Hardware Manual

IXXAT CME/PN

CANopen-PROFINET Gateway

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Support

In case of unsolvable problems with this product or other IXXAT products please contact IXXAT in written form:

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E-Mail: support@ixxat.de

Further international support contacts can be found on our webpage www.ixxat.com

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1 Introduction

1.1 Overview

In the CANopen-PROFINET Gateway IXXAT CME/PN , you have purchased a high-quality electronic component that has been developed and manufactured according to the latest technological state of the art.

1.2 Features

- Input voltage range 9 - 32 V DC
- Power consumption 2.5 W
- Temperature range -20 °C up to +70 °C
- 2 x 100 MBit/s Ethernet using RJ45 connectors
- Built-in 2-port switch
- Galvanically isolated CAN bus interface as defined in ISO11898-2
- CAN connections using screw terminals
- Housing for top hat rail mounting
- USB configuration interface using Mini-USB

2 Installation

2.1 Software installation

The software you will need to operate the IXXAT CME/PN is listed in the manual:

- CANopen Configuration Studio for IXXAT CME/PN

2.2 Hardware installation

No special hardware installation is needed to operate the IXXAT CME/PN. Only connections to a power source, to Ethernet, and to CAN need to be established.

Do not connect the USB plug to an unpowered IXXAT CME/PN device. Supply the IXXAT CME/PN with power first and mate the USB plug next. Otherwise the device may be subject to irreparable damage.

The IXXAT CME/PN can be connected to or disconnected from the Ethernet network during operation.

3 Connections and displays

3.1 Connection pinout

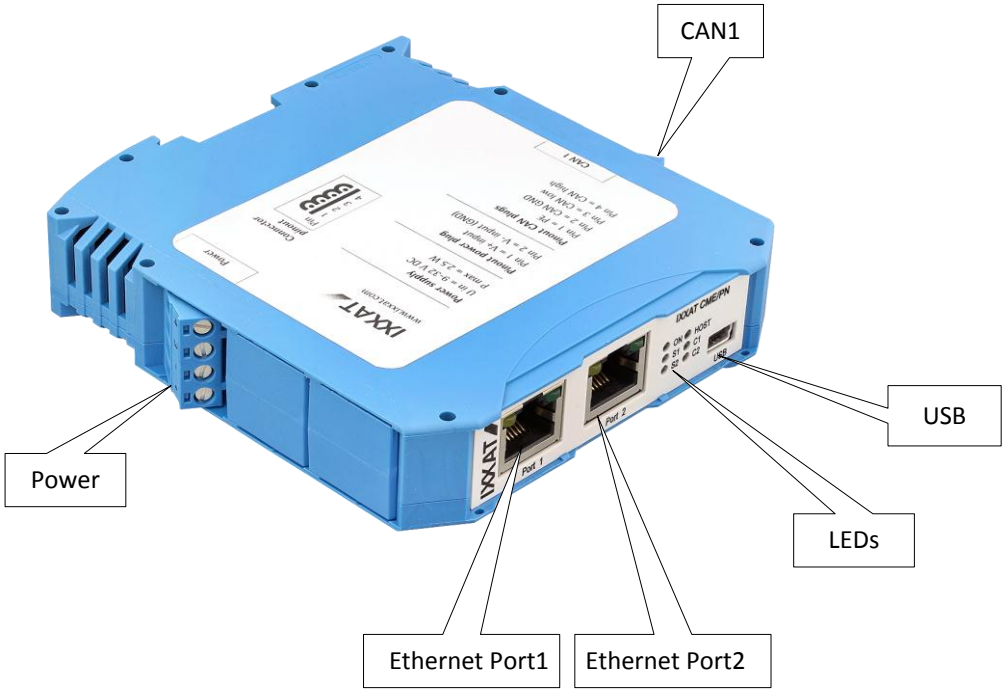


Figure 3-1: Connections and displays on the IXXAT CME/PN

3.1.1 Power plug

A screw terminal is used to connect the IXXAT CME/PN to a power supply. For the cabling, it is important for the cables to have a sufficient cross section (>0.14mm^2). The pinout of the screw terminal is shown in Table 3-1.

Figure 3-2: Power plug for the IXXAT CME/PN

Pin no. on connector	Signal
+	V+ (+9 V up to +32 V DC)
-	V- (Ground)
3	Not connected
4	Not connected

Table 3-1: Pinout of the power plug

The screw terminal module is plugged on top and can be separated from the housing using a screwdriver or similar tool.

3.1.2 Ethernet connectors

To connect the IXXAT CME/PN to a PROFINET network, there are two RJ45 connectors available. Due to the Auto Crossover feature of the Ethernet PHYs used, both crossover cables and 1-to-1 network cables can be used.

Pin no. RJ45	Signal
1	TX +
2	TX -
3	RX +
4	Connected to pin 5
5	Connected to pin 4
6	RX -
7	Connected to pin 8
8	Connected to pin 7

Table 3-2: Pinout of the Ethernet connectors

3.1.3 CAN bus connection

The IXXAT CME/PN has a CAN bus connection compliant with ISO11898-2. The CAN connection is galvanically isolated from the main electronics. A screw terminal is needed to connect the IXXAT CME/PN to the CAN bus. The pinout of the screw terminal is shown in Table 3-3.

Figure 3-3: CAN connection terminal for the IXXAT CME/PN

Pin no. on connect-or	Signal
1	PE
2	Galvanically isolated ground
3	CAN-Low
4	CAN-High

Table 3-3: Pinout of the CAN connector

3.2 Displays

The IXXAT CME/PN has six LEDs. These LEDs are used to display the communication status of the associated interfaces and/or to display the device status. The RJ45 connectors also each have two LEDs that display the link status of the corresponding Ethernet port.

Figure 3-4: Displays of the IXXAT CME/PN

3.2.1 Power LED (ON)

The power LED indicates the operational readiness of the device. If the power supply voltage is applied to the device, the power LED lights up. If the power LED is off, there is a fault in the power supply.

- **ON**

Color	Mode	Status
-	off	• Fuse defective • Voltage regulation defective • Device not connected to power
green	on	• Device fully functional

3.2.2 PROFINET Status LEDs (S1/S2)

The two two-colored (green and red) PROFINET status LEDs indicate the status of PROFINET communications.

- **S1**

Color	Mode	Status
-	off	No fault
green	-	-
red	blinking	Module identification
red	on	Module fault status

- **S2**

Color	Mode	Status
-	off	Connection (AR) established to the controller
green	on	PROFINET protocol not initialized
red	on	No connection (AR) to the controller

If an invalid firmware update file is loaded via Ethernet both LEDs S1 and S2 will blink red. In this case the device must be power cycled. Afterwards the device will be operational again.

3.2.3 Host Status LED (HOST)

The two-colored (green and red) host status LED indicates the status of the gateway application.

- **HOST**

Color	Mode	Status
-	off	Gateway software is not running, initialization
red	on	Update mode for configuration or software
red	blinking	No valid configuration found
red	flickering	Fatal error
green	single flash	Configured and initialized, but PROFINET Connect Frame has not yet been received
green	flashing	Normal operation, process model not valid or no transfer of the process model
green	on	Normal operation, exchange of valid process data

3.2.4 CAN RUN LED (C1)

The green CAN RUN LED is used to indicate the status of CANopen communication.

- **C1**

Color	Mode	Status
-	off	Gateway software is not running, initialization Fatal Error if HOST LED red flickering
green	blinking	PRE-OPERATIONAL
green	single flash	STOPPED
green	on	OPERATIONAL

3.2.5 CAN ERROR LED (C2)

The red CAN ERROR LED is used to indicate an error in CANopen communications.

- **C2**

Color	Mode	Status
-	off	No fault Fatal Error if HOST LED red flickering
red	blinking	Invalid configuration
red	single flash	CAN Warning Limit reached
red	double flash	Error Control Event occurred
red	triple flash	Sync Error Event occurred
red	on	CAN bus Off

3.2.6 Link Status LEDs

The two LEDs built into the RJ45 connector are used to indicate the link status of the Ethernet port. The green LED shows the link status and the activity of the port, while the yellow LED shows the speed of the link.

- **Link/Activity**

Color	Mode	Status
green	off	No connection to the Ethernet network
green	on	Connection available to the network; no network activity
green	flashing	Ethernet communication is taking place

- **Speed**

Color	Mode	Status
yellow	off	10Mb/s operation
yellow	on	100Mb/s operation (with active Link/Activity LED only)

4 Appendix

4.1 Support

For more information on our products, FAQ lists and installation tips, please refer to the support area on our homepage (http://www.ixxat.de). There you will also find information on current product versions and available updates.

4.2 Returning hardware

If it is necessary to return hardware to us, please download the relevant RMA form from our homepage and follow the instructions on this form.

4.3 FCC Compliance

Declaration of conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation

Class A digital device – Instructions

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

4.4 Disposing of old equipment

This product is covered by ElektoG (WEEE) and has to be disposed according to ElektoG (WEEE) separately. Products of IXXAT, which are covered by ElektoG, are exclusively for commercial use and marked with the symbol of the crossed-out garbage can.

According to the B2B regulations, the disposal in accordance with § 10 para. 2 clause 3 Electrical and Electronic Equipment act in the version of 16.03.2005 is regulated separately in the General Terms and Conditions and its supplements of IXXAT. The terms and conditions, its supplements and other information on disposal of old equipment can be downloaded at www.ixxat.de.

Die Allgemeinen Geschäftsbedingungen und deren Ergänzungen sowie weitere Hinweise zur Entsorgung von Altgeräten können unter www.ixxat.de herunter geladen werden.

4.5 Information on EMC

The product is a class A device. If the product is used in office or home environment radio interference can occur under certain conditions. To ensure faultless operation of the device, the following instructions must be followed due to technical requirements of EMC:

- use only the included accessories
- the shield of the interfaces must be connected with the device plug and with the plug on the other side

4.6 Technical data

Input voltage range:	9 - 32 V DC
Power consumption:	2.5 W
Working temperature range:	-20 °C up to +70 °C
Storage temperature range:	-40 °C up to +85 °C
Relative humidity:	10 - 95%, no condensation
Housing material:	Polyamide
Dimensions:	Dimensions 115 x 100 x 22.5 mm
Weight:	approx. 100 g
Ethernet interfaces:	10Base-T, 100Base-Tx with Auto-MDIX
Ethernet PHYs:	National DP83848K
Built-in 2-port switch:	Ethernet 10/100, store & forward, non blocking, wire speed, 2 independent priority queues, VLAN priority information used, transparent VLAN mode
CAN interface:	galvanically isolated CAN interface as defined in ISO11898-2 (Highspeed CAN)
Galvanic isolation:	500 V AC for 1 min
CAN-Transceiver:	Texas Instruments SN65HVD251
Max. number of CAN bus nodes:	120
CAN bus terminating resistor:	None

4.7 EC Declaration of Conformity

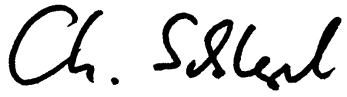
IXXAT Automation declares, that the product: IXXAT CME/PN

With the article numbers:	1.01.0261.00100 1.01.0261.00200

complies with the EU directive 2004/108/EC.

Applied harmonized standards:	EN 61000-6-3:2007 + A1:2011 EN 61000-6-2:2005

18.02.2013, Dipl.-Ing. Christian Schlegel, Managing Director



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