

Instructions for Use

C6 X1 WEB

HMI Series

Translation of the original manual

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Imprint

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1 Introduction

The described devices, accessories, hardware and/or software are products of KEB Automation KG. The enclosed documents correspond to conditions valid at printing. Misprint, mistakes and technical changes reserved.

1.1 Markings

1.1.1 Warnings

Certain operations can cause hazards during the installation, operation or there-after. There is safety information in the documentation in front of these operations.

Warnings contain signal words for the severity of the hazard, the type and/or source of the hazard, the consequence of non-compliance and the measures to avoid or reduce the hazard.

DANGER



Type and/or source of the hazard.

Leads to death or serious bodily injury if not observed.

- a) Measures to avoid the hazard.
- b) Can be supplemented by an additional danger sign or pictogram.

WARNING



Type and/or source of the hazard.

May cause death or serious injury if not observed.

- a) Measures to avoid the hazard.
- b) Can be supplemented by an additional danger sign or pictogram.

CAUTION



Type and/or source of the hazard.

May cause bodily injury if not observed.

- a) Measures to avoid the hazard.
- b) Can be supplemented by an additional danger sign or pictogram.

NOTICE



Type and/or source of the hazard.

Can cause damage to property if not observed.

- a) Measures to avoid the hazard.
- b) Can be supplemented by an additional danger sign or pictogram.

1.1.2 Information notes



Indicates to the user a special condition, prerequisite, scope or simplification.



This is a reference to further documentation. The barcode is for smartphones, the following link is for online users or for typing.

( <https://www.keb-automation.com/search>)



Notes on conformity for use in the North American or Canadian market.

1.1.3 Symbols and markers

✓	Condition
a)	Action step
⇒	Result or intermediate result
(≡ ▶ Refe [▶ 5])	Reference to a chapter, table or picture with page reference
ru21	Parameter name or parameter index
(🌐 ▶)	Hyperlink
<Strg>	Control code
COMBIVERT	Glossary entry

1.2 Laws and guidelines

KEB Automation KG confirms with the CE mark and the EU declaration of conformity that our device complies with the essential safety requirements.

The EU declaration of conformity can be downloaded on demand via our website.

1.3 Warranty and liability

The warranty and liability on design, material or workmanship for the acquired device is given in the general conditions of sale.



Here you will find our general sales conditions.

(🌐 ▶ <https://www.keb-automation.com/terms-conditions>)



Further agreements or specifications require a written confirmation.

1.4 Support

Through multiple applications, not every possible case has been taken into account. If you require further information or if problems occur which are not treated detailed in the documentation, you can request the necessary information via the local KEB Automation KG agency.

The use of our units in the target products is beyond of our control and therefore exclusively the responsibility of the customer.

The information contained in the technical documentation, as well as any support provided verbally, written or through testing, is made to the best of our knowledge and information regarding intended use of KEB products. However, due to technical changes, any information provided is considered non-binding and is subject to change. This also applies to any violation of industrial property rights of a third-party.

Selection of KEB units in view of their suitability for the intended use must be done by the user.

Tests can only be carried out within the scope of the intended end use of the product (Application) by the Customer. They must be repeated, even if only parts of hardware, software or the unit adjustment are modified.

1.5 Copyright

The customer may use the instructions for use as well as further documents or parts from it for internal purposes. Copyrights are with KEB Automation KG and remain valid in its entirety.

This KEB product or parts thereof may contain foreign software, incl. free and/or open source software. If applicable, the license terms of this software are contained in the instructions for use. The instructions for use are already available, can be downloaded from the KEB website or can be requested from the respective KEB contact person.

Other wordmarks and/or logos are trademarks (™) or registered trademarks (®) of their respective owners.

1.6 Validity of this manual

These instructions for use are valid for the units specified in the product description. It can be supplemented by corresponding options or special designs. It contains:

- Safety instructions to be observed
- Information on intended use
- Description of the device
- Technical Data
- Installation
- Connection
- Operation
- Maintenance, service and disposal

1.7 Target group

The instructions for use is determined exclusively for electrical personnel. Electrical personnel for the purpose of this instruction manual must have the following qualifications:

- Knowledge and understanding of the safety instructions.
- Skills for installation and assembly.
- Start-up and operation of the product.
- Understanding of the function in the used machine.
- Detection of hazards and risks of the electrical drive technology.
- Knowledge of IEC 60364.
- Knowledge of national safety regulations (e. g. DGUV Regulation 3).

2 General Safety Instructions

The products are designed and constructed in accordance with state-of-the-art technology and the recognised safety rules and regulations. However, the use of such devices may cause functional hazards for life and limb of the user or third parties, or damages to the system and other material property.

The following safety instructions have been created by the manufacturer for the area of electric drive technology. They can be supplemented by local, country or application-specific safety instructions. They do not claim to be exhaustive. Non-observance of the safety instructions by the customer, user or other third parties leads to the loss of all claims against the manufacturer caused by this.

NOTICE

Hazards and risks through ignorance!

- a) Read the instructions for use.
- b) Observe the safety and warning instructions.
- c) Ask if something is unclear.

2.1 Installation

DANGER



Electrical voltage in the vicinity of the device!

Danger to life due to electric shock !

- ✓ This device is intended for installation in control cabinets or machines that can be operated under dangerous voltages. For any work on the device
 - a) Switch off the supply voltage of the control cabinet or machine.
 - b) Secure it against switching on.
 - c) Wait until all drives has been stopped in order that no regenerative energy can be generated.
 - d) Never bridge upstream protective devices. Also not for test purposes.

NOTICE



Use of suitable voltage sources!

Electric shock!

- a) Only use voltage sources with protective separation (SELV/PELV) in accordance with VDE 0100 as per the stated specification.
- b) Pay attention to a sufficient overvoltage category of the voltage supply.
- c) With existing or newly-wired circuits the person installing the device or machine must ensure that the PELV requirements are met.

For a trouble-free and safe operation, please pay attention to the following instructions:

- The electrical installation shall be carried out in accordance with the relevant requirements.
- Cable cross-sections and fuses must be dimensioned by the user according to the specified minimum/maximum values for the application.
- When using components without isolated inputs/outputs, it is necessary that equipotential bonding exists between the components to be connected (e.g. by the equipotential line). Disregard can cause destruction of the components by equalizing currents.

3 Product description

The following devices are described in this manual:

Model	Mat.No.	Description
C6 X1-07	A7C6XA1-1100	Web HMI 7" TFT, 1024x600, PCAP Touch, 8GB Flash memory, PoE Ethernet, Wi- Fi, NFC, Web Browser
C6 X1-10	B0C6XA1-1100	Web HMI 10" TFT, 1280x800, PCAP Touch, 8GB Flash memory, PoE Ethernet, Wi-Fi, NFC, Web Browser
C6 X1-15	B5C6XA1-1100	Web HMI 15.6" TFT, 1366x768, PCAP Touch, 8GB Flash memory, PoE Ethernet, Wi-Fi, NFC, Web Browser
C6 X1-21	C1C6XA1-1100	Web HMI 21.5" TFT, 1920x1080, PCAP Touch, 8GB Flash memory, PoE Ethernet, Wi-Fi, NFC, Web Browser

3.1 Product features

- The HMIs of the X1 series are ideal for use in the industrial sector.
- They have high-resolution displays and multi-touch PCAP touchscreens with a robust glass front.
- The touchscreen/display connection ensures stable visual performance.
- Power over Ethernet (PoE) offers simple connection via standard CAT5 cabling.
- The availability of a Wi-Fi interface improves device integration, while NFC expands the application possibilities of the device.
- Full IP protection when using special connections.
- Maximum installation flexibility, from the mounting arm to a simple M22 hole.
- The HMIs of the X1 series have been optimised for use as embedded browsers.
- They are the ideal choice for all demanding IoT edge applications in industrial automation where a powerful and high-performance HTML5 web browser is required.
- They contain a Chromium-based HTML5 browser that supports operation in kiosk mode. Supports secure Corvina Cloud connectivity.

3.2 Product identification

In order to use the information contained in the instructions correctly, the device type must be identified using the information on the rear panel

Below you will find an example of the displayed information:

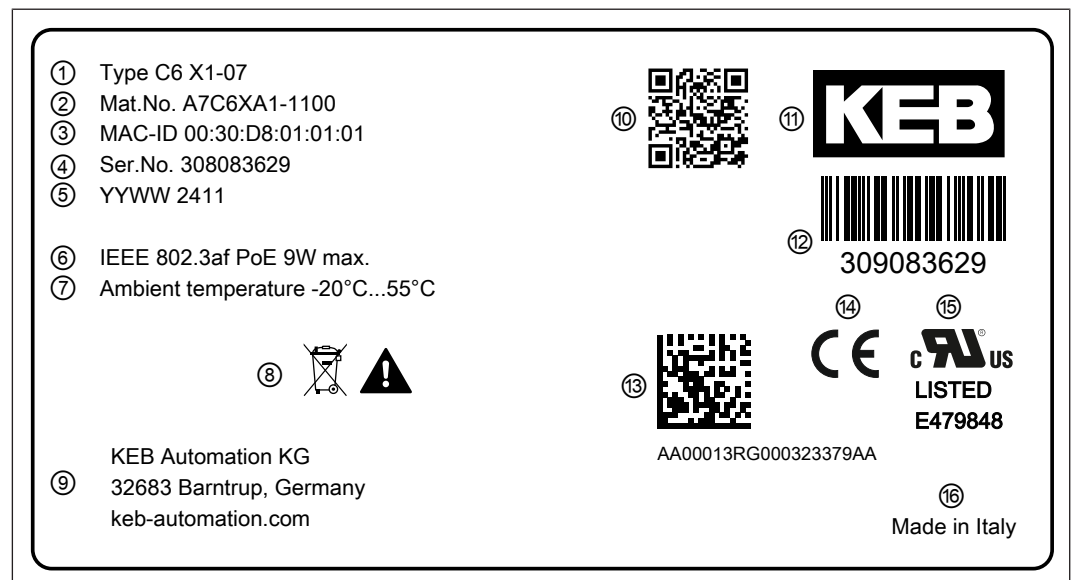


Fig. 1: Nameplate X1A

① Material type	② Material number
③ MAC-Id	④ Serial number
⑤ Year/week of manufacture	⑥ IEEE standard and performance
⑦ Ambient temperature	⑧ Additional logos
⑨ Manufacturer address	⑩ QR code with KEB link
⑪ Manufacturer logo	⑫ Barcode with serial number
⑬ Data matrix code for internal use	⑭ CE label
⑮ UL certification	⑯ Country of manufacture

4 Technical data

4.1 Operating conditions

4.1.1 Climatic ambient conditions

Storage	Standard	Value	Notes
Ambient temperature	EN 60068-2-1	-30...80 °C	7" and 10"
	EN 60068-2-2 EN 60068-2-14	-20...70 °C	15" and 21"
Relative humidity	EN 60068-2-30	5...85 %	without condensation
Operation	Standard	Value	Notes
Ambient temperature	EN 60068-2-14	-20...55 °C	Vertical installation
Relative humidity	EN 60068-2-30	5...85 %	without condensation
Type of protection	EN 60529	IP67	requires suitable connectors and cables

4.1.2 Mechanical ambient conditions

Operation	Standard	Class	Notes
Vibration limits	EN 60068-2-6	-5...9 Hz	7 mm p-p
		9...150 Hz	1 g
Shock limit values	EN 60068-2-27	±50 g 11 ms	3 pulses per axis

4.1.3 Electrical operating conditions

4.1.3.1 Device classification

Requirement	Standard	Value	Notes
Overvoltage category			-
Pollution degree	EN 60664-1	2	

4.1.3.2 Electromagnetic compatibility

4.1.3.2.1 EMC emitted interference

Requirement	Standard	Value	Notes
Radiated interferences	EN 55022 EN 55016-2-3	Class A	-

4.1.3.2.2 Interference immunity

Requirement	Standard	Value	Notes
Static discharges	EN 61000-4-2	8 kV	AD (air discharge)
		4 kV	CD (contact discharge)
Burst	EN 61000-4-4	±2 kV	DC input
		±1 kV	Signal cable
Electromagnetic fields	EN 61000-4-3	10 V/m	80 MHz...1 GHz
		3 V/m	1.4 GHz...2 GHz
		1 V/m	2 GHz...2.7 GHz

Surge	EN 61000-4-5	±0.5 kV	DC input (line to earth)
		±0.5 kV	DC input (line to line)
		±1 kV	Signal cable (against earth)
Conducted immunity, induced by high-frequency fields	EN 61000-4-6	10 V	0.15...80 MHz
Mains frequency magnetic field	EN 61000-4-8	30 A/m	50/60 Hz against housing

4.2 Other data

Backup battery

3 V 7 mAh vanadium-lithium, rechargeable, permanently installed, model VL1220

Flash

8 GB

RAM

2 GB

Hardware clock

Clock/calendar with backup battery

Accuracy

RTC (at 25°C) <100ppm

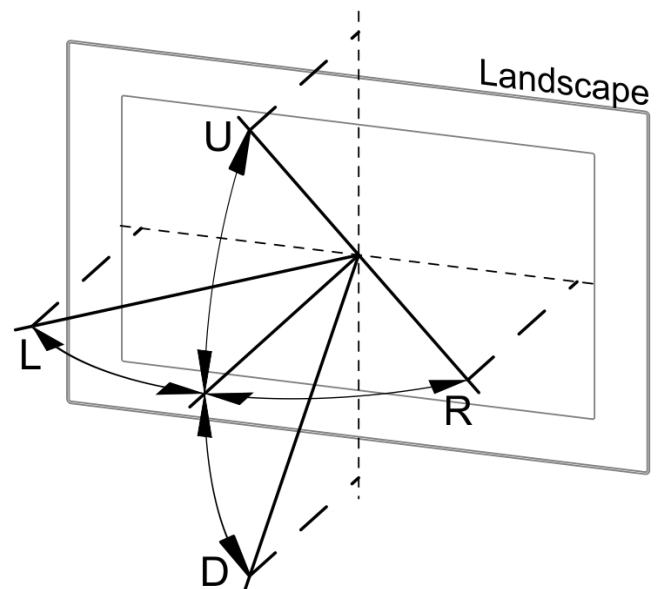
Screen

Backlight (LED type)

Service life 40000 h or more (at 25°C ambient temperature) until the brightness of the backlight reaches 50% of the nominal value. Prolonged use at ambient temperatures > 40°C may affect the quality/reliability/durability of the backlight.

Viewing angle

The viewing angles (U,D,R,L) of the monitor types are described in the technical data of the respective device.



The viewing angles are specified for the horizontal (L, R) and vertical (U, D) axes in relation to the vertical axis of the monitor. The viewing angles specified above always refer to the standard mounting orientation.

Resistance of the screen surface

Chemical resistance of the front glass after 24 hours of exposure without visible changes:

- Betadine (10% povidone solution)
- Cola

- Electrode gel/paste
- Hydrogen peroxide (3% solution)
- NaCl (0.9% solution)
- Coffee
- Dextrose (5% glucose solution)
- Hydrogen chloride (0.5% solution PH=1)
- Isopropyl alcohol
- Sodium hypochlorite
- Ethyl alcohol (70%-90%)
- Quaternary ammonium compound

Touch screen

Technology

Projected-capacitive (PCAP)

Characteristics

Number of fingers

5

Input pens

Active and passive

Front glass

Hardened

Operation with gloves

The touchscreens are suitable for operation with or without gloves.

A variety of different gloves are supported, but not **all** types can be guaranteed.**4.3 Product data**

Type	C6 X1-07	C6 X1-10	C6 X1-15	C6 X1-21
Display	TFT Colour			
backlight	LED			
Colours	16 million			
Resolution	1024x600	1280x800	1920x1080	1920x1080
Diagonal	7" widescreen	10.1" wi-descreen	15.6" wi-descreen	21.5" wi-descreen
Viewing angle L / R / U / D	75° typically	85° typically	80° typically	89° typically
Dimmable	yes			
CPU	64-bit RISC Quad core – 1.6 GHz			
Operating system	Linux			
Flash	8 GB			
RAM	2 GB			
Real-time clock	yes			
Ethernet port	10/100 PoE 802.3af/at/bt			
USB port	1 (Host v. 2.0, special plug required)			
Battery	rechargeable			
Weight	0.7 kg	1.2 kg	4.0 kg	6.0 kg

4.4 Electrical data

Type	C6 X1-07	C6 X1-10	C6 X1-15	C6 X1-21
Voltage supply	IEEE 802.3af PoE	IEEE 802.3at PoE+	IEEE 802.3at PoE+	IEEE 802.3bt PoE++
Power input	12 W	14 W	23 W	35 W

4.5 Dimensions

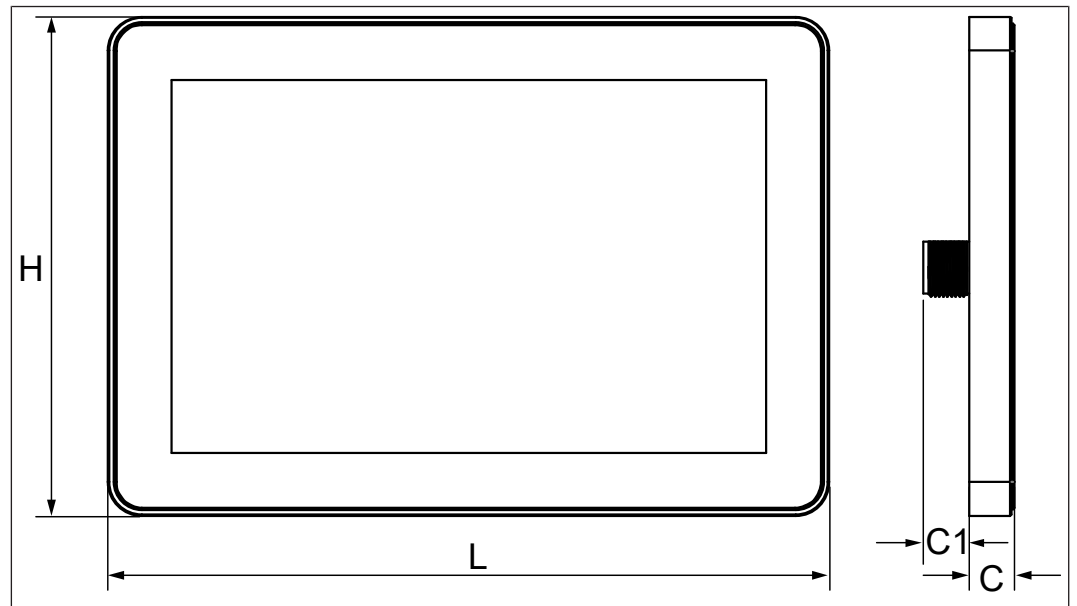


Fig. 2: Dimensions

Type	H	L	C	C1
C6 X1-07	131.6 mm/5.18"	195.2 mm/7.68"	16.5 mm/0.64"	17 mm/0.66"
C6 X1-10	183.1 mm/7.20"	264.5 mm/10.41"	16.5 mm/0.64"	17 mm/0.66"
C6 X1-15	248 mm/9.76"	398.6 mm/15.69"	26.5 mm/1.04"	17 mm/0.66"
C6 X1-21	325.6 mm/12.81"	534.1 mm/21.02"	26.5 mm/1.04"	17 mm/0.66"

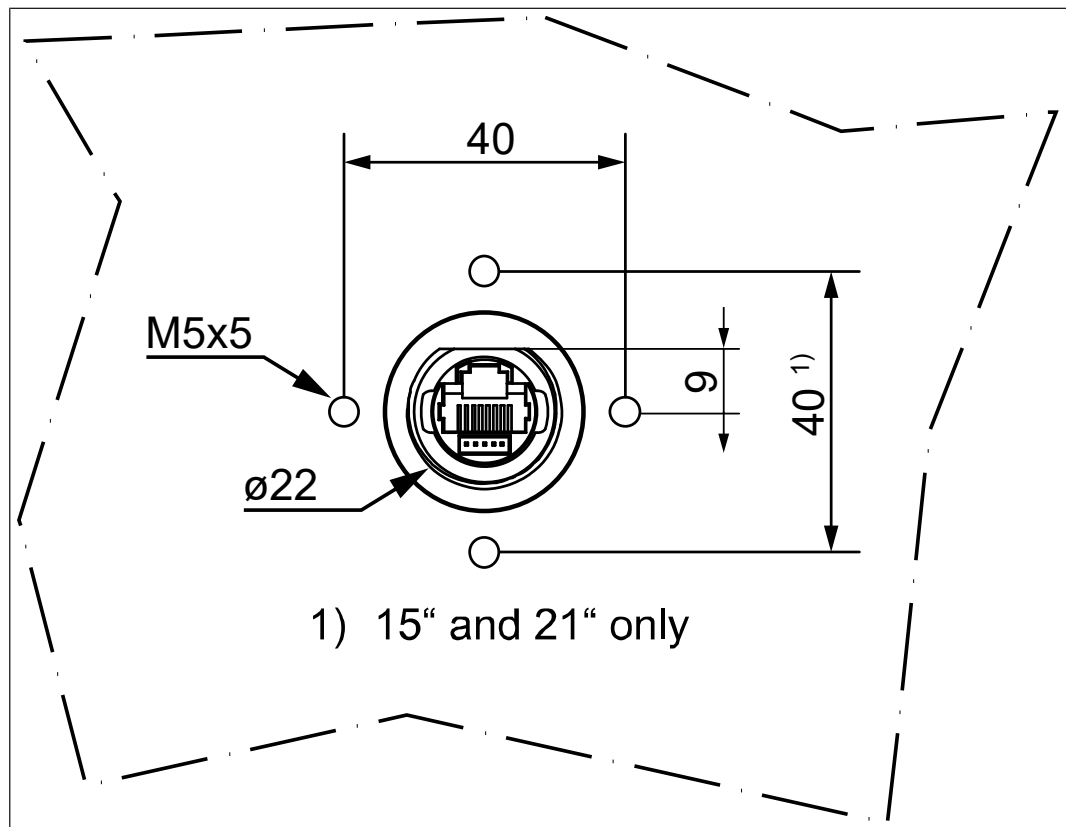


Fig. 3: Rear view

5 Assembly

Before installation, observe the following notes on the installation location:

Avoid locations exposed to direct sunlight for long periods of time (overheating of the device).

The device is not intended for installation in contact with corrosive chemical compounds.

Check whether the used bracket is suitable for the intended installation location.



To achieve protection class IP67, please note:

Use connection cable 00C6FX1-Cxxx.

Maximum deviation from the flat surface to the cutout ≤ 0.5 mm.

Material thickness of the mounting plate 1.5...3 mm.

Roughness of the surface where the seal is in contact ≤ 120 μm .

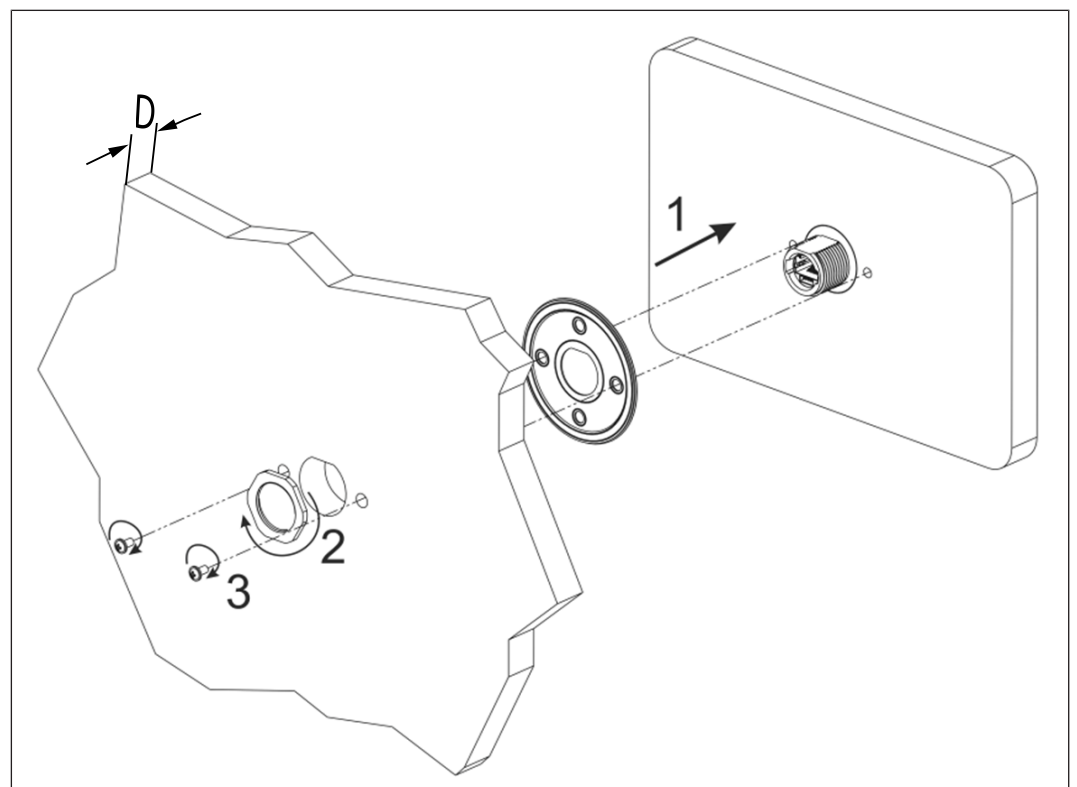


Fig. 4: Monitor mounting

D Max. 3 mm with cable 00C6FX1-Cxxx (IP67).

Max. 10 mm with standard Ethernet cable.

◆ Tightening torque: 10 Nm (88 lbin) for nut (2); 1.3 Nm (11 lbin) for screws (3);

6 Connection

6.1 Ethernet/USB port

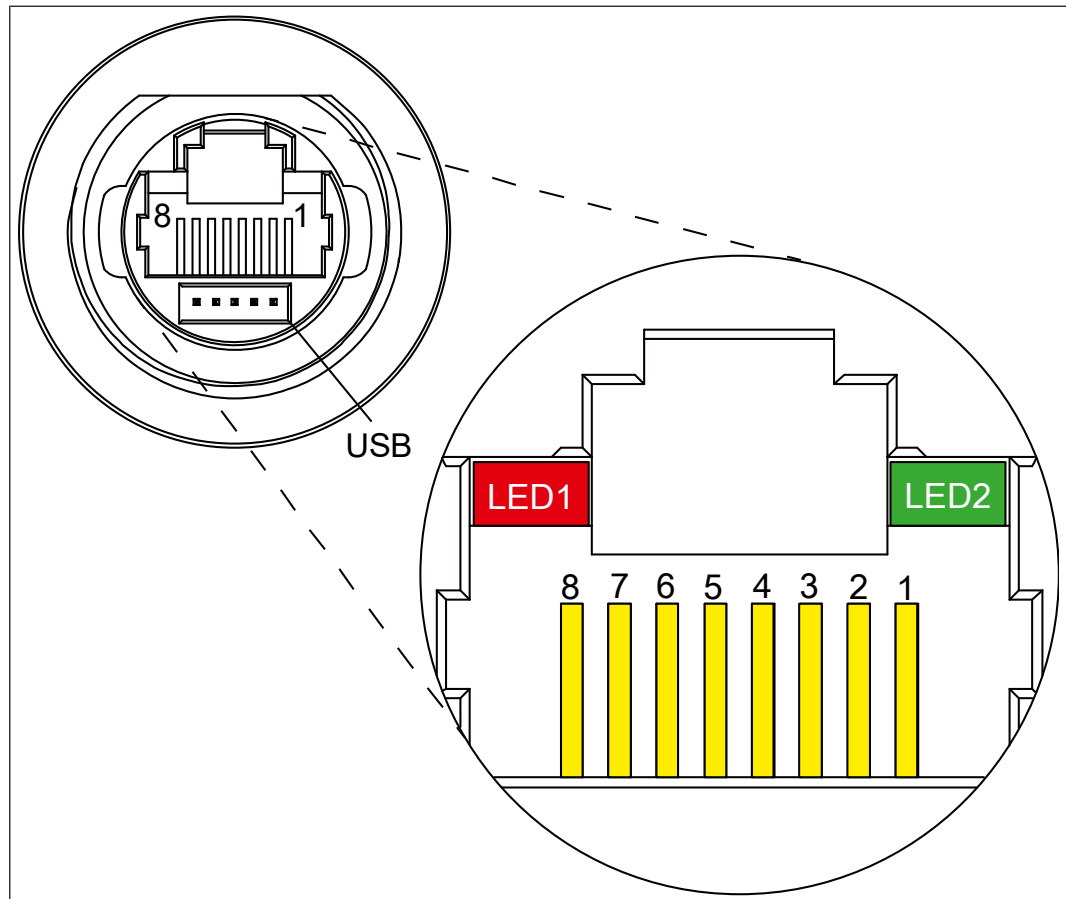


Fig. 5: Ethernet port assignment

1 TX+	2 TX-
3 RX+	4 not assigned
5 not assigned	6 RX-
7 not assigned	8 not assigned
LED red: off (no connection) on (connection recognised)	LED green: on (no activity) flashing (port 2 active)

6.2 Power supply connection

Power is supplied via the Ethernet cable (PoE).



Check the power supply for sufficient power. (⇒ [Electrical data](#) [▶ 12]).

To protect against transient overvoltages, protection with a maximum of 140 % of the peak input voltage of the device must be provided.

Measures against electromagnetic interferences:

- All electronic devices in the control system must be properly earthed.
- Earthing must be carried out in accordance with the applicable regulations.
- Use shielded CAT 5 cable or higher.

- Earth the device via the shielding. Alternatively, the earth connection can be established via the screws near the plug.

7 Maintenance

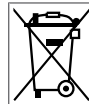
The following maintenance work has to be carried out as required, but at least once a year, by authorised and trained personnel.

- Switch off the device before cleaning.
- Check device for loose screws and plugs and if necessary tighten up.
- Keep devices free of dirt and dust deposits.
- Clean the front of the system with a soft, damp cloth.
- Do not use any cleaning agents, solvents or other objects that could scratch or attack the surface.

8 Disposal

Electronic devices of KEB Automation KG are intended for professional, commercial processing (so-called B2B devices).

Manufacturers of B2B devices are obliged to take back and recycle devices manufactured after 14.08.2018. In principle, these devices may not be left at public or communal recycling or collection points.



Unless otherwise agreed between the customer and KEB or unless there is a deviating mandatory legal regulation, KEB products labelled in this way can be returned. Company and keyword for the return point can be found in the list below.

Shipping costs are at the expense of the customer. The devices are then professionally recycled and disposed of.

The entry numbers are listed country-specifically in the following table. KEB addresses can be found on our website.

Withdrawal by	WEEE registration no.	Keyword
Germany		
KEB Automation KG	EAR: DE12653519	Keyword: "Withdrawal WEEE"
France		
RÉCYLUM – Recycle point	ADEME: FR021806	Mots clés "KEB DEEE"
Italy		
COBAT	AEE: (IT) 19030000011216	Parola chiave "Ritiro RAEE"
Austria		
KEB Automation GmbH	ERA: 51976	Keyword: "Withdrawal WEEE"
Spain		
KEB Automation KG	RII-AEE: 7427	Palabra clave "Retirada RAEE"
Czech republic		
KEB Automation KG	RETELA: 09281/20-ECZ	Klíčové slovo "Zpětný odběr OEEZ"
Slovakia		
KEB Automation KG	ASEKOL: RV22EEZ0000421	Kľúčové slovo: "Spätný odber OEEZ"

The packaging must be sent for paper and cardboard recycling.

9 Certification

9.1 CE marking

Conformity with the EU directives applicable on the production date is confirmed by the CE mark on the rating plate.

9.1.1 Declaration of Conformity

The current EU Declaration of Conformity for this product is available for download on our website at the following link:

( keb-automation.com/search)

There you will find the declaration of conformity by entering the material number. It contains the list of applied EU directives and harmonised standards.

If you need help or further documentation, our customer service will be happy to assist you.

10 Revision history

Edition	Version	Note
2023-12	00	Pre-series
2024-05	01	Series version
2025-08	02	Monitor changeover C6 X1-15 new resolution; CE declaration section revised.

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Glossary

Application

The application is the intended use of the KEB product.

COMBIVERT

Proper name for a KEB Drive Controller.

Customer

The customer has purchased a product from KEB and integrates the KEB product into his product (customer product) or resells the KEB product (reseller).

EN 55016-2-3

Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements. German version EN 55016-2-3 (VDE 0877-16-2). International version CISPR 16-2-3.

EN 55022

Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement. German version VDE 0878-22.

EN 60068-2-1

Environmental influences - Part 2-1: Test method - Test A: Cold. German version VDE 0468-2-1.

EN 60068-2-14

Environmental influences - Part 2-14: Test method - Test N: Temperature change. German version VDE 0468-2-14.

EN 60068-2-2

Environmental influences - Part 2-2: Test method - Test B: Dry heat. German version VDE 0468-2-2.

EN 60068-2-27

Environmental influences - Part 2-27: Test method - Test Ea and guideline: Shock. German version VDE 0468-2-27

EN 60068-2-30

Environmental influences - Part 2-30: Test method - Test Db: Moist heat, cyclical (12 + 12 hours). German version DIN EN 60068-2-30.

EN 60068-2-6

Environmental influences - Part 2-6: Test method - Test Fc: Oscillation (sinusoidal). German version VDE 0468-2-6.

EN 60529

Degrees of protection provided by enclosures (IP-Code).

EN 60664-1

Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests.

EN 61000-4-2

Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test. German version VDE 0847-4-2.

EN 61000-4-3

Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test. German version VDE 0847-4-3

EN 61000-4-4

Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test. German version VDE 0847-4-3.

EN 61000-4-5

Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test. German version VDE 0847-4-5.

EN 61000-4-8

Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test. German version VDE 0847-4-8.

EN 61000-4-6

Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields. German version VDE 0847-4-6.

HMI

Human-Machine-Interface describes a visual user interface (touchscreen).

PELV

Safe protective extra-low voltage (earthed).

SELV

Safe extra-low voltage (unearthed).

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