MBX2

Technical Data

This technical data was extracted from the following manual: ENU 1274 05 02

The product information, specifications, and technical data embodied in this manual represent the technical status at the time of writing and are subject to change without prior notice.

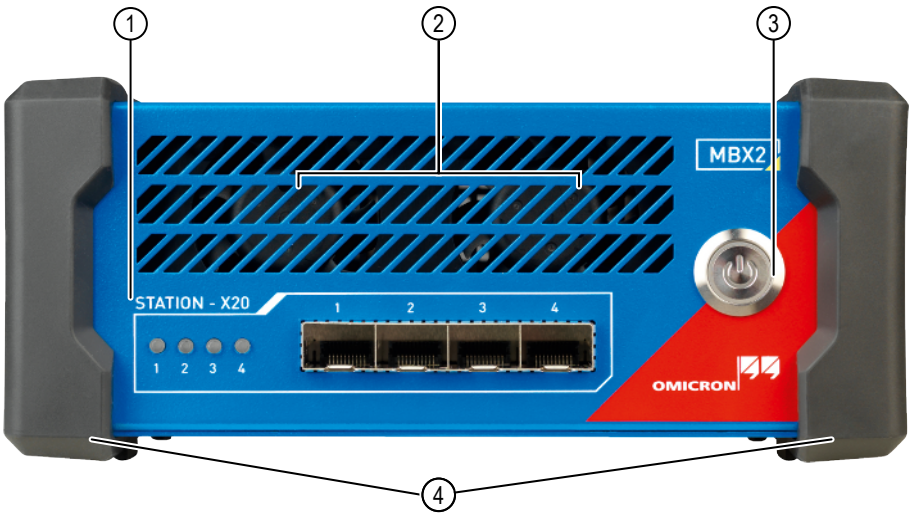
We have done our best to ensure that the information given in this manual is useful, accurate, up-to-date, and reliable. However, OMICRON does not assume responsibility for any inaccuracies which may be present.

The user is responsible for every application that makes use of an OMICRON product.

OMICRON translates this manual from the source language English into a number of other languages. Any translation of this manual is done for local requirements, and in the event of a dispute between the English and a non-English version, the English version of this manual shall govern.

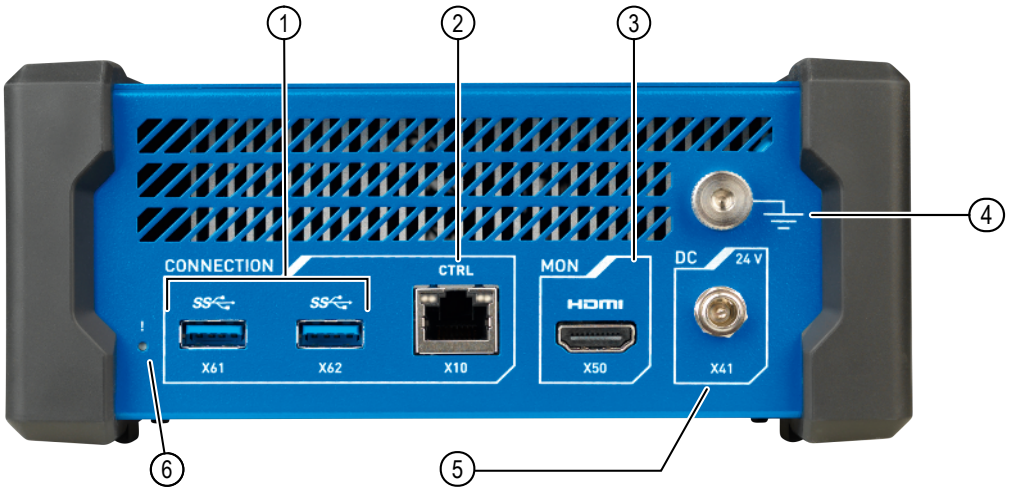
1 Device overview

1.1 Front view



1	STATION - X20:1–4 – SFP ports for connection to substation and devices	3	Power button – Switch the device on and off. The indicator light is continuously on while the device is switched on.
2	Cooling fans	4	Bumpers

1.2 Back view



1	USB ports – USB 3.0 SuperSpeed 5 GBit/s (for future use)	4	Grounding screw for connection to ground (for example with a 6 m/19.8 ft grounding cable with a battery clamp and an M6 cable lug)
2	CTRL – Ethernet connector for connection to a computer	5	DC input for connection to power supply (24 V)
3	HDMI port – HDMI 2.0b, 4096 × 2304 at 60 Hz (for future use)	6	Device reset – Refer to the software documentation for further information.

⚠ CAUTION

Minor or moderate injury due to ignition sources

If the device is mounted in any position different from how it is described in this document, flammable parts could fall out in the event of a fire inside the device

▶ Install the device as described in the User Manual > Installing the device in the substation.

1.3 Accessories

SFP modules available from OMICRON

Module	Characteristics
SFP module for 10/100/1000Base-TX (acc. to IEEE 802.3) with RJ45 connector	–
SFP module for 1000Base-SX with LC connector	• Multi-mode fiber • 850 nm wavelength • Up to 500 m (via 50/125 µm) • Up to 300 m (via 62.5/125 µm)
SFP module for 1000Base-SX with LC connector	• Multi-mode fiber • 1310 nm wavelength • Up to 2 km (via multi-mode OM3)
SFP module for 1000Base-LX with LC connector	• Single-mode fiber • 1310 nm wavelength • Up to 10 km (via 9/125 µm)
SFP module for 100Base-FX with LC connector	• Multi-mode fiber • 1310 nm wavelength • Up to 2 km (via 50/125 µm)
SFP module for 100Base-LX with LC connector	• Single-mode fiber • 1310 nm wavelength • Up to 10 km (via 9/125 µm)

2 Technical data MBX2

Computing performance	
Processors	Secure cryptoprocessor according to TPM 2.0 (ISO/IEC 11889) Quad-core processor with hardware multithreading
Memory	16 GB memory 256 GB SSD

Power consumption	
Typical power consumption	50 W

Mechanical data	
Weight	1.6 kg 3.5 lb
Dimensions W × H × D	180 × 80 × 180 mm 7.1 × 3.1 × 7.1 in
Ingress protection (IEC 60529)	IP30

2.1 Power supply

Refer to the manufacturer's documentation for detailed specifications.

⚠ WARNING

Death or severe injury due to electrical shock

▶ The power supply unit is suitable for indoors use only, do not use outdoors.

AC power supply

Connection	C14 connector in accordance with EN IEC/IEC 60320-1
Power connector	Standard DC barrel jack, positive center pin ⌀ 2.1 × 5.5 × 11 mm ⌀ 0.08 × 0.22 × 0.43 in
Manufacturer and type	EDAC EA11011M2471
Input voltage	
Nominal voltage (AC)	100 V … 240 V
Nominal frequency	50 Hz / 60 Hz
Maximum input current	2 A
Overvoltage category	II
Output	
Output voltage (DC)	24 V (±5 %)
Output power	120 W

DC power supply (110/220 V_{DC})

Connection	Screw terminals
Manufacturer and type	Weidmüller PRO MAX 180W 24V 7,5A
Input voltage	
Nominal voltage (DC)	80 V … 370 V
Nominal voltage (AC)	85 V … 277 V
Nominal frequency (AC)	50 Hz / 60 Hz
Overvoltage category	III
Output	
Output voltage (DC)	24 V (±1 %)
Output power	180 W

DC power supply (48/60 V_{DC})

Connection	Screw terminals
Manufacturer and type	Mean Well DDR-120C-24
Input voltage	
Nominal voltage (DC)	33.6 V … 67.2 V
Overvoltage category	III
Output	
Output voltage (DC)	24 V (±1 %)
Output power	120 W

2.2 Connectors

Ethernet port (CTRL – X10)	
Type	10/100/1000Base-TX
Connector	RJ45
Cable type	LAN cable of category 5 (CAT5) or better
Status indication	Green indicator light: physical link present
	Yellow indicator light: network traffic on interface

SFP ports (STATION – X20:1-4)	
Type	10/100/1000Base-TX
Connector	SFP
Status indication	Green indicator light: network traffic on interface

USB ports (X61 – X62)	
Type	USB 3.0 (*SuperSpeed*, 5 Gbit/s)
Connector	USB type A

HDMI port (X50)	
Type	HDMI 2.0b, 4 096 × 2 304 at 60 Hz
Connector	HDMI type A

2.3 Environmental conditions

Temperature	
Operating	0 °C … +70 °C 32 °F … +158 °F
Storage	–40 °C … +80 °C –40 °F … +176 °F
Maximum altitude	
Operating	4 000 m 13 123 ft
Storage	15 000 m 49 212 ft
Humidity	
20 % … 80 % relative humidity; non-condensing	

2.4 EMC and safety standards

Electromagnetic compatibility (EMC)

Electromagnetic interference (EMI)	
Europe	EN IEC 61326-1, EN IEC 61000-3-2/3, EN 55032 (Class A)
International	IEC 61326-1, IEC 61000-3-2/3, CISPR 32 (Class A)
USA	47 CFR 15 Subpart B (Class A) of FCC

Electromagnetic susceptibility (EMS)	
Europe	EN IEC 61326-1 (industrial electromagnetic environment)
International	IEC 61326-1 (industrial electromagnetic environment)

Safety standards

Europe	EN IEC 62368-1
International	IEC 62368-1
USA	UL 62368-1
Canada	CAN/CSA-C22.2 No 62368-1
Certificates	

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UK importer:
OMICRON electronics UK Limited
Staples Close
Redhill Business Park
Stafford
ST16 1WQ
United Kingdom

Manufacturer:
OMICRON electronics GmbH
Oberes Ried 1
6833 Klaus
Austria