Installation- and Operating instructions for

CU8880-0000

Ethernet Controller with USB Input

Version: 1.3
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BECKHOFF

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General instructions

Notes on the Documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards. It is essential that the following notes and explanations are followed when installing and commissioning these components.

Liability Conditions

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

The documentation has been prepared with care. The products described are, however, constantly under development. For that reason the documentation is not in every case checked for consistency with performance data, standards or other characteristics. None of the statements of this manual represents a guarantee (Garantie) in the meaning of § 443 BGB of the German Civil Code or a statement about the contractually expected fitness for a particular purpose in the meaning of § 434 par. 1 sentence 1 BGB. In the event that it contains technical or editorial errors, we retain the right to make alterations at any time and without warning. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

State at Delivery

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH.

Description of safety symbols

The following safety symbols are used in this operating manual. They are intended to alert the reader to the associated safety instructions.

Danger — This symbol is intended to highlight risks for the life or health of personnel.

Warning — This symbol is intended to highlight risks for equipment, materials or the environment.

Note — This symbol indicates information that contributes to better understanding.

Product Description

Product Overview

View of the CU8880-0000

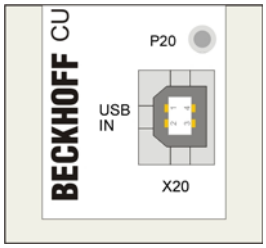
The CU8880 USB-to-LAN adapter places an additional industrially-suited and independent Ethernet interface at the user's disposal. In this way, four or more Ethernet interfaces can be implemented, depending on the system configuration. The CU8880 is used for necessary IT communication, so that the respective on-board Ethernet interfaces are available for EtherCAT or real-time Ethernet communication. Drivers for the USB-to-LAN adapter are available for Windows XP Professional, and Windows XP Embedded.

- user-friendly installation via integrated top hat rail adapter
- power supply via USB - no supply voltage necessary
- compact industrial design
- clear quick diagnosis by separate LEDs.

Power Supply

Power supply via USB-port

The Ethernet controller does not need any additional power supply. The power supply (5 V DC) is realized by the USB connector. The LED P20 lights green when power supply is connected.

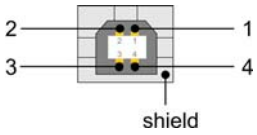


Data connectors

The connector are 1 USB port Type B and a RJ45-connector. The pins are described below:

USB type B Port (X20) (standard-cable)

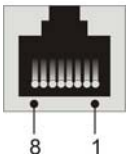
USB type B Port



Pin	Signal
1	VCC
2	Data -
3	Data +
4	GND
shield	shield

RJ 45-Port (X10) (standard CAT5-cable)

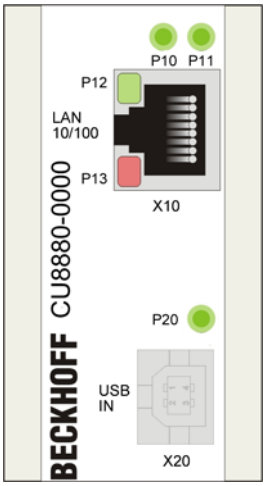
RJ 45 Port



Pin	Signal
1	TX+
2	TX-
3	RX+
4	n.c.
5	n.c.
6	RX-
7	n.c.
8	n.c.

LED Diagnostics

LED Diagnostics



The following table shows the possible states for the LEDs:

LED	Assignment	Status	Meaning
P20	power supply	off	no power supply connected
		lights green	5 V_{DC} via USB-Port
P10	Ethernet port	off	
		lights green	Ethernet Collision
P11	Ethernet port	off	
		lights yellow	Ethernet full duplex
P12	Ethernet port	off	
		lights	Ethernet Link
P13	Ethernet port	off	Ethernet Speed 10MBit
		lights	Ethernet Speed 100MBit

Installation Instructions

Please also refer to chapter *General instructions*.

Transport and Unpacking

The specified storage conditions must be observed (see chapter *Technical data*).

Transport

Despite the robust design of the unit, the components are sensitive to strong vibrations and impacts. During transport, the unit should therefore be protected from excessive mechanical stress. Therefore, please use the original packaging.

Warning

Danger of damage to the unit!
If the device is transported in cold weather or is exposed to extreme variations in temperature, make sure that moisture (condensation) does not form on or inside the device.

Prior to operation, the unit must be allowed to slowly adjust to room temperature. Should condensation occur, a delay time of approximately 12 hours must be allowed before the unit is switched on.

Unpacking

Proceed as follows to unpack the unit:

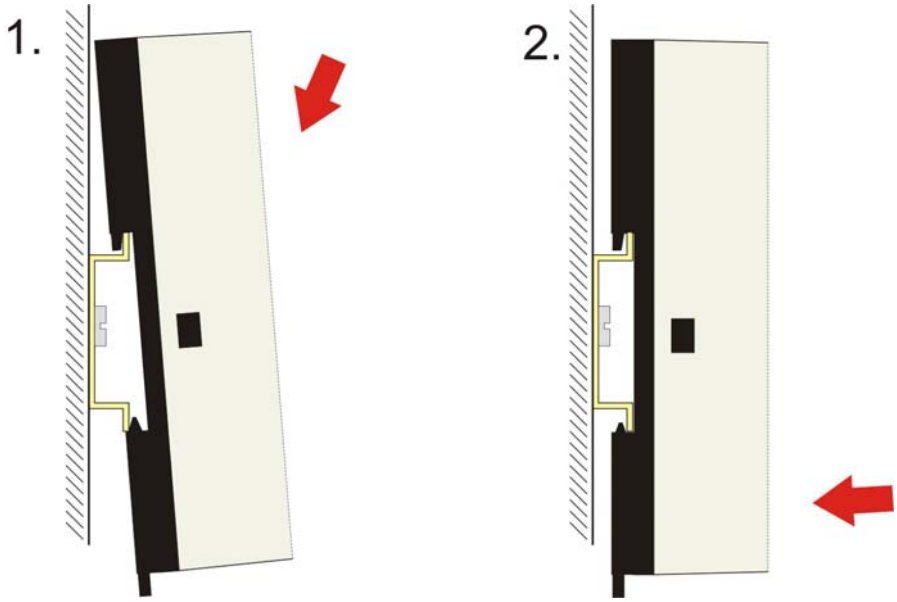
1. Remove packaging.
2. Do not discard the original packaging. Keep it for future relocation.
3. Check the delivery for completeness by comparing it with your order.
4. Please keep the associated paperwork. It contains important information for handling the unit.
5. Check the contents for visible shipping damage.
6. If you notice any shipping damage or inconsistencies between the contents and your order, you should notify Beckhoff Service.

Mounting / Unmounting

The CU8880 can be snapped onto a 35 mm mounting rail conforms to EN 50022.

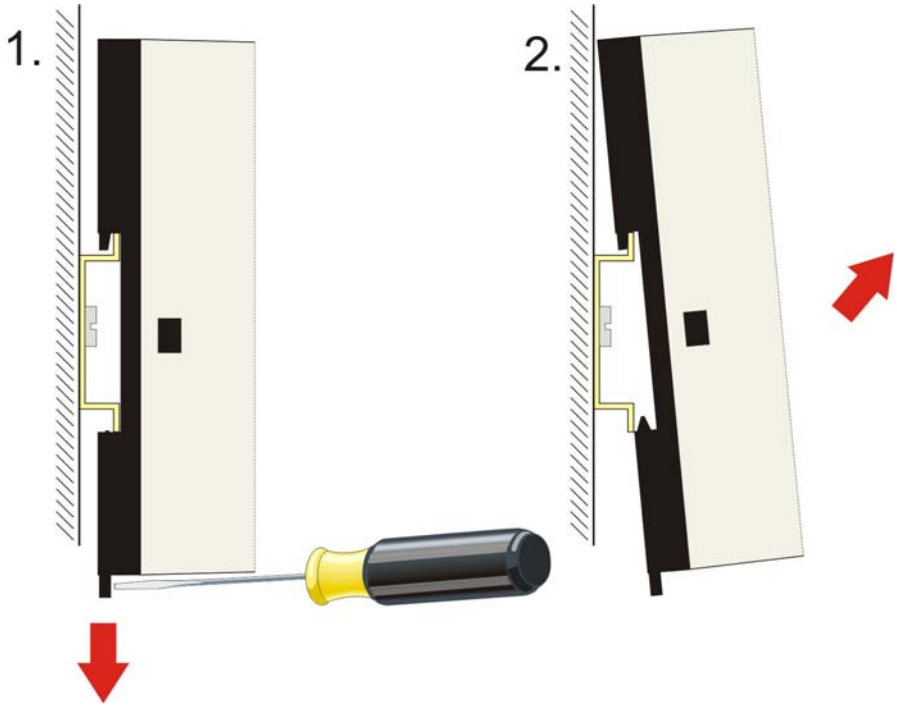
Mounting the Ethernet Controller

Just push the unit on the upper side under the rail **(figure 1)** and snap in the lower side as shown below **(figure 2)**:



Unmounting the Ethernet Controller

To release the CU8880 from the mounting rail pull down the locking clip with a screwdriver **(figure 1)** and pull off the device from the rail **(figure 2)**:



Connecting devices

Warning

The power supply plug must be withdrawn!

Please read the documentation for the external devices prior to connecting them.

During thunderstorms, plug connector must neither be inserted nor removed.

When disconnecting a plug connector, always handle it at the plug. Do not pull the cable!

Connecting cables

The connections are documented in the section *Product Description*.

When connecting the cables to the CU8880, proceed according to the following sequence:

- Switch off all the devices that are to be connected.
- Disconnect all the devices that are to be connected from the power supply.
- Connect all the cables between the CU8880 and to the devices that are to be connected.
- Reconnect all devices to the power supply.

Operating Instructions

Configuration

Software driver

Drivers for the USB-to-LAN adapter are available for Windows XP Professional, and Windows XP Embedded.

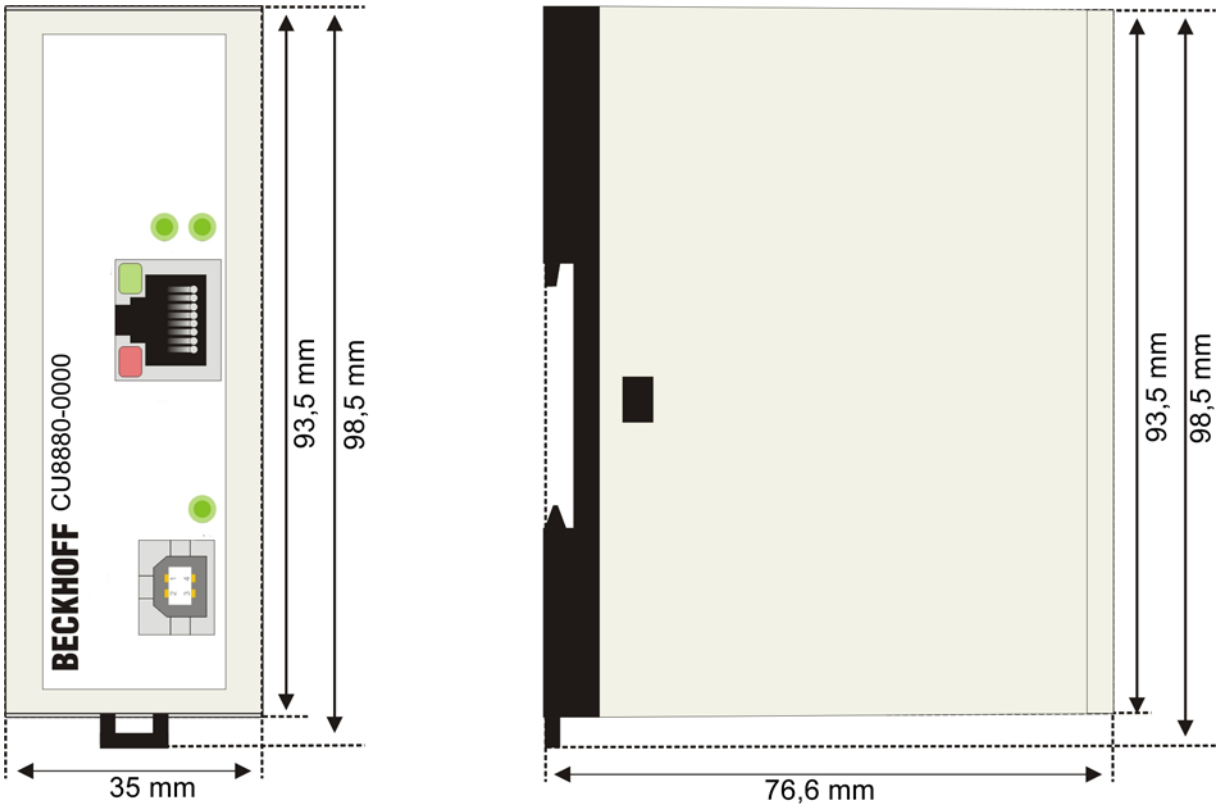
Note

The provided CD contains the according configuration software.

Appendix

Assembly dimensions

The product is characterized by small overall installed size. With a height of approx. 100 mm, the module dimensions exactly match those of the Beckhoff Bus Terminals. Together with the lowered connector surfaces, this means that it can be used in a standard terminal box with a height of 120 mm.



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You will also find further documentation for Beckhoff components there.

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Quote the project number

If servicing is required, please quote the **project number** of your product.

Technical data

Number of ports	1	USB-input type B
	1	Ethernet interface with 10/100BASE-T-connector RJ45
Supported USB standard	USB 2.0	
Status display	5 LEDs	
USB wiring length	maximum 1 meter	
Power supply	power supply via USB input connector	
Max. current input from 5 V USB	maximum 500 mA at 5V DC	
	The following conditions must be observed during operation:	
Environmental conditions	Ambient temperature:	0 to 55°C (operation) -25°C to +70°C (transport/ storage)
	Atmospheric humidity:	Maximum 95%, non-condensing
Vibration/ Shock resistance	EN 60068-2-6 / EN 60068-2-27, EN 60068-2-29	
EMC resistance burst/ ESD	EN 60000-6-2 / EN 60000-6-4	
Protection class	IP20	
Do not use the CU8880 in areas of explosive hazard	**The Ethernet Controller may not be used in areas of explosive hazard.**	
Dimensions (W x H x D)	app. 35 mm x 98,5 mm x 76,6 mm (with mounting for DIN rail)	
Weight	app. 95 g	
Assembly	on 35 mm mounting rail conforms to EN 50022	
Installation position	any	
Approvals	CE	

Approvals for USA and Canada

FCC: Federal Communications Commission Radio Frequency Interference Statement

FCC Approval for USA

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.

FCC: Canadian Notice

FCC Approval for Canada

This equipment does not exceed the Class A limits for radiated emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.