: 0 - 10 V
40 - 4 MOhm
ON: 0.. 20 mA

Description	Button	Contacts	LED display	
Relay output changeover contacts 6 A	T1	11-12-14	T1 ON (yellow)	
	T2	21-22-24	T2 ON (yellow)	
	T3	31-32-34	T3 ON (yellow)	
	T4	41-42-44	T4 ON (yellow)	
Analog output 0-10 V	AO1/	O1/-	O1 ON (yellow)	
	AO2/	O2/-	O2 ON (yellow)	
	AO3/	O3/-	O3 ON (yellow)	
Digital output 24 V / 20 mA	T5	D1/-		
	T6	D2/-		
	T7	D3/-		
	T8	D4/-		
Analog input 0-10 V / 40-4 MOhm / 0-20 mA		E1/-	see picture left below	
		E2/-		
		E3/-		
Digital input	(T1)	1+/1-	DI1 ON (yellow)	
	(T2)	2+/2-	DI2 ON (yellow)	
	(T3)	3+/3-	DI3 ON (yellow)	
	(T4)	4+/4-	DI4 ON (yellow)	
	(T5)	5+/5-	galvanically isolated	DI5 ON (yellow)
	(T6)	6+/6-		DI6 ON (yellow)
	(T7)	7+/7-		DI7 ON (yellow)
	(T8)	8+/8-		DI8 ON (yellow)
Operating voltage		24 V / 0 V		
Jumper for operating voltage		24 V / GND		
RS-485 / Modbus RTU		B+/A- B+/A-		
Jumper for extension modules		B+/A- B+/A-		
M-Bus		M+/M- M+/M-		
USB		USB		
Ethernet 10/100 MBit communication interface		RJ45		
Ethernet connection			Link (green)	
10/100 MBit connection			100 MBit (yellow)	
EWIO ₂ -M is ready			Active (green)	
EWIO ₂ -M boots			Boot (red)	
EWIO ₂ -M new boot procedure	Reset		Reset (red)	

13. Remove and insert the electronic unit

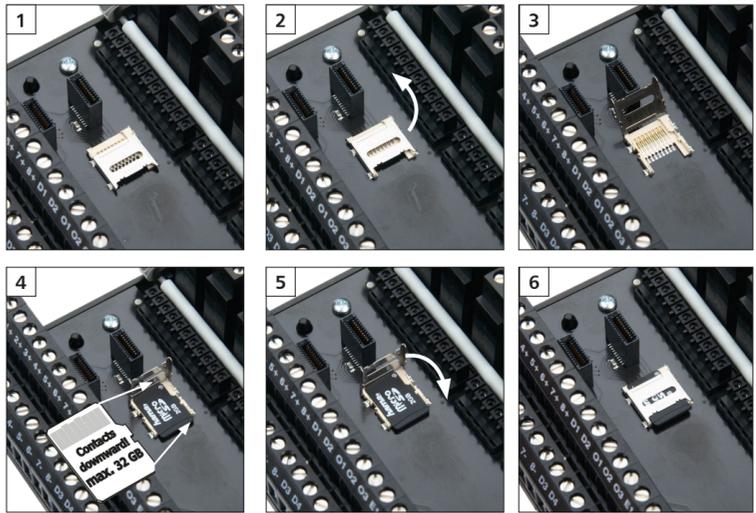


Move the ejection lever backwards before inserting the electronic unit.



14. Insert the microSD card

Remove the electronic unit before inserting the microSD card (see 13)!



NOTE

Additional information and documentations are available as download at www.metz-connect.com

