

Manual | EN

CP39xx-14xx-0010

Stainless steel multi-touch Control Panel with CP-Link 4



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1 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.

The following instructions and explanations must be followed during installation and commissioning of the components. 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.

Disclaimer

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. 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. All illustrations shown are only examples. The configurations depicted may deviate from the standard.

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2 For your safety

The Safety chapter first explains the safety symbols used in the documentation and their meanings. They contain fundamental safety instructions that are essential for the avoidance of personal injuries and damage to property.

Exclusion of liability

Beckhoff shall not be liable in the event of non-compliance with this documentation and thus the use of the devices outside the documented operating conditions.

2.1 Description of safety symbols

The following safety symbols are used in these operating instructions. In order to avoid personal injuries and damage to property, read and follow the safety and warning notices.

Warning of personal injuries:

⚠ DANGER
Disregarding the safety notice will lead to death or serious injuries.
⚠ WARNING
Disregarding the safety notice may lead to death or serious injuries.
⚠ CAUTION
Disregarding the safety notice may lead to minor injuries.

Warning of damage to property:

NOTICE
Disregarding the notice may lead to damage to property.

2.2 Intended use

The Control Panels of the CP39xx-14xx-00x0 series in stainless steel design are control and operating devices that meet strict hygiene requirements and are particularly suitable for the pharmaceutical, food and packaging industries. The stainless steel Control Panels are designed for installation on a 48 mm mounting arm tube system.

The Control Panels with IP65 protection are characterized by a housing design with minimized gaps. It offers full protection against contact and against water jets (nozzle) from any angle and against dust. The specified limits for technical data must be adhered to.

The Control Panel can be used within the documented operating conditions.

Improper use

Do not use the device outside the documented operating conditions.

2.3 Fundamental safety instructions

The following safety instructions must be observed when handling the device.

Application conditions

- Do not use the device under extreme environmental conditions. Protect the device from heat.
- Never use the device in potentially explosive atmospheres.
- Do not carry out any work on the device while it is live. Always switch off the supply voltage for the device before mounting it, replacing device components or rectifying malfunctions.

- Never connect the device during a thunderstorm. There is a risk of electric shock.
- Ensure that the device has a protective and functional earth connection.

Damage to property, loss of data and impairment of functions

- Ensure that only trained specialists with a control and automation engineering background, operate the device. Use by unauthorized persons can lead to damage to property and loss of data.
- Protect the power supply cable with a fuse with a max. rating of 16 A. The fuse serves to protect the supply line in the event of a short circuit.
- In case of fire, extinguish the device with powder or nitrogen.

2.4 Operator's obligation to exercise diligence

The operator must ensure that

- the products are used only for their intended purpose (see Chapter 2.2 [Intended use](#) [▶ 6]).
- the products are only operated in sound condition and in working order.
- the products are operated only by suitably qualified and authorized personnel.
- the personnel is instructed regularly about relevant occupational safety and environmental protection aspects, and is familiar with the operating instructions and in particular the safety instructions contained herein.
- the operating instructions are in good condition and complete, and always available for reference at the location where the products are used.

3 Product overview

The control panels in the CP39xx-14xx-00x0 series meet the strict hygiene requirements of the pharmaceutical, food and packaging industries and can be used directly in the field. The mounting arm adapter, which can be ordered separately, is available for integration into a 48 mm mounting arm system. This also protects all connections and lines from contamination and chemical influences.

The stainless steel control panels are available in the following three display sizes with corresponding resolution in 16:10 and 16:9 formats.

- 12.1-inch (1280 x 800)
- 15.6-inch (1366 x 768)
- 18.5-inch (1366 x 768)
- 21-inch (1920 x 1080)

The stainless steel control panel, designed in protection class IP65, has a multi-touch screen with a laminated polyester film and thus offers increased splintering protection. This prevents contamination of the products should the device become damaged. In order to be able to cover a wide range of hygiene requirements, the stainless steel devices offer further special features:

- Resistance of the polished stainless steel surface
- Minimized gap dimensions thanks to an optimal housing design
- Self-draining of liquids which prevents the adhesion of impurities
- Sealing materials provide protection against a wide range of chemical cleaning agents

The stainless steel control panels have the following features

- Capacitive multi-touch screen
- Stainless steel housing 1.4301
- Flush-mounted front laminate
- Integrated CP-Link 4 connection technology
 - CP-Link 4 enables the panel to be remotely located up to 100 m from the PC via a CP-Link 4 cable with either an integrated or separate 24 V DC power supply, depending on the transmitter module.
 - CP-Link 4 transmits USB 2.0 at 100 Mbit/s and DVI
- CP39xx-1400-0010 interfaces in the mounting arm adapter
 - CP-Link 4
 - 24 V DC
 - 1-port USB socket
- CP39xx-1401-0010 interfaces in the mounting arm adapter
 - CP-Link 4
 - 1-port USB socket
 - Power supply via the 19-pin round connector
 - Emergency stop, 3 short-stroke buttons with LED ring illumination via 19-pin round connector
- CP39xx-1414-0010 interfaces in the mounting arm adapter
 - CP-Link 4
 - 24 V DC
 - 1-port USB socket
 - 4-pin round connector for emergency stop
 - Emergency stop
 - 3 short-stroke keys with LED ring illumination via USB

Push button extension

The following control panels can be ordered with push button extension ex factory.

- CP3913-1401-0010

- CP3913-1414-0010
- CP3916-1401-0010
- CP3916-1414-0010
- CP3918-1401-0010
- CP3918-1414-0010
- CP3921-1401-0010
- CP3921-1414-0010

3.1 Structure

Fig. 1 shows an example of the device configuration representing all CP39xx-14xx-0010 versions.

The Control Panel connection interfaces vary, depending on the product version. Otherwise, there are no differences in the external design of the device.



Fig. 1: CP39xx-14xx-0010_configuration

Table 1: Key for CP39xx-14xx-0010 configuration

No.	Component	Description
1	Mounting arm tube	Mounting arm tube for installation from below or above
2	Optional RFID	RFID integrated in the push button extension
3	Display and touch screen glass	Operating the Control Panel
4	Optional mounting arm adapter	Adapter for installation from below or above
5	FCC label	FCC approval
6	Connection compartment	Access to the interfaces
7	Bolt plate	Assembly aid for mounting arm adapter
8	Name plate	Information on the Control Panel equipment

3.2 Interface description

The connection options of the CP39xx-14xx-0010 vary, depending on the product version. The following view illustrates the configuration of the connector panels.

- CP39xx-1400-0010 (A) connection section
- CP39xx-1401-0010 (B) connection section
- CP39xx-1414-0010 (C) connection section

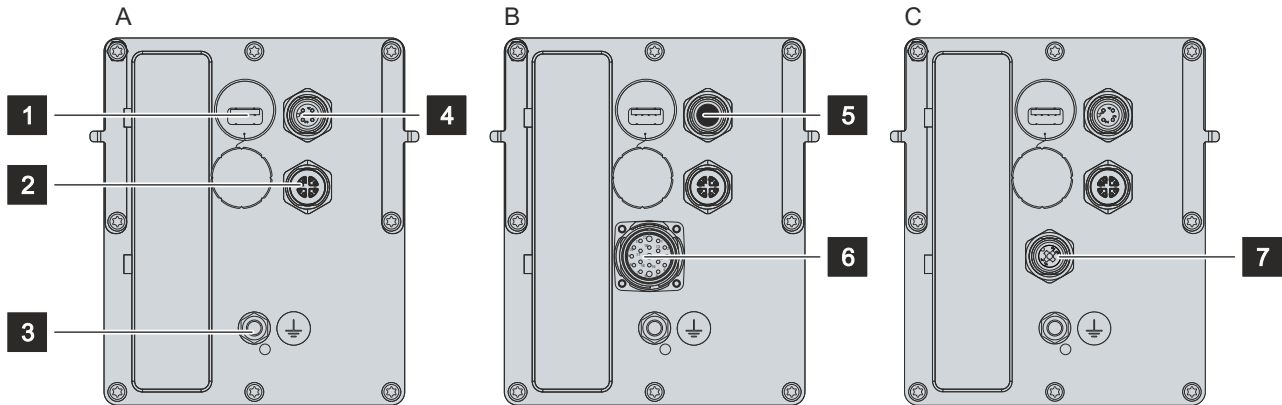


Fig. 2: CP39xx-14xx-0010_connection section

Table 2: Key for CP39xx-1400-0010, CP39xx-1401-0010, CP39xx-1414-0010 connection section

No.	Component	Description
1	Single-port USB interface under screw cap	Connection of peripheral devices
2	CP-Link 4	CP-Link 4 allows the Panel to be located up to 100 m from the PC via a CP-Link 4 cable
3	Protective conductor connection (PE)	Low-resistance protective earth and functional earth for the Control Panel
4	4-pin round connector	Power supply for CP39xx-1400-0010, CP39xx-1414-0010 Control Panels
5	4-pin round connector, sealed	Function via the 19-pin round connector of the CP39xx-1400-0010 Control Panel
6	19-pin round connector	Control Panel power supply and push button extension of the CP39xx-1401-0010
7	4-pin round connector	CP39xx-1414-0010 emergency stop connection

3.2.1 Power supply, 4-pin round connector

The CP39xx-1400-0010 and CP39xx-1414-0010 Control Panels are supplied with a nominal input voltage of 24 V. The power supply is connected via a 4-pin M12 socket with IP65 protection. The socket is connected to + 24 V and GND.

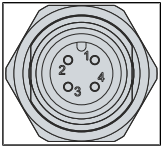


Fig. 3: CP39xx-1400-0010_CP39xx-1414-0010_power supply, 4-pin

Table 3: Pin assignment of the 4-pin voltage socket

Pin	Signal
1	+ 24 V DC
2	GND
3	GND
4	+ 24 V DC

Due to the dual connection, maximum wire cross-sections of 4 x 0.75 mm² can be accommodated. For long supply lines, use 4 x 0.75 mm² cables to achieve a low voltage drop on the supply lines. There should be at least 22 V at the power supply plug of the Control Panel, so that the Control Panel remains switched on during voltage fluctuations. You can obtain a replacement plug from your Beckhoff Sales using the following ordering option:

- C9900-P916: Power supply connector for CP39xx, round connector IP65 with strain relief for the external supply cable.

3.2.2 CP-Link 4

The CP39xx-14xx-0010 Control Panel has a CP-Link 4 input in the form of an 8-pin M12 socket. Via the interface the Control Panel can be connected to an Industrial PC over a distance of up to 100 m. The device can be connected to the Industrial PC either directly with a corresponding PCIe module or indirectly via an intermediate CU8802/ CU8803 transmitter box.

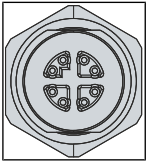


Fig. 4: CP39xx-1400-0010_ CP39xx-1401-0010_ CP39xx-1414-0010_ CP-Link 4

Table 4: Pin assignment of the CP-Link 4 socket

Pin	Signal
1	CP-Link4_0P
2	CP-Link4_0N
3	CP-Link4_1P
4	CP-Link4_1N
5	CP-Link4_3P
6	CP-Link4_3N
7	CP-Link4_2N
8	CP-Link4_2P
S1	Shield
S2	Shield
S3	Shield

On an Industrial PC with PCIe module, CP-Link 4 is available as a Two Cable Display Link. The Control Panel can be connected directly to the Industrial PC via the module. USB 2.0 (100 Mbit/s) and DVI are transmitted together via a CP-Link 4 cable. The CP39xx-14xx-0010 requires an additional 24 V power supply (see Fig. 5).

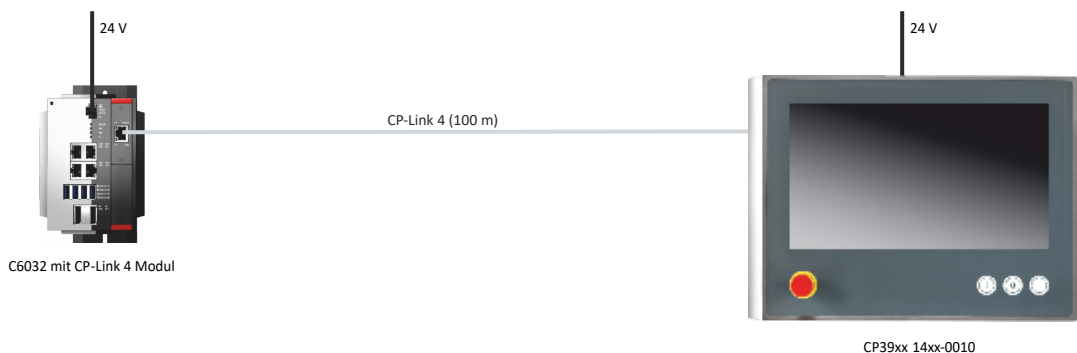


Fig. 5: CP39xx-14xx-0010_ CP-Link 4

CP-Link 4 with transmitter box

If the Industrial PC is not equipped with a PCIe module, a transmitter box is required for connecting a CP39xx-14xx-0010. The transmitter boxes CU8802-000x (Two Cable Display Link) and CU8803-000x (One Cable Display Link) are available for this purpose.

With the CU8802-000x, the Industrial PC is connected to the transmitter box via USB and DP/DVI. The transmitter box is then connected to the Control Panel via the CP-Link 4 connection of the transmitter box using a CP-Link 4 cable. USB and DVI are transmitted together via this cable. An additional power supply is required for the CP39xx-14xx-0010 (Two Cable Display Link). Figure 6 shows the wire connection to the CU8802-000x.

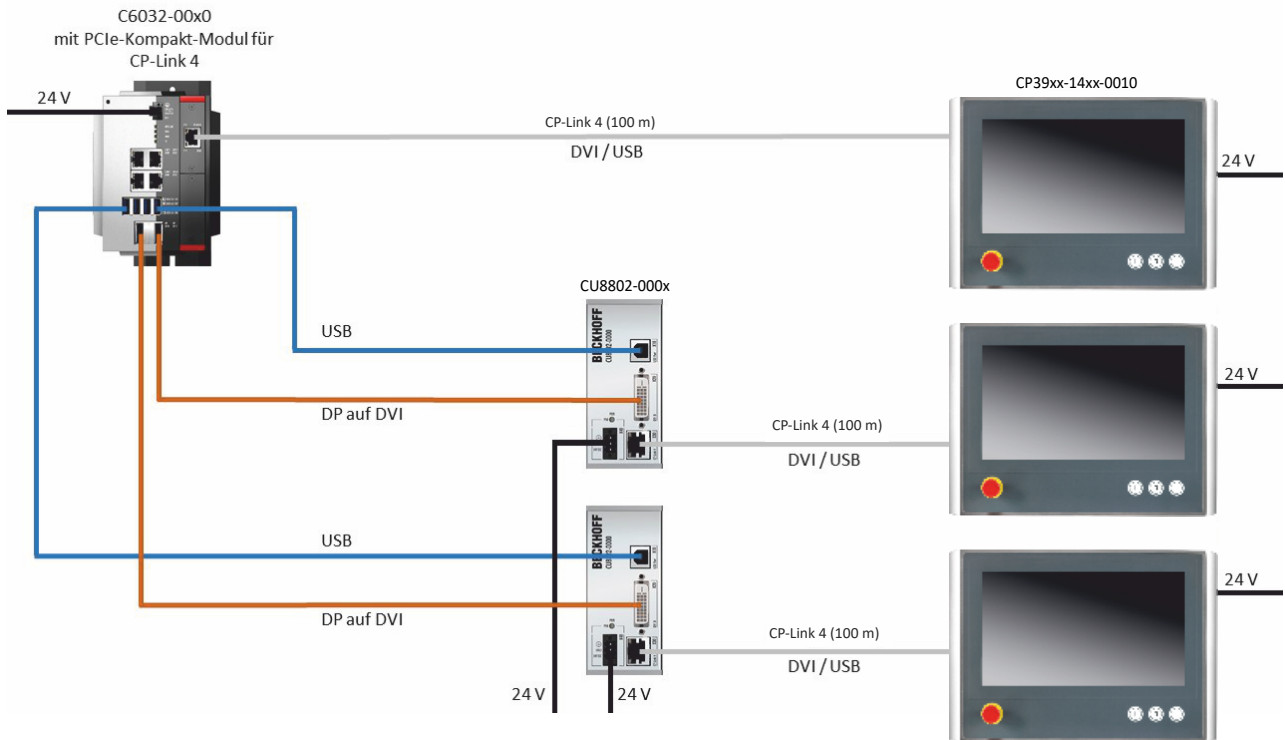


Fig. 6: CP39xx-14xx-0010_CP-Link 4 CU8802-000x

With the CU8803-000x, the Industrial PC is also connected to the transmitter box via USB and DP/DVI. The transmitter box is then connected to the Control Panel via the CP-Link 4 connection of the transmitter box using a CP-Link 4 cable. With this box, USB, DP/DVI and power supply can be transmitted together via the cable (One Cable Display Link). No additional power supply is required for the CP39xx-14xx-0010. Figure 7 shows the wire connection to the CU8803-000x.

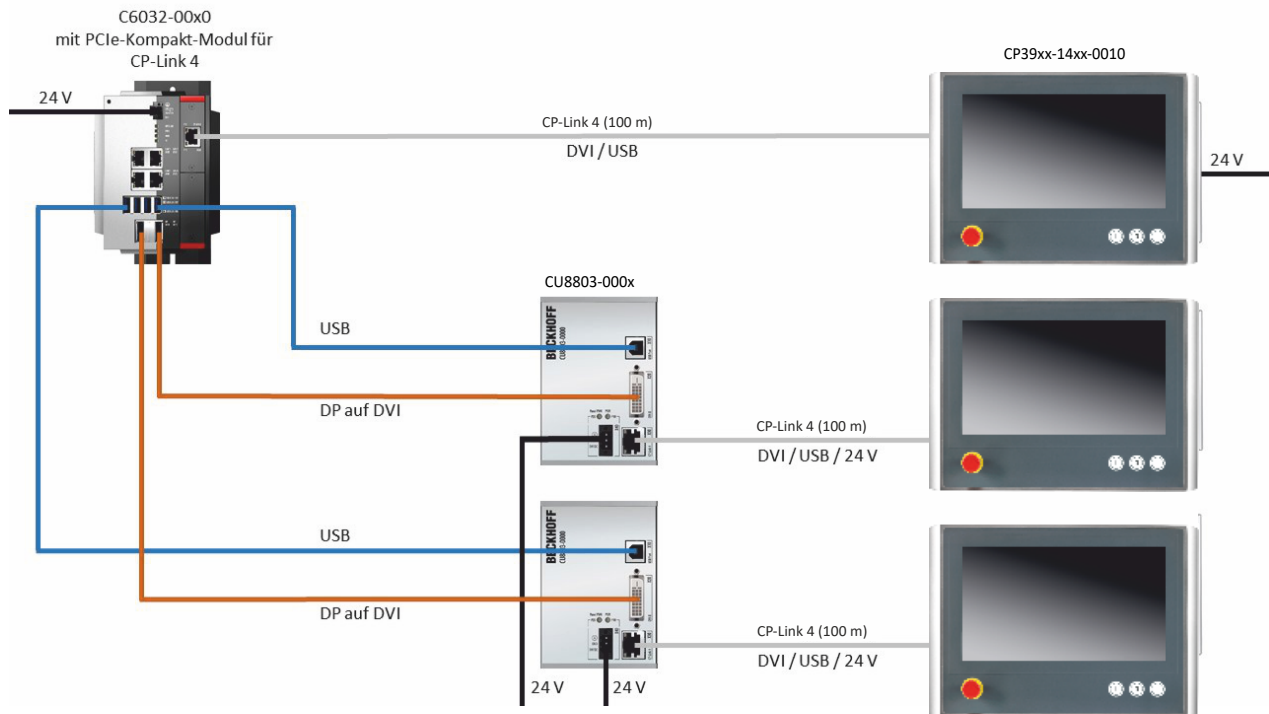


Fig. 7: CP39xx-14xx-0010_CP-Link 4 CU8803-000x

The following ordering options are available for the transmitter boxes:

- CU8802-0000
- CU8802-0001
- CU8803-0000
- CU8803-0001

3.2.3 19-pin round connector for signal and power supply

The push button extension of the CP39xx-1401-0010 is connected via the 19-pin M23 socket.

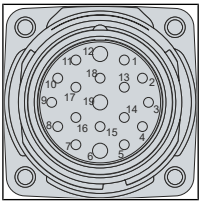


Fig. 8: CP39xx-1401-0010_signal and power supply, 19-pin

Table 5: Pin assignment of the 19-pin voltage socket

Pin	Signal
1	Emergency stop (break contact 1)
2	Emergency stop (break contact 1)
3	Emergency stop (break contact 2)
4	Emergency stop (break contact 2)
5	Short-stroke key S2 (make contact)
6	GND
7	Short-stroke key S2 (make contact)
8	LED S2 (green)
9	Short-stroke key S3 (break contact)
10	Short-stroke key S3 (break contact)
11	LED S3 (red)
12	PE
13	Short-stroke key S4 (make contact)
14	Short-stroke key S4 (make contact)
15	LED S4 (blue)
16	reserve
17	GND LED S2/ S3/ S4
18	reserve
19	+ 24 V DC

3.2.4 4-pin round connector (emergency stop)

The 4-pin M12 socket is used to connect the emergency stop in the push button extension.

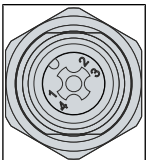


Fig. 9: CP39xx-1414-0010_round connector for emergency stop, 4-pin

Table 6: Pin assignment of 4-pin emergency stop connection socket

Pin	Signal
1	Break contact 1
2	Break contact 1
3	Break contact 2
4	Break contact 2

3.3 Optional interface

You can extend the control panels beyond the basic configuration by adding an external USB interface in the mounting arm adapter. The following ordering option is available to you for this purpose.

Table 7: Ordering option USB interface

Options	Description
C9900-E299	1-port USB-A interface with stainless steel IP65 screw cap, outlet in the side panel of the C9900-M759 mounting arm adapter; second side USB A plug, IP65, occupies the USB port in the connection section, single part, not mounted

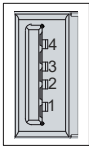


Fig. 10: CP39xx-14xx-0010_Optional USB interface

Table 8: USB interface pin assignment

Pin	Connection
1	Vbus
2	D -
3	D +
4	GND

3.4 Optional RFID readers

The stainless steel Control Panels can be extended with an integrated RFID reader in the push button extension. The following ordering option is available for this purpose.

Table 9: RFID reader ordering option

Options	Description
C9900-E295	RFID reader for ISO14443 A/B, ISO 15693, Mifare Classic, Mifare Plus, Mifare DESFire, Legic RF standards, Sony FeliCa read/write, 13.56 MHz, connection via USB, mounted under the front laminate

3.5 Optional maintenance kit

The C9900-M759 mounting arm adapter connects the Control Panel to the mounting arm system and protects the connections and cables from aggressive cleaning agents, water and dirt. The seals of the mounting arm adapter should therefore be checked regularly for tightness. A replacement seal kit C9900-Z494 is available for replacing worn seals. The set contains all the required seals and screws for C9900-M735, C9900-M736, C9900-M759 and C9900-M764.

Table 10: Maintenance set ordering option

Option	Description
C9900-Z494	Replacement seals, accessories and mounting hardware for C9900-M759, C9900-M764, C9900-M735 and C9900-M736

3.6 Name plate

The name plate provides information about the Control Panel equipment.

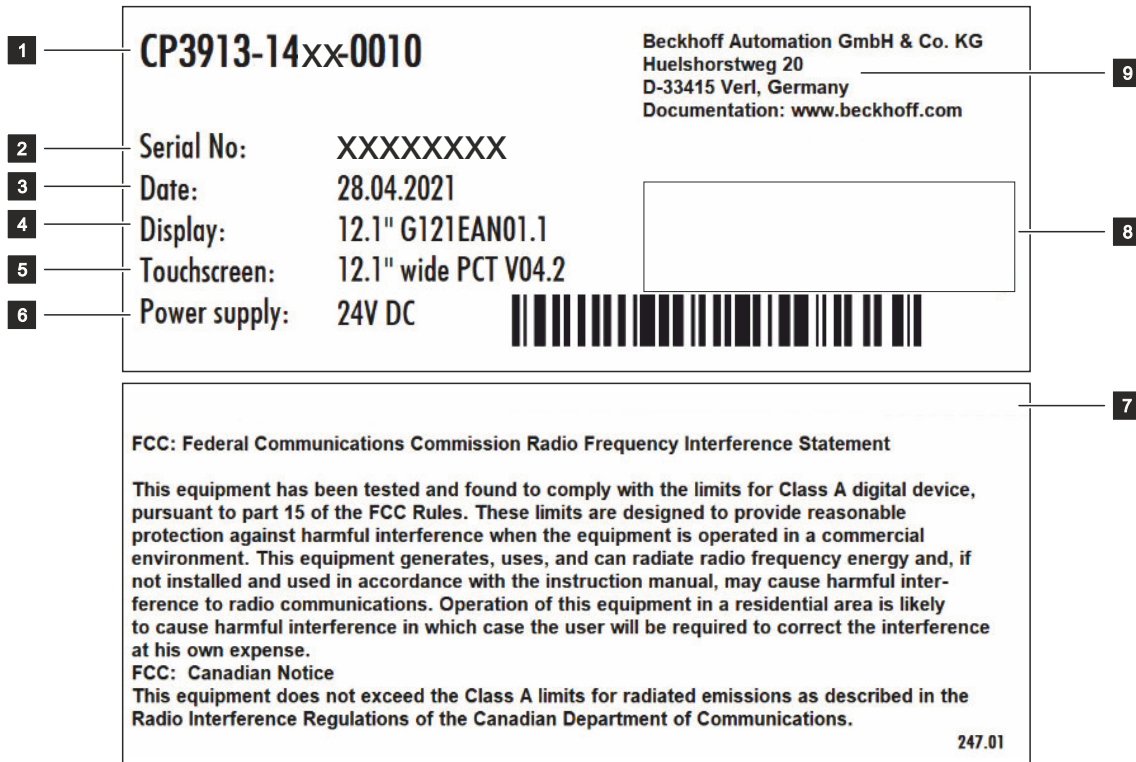




Fig. 11: CP39xx-14xx-00x0_name plate

Key for CP39xx-14xx-0010 name plate

No.	Description
1	Device name
2	Serial number (BTN)
3	Date of manufacture
4	Display
5	Touch screen
6	24 V _{DC} power supply, NEC class 2
7	FCC approval
8	Symbols <div style="text-align: right;">  </div> <p>Note: Here you will find the symbols that apply to the device: CE, EAC, UKCA,  The approvals for your device can be found on the name plate and in chapter 10.2 Approvals [► 52]</p>
9	Address of the vendor

3.7 Connecting cable

Optionally, ready-made connection cables for all connections are available in various lengths. You can order them using the following article descriptions.

Power supply line

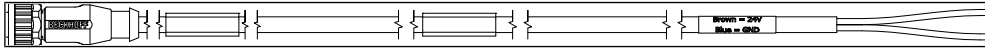


Fig. 12: CP39xx-1400-0010 CP39xx-1414-0010_power supply, 4-pin

Table 11: 4-pin power supply cable for CP39xx-1400-0010 CP39xx-1414-0010

Connection cable	Description
C9900-K742	Power cable for Control Panel, drag-chain suitable, with 4-pin round connector, 5 m, consisting of: - Power cable 2x0.75 mm ² conforming to UL, cores color-coded - Side A: Round 4-pin socket - Side B: not used
C9900-K743	Power cable for Control Panel, drag-chain suitable, with 4-pin round connector, 10 m, consisting of: - Power cable 2x0.75 mm ² conforming to UL, cores color-coded - Side A: Round 4-pin socket - Side B: not used
C9900-K744	Power cable for Control Panel, drag-chain suitable, with 4-pin round connector, 20 m, consisting of: - Power cable 2x0.75 mm ² conforming to UL, cores color-coded - Side A: Round 4-pin socket - Side B: not used

Sensor cable

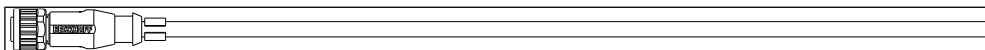


Fig. 13: CP39xx-1414-0010_emergency stop sensor cable

Table 12: CP39xx-1414-0010 emergency stop sensor cable

Connection cable	Description
ZK2000-6100-0050	Sensor cable, M12, plug, straight, pin, 4-pin, A-coded open end 5 m
ZK2000-6100-0100	Sensor cable, M12, plug, straight, pin, 4-pin, A-coded open end 10 m
ZK2000-6100-0150	Sensor cable, M12, plug, straight, pin, 4-pin, A-coded open end 15 m
ZK2000-6100-0300	Sensor cable, M12, plug, straight, pin, 4-pin, A-coded open end 30 m

signal line



Fig. 14: CP39xx-1401-0010_power supply, 19-pin

Table 13: CP39xx-1401-0010 19-pin signal line

Connection cable	Description
C9900-K618	Signal and power supply cable for push button extension, drag-chain suitable, length 5 m, 3x1mm ² + 16x0.34mm ² , pre-assembled, M23 socket IP65, screwable, 19-core, second end open
C9900-K619	Signal and power supply cable for push button extension, drag-chain suitable, length 10 m, 3x1mm ² + 16x0.34mm ² , pre-assembled, M23 socket IP65, screwable, 19-core, second end open
C9900-K620	Signal and power supply cable for push button extension, drag-chain suitable, length 20 m, 3x1mm ² + 16x0.34mm ² , pre-assembled, M23 socket IP65, screwable, 19-core, second end open
C9900-K668	Signal and power supply cable for push button extension, drag-chain suitable, length 30 m, 3x1mm ² + 16x0.34mm ² , pre-assembled, M23 socket IP65, screwable, 19-core, second end open

Connecting cable

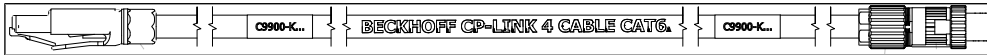


Fig. 15: CP39xx-14xx-0010_CP-Link 4 connection cable

Table 14: CP39xx-14xx-0010 CP-Link connection cable

Connection cable	Description
C9900-K667	RJ 45 Cat. 6A connection cable, 3 m, one end with IP 65 connector
C9900-K652	RJ 45 Cat. 6A connection cable, 5 m, one end with IP 65 connector
C9900-K653	RJ 45 Cat. 6A connection cable, 10 m, one end with IP 65 connector
C9900-K654	RJ 45 Cat. 6A connection cable, 20 m, one end with IP 65 connector
C9900-K655	RJ 45 Cat. 6A connection cable, 30 m, one end with IP 65 connector
C9900-K656	RJ 45 Cat. 6A connection cable, 40 m, one end with IP 65 connector
C9900-K657	RJ 45 Cat. 6A connection cable, 50 m, one end with IP 65 connector
C9900-K658	RJ 45 Cat. 6A connection cable, 60 m, one end with IP 65 connector
C9900-K659	RJ 45 Cat. 6A connection cable, 70 m, one end with IP 65 connector
C9900-K660	RJ 45 Cat. 6A connection cable, 80 m, one end with IP 65 connector
C9900-K661	RJ 45 Cat. 6A connection cable, 90 m, one end with IP 65 connector
C9900-K662	RJ 45 Cat. 6A connection cable, 100 m, one end with IP 65 connector
C9900-K724	Connection cable RJ 45 Cat.6A, 3 m, one end with IP65 connector, drag-chain suitable
C9900-K704	Connection cable RJ 45 Cat.6A, 5 m, one end with IP65 connector, drag-chain suitable
C9900-K705	Connection cable RJ 45 Cat.6A, 10 m, one end with IP65 connector, drag-chain suitable
C9900-K706	Connection cable RJ 45 Cat.6A, 20 m, one end with IP65 connector, drag-chain suitable
C9900-K707	Connection cable RJ 45 Cat.6A, 30 m, one end with IP65 connector, drag-chain suitable
C9900-K708	Connection cable RJ 45 Cat.6A, 40 m, one end with IP65 connector, drag-chain suitable
C9900-K709	Connection cable RJ 45 Cat.6A, 50 m, one end with IP65 connector, drag-chain suitable
C9900-K710	Connection cable RJ 45 Cat.6A, 60 m, one end with IP65 connector, drag-chain suitable
C9900-K711	Connection cable RJ 45 Cat.6A, 70 m, one end with IP65 connector, drag-chain suitable
C9900-K712	Connection cable RJ 45 Cat.6A, 80 m, one end with IP65 connector, drag-chain suitable

3.8 Optional transmitter box CU8802-000x/ CU8803-000x

Different transmitter boxes are available depending on the product version.

3.8.1 CU8802-000x for CP39xx-14xx-0010

Table 15: CP-Link 4 extender CU8802-0000

Accessories	Description
CU8802-0000	<p>CP-Link 4 Extender-Tx for connecting a Control Panel with CP-Link 4 interface CP29xx-0010, CP39xx-0010 or CPX39xx-0010</p> <ul style="list-style-type: none"> – 1 USB input with USB B socket for connection to the PC at a distance of 1 m – 1 DVI input with DVI-D socket for connection to the PC at a distance of 1 m – 1 CP-Link 4 output with RJ45 socket for Cat.6A cable (up to 100 m) for connection of a Control Panel with CP-Link 4 interface CP29xx-0010, CP39xx-0010 or CPX39xx-0010 – Power supply for the Control Panel by connecting 24 V at the Control Panel – Metal housing for DIN rail mounting –CP-Link 4 transmits USB 2.0 at 100 Mbit/s and DVI. – 24 V input for power supply of the CU8802 transmitter box – Protection class IP 20 – Operating temperature range 0 ... 55 °C – Dimensions (W x H x D) 45 x 100 x 80 mm - 1 m USB connection cable - 1 m DVI connection cable

Table 16: CP-Link 4 extender CU8802-0001

Accessories	Description
CU8802-0001	<p>CP-Link 4 Extender-Tx for connecting a Control Panel with CP-Link 4 interface CP29xx-0010, CP39xx-0010 or CPX39xx-0010 to a PC C60xx or ATX-PC with DisplayPort</p> <ul style="list-style-type: none"> – 1 USB input with USB B socket for connection to the PC at a distance of 1 m – 1 DVI input with DVI-D socket for connection to the PC at a distance of 1 m – 1 CP-Link 4 output with RJ45 socket for Cat. 6A cable (up to 100 m) for connecting a Control Panel with CP29xx-0010 or CP39xx-0010 CP-Link-4 interface – The Control Panel features a 24 V power supply connection – Metal housing for DIN rail mounting –CP-Link 4 transmits USB 2.0 at 100 Mbit/s and DVI. – 24 V input for power supply of the CU8802 transmitter box – Protection class IP 20 – operating temperature range 0...55 °C – Dimensions (W x H x D) 45 x 100 x 80 mm – 1 m USB connection cable – 1 m DisplayPort to DVI connection cable

3.8.2 CU8803-000x for CP39xx-14xx-0010

Table 17: CP-Link 4 extender CU8803-0000

Accessories	Description
CU8803-0000	<p>CP-Link 4 Extender-Tx for connecting a Control Panel with CP-Link 4 interface CP29xx-0010, CP39xx-0010 or CPX39xx-0010</p> <ul style="list-style-type: none"> – 1 USB input with USB B socket for connection to the PC at a distance of 1 m – 1 DVI input with DVI-D socket for connection to the PC at a distance of 1 m – 1 CP-Link 4 output with RJ45 socket for Cat.6A cable (up to 100 m) for connection of a Control Panel with CP-Link 4 interface CP29xx-0010, CP39xx-0010 or CPX39xx-0010 – Power supply for the Control Panel by CU8803 via the Cat.6A cable – Metal housing for DIN rail mounting – CP-Link 4 transmits USB 2.0 at 100 Mbit/s and DVI. – 24 V input for power supply to the CU8803 Transmitter Box and the Control Panel – Protection class IP 20

Table 18: CP-Link 4 extender CU8803-0001

Accessories	Description
CU8803-0001	<p>CP-Link 4 Extender-Tx for connecting a Control Panel with CP-Link 4 interface CP29xx-0010, CP39xx-0010 or CPX39xx-0010 to a PC C60xx or ATX-PC with DisplayPort</p> <ul style="list-style-type: none"> – 1 USB input with USB B socket for connection to the PC at a distance of 1 m – 1 DVI input with DVI-D socket for connection to the PC at a distance of 1 m – 1 CP-Link 4 output with RJ45 socket for Cat. 6A cable (up to 100 m) for connecting a Control Panel with CP29xx-0010 or CP39xx-0010 CP-Link-4 interface – Power supply for the Control Panel by CU8803 via the Cat.6A cable – Metal housing for DIN rail mounting – CP-Link 4 transmits USB 2.0 at 100 Mbit/s and DVI. – 24 V input for power supply of the CU8803 transmitter box and the Control Panel – protection class IP 20 – Operating temperature range 0 ... 55 °C - Dimensions (W x H x D) 70 x 100 x 80 mm – 1 m USB connection cable – 1 m DisplayPort to DVI connection cable

4 Commissioning

Operating the Control Panel

The Control Panel is operated via the touch screen.

NOTICE

Damage to the touch screen

Operating the touch screen with unsuitable objects may damage the touch screen.

- Operate the touch screen only with bare fingers or wearing suitable special gloves.
- If you use gloves, make sure that no hard particles such as metal shavings, glass splinters or similar adhere to the glove.

To use the Control Panel, you must first put it into operation. The first step is to transport the device to its operating location and unpack it. This is followed by mounting the device in the required position, connecting the cables and power supply, and finally switching on the Control Panel. Since the Control Panel does not have its own power switch, switching the power supply on and off also switches the Control Panel on and off.

4.1 Transport and unpacking

Note the specified transport and storage conditions (see Chapter 8, [Technical data](#) [[▶ 49](#)])

Despite the robust design of the unit, the components are sensitive to strong vibrations and impacts. During transport the device must therefore be protected from mechanical stress. Appropriate packaging of the Control Panel, in particular the original packaging, can improve the vibration resistance during transport.

NOTICE

Hardware damage due to condensation

Unfavorable weather conditions during transport can cause damage to the device.

- Protect the device against moisture (condensation) during transport in cold weather or in case of extreme temperature fluctuations.
- Do not put the device into operation until it has slowly adjusted to the room temperature.
- Should condensation occur, wait for about 12 hours before switching the device on.

Unpacking

Proceed as follows to unpack the device:

1. Check the packaging for transport damage
2. Remove packaging.
3. Keep the packaging for possible future transport.
4. Check your delivery for completeness by comparing it with your order.
5. Check the contents for visible shipping damage.
6. In case of discrepancies between the package contents and the order, or in case of transport damage, please inform Beckhoff Service (see Chapter 10.1 [Support and Service](#) [[▶ 51](#)])

4.2 Mounting

The CP39xx-14xx-0010 stainless steel Control Panel is designed for installation on a mounting arm system. Note the ambient conditions specified for operation (chapter 8 [Technical data](#) [▶ 49])

The Control Panel is installed on the mounting arm system using a mounting arm adapter. There are six M5 threaded holes at the back of the Control Panel for installation on the mounting arm system. In addition, the mounting arm adapter is equipped with anti-twist protection, so that damage to the connection cable and the Control Panel is prevented. The following ordering options are available, if you require a Beckhoff mounting arm adapter for the installation.

Table 19: Mounting arm adapter ordering option

Order identifier	Execution
C9900-M759	Rotatable mounting arm adapter, stainless steel, 1.4404, brushed grain 240, mounting arm installation from above or below. Single part, not mounted A separate tube holder is required for mounting: C9900-M735 holder with welded-on tube or C9900-M736 tube holder

Before you can attach the mounting arm adapter to the Control Panel, you must first prepare the C9900-M735 mounting arm tube and place it in the desired position.

Table 20: Mounting arm tube ordering option

Order identifier	Execution
C9900-M735	Holder with welded-on 48 mm tube (length 150 cm, internal diameter 42 mm)
C9900-M736	Holder for 48 mm tube (must be welded) For C9900-M759 CP3xxx-14xx mounting arm adapter, stainless steel

Mounting arm tube installation

To ensure trouble-free installation of the tube, follow the steps shown in Fig. 16:

1. Apply the two red O-rings at the designated position on the tube.
2. Apply the PTFE paste supplied to the red marked area with a brush or spatula.

⇒ The tube is now prepared.

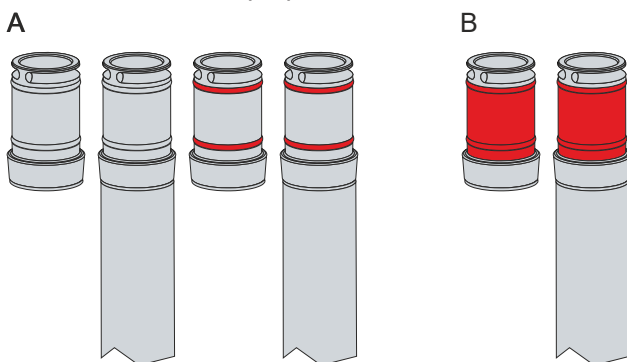


Fig. 16: CP39xx-14xx-0010_mounting arm tube installation

Pay attention to the notes on the safety data sheet for the PTFE paste: [Safety_data_sheet_mounting_paste-PAO-PTFE-](#)

4.2.1 Installing the mounting arm adapter

Before mounting the Beckhoff mounting arm adapter, you have to decide whether to install it from above or below.

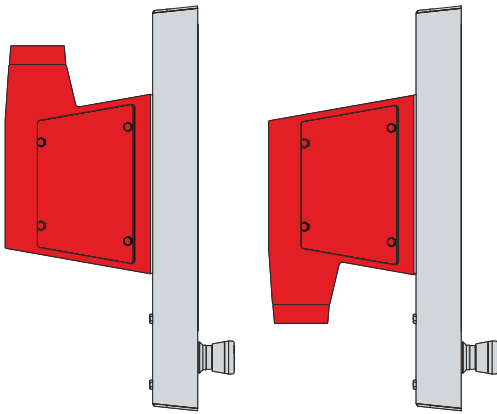


Fig. 17: CP39xx-140x-0010_mounting arm adapter orientation

In addition, an optional tilt adapter can be customer-mounted on the Control Panel. This option allows the Control Panel to be tilted by 10°.

Table 21: Tilt adapter ordering option

Order identifier	Execution
C9900-M764	Two-part mounting arm adapter plate for multi-touch Control Panel or multi-touch Panel PC CP3xxx-14xx with mounting arm adapter C9900-M759. Stainless steel 1.4408, brushed grain 240, with 10° tilt, can be customer-mounted, i.e. not installed ex factory.

Fitting the mounting arm adapter without tilt adapter C9900-M764

To fasten the mounting arm adapter to the Control Panel, follow the steps below, shown in Figs. 18 & 19:

1. Release the four M4 screws of the two side covers (section A).
2. Slide the C9900-M759 adapter onto the C9900-M735 tube adapter and feed the cables out the side of the mounting arm adapter (section B).
3. Grease the set screw with the PTFE paste supplied (section C).

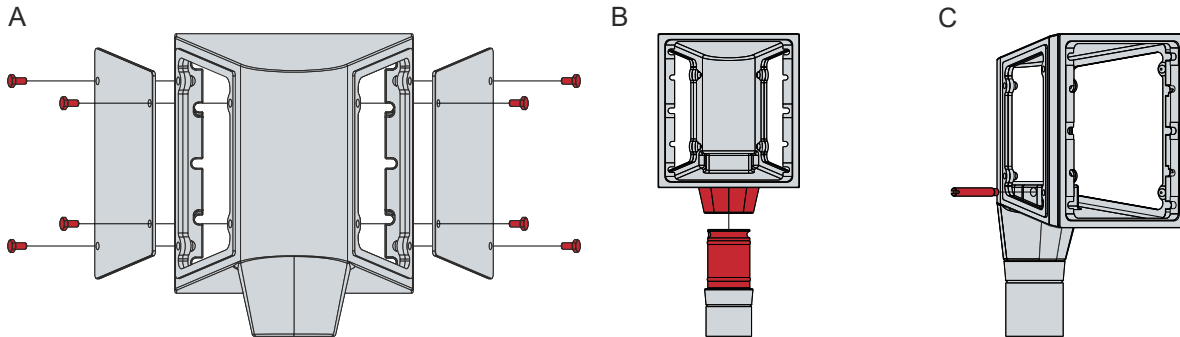


Fig. 18: CP39xx-14xx-0010_mounting arm adapter installation

4. Use the bolt plates provided for temporary mounting (section D).
5. Use the M5 screws provided to fasten the mounting arm adapter to the Control Panel. A tightening torque of 4 Nm is recommended (section E).
6. Connect the cables coming out of the side to the Control Panel (section F).
7. Screw the side covers back onto the mounting arm adapter. A tightening torque of 1 Nm is recommended (section G).

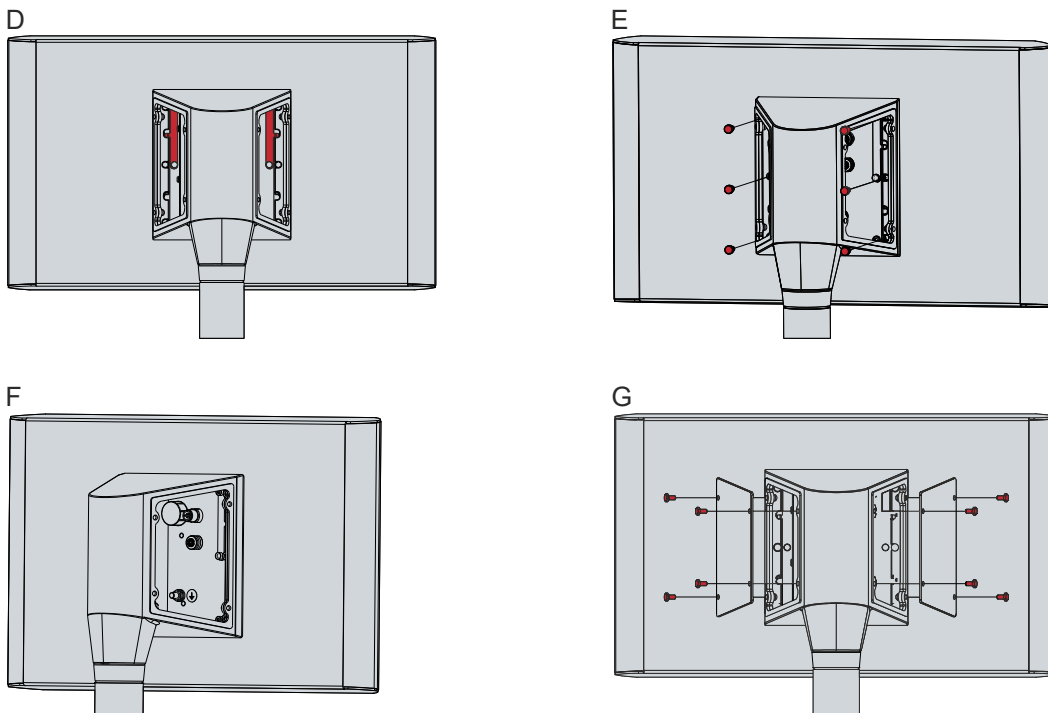


Fig. 19: CP39xx-14xx-0010_mounting arm adapter installation

⇒ You have successfully installed the mounting arm adapter on the Control Panel.

Installing the mounting arm adapter with tilt adapter C9900-M764

To fasten the mounting arm adapter with tilt adapter to the Control Panel, follow the steps below, shown in Figs. 20 - 24:

1. Release the four M4 screws of the side cover (section A).
2. Slide the C9900-M759 adapter onto the C9900-M735 tube adapter and feed the cables out the side of the mounting arm adapter (section B).
3. Grease the set screw with the PTFE paste supplied (section C).

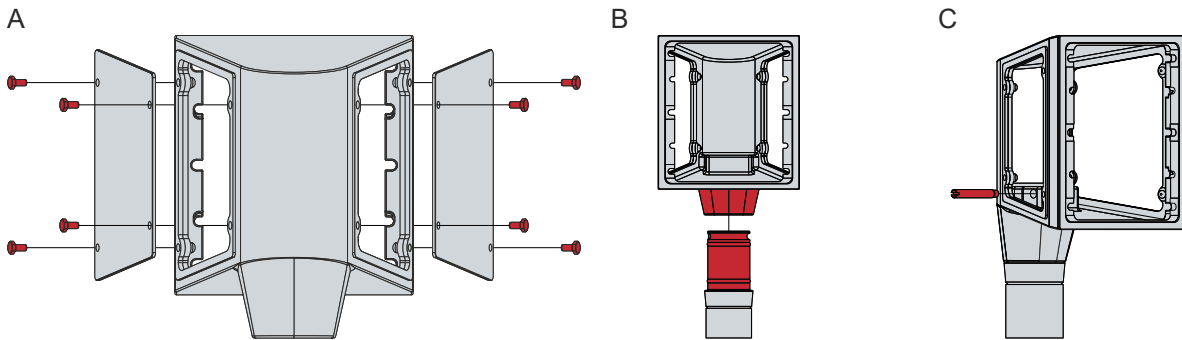


Fig. 20: CP39xx-14xx-0010_installation of mounting arm adapter with tilt adapter

4. Release the four M5 screws of the connection plate (section D).
5. Position the tilt adapter on the connection section of the Control Panel and tighten the six M5 screws supplied with a tightening torque of 4 Nm. (section E).

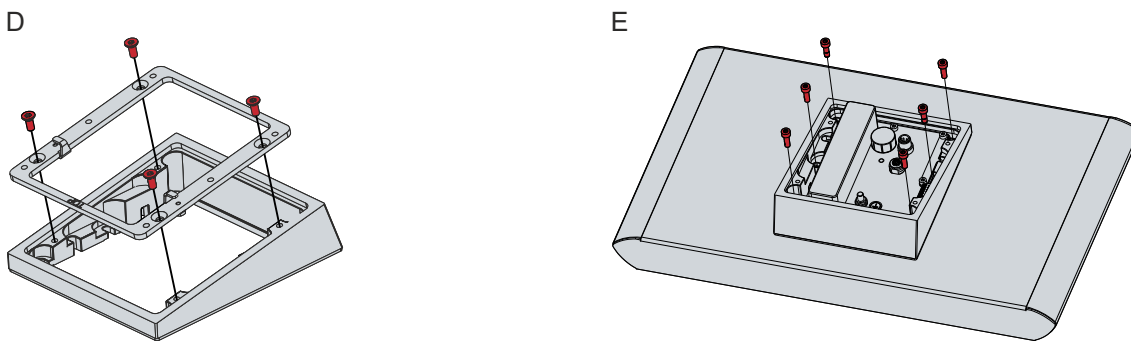


Fig. 21: CP39xx-14xx-0010_installation of mounting arm adapter with tilt adapter

6. Fasten the four M5 screws of the connection plate (section F).
7. Use the bolt plates provided for temporary mounting (section G).

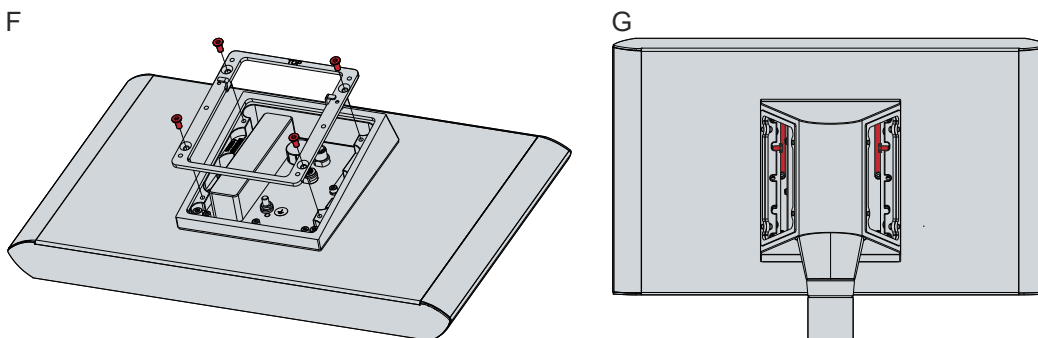


Fig. 22: CP39xx-14xx-0010_installation of mounting arm adapter with tilt adapter

8. Use the M5 screws provided to fasten the mounting arm adapter to the tilt adapter. A tightening torque of 4 Nm is recommended (section H).
9. Connect the cables coming out of the side to the Control Panel (section I).

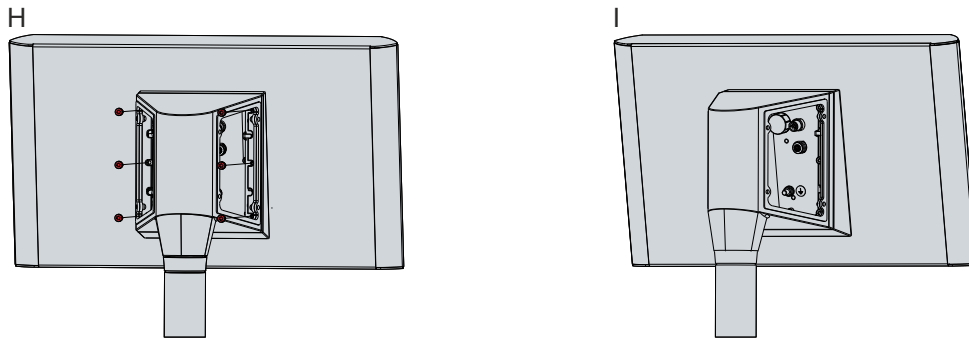


Fig. 23: CP39xx-14xx-0010_installation of mounting arm adapter with tilt adapter

10. Screw the side covers back onto the mounting arm adapter. A tightening torque of 1 Nm is recommended (section J).

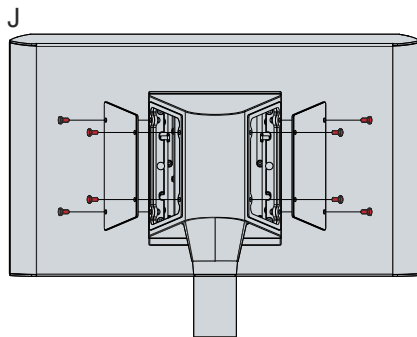


Fig. 24: CP39xx-14xx-0010_installation of mounting arm adapter with tilt adapter

- ⇒ You have successfully fitted the mounting arm adapter and the tilt adapter to the Control Panel.

4.2.2 Dimensions

All dimensions are in mm.

Figure 25 shows the dimensions of the 12.1-inch control panel.

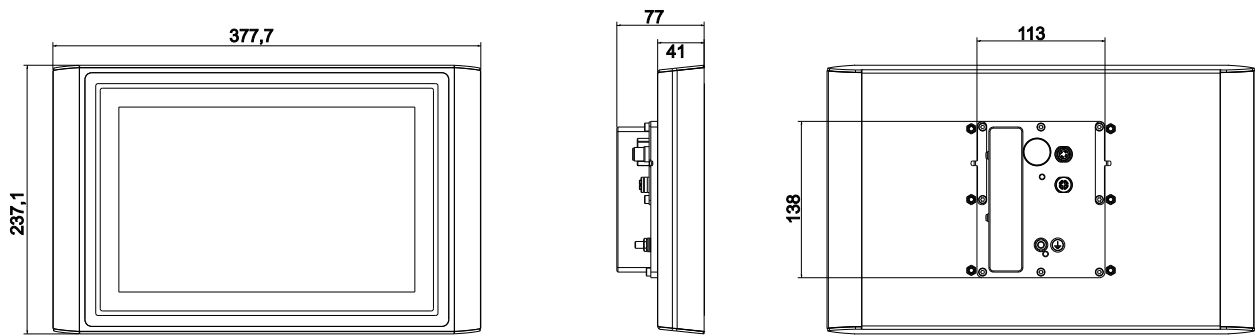


Fig. 25: CP3913-1400-0010_Dimensions

Figure 26 shows the dimensions of the 15.6-inch control panel.

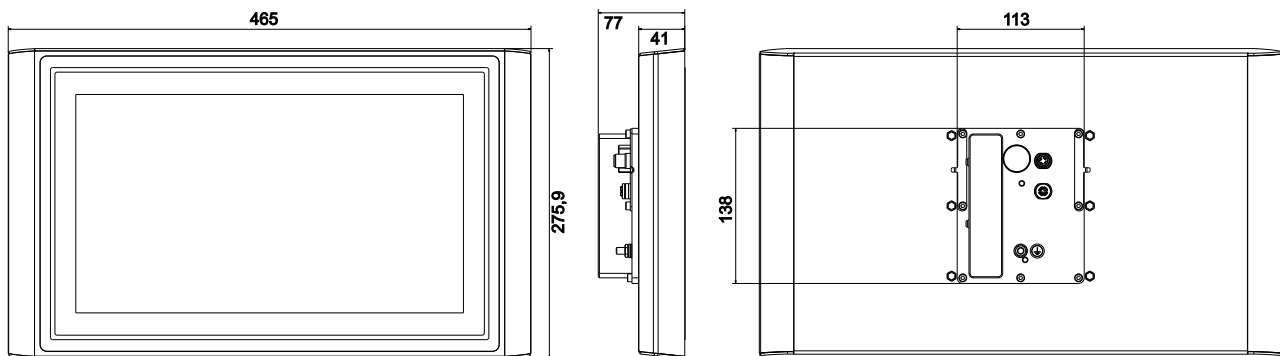


Fig. 26: CP3916-1400-0010_Dimensions

Figure 27 shows the dimensions of the 18.5-inch control panel.

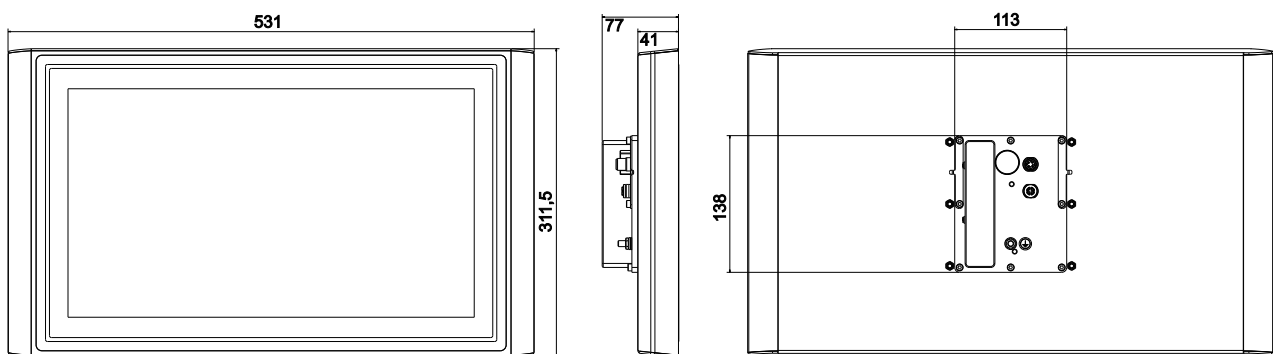


Fig. 27: CP3918-1400-0010_Dimensions

Figure 28 shows the dimensions of the 21-inch control panel.

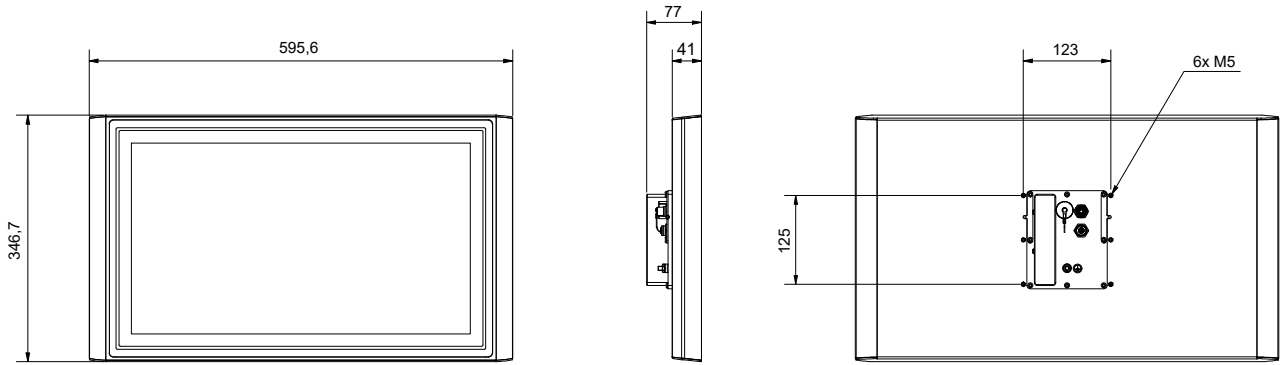


Fig. 28: CP3921-1400-0010_Dimensions

Figures 29 and 30 show the dimensions of the 12.1-inch control panel with fitted push button extension.

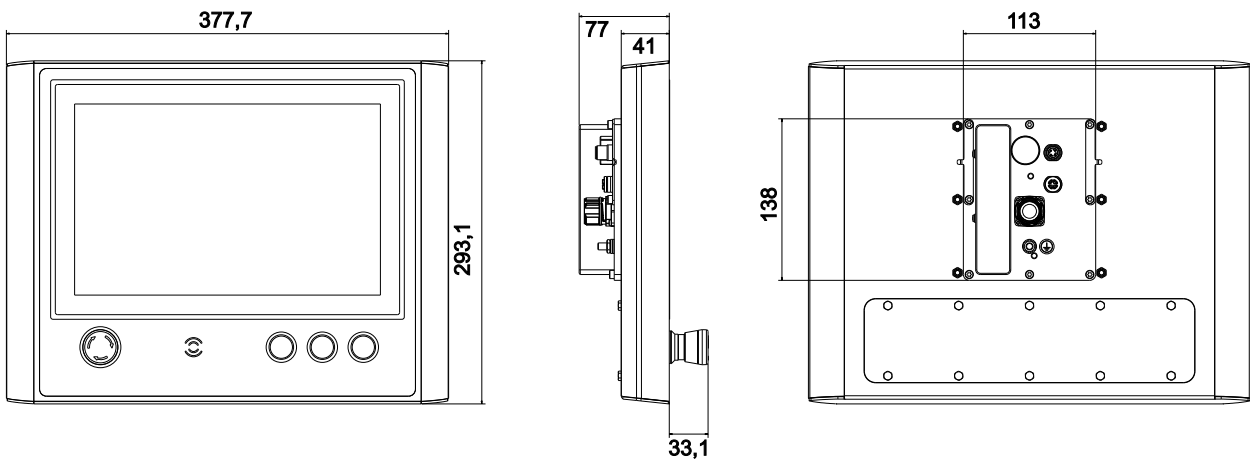


Fig. 29: CP3913-1401-0010_Dimensions

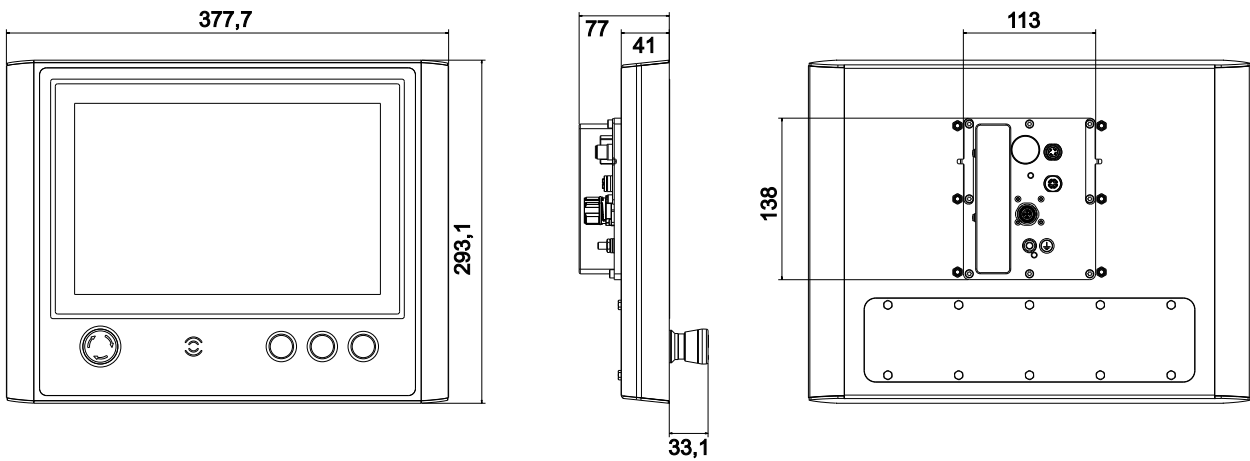


Fig. 30: CP3913-1414-0010_Dimensions

Figures 31 and 32 show the dimensions of the 15.6-inch control panel with fitted push button extension.

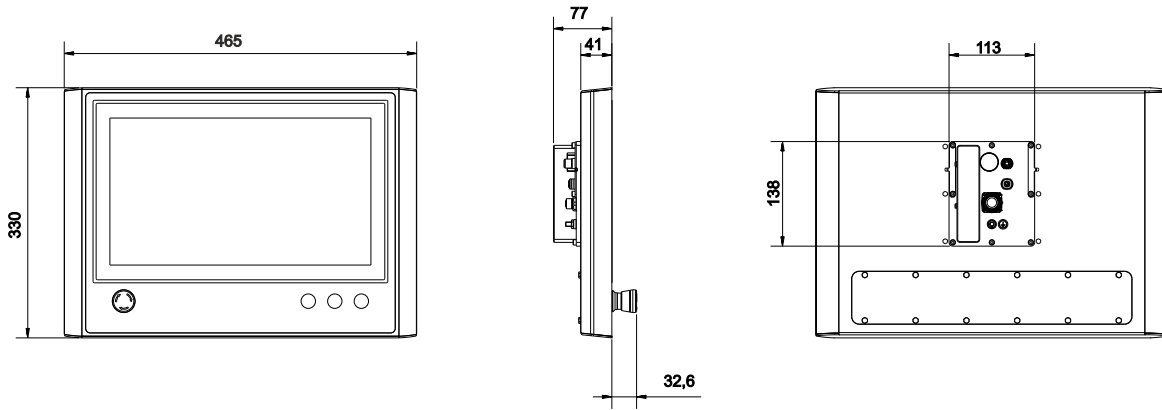


Fig. 31: CP3916-1401-0010_Dimensions

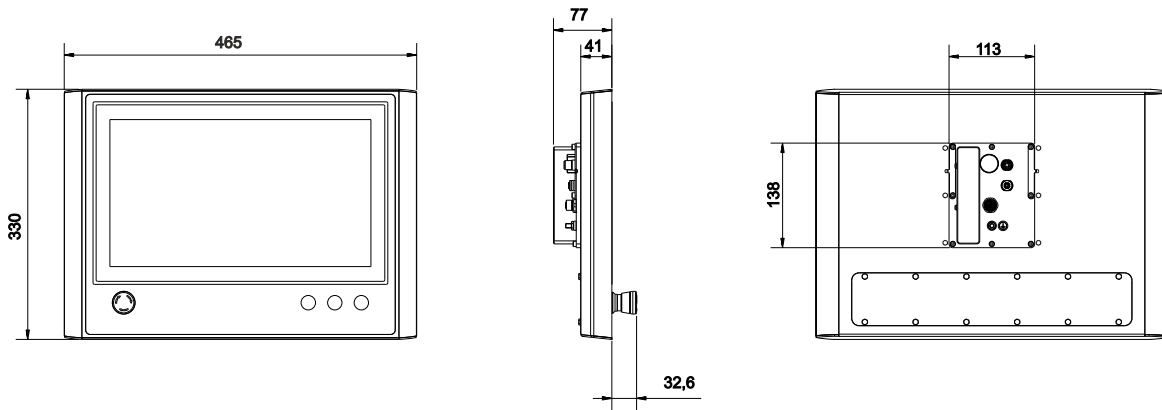


Fig. 32: CP3916-1414-0010_Dimensions

Figures 33 and 34 show the dimensions of the 18.5-inch control panel with fitted push button extension.

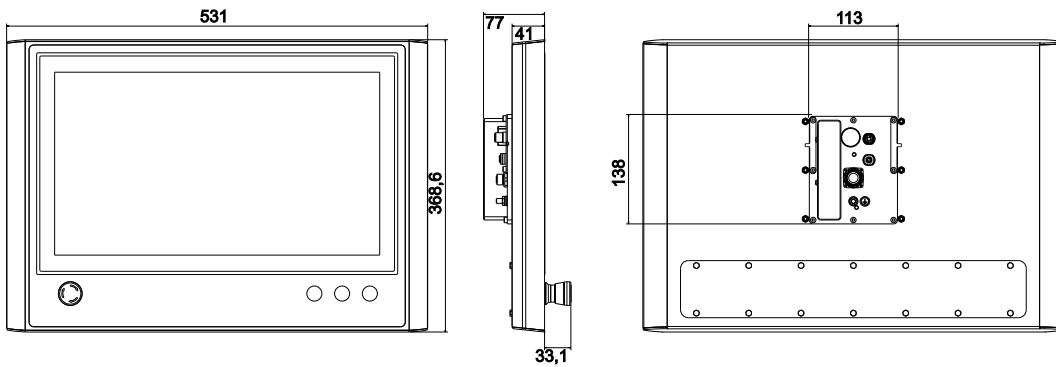


Fig. 33: CP3918-1401-0010_Dimensions

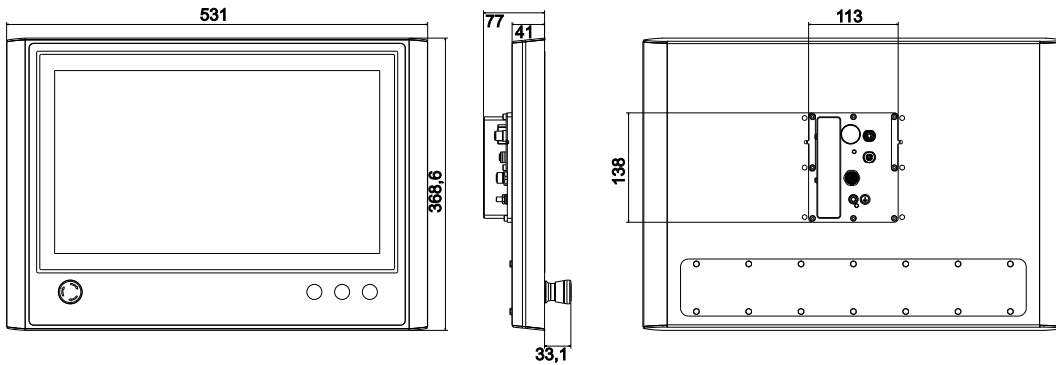


Fig. 34: CP3918-1414-0010_Dimensions

Figures 35 and 36 show the dimensions of the 21-inch control panel with fitted push button extension.

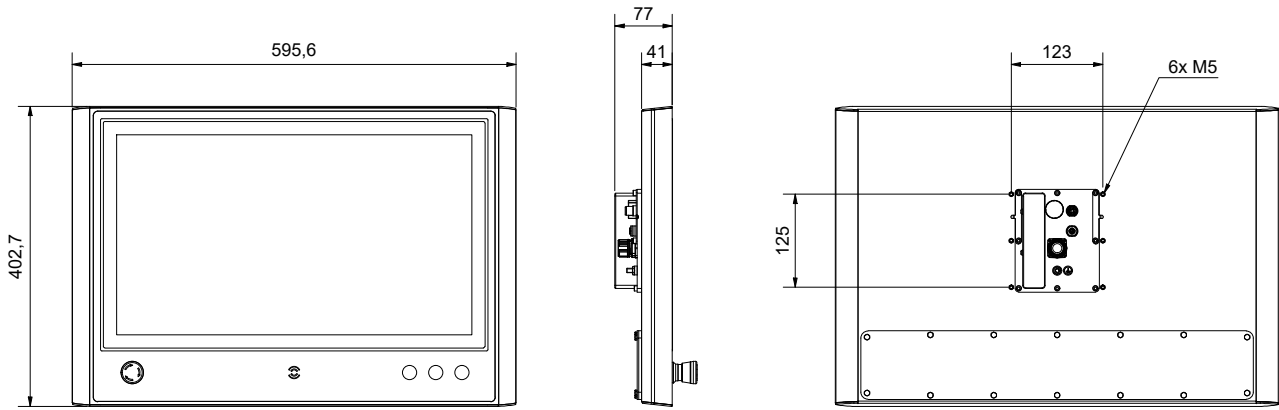


Fig. 35: CP3921-1401-0010_Dimensions

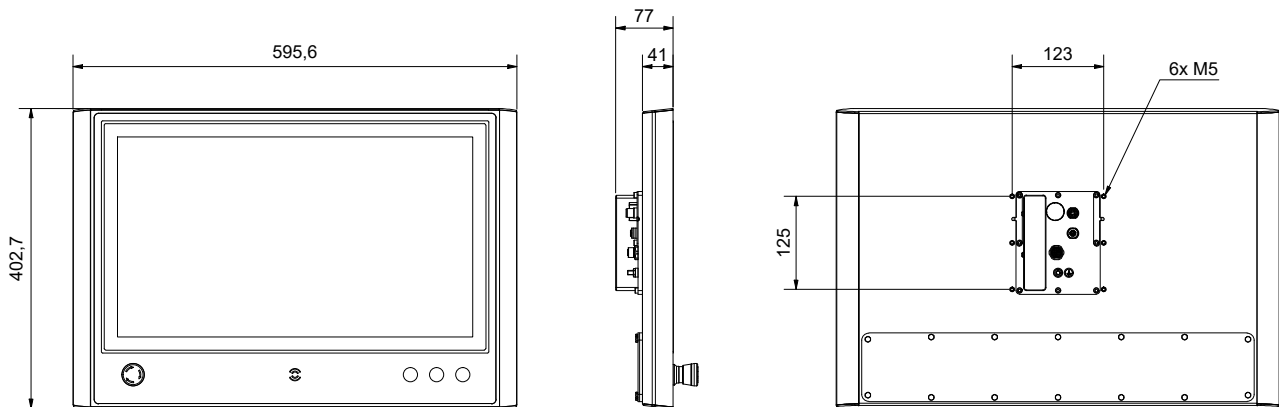


Fig. 36: CP3921-1414-0010_Dimensions

4.3 Connecting the Control Panel

⚠ CAUTION

Risk of electric shock

Dangerous touch voltages can lead to electric shock. To avoid electric shock, observe the following:

- Never connect or disconnect the device cables during a thunderstorm.
- Provide protective earthing for handling the device.

To prepare the Control Panel for operation, you have to connect it. The first step is to ground the device. Then you can connect the cables and the power supply.

An external power supply unit is required to supply 24 V DC (-15 %/+20 %) for operating the device.

Connect the Control Panel according to EN 60204-1:2006 PELV / Protective Extra Low Voltage.

- The protective conductor (protective earth, PE) and the "0 V" conductor of the voltage source must be at the same potential.
- Standard EN 60204-1:2006, section 6.4.1:b stipulates that one side of the circuit, or a point of the energy source for this circuit must be connected to the protective conductor system.

Devices connected to the Control Panel with their own power supply must have the same potential for the PE and "0 V" conductors as the Control Panel (no potential difference).

4.3.1 Circuit diagrams

You can use the following circuit diagrams to plan your wiring in advance. In addition, you will receive a circuit diagram for your device.

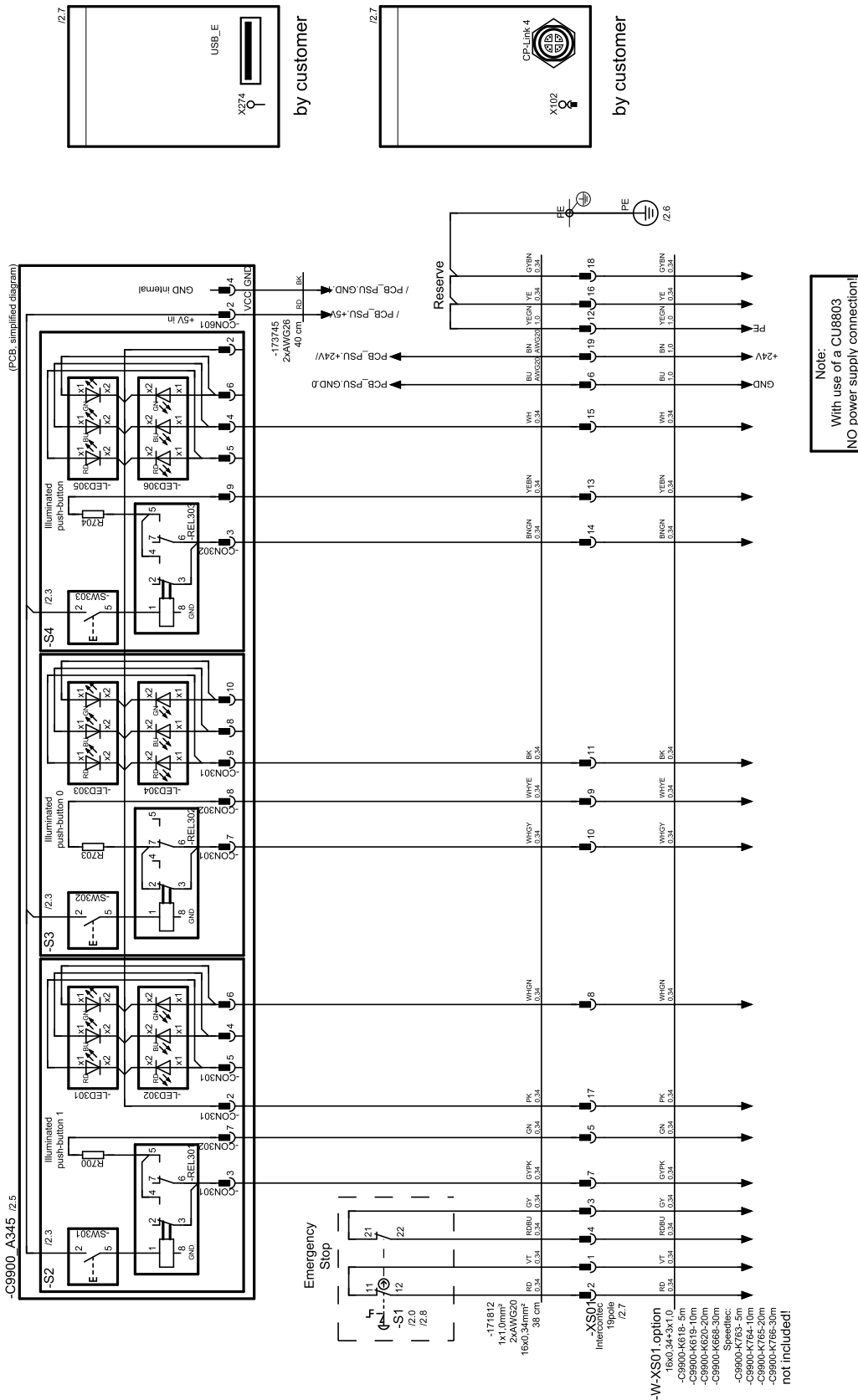


Fig. 37: CP39xx-1401_circuit diagram

Kurzhubtasten mit Ringausleuchtung

Not-Halt

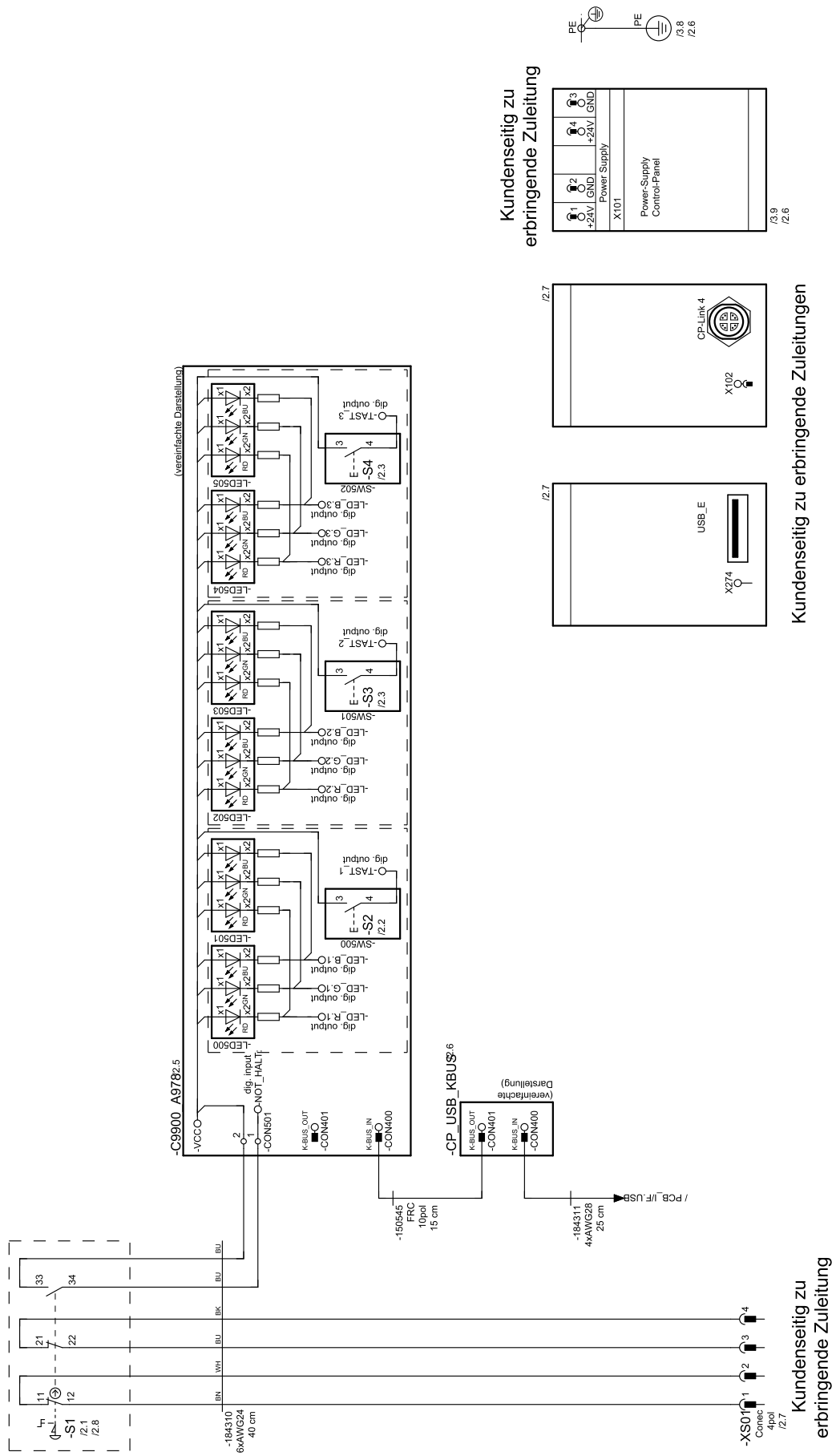


Fig. 38: CP39xx-1414-0010_circuit diagram

4.3.2 Grounding the Control Panel

Potential differences are minimized and electrical currents are diverted to the ground through grounding or potential equalization of electronic devices. This is to prevent dangerous touch voltages and electromagnetic interference.

The connection compartment of the CP39xx-14xx-0010 features an M6 protective conductor connection, through which you have to establish the low-resistance protective earthing and functional earthing for the panel (see Fig. 39). Use cables with a cross-section of at least 4 mm² to connect the protective conductor.

For information on how to access the connection compartment, refer to chapter 3.2 [Interface description](#) [► 10]

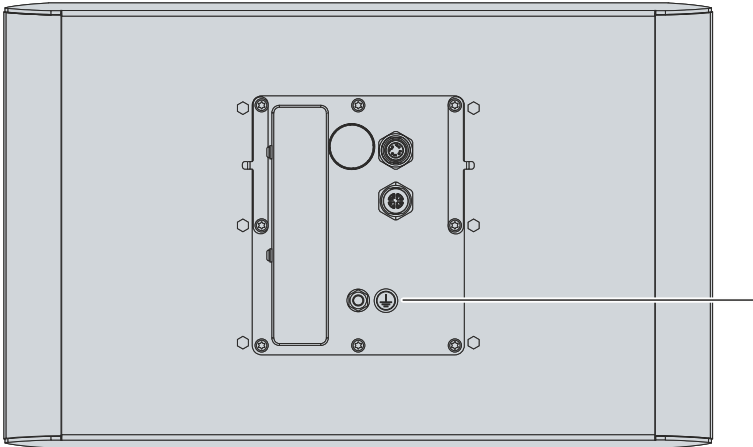


Fig. 39: CP39xx-14xx-0010_Protective conductor connection PE

Protective earth

By connecting the protective conductor connection PE (protective earth), you establish the low-resistance protective earthing of the control panel and thus avoid dangerous touch voltages.

EMC

NOTICE

Hardware damage due to electromagnetic interference

Using the control panel without functional earth can lead to material damage due to electromagnetic interference.

- Only use the device with functional earth.

Electromagnetic compatibility (EMC) of the control panel includes on the one hand not affecting other devices and equipment by electromagnetic interference and on the other hand not being disturbed by electrical or electromagnetic effects itself.

The control panel must comply with certain protection requirements. The control panel has EMC interference immunity according to EN 61000-6-2. The EMC interference emission of the device meets the requirements of EN 61000-6-4.

The functional earth is necessary for the EMC of the device. Functional earth is also established via the protective conductor connection PE in the connection section of the control panel.

4.3.3 Connecting cables and power supply

NOTICE

Incorrect connection procedure

Incorrect procedure when connecting the cables and the power supply can cause hardware damage.

- Follow the documented procedure for connecting the cables and the power supply.
- Always connect all cables first and only then switch on the power supply.
- Please read the documentation for the external devices prior to connecting them.

The connections are located at the back of the Control Panel in the connection compartment. The interface cables in the connection compartment are routed through the mounting arm tube. To gain access to the connection compartment, first remove the side covers of the mounting arm adapter C9900-M759 (see chapter 4.2.1 [Installing the mounting arm adapter](#) [► 24]).

Before you can connect the cables and the power supply, you have to guide the cables into the connection compartment.

Connecting cables

Make sure that you first ground the Control Panel (see chapter 4.3.2 [Grounding the Control Panel](#) [► 36]) and then plug in all data transmission cables.

When connecting the Control Panel to an Industrial PC with UPS output, we recommend using this for the connection. For CP-Link 4, we recommend connecting the CU880x transmitter boxes to the UPS output of the PC.

Connecting the power supply

Cables with a maximum cable cross-section of $4 \times 0.75 \text{ mm}^2$ can be used for connecting the power supply. For long supply lines, use $4 \times 0.75 \text{ mm}^2$ cables to achieve a low voltage drop on the supply line. There should be at least 22 V at the voltage connector of the Control Panel, so that the Panel remains switched on during voltage fluctuations.

Proceed as follows to connect the 24 V_{DC} power supply unit:

1. Check the correct voltage of your external power supply.
2. Plug the voltage connector into the voltage socket on the Panel.
3. Screw the voltage connector to the voltage socket. Then check the screw connection.
4. Connect the Panel to your external 24 V power supply.
5. Switch on the 24 V power supply.
6. Calculate the voltage at the power supply plug.

In order to check the voltage at the power supply plug, you must first calculate the voltage drop on the supply cable. You can orient yourself to the following calculation example:

- CP3918-14xx-0010 with CU8802 transmitter box or PCIe module
- Power consumption: 31 W
- Current consumption: $31 \text{ W} / 22 \text{ V} = 1.41 \text{ A}$
- Connection with 10 m two-core 0.75 mm^2 cable, although the supply cable length then corresponds to 20 m
- Constant of the specific resistance of pure copper: $0.0178 \text{ Ohm} \cdot \text{mm}^2 / \text{m}$
- Resistance of the supply line: $0.0178 \text{ Ohm} \cdot \text{mm}^2 / \text{m} \cdot 20 \text{ m} / 0.75 \text{ mm}^2 = 0.0178 \cdot 20 / 0.75 = 0.475 \text{ Ohm}$

With the listed data, you can now calculate the voltage drop on the supply line:

- $1.41 \text{ A} \cdot 0.475 \text{ Ohm} = 0.7 \text{ V}$

With a CP39xx-14xx-0010 with CP-Link 4 and CU8803 transmitter box, you only have to pay attention to the voltage on the supply line to the transmitter box. More detailed information can be found in the manual for the [CU8803](#).

All data for the power consumption can be found in chapter 8 [Technical data](#) [▶ 49].

4.3.4 Commissioning in the TwinCAT System Manager

The switching contacts and LED data are transmitted to the control/visualization PC via USB.

To integrate the push button extension in the TwinCAT System Manager, follow the steps shown in Figures 40 to 44:

1. Click at the top in the menu on **File > New > Project** and create a new **TwinCAT XAE Project**.

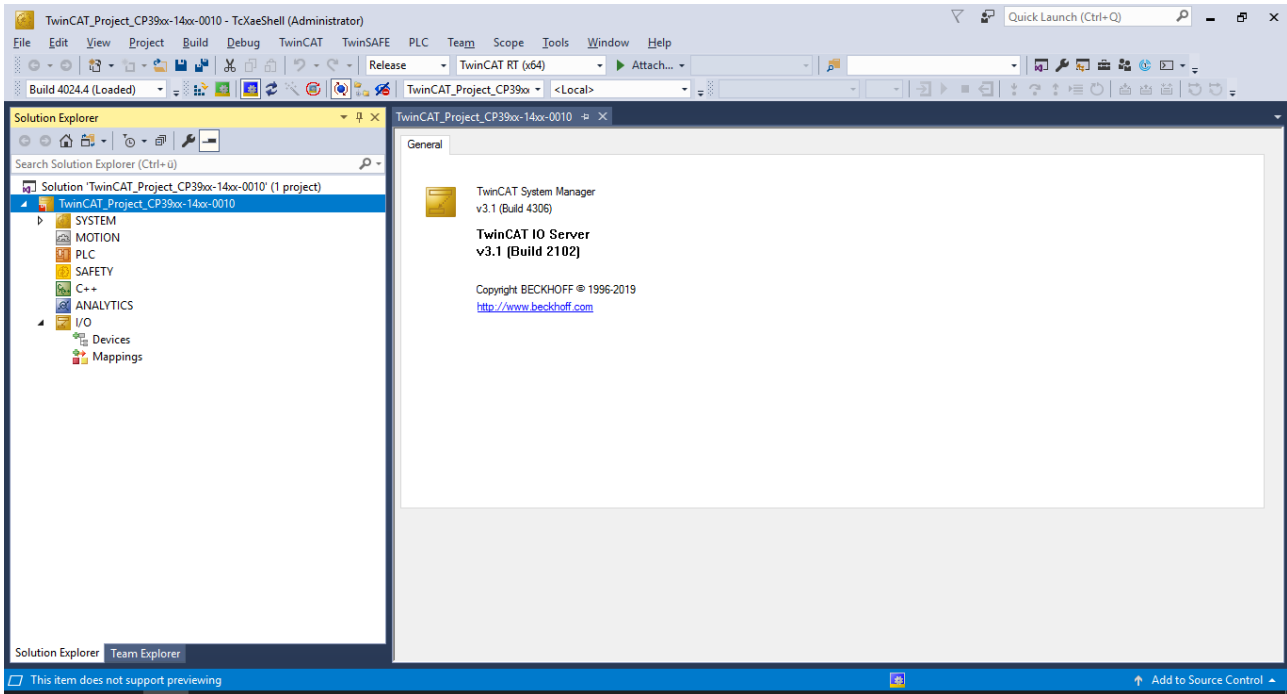


Fig. 40: TwinCAT_XAE project

2. Click **I/O** on the left in the tree view, and then right-click **Devices**.
3. In the context menu click **Scan**.

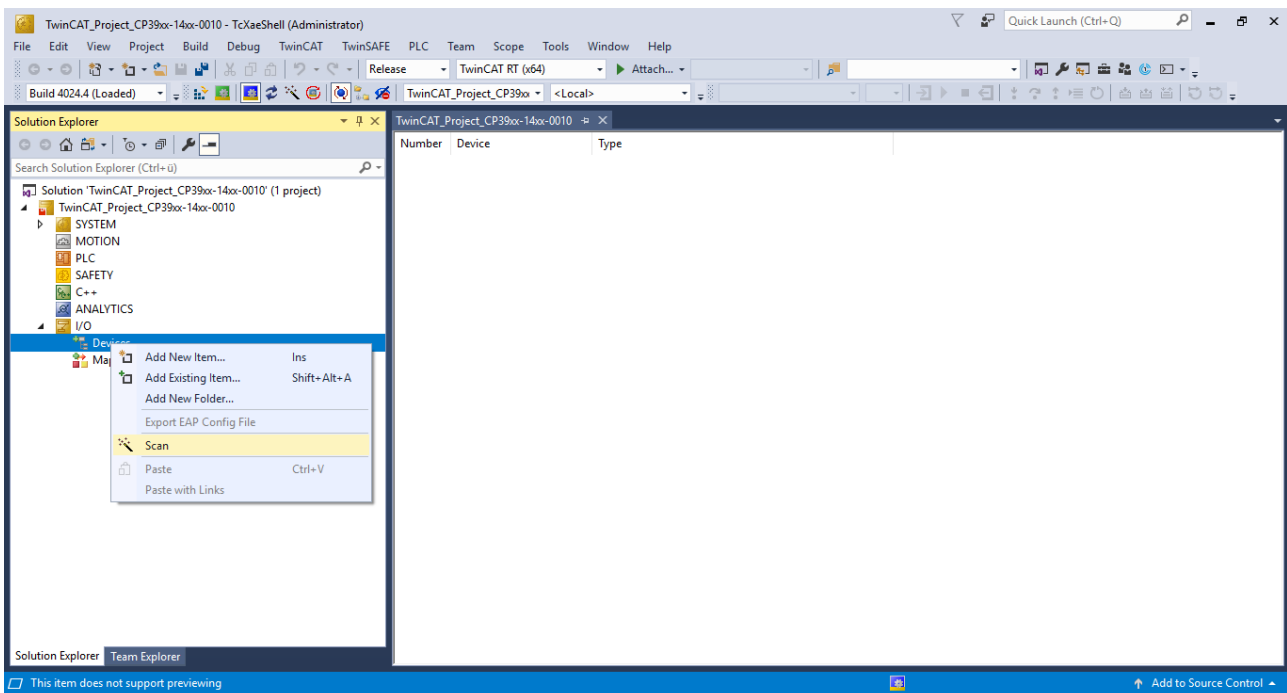


Fig. 41: TwinCAT_device scan

4. First select the device that was found and confirm the selection with **OK**.

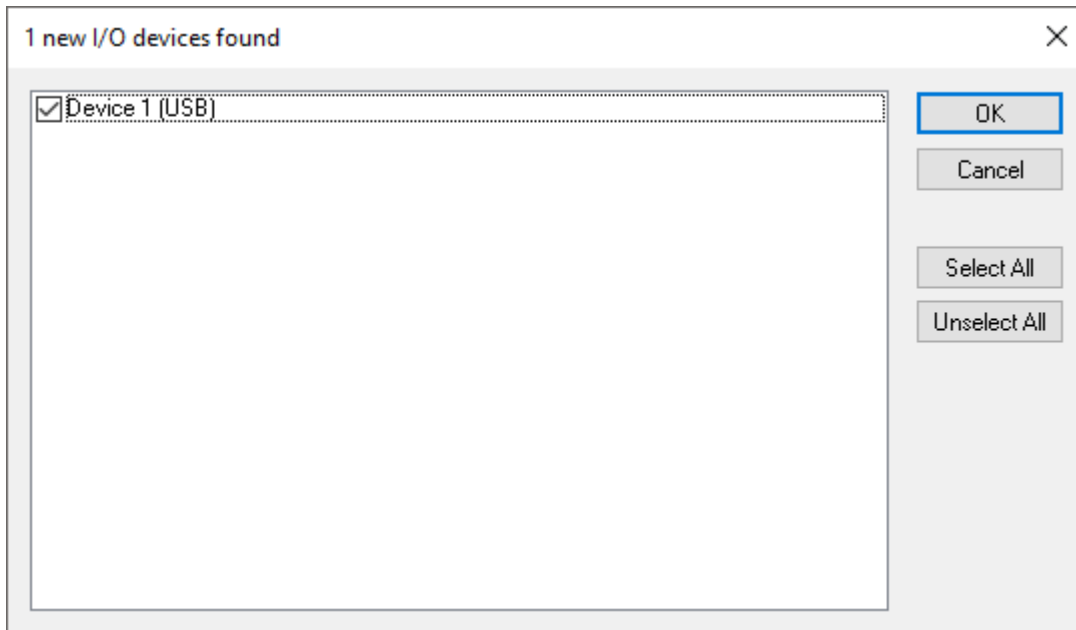


Fig. 42: TwinCAT_device select

5. Confirm the request with **Yes**, in order to scan for box modules.

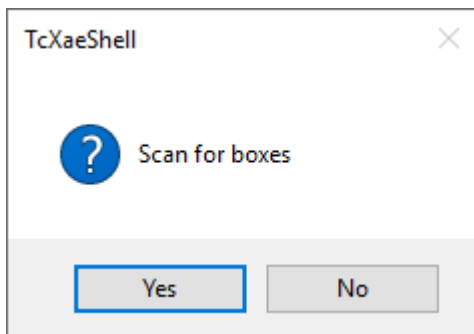


Fig. 43: TwinCAT_scan for box modules

6. Confirm the request whether to enable **FreeRun** with **Yes**. The device is inserted as a box in the tree view and displayed with the respective inputs/outputs (e.g. Term 1 to Term 3).

⇒ You have connected the push button extension of the control panels in the TwinCAT system.

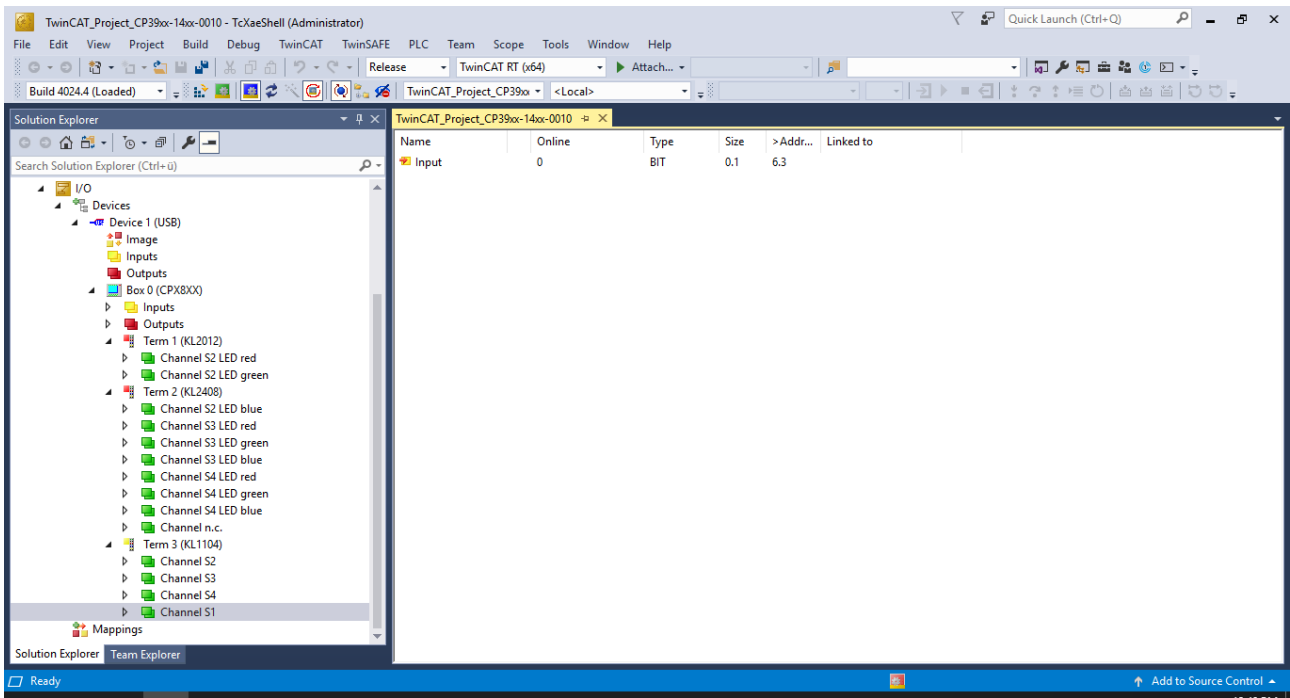


Fig. 44: TwinCAT_Renaming terms and channels

As shown in Figure 44, you can rename the individual channels of the respective terms.

5 Decommissioning

NOTICE

Hardware damage due to power supply

A connected power supply can cause damage to the Control Panel during disassembly.

- Disconnect the power supply from the device before starting to disassemble it.

When taking the Control Panel out of operation, you must first disconnect the power supply and cables. Afterwards, you can dismount the device from the mounting arm.

If you do not want to continue using the Control Panel, Chapter 5.2 [Disassembly and disposal](#) [▶ 42] provides information on the correct disposal of the device.

5.1 Disconnecting the power supply and cables

⚠ CAUTION

Risk of electric shock

Disconnecting the Control Panel during a thunderstorm can lead to electric shock.

- Never disconnect the cables of the Control Panel during a thunderstorm.

NOTICE

Hardware damage due to power supply

Disconnecting the CP-Link 4 connection while the transmitter box power supply is switched on may cause damage to the transmitter box.

- Switch off the power supply to the CU880x transmitter box before disconnecting the CP-Link 4 connection.

Before removing the Control Panel, you must follow the steps below:

1. Shut down the Control Panel.
2. Disconnect the Control Panel from the power supply (see below).
3. Disconnect the data transfer cables between the Control Panel and the connected devices.

Disconnect the power supply

Proceed as follows to disconnect the power supply:

1. Disconnect the Control Panel from the external 24 V power supply.
2. Loosen the screw connection between the voltage socket and the voltage connector.
3. Remove the voltage connector from the voltage socket.
4. Disassemble the power cable if the connector is to remain with the Panel.

Disconnecting cables

To disconnect the cables from the Control Panel, proceed as follows:

1. Make a note of the wiring configuration, if you wish to restore it with another device.
2. Disconnect all data transfer cables from the Control Panel.
3. Finally, disconnect the ground connection.

5.2 Disassembly and disposal

Before you can remove the control panel from the mounting arm tube, you must first disconnect the side covers, the power supply and the cables (see chapter 5.1 [Disconnecting the power supply and cables](#) [▶ 42]).

Removing the mounting arm tube

NOTICE

Damage to property due to falling down

If the control panel is suspended from the ceiling and you undo the set screw of the mounting arm adapter without securing it, the control panel will fall down.

- Make sure the control panel is secured against falling down before you undo the set screw of the mounting arm adapter.

To remove the control panel from the mounting arm tube, follow the steps shown in Fig. 45:

1. Loosen the four M4 screws on the two side covers (section A).
2. Loosen the set screw (section B).
3. Pull the control panel with the mounting arm adapter off the mounting arm tube (section C).

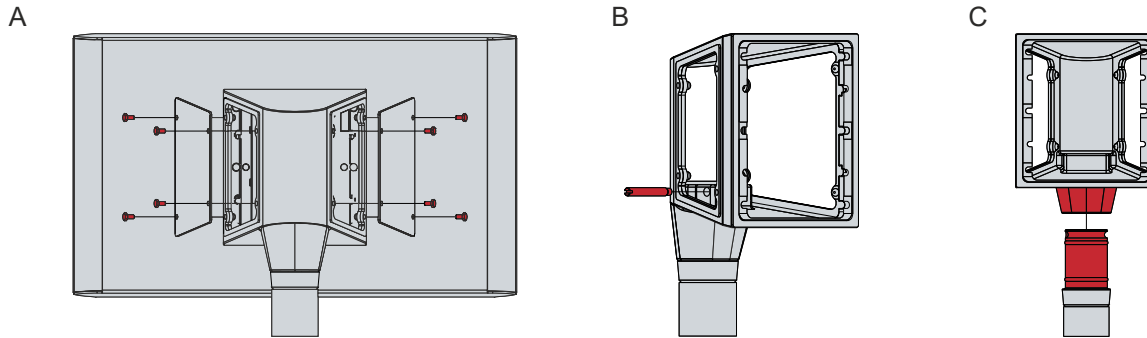


Fig. 45: CP39xx-14xx-0010_Removing the mounting arm tube

⇒ You have removed the mounting arm tube from the mounting arm adapter.

Removing the mounting arm adapter without tilt adapter C9900-M764

To remove the mounting arm adapter from the control panel, follow the steps below, shown in Figure 46:

1. Loosen the six M5 screws (section D).
2. Remove the mounting arm adapter by levering it upwards (section E).

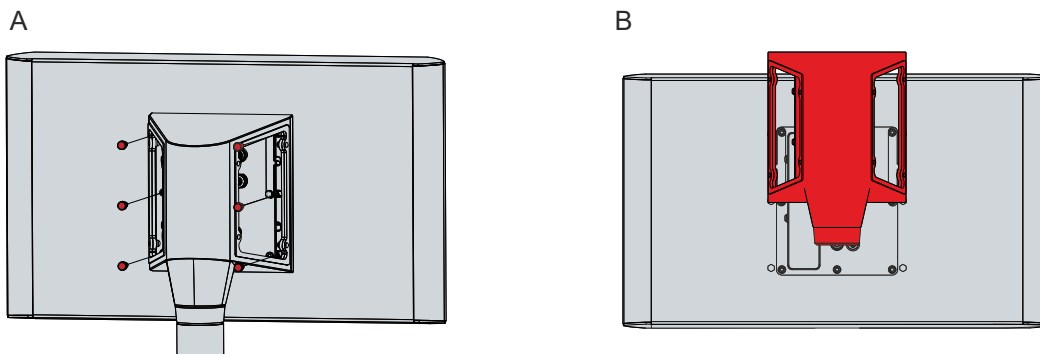


Fig. 46: CP39xx-14xx-0010_Removing the mounting arm adapter without tilt adapter

⇒ You have successfully removed the mounting arm adapter from the control panel.

Removing the mounting arm adapter with tilt adapter C9900-M764

To remove the mounting arm adapter and the tilt adapter from the control panel, follow the steps below, shown in Figures 47 and 48:

1. Loosen the six M5 screws (section A).
2. Remove the mounting arm adapter by levering it upwards (section B).

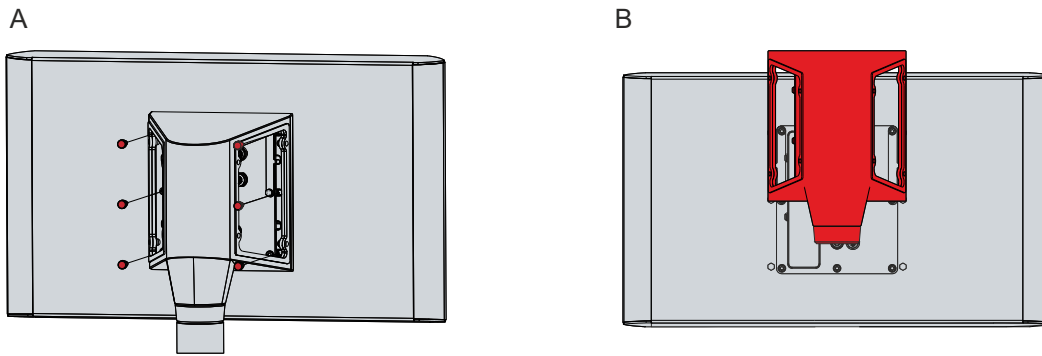


Fig. 47: CP39xx-14xx-0010_Removing the mounting arm adapter with tilt adapter

3. Remove the four M5 screws from the connection plate (section C).
 4. Loosen the six M5 screws on the tilt adapter (section D).
 5. You can now detach the tilt adapter from the control panel.
- ⇒ You have successfully removed the mounting arm adapter and the tilt adapter.

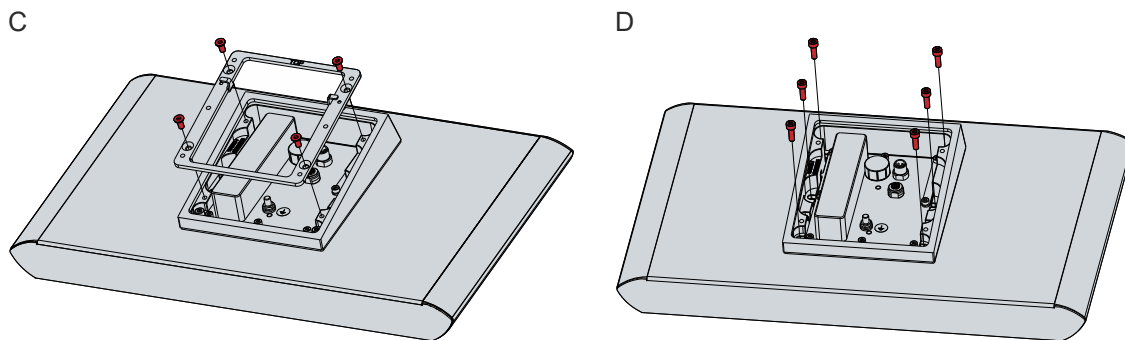


Fig. 48: CP39xx-14xx-0010_Removing the mounting arm adapter with tilt adapter

Disposal of the control panel

When disposing of the control panel the national electronic waste regulations must be followed.

6 Maintenance

Maintenance measures increase the efficiency of the device by ensuring long-term functionality. Cleaning the device contributes to this.

Defective pixels in the TFT display are production-related and are not grounds for complaint.

Cleaning

NOTICE

Unsuitable cleaning agents

The use of unsuitable cleaning agents can damage the device.

- The control panel should only be cleaned as specified.

It is essential to observe the following aspects when cleaning the control panel:

- Make sure that no dust gets into the device.
- Use a soft, damp cloth to clean the control panel
- Do not use any aggressive cleaning materials, thinners, scouring agents or hard objects that could cause scratches.

For further information, please refer to the chapter 9 [Chemical resistance of stainless steel panel with flush-mounted touch screen](#) |> 50]

Cleaning the front screen

You can clean the front screen of the control panel during operation. In order to avoid inadvertent touch entries when doing this, you must first set the device to "Cleaning Mode" with the help of the Beckhoff Control Tool.

The Beckhoff Control Tool does not start automatically when the connected PC starts up. Proceed as follows to activate the "Cleaning Mode" of the Beckhoff Control Tool:

1. Click the Beckhoff Control Tool to start it.
 - ⇒ When the tool is started, a small sun symbol appears in the taskbar.
2. Right-click the sun symbol.
3. Select the "Cleaning Mode" (see Fig. 49).
 - ⇒ "Cleaning Mode" is activated. You can now clean the front panel.

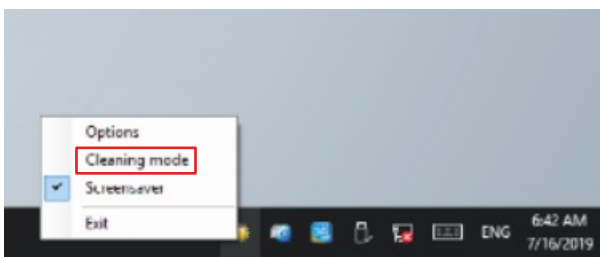


Fig. 49: CP39xx-14xx-0010_Select Cleaning Mode

You can set the duration for which the panel should remain in "Cleaning Mode". The period can be set between 5 and 120 seconds. Right-click the sun symbol again and click "Options". Now select the appropriate period (see Fig. 50).

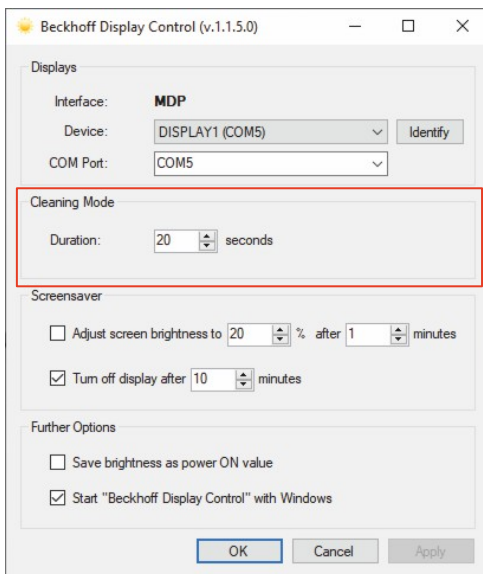


Fig. 50: CP39xx-14xx-0010_Configuration Cleaning Mode

Repair

Only the vendor may repair the device. If a repair should be necessary, contact Beckhoff Service (see Chapter 10.1 [Support and Service](#) [► 51])

Maintenance

NOTICE

Use of incorrect spare parts

The use of spare parts not ordered from Beckhoff Service can lead to unsafe and faulty operation.

- Only use spare parts that you have ordered from Beckhoff Service.

Beckhoff Control Panels are manufactured from components of the highest quality and robustness. They are selected and tested for best interoperability, long-term availability and reliable function under the specified environmental conditions.

Nevertheless, some components of the control panel may be subject to a limited service life if they are operated under certain conditions, such as more demanding ambient conditions during operation or during storage, or if they are out of service for long periods of storage.

Beckhoff therefore recommends replacing some of the control panel components after the time after which predictions of the remaining service life of such components can no longer be reliably calculated.

The use of cleaning agents can cause the seals to become porous and allow moisture into the connection section. The seals should therefore be replaced regularly. The maintenance set can be ordered at a later stage, with ordering option C9900-Z494 (see chapter 3.5 [Optional maintenance kit](#) [► 16])

Figure 51 below shows you where each seal of the maintenance set is located.

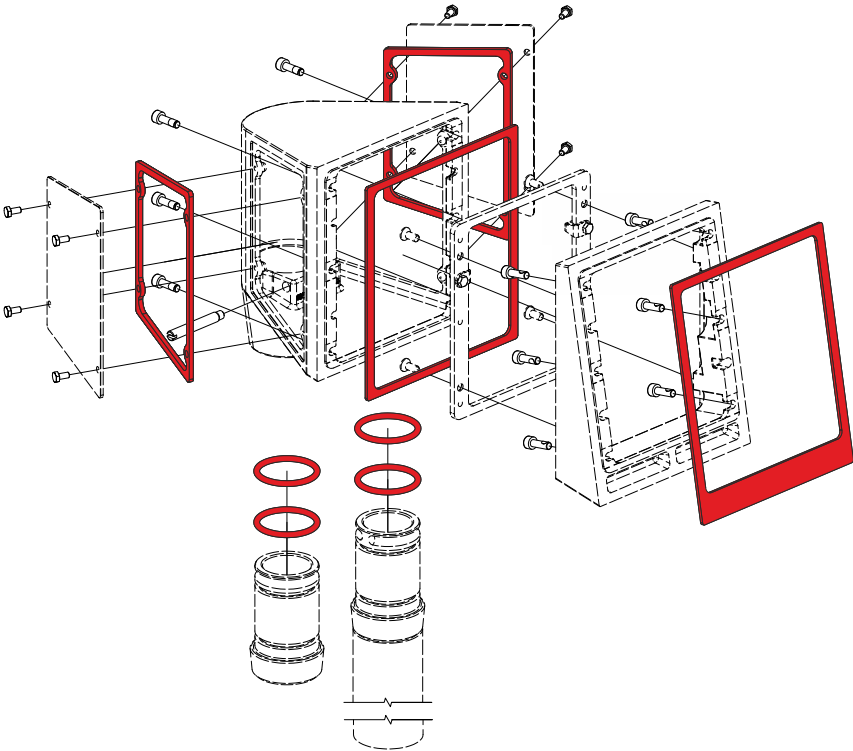


Fig. 51: CP39xx-14xx-0010_Maintenance set

7 Troubleshooting

Table 22: Troubleshooting

Fault	Cause	Measures
No Control Panel function	Lack of power supply to the Control Panel/ Industrial PC Cable not connected	Check the cable for the power supply 1. Correctly connect cable. 2. Call Beckhoff Service
Malfunction of the touch screen	Poor or missing functional earth of the device	Establish functional earth
	Poor or missing ground connection of the user	User must stand on the floor with normal shoes
USB error during access with TwinCAT via USB	Cycle time in TwinCAT set to 10 ms (standard)	Increase the cycle time to between 50 ms and 80 ms
The Control Panel has only partial function, or only functions some of the time, for instance the picture is dark or absent.	Defective backlight in the display Defective components in the Control Panel	Call Beckhoff Service Call Beckhoff Service

8 Technical data

Product designation	CP39xx-140x-0010	
Weight	CP3913-1400-0010 4.1 kg/ 6.5 kg	
Without/with mounting arm adapter	CP3913-1401-0010 5.0 kg/ 7.4 kg CP3913-1414-0010 5.0 kg/ 7.4 kg CP3916-1400-0010: 6.0 kg/ 8.4 kg CP3916-1401-0010: 6.9 kg/ 9.3 kg CP3918-1400-0010: 7.4 kg/ 9.8 kg CP3918-1401-0010: 8.5 kg/ 10.9 kg CP3916-1414-0010: 6.9 kg/ 9.3 kg CP3918-1414-0010: 8.5 kg/ 10.9 kg	
Resolution	12.1-inch display: 1280 x 800 15.6-inch display: 1366 x 768 18.5-inch display: 1366 x 768	
Supply voltage	24 V _{DC} (20.4 to 28.8 V _{DC})	
Power consumption	12.1-inch display: max. 9.3 W 15.6-inch display: max. 20 W 18.5-inch display: max. 25 W	
Emergency stop	1.30.273.511/0300 RAFI Rafix FS+	
	The emergency stop is reset by rotating	
	Service life	50,000 cycles
	B10 value	65,000 cycles
Switching elements (emergency stop)	1.20.126.504/9000 RAFI Rafix FS+	
	Service life	1,000,000 cycles at 10 mA / 24 VDC
	B10 value	1,300,000 cycles at 10 mA / 24 VDC
Short-stroke key Micon 5	1.14.002.111/0000 Rafi	
	Service life	1,000,000 cycles
	B10 value	1,300,000 cycles
Protection class	IP65	
Shock resistance (sinusoidal vibration)	EN 60068-2-6: 10 ... 58 Hz: 0.035mm 58 ... 500 Hz: 0.5 G (~5 m/s ²)	
Shock resistance (Shock)	EN 60068-2-27: 5G (~50 m/s ²), duration: 30 ms	
EMC interference immunity	conforms to EN 61000-6-2	
EMC interference emission	conforms to EN 61000-6-4	
Permissible ambient temperature	+0 °C to 45 °C (operation) -25 °C to +65 °C (transport / storage)	
Permissible relative air humidity	Maximum 95%, no condensation	
Transport and storage	The same values for air humidity and shock resistance are to be observed during transport and storage as in operation. Suitable packaging of the Control Panel can improve the resistance to impact during transport.	

9 Chemical resistance of stainless steel panel with flush-mounted touch screen

Description	Properties
Note the maximum operating temperature	Liquids and vapors that act on the panel for several minutes must not exceed a temperature of 45 °C on the Control Panel. Flush-mounted Beckhoff touch screens are resistant to many solvents. The following solvents have been explicitly tested.
Solvent resistance	According to DIN 42115 Part 2 with an action time of more than 24 hours: - ethanol, cyclohexanol, glycol, glycerine, methanol - acetone, methylene chloride, methyl ethyl ketone acetic acid (< 50%), phosphoric acid (< 30%), hydrochloric acid (< 36%), nitric acid (< 10%), sulfuric acid (< 10%), chloracetic acid (< 50%) ammonia (< 40%), caustic soda (< 40%)*, alkali carbonate solution*, potassium ferrocyanide, potassium hydroxide (< 30%) paraffin oil, castor oil, pure turpentine isopropanol, hexanol, diacetone alcohol turpentine, mineral oils, cutting oil, linseed oil unleaded petrol, diesel oil, petroleum benzine*, white spirit engine oil, gearbox oil, antifreeze bleach*, SBP 60/95*
Not resistant against	concentrated mineral acids, concentrated alkaline solutions, high-pressure steam over 100 °C benzyl alcohol, methylene chloride, dimethylformamide, tetrahydrofuran The same applies to a large number of household chemicals. The following household chemicals have been explicitly tested.
Resistance against household chemicals	according to DIN 42115 Part 2 with an action time of more than 24 hours: dissolved Ariel* powder, dissolved Persil* powder, Wisk, Lenor*, Downey* Ajax, dissolved Vim, Windex* glass cleaner (ammonia-based) detergents Household cleaners (Fantastic, Formula 401, Joy, Gumption*, etc.) vinegar, coffee, tea, cooking fat, salad oil, salt tomato ketchup
Splash resistance	Flush-mounted Beckhoff touch screens are resistant to splash-water.
	* extremely weakly pronounced glossiness was determined

10 Appendix

10.1 Support and Service

Beckhoff and its worldwide branch offices offer comprehensive support and service, providing fast and competent assistance with all issues relating to Beckhoff products and system solutions.

Beckhoff subsidiaries and agencies

Please contact your Beckhoff subsidiary or representative regarding local support and service for Beckhoff products.

The addresses of Beckhoff's branch offices and representatives round the world can be found on the internet pages: <https://www.beckhoff.de>

You will also find further documentation for Beckhoff components there.

Beckhoff Support

Support offers you comprehensive technical assistance, helping you not only with the application of individual Beckhoff products, but also with other, wide-ranging services:

- Support
- design, programming and commissioning of complex automation systems
- and extensive training program for Beckhoff system components

Hotline: +49(0)5246 963 157
Fax: +49(0)5246 963 9157
e-mail: support@beckhoff.com

Beckhoff Service

The Beckhoff Service Center supports you in all matters of after-sales service:

- on-site service
- repair service
- spare parts service
- hotline service

Hotline: +49(0)5246 963 460
Fax: +49(0)5246 963 479
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10.2 Approvals

The control panel has the following approvals:

Table 23: Approvals CP39xx-14xx-0010

Product version according to connection type	Approvals
CP3913-1400-0010	CE, EAC, UKCA, FCC
CP3913-1401-0010	CE, EAC, UKCA, FCC
CP3913-1414-0010	CE, EAC, UKCA, FCC
CP3916-1400-0010	CE, EAC, UKCA, FCC
CP3916-1401-0010	CE, EAC, UKCA, FCC
CP3916-1414-0010	CE, EAC, UKCA, FCC
CP3918-1400-0010	CE, EAC, UKCA, FCC
CP3918-1401-0010	CE, EAC, UKCA, FCC
CP3918-1414-0010	CE, EAC, UKCA, FCC
CP3921-1400-0010	CE, EAC, UKCA, FCC
CP3921-1401-0010	CE, EAC, UKCA, FCC
CP3921-1414-0010	CE, EAC, UKCA, FCC

You will find all other applicable approvals on the name plate of your device.

FCC approvals for the United States of America

FCC: Federal Communications Commission Radio Frequency Interference Statement

This device was tested and complies with the limits for a digital device of class A, according part 15 of the FCC regulations. These limits are designed to provide adequate protection against adverse interference, if the device is used in a commercial environment. This device generates, uses and may emit radio frequency energy and may cause adverse interference with radio communications, if it is not installed and used in accordance with the operating instructions. If this device is used in a residential area it is likely to cause adverse interference, in which case the user must take appropriate countermeasures in order to eliminate the interference at his own expense.

FCC approvals for Canada

FCC: Canadian Notice

This device does not exceed the class A limits for radiation, as specified by the Radio Interference Regulations of the Canadian Department of Communications.

More Information:
www.beckhoff.com/cp39xx-1400-0010

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