

EWIO₂-BM 110904



en Mounting note for the installer



1. Description

The EWIO₂ is a compact Ethernet I/O controller based on Linux, which connects digital and analogue signals from the sensor and actuator level with an IP network. Simple tasks in building and industrial automation can be implemented with functions integrated onto the webserver. Immediately executable applications can also be created via the web interface in a displayed Linux Shell. Two Ethernet-Ports with a Daisy Chain function are available for the connection to the LAN network. With the integrated graphic programming interface „Node-RED“, small applications and visualizations can also be created via drag & drop. The system is parameterised, configured and commissioned through a platform-independent web browser. For the upgrade of the sensor/actuator level, MR-I/O upgrade modules can be connected using plug & play jumper plugs and wiring to a second interface of EWIO₂. An integrated µSD memory card expands the range of functions of the EWIO₂ for save settings, data and applications.

2. Important Notes

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

Notes Regarding Device Connection
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, TCP/IP, BACnet/IP, Modbus TCP
Connection: 2x RJ45 jack
Modbus RTU: for 32 RS485 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
Internal memory: RAM 512 MB / flash 4 GB
Operating system: Linux embedded
RealTimeClock: clock accuracy 1 s/day
power failure bridging: 10 h

Supply
Operating voltage UB: 24 V DC (SELV) +/- 10 %
Current consumption: max. 350 mA
Power loss: 8.4 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 limit
switching voltage: 24 V (operating voltage)
switching current: max. 20 mA
triac output: 2 x 20 - 250 V AC 0.5 A
switch current: max. 0.8 A (10 seconds)
Relay contacts
changeover relay: 6x
contact material: AgSnO₂
switching current: max. 6 A/230 V ohmic load

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 %

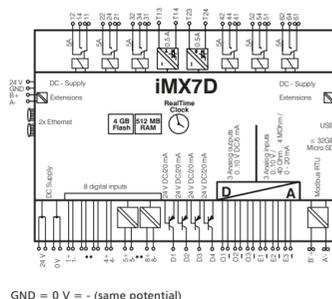
Housing
dimensions (WxHxD): 125 x 93 x 66 mm
housing: 45 mm cover size / 7 HP
weight: 425 g
mounting position: any, horizontally recommended
mounting: rail TH35 as per IEC 60715 possible without distance
side-by-side mounting: type of protection (IEC 60529)
housing: IP20
terminal blocks: IP20
impact 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

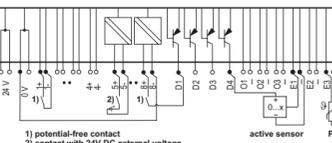
Terminal blocks
device connection: 0.33 to 2.5 mm²
inputs/outputs: AWG 22 to 12
wire diameter: 0.3 to max. 2.7 mm

Indication
Operation indicator LED
active/boot: green
power on - ok: red
boot sequence/error: green
ethernet link: green
10/100 MBit: yellow
Status indicator LED
switching status: yellow
cable length adjustment: yellow

4. Wiring diagram



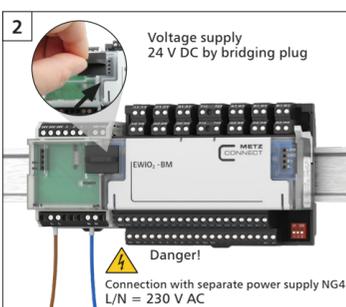
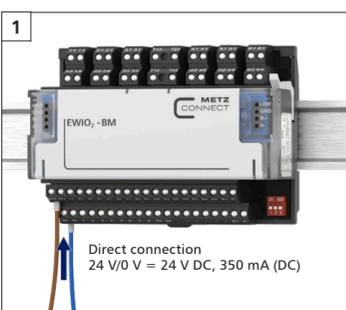
5. Wiring sample



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 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 with a standard RJ45 patch cable to the Ethernet network.

8. Availability of the EWIO₂ via LAN



Example: EWIO₂ with MAC address MAC: E8:78:29:A0:1F:F4 makes the host name ewio2-a01ff4, that you enter in the address line of the browser in the following way: <http://ewio2-a01ff4>
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-Address of the PC).

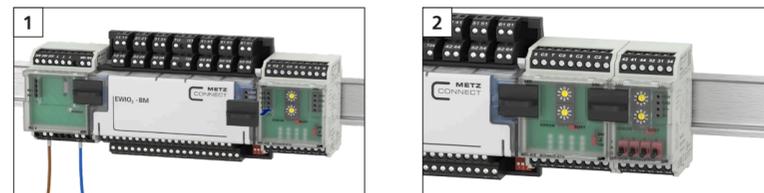
The EWIO₂ has the following IP factory settings:

- DHCP
- If no DHCP exists, the settings are

IP address 192.168.0.111
Gateway address 192.168.0.1

Enter the host name or the IP address in the browser address line to get to the EWIO₂ home page. If your network has DHCP the host name is composed of "ewio2-" and the last 3 byte of the MAC address. The MAC address is on the identification plate on the side of the device (see image)

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 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 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. All active I/O modules are listed in the menu item „I/O“ automatically and are marked as I/O of the extension modules.

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

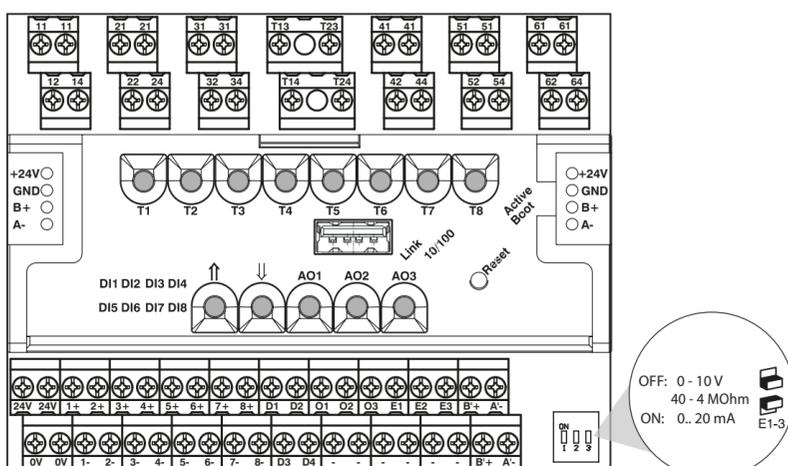
10. Connection of Modbus slaves

The EWIO₂ 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.

The EWIO₂ 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 via Modbus TCP.

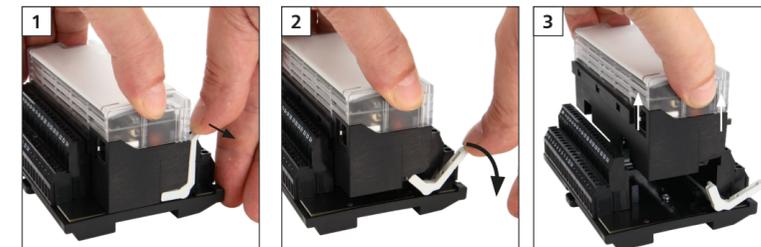
(See also documents on www.metz-connect.com: EWIO₂ Manual and EWIO₂ Modbus Server)

11. Contacts, indicator and operating elements

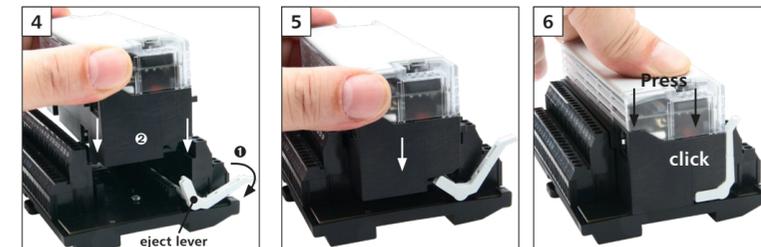


Description	Button	Contacts	LED display	
Relay output changeover contacts 6 A	T1	11-12-14	T1 ON (yellow)	
	T2	21-22-24	T2 ON (yellow)	
	T3	31-32-34	T3 ON (yellow)	
	T6	41-42-44	T6 ON (yellow)	
	T7	51-52-54	T7 ON (yellow)	
	T8	61-62-64	T8 ON (yellow)	
	Triac outputs	T4	T13-T14	T4 ON (yellow)
		T5	T23-T24	T5 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	D1/-			
	D2/-			
	D3/-			
	D4/-			
Analog input 0-10 V / 40-4 MOhm / 0-20 mA	E1/-	see picture left below		
	E2/-			
	E3/-			
	1+/1-		D11 ON (yellow)	
	2+/2-		D12 ON (yellow)	
	3+/3-		D13 ON (yellow)	
	4+/4-	galvanically isolated	D14 ON (yellow)	
	5+/5-		D15 ON (yellow)	
6+/6-	D16 ON (yellow)			
7+/7-		D17 ON (yellow)		
8+/8-		D18 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-		
USB		USB		
Ethernet 10/100 MBit communication interface		RJ45		
Ethernet connection			Link (green)	
10/100 MBit connection			100 MBit (yellow)	
EWIO ₂ is ready			Active (green)	
EWIO ₂ boots			Boot (red)	
EWIO ₂ new boot procedure	Reset		Reset (red)	

11. Remove and insert the electronic unit

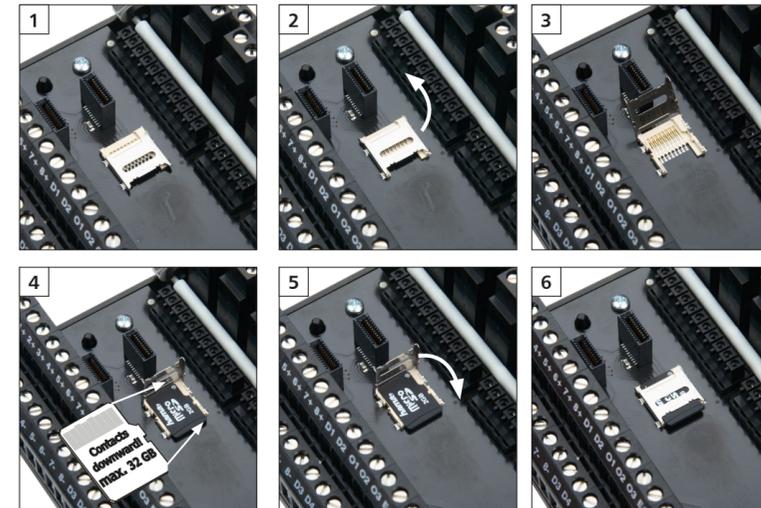


Move the ejection lever backwards before inserting the electronic unit.



12. Insert the microSD card

Remove the electronic unit before inserting the microSD card (see 11)!



i NOTE

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

