Installation and Operating instructions for

Panel PC CP72xx

Version: **1.2**
Date: **2007-10-17**

BECKHOFF

Table of contents

General Notes

Notes on the documentation

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

Liability conditions

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

The documentation has been prepared with care. The products described are, however, constantly under development. For this reason, the documentation may not always be have been fully checked for consistency with the performance data, standards or other characteristics described. None of the statements in this manual represent a guarantee for as set out in § 443 of the German Civil Code or a statement about the assumed use according to the contract as set out in § 434 para. 1 clause 1 no. 1 of the German Civil Code. 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.

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Description of safety symbols

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

Danger

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

Warning

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

Note

This symbol indicates information that contributes to better understanding.

Basic safety measures

Only switch the PC off after closing the software

Before the Industrial PC is switched off, software that is running must be properly closed.

Otherwise it is possible that data on the hard disk is lost. Please read the section *Switching the Industrial PC on and off*.

⚠️ **Warning**

Switch off all parts of the equipment, then uncouple the fieldbus!
Before opening the housing of the PC, and whenever the PC is being used for purposes other than plant control, such as during functional tests following repair, all parts of the equipment must first be switched off, after which the Industrial PC can be uncoupled from the plant.

Pulling out the fieldbus connection plug uncouples the PC (optional).

Items of equipment that have been switched off must be secured against being switched on again.

The Industrial PC's power supply unit must be supplied with $24V_{DC}$.

Do not exchange any parts when under power!
When components are being fitted or removed, the supply voltage must be switched off.

Fitting work on the Industrial PC can result in damage:
- If metal objects such as screws or tools fall onto operating circuit boards.
- If connecting cables internal to the PC are removed or inserted during operation.
- If plug-in cards are removed or inserted when the PC is switched on.

Operator's obligation to exercise diligence

The operator must ensure that
- the Industrial PC is only used for its intended purpose (see *Product Description* section);
- the Industrial PC is only operated in a sound condition and in working order;
- the instruction manual is in good condition and complete, and always available for reference at the place of installation of the Industrial PC;
- the Industrial PC is operated, maintained and repaired 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 manual and in particular the safety notes contained herein.
- none of the safety and warning notes attached to the Industrial PC are removed, and all notes remain legible.

National regulations depending on the machine type

Depending on the type of machine and plant in which the Industrial PC is used, national regulations governing the controllers of such machines will apply, and must be observed by the operator. These regulations cover, amongst other things, the intervals between inspections of the controller.

The operator must initiate such inspections in good time.

Warning

Only trained persons may open the Industrial PC housing!
The operator is responsible for ensuring that only trained electrical staff opens the housing of the Industrial PC.

Procedure in the event of a fault

In the event of faults at the Industrial PC, the list in the section *Troubleshooting* can be used to determine the measures to be taken.

Operator requirements

Read the operating instructions

Anyone who uses the Industrial PC must have read these operating instructions.

Software knowledge

Every user must be familiar with all the functions of the software installed on the Industrial PC to which he has access.

Product Description

Appropriate Use

The CP72xx add-on PC with 3½" motherboard is designed for mounting behind a Beckhoff Control Panel. Cooling is achieved via heat sink structure between the Control Panel and the add-on PC. A fan inside the closed housing ensures that the heat is distributed evenly.

The Industrial PC is designed for mounting arm installation.

Structure

Rear view of theCP72xx

Access to the connectors

In order to get access to the connectors, first unscrew the according M4-cross-head screws (**1**) (see photo above). The plastic caps (**2**) can then be taken off easily.

View to the connectors

The picture shows the view to the connectors when the plastic caps are removed.

Access to memory and battery

Removing the drive cover

After unscrewing the two Allen screws (see arrows) the drive cover can be taken off.

View to the hard-disk drive (optional) and the memory card
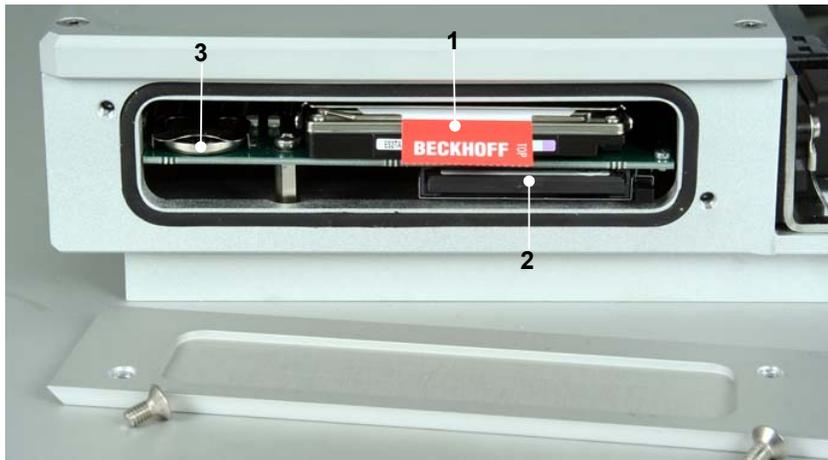
Removing the drive cover allows access to the IDE-hard-disk (**1**) (optional), the Compact-Flash-memory card (**2**) and the lithium battery of the system clock (**3**).

Removing the hard-disk drive and the memory card

The hard-disk drive and the memory card can now be pulled out. Here, changing the lithium battery is also possible.

The installation takes place in reverse order.

Interfaces

Power supply

Power supply

The power supply connection of the Industrial PC and the connection with the UPS (optional) is established via the power supply socket (**X101**).

Network connection

Network connection

The Ethernet-interface with RJ-45-connector (**X106**) allows the PC to be connected to a network (LAN). In the basic configuration a Gigabit-port is available.

Additional plug-in cards (optional)

Type plate

There are notes at the Industrial PC and in the connection area which provide information about the hardware configuration of the Industrial PC at the time it was supplied.

Installation Instructions

Transport and Unpacking

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

Transport

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

⚠ **Warning**

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

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

Unpacking

Proceed as follows to unpack the unit:

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

Installation of the PC

The Panel PC series CP72xx is designed for mounting arm installation. A Control Panel is installed in the front of the IP 65 Panel PC.

The ambient conditions specified for operation must be observed (see the section *Technical data*).

i **Note**

When the unit is installed in an enclosure, adequate space for ventilation and for opening the PC must be provided.

Please note the following points during installation of the PC:

- Position the PC in such a way that reflections on the screen are avoided as far as possible.
- Use the position of the screen as a guide for the correct installation height; it should be optimally visible for the user at all times.
- The PC should not be exposed to direct sunlight.

⚠ Warning

Extreme environmental conditions should be avoided as far as possible. Protect the rear of your PC from dust, humidity and heat.

The clearance above and below the housing must be at least 20 cm in order to ensure adequate ventilation of the PC.

The cooling ribs of the PC must not be covered.

Mounting arm installation

Rotatable mounting arm adapter

The industrial PC is designed for mounting arm installation using a 48 mm diameter mounting arm tube. The case features an integrated rotatable mounting arm adapter.

Rotatable and tiltable mounting arm adapter (optional)

The swivelling range of the tiltable mounting arm adapter (optional) amounts to approx. 45°.

Mounting arm installation

For Installation the Industrial PC at the mounting arm, first push back the red ring cover (**1**) (see arrows).

Now you get access to the allen head screws (**2**), with which the mounting arm tube is fixed in the adapter.
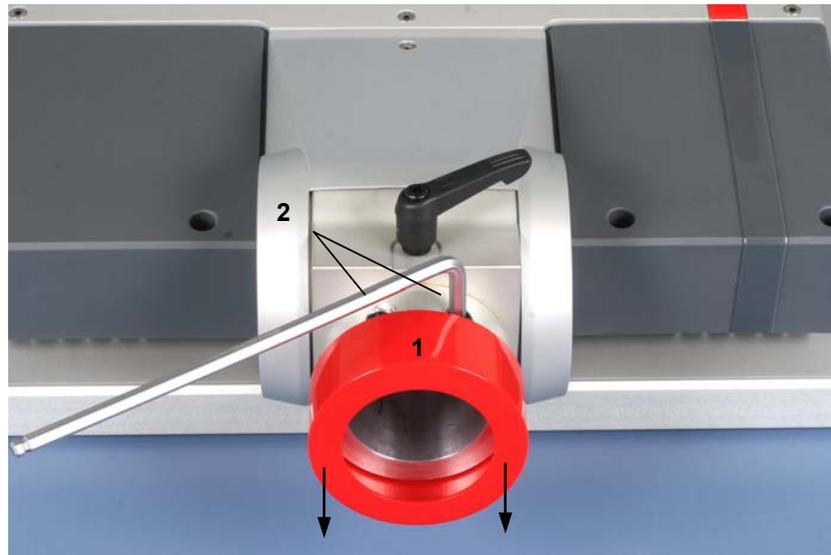
The picture shows the rotatable and tiltable mounting arm adapter (optional).

Earthing measures

Earthing measures

Earthing connections dissipate interference from external power supply cables, signal cables or cables to peripheral equipment.

The picture shows the earthing connection in the wiring area of the PC (see arrow). The earthing cable is laid through the support arm.

Power Supply Connection

Supplied mains power unit

The Industrial PC is fitted with a 24 V_{DC} power supply unit .
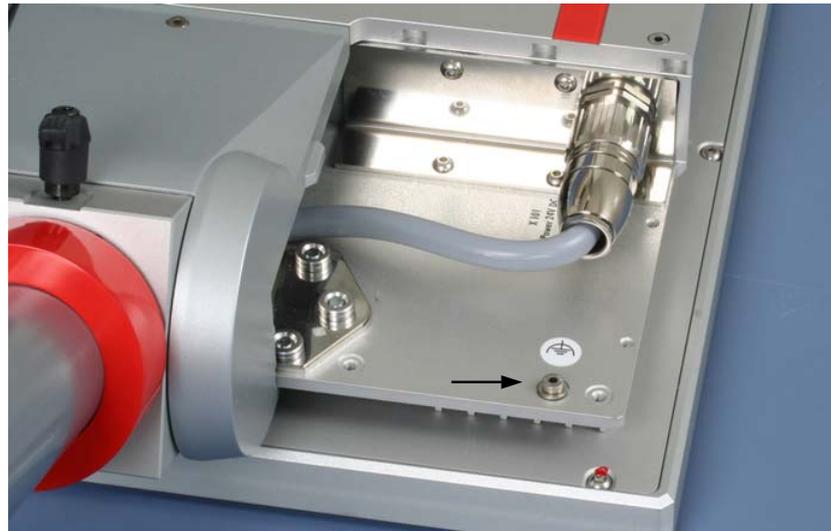
Optional an uninterruptible power supply (UPS) can be realized using the battery pack C9900-U330.

Danger

Danger of Explosion if using other battery packs!

Connecting Power Supply

The external wiring consists of the connection of the power supply, the battery pack (optional) and the connection of customised components for shutting down the PC.

Cable Cross Sections

Note cable cross sections, avoid voltage drop!

For the connection of the power supply, wiring with a cable-cross-section of 1.0 mm^2 must be used.

With bigger distances between voltage source and PC, you take the voltage drop as a function of the cable-cross-section as well as voltage fluctuations of your distribution voltage into account, so that is secured that the voltage doesn't fall under 22 V at the power supply.

Insert Fuse

The power supply must be protected with 10 A.

PC_ON, Power-Status

External wiring

The circuit for shutting down the Industrial PC is realized using the input-signal **PC_ON** and the output-signal **Power-Status**:

- The PC starts shutting down if 24 V exists at **PC_ON**, for example using a switch.

- After shutting down, the output-voltage of 24 V at **Power-Status** is switched to 0 V. This allows connecting an air gap switch for disconnecting the system from power supply. The maximum current loading of the Power-Status output is 0.5 A.

Pin assignment of the power supply connector

The power supply and the external circuit for switching the Industrial PC on and off are connected via the 12-pole plug connector .

Pin assignment for connecting the power supply, the switch and the battery pack (optional)

View connector-sided
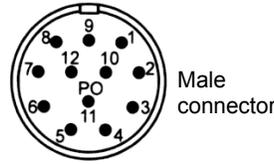
Male connector

Connector 12-pole Coninvers RC-12P1N1126000

Pin	Wire	Function	
1	1	-	Battery Pack
2	2	+	(with UPS)
3	3	UPS+ (Output)	
4	ye/gn	⏚	
5	4	-	24 V DC Power Supply
6	5	+	
7	6	PC_ON	
8	7	Power-Status	

Pre-assembled cable sets for the power supply

Pre-assembled power supply cables

For easy installation of the power supply there are pre-assembled connection cables of different length and with IP 65 connectors available (see table).

Order number	Denomination
C9900-K271	Power supply cable IP 65 for CP72xx, length 5 m, pre-assembled, M23-female connector, screwable, 8-wire, second end open
C9900-K272	Power supply cable IP 65 for CP72xx, length 10 m, pre-assembled, M23-female connector, screwable, 8-wire, second end open
C9900-K273	Power supply cable IP 65 for CP72xx, length 20 m, pre-assembled, M23-female connector, screwable, 8-wire, second end open

Fitting the power supply cable with IP 65 connector

Basic configuration without connecting cable and connector

In the basic configuration of the Industrial PC there is no connection cable provided for connecting the power supply.

For connecting the power supply following *Coninvers Connector Series RC 12-pole* can be used:

- *Coninvers female connector 12-pole with metric screw connection M16 Crimp Coninvers RM-12S1N8A1100, Beckhoff-No.: 048054*

The connector and special tools for the assembly are available via the company Coninvers *http://www.coninvers.com* as well as different distributors.

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Wiring diagram

Wiring according to the wiring diagram (the circuit of PC_ON and Power-Status is symbolical):

Wiring diagram power supply and external wiring
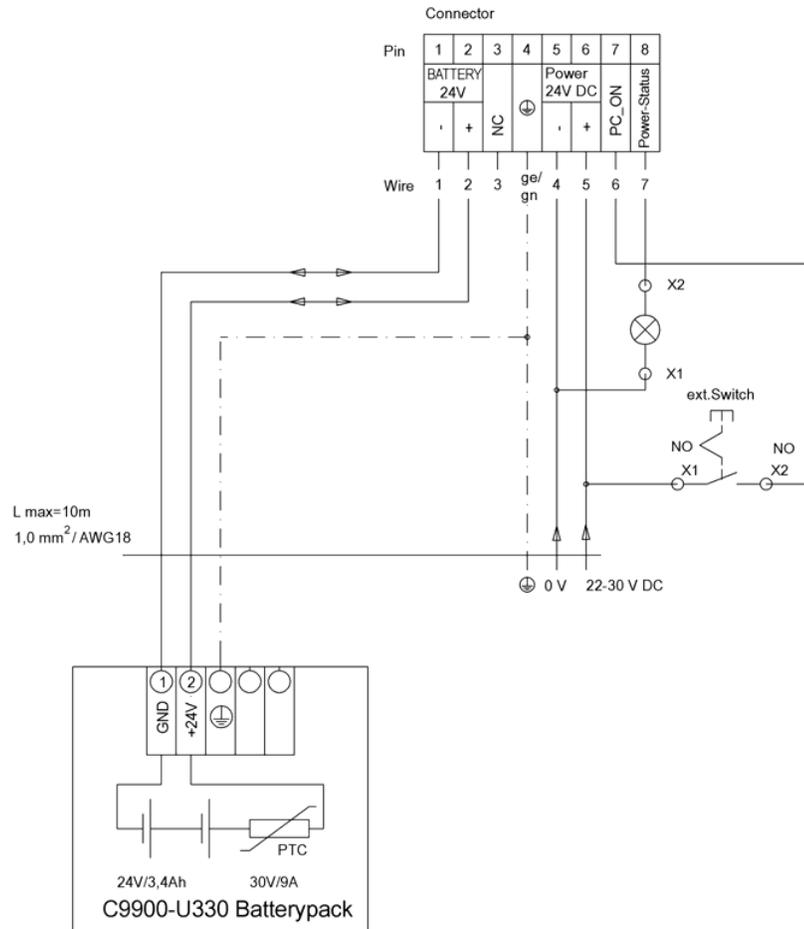
Connecting the Network

Pre-assembled network cables

Pre-assembled network cables

For easy installation of the network connection there are pre-assembled connection cables of different length and with IP 65 – RJ45 connectors available (see table).
In addition to the specified network cables, cables for further configuration are available.

Order number	Denomination
C9900-K281	Network cable for CP72xx, length 3 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K282	Network cable for CP72xx, length 5 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K283	Network cable for CP72xx, length 10 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K284	Network cable for CP72xx, length 15 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K285	Network cable for CP72xx, length 20 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K286	Network cable for CP72xx, length 30 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K287	Network cable for CP72xx, length 40 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20
C9900-K288	Network cable for CP72xx, length 50 m, pre-assembled, Harting-Push-Pull-Ethernet-connector IP 65, second cable end RJ45 IP 20

Fitting the network cable with IP 65 connector

Basic configuration without network cable and connector

In the basic configuration of the Industrial PC there is a connector cap provided without connector.

For network connection following *Harting PushPull connector RJ45, 8-pole* can be used:

- *Connector RJ45 8-pole Harting PushPull connector-set according to IEC24702, white No. 09 45 145 1500, Beckhoff-No.: 047177*

The connector and special tools for the assembly are available via the company Harting *http://www.harting.de/* as well as different distributors.

USB-interface (optional)

Order option C9900-E187   Optionally a USB 2.0 interface with 4-pole-connector (M12-female connector IP 65) in the connection area is available with order option C9900-E187:

Order number	Denomination
C9900-E187	IP 65 connector M12 in the wiring area of a CP72xx for one USB 2.0 Port

Pin assignment for connecting the USB-interface (optional)

Pin assignment, view connector-sided

Pin	Signal	Color
1	**VCC**	Red
2	**D -**	White
3	**GND**	Black
4	**D +**	Green
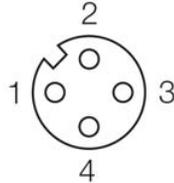
Female connector 4-pole Escha 8029477

Pre-assembled USB-cables

Pre-assembled USB-cables   For easy installation of the USB-interface in the wiring area there are pre-assembled USB-cables of different length and with IP 65-connectors available (see table).

 Note   These USB-cables can not be used for connecting the following options:

- C9900-E190 (USB-A in the wiring area of a CP72xx for one USB 2.0 Port)
- C9900-E169 (2-port USB socket inside the Control Panel backplane).

Order number	Denomination
C9900-K291	USB cable for CP72xx, length 3 m, assembled, M12 connector IP 65, screw type, 4 pin, second end USB-B connector
C9900-K292	USB cable for CP72xx, length 5 m, assembled, M12 connector IP 65, screw type, 4 pin, second end USB-B connector

Fitting the USB-cable with IP 65 connector

Required connector   For connecting the USB-interface the following connector is needed cable-sided:

- *Connector 4-pole round shield Binder 99142981404, Beckhoff-No. 050536*

For further information see *http://www.binder-connector.de/*.

RS232-interface (optional)

Order option C9900-E186

Optionally a RS232-interface with 12-pole-connector (M12-female connector IP 65) is available in the connection area with order option C9900-E186:

Order number	Denomination
C9900-E186	IP 65-connector M12 in the wiring area of a CP72xx for one serial interface RS232

Pin assignment for connecting the RS232-interface (optional)

Pin assignment, view connector-sided
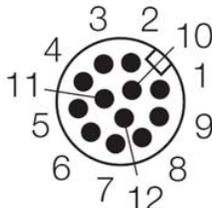
SG 12-pole M12
Escha 8029505

Pin	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	SGND
6	DSR
7	RTS
8	CTS
9	RI
10	NC
11	NC
12	NC

Pre-assembled serial interface cables

Pre-assembled RS232-cables

For easy installation of the serial interface in the wiring area there are pre-assembled RS232-cables of different length and with IP 65-connectors available (see table).

Order number	Denomination
C9900-K295	Serial interface cable RS232 for CP72xx, length 3 m, assembled, M12 connector IP 65, screw type, 12 pin, second end D-Sub 9 pin plug
C9900-K296	Serial interface cable RS232 for CP72xx, length 5 m, assembled, M12 connector IP 65, screw type, 12 pin, second end D-Sub 9 pin plug
C9900-K297	Serial interface cable RS232 for CP72xx, length 10 m, assembled, M12 connector IP 65, screw type, 12 pin, second end D-Sub 9 pin plug

Fitting the RS232-interface cable with IP 65 connector

Required connector

For connecting the RS232-interface the following connector is needed cable-sided:

- *Cable with connector M12 12-pole, 12x0,14mm² 5m Escha 8028494 , Beckhoff-No.: 050541*

For further information see *http://www.escha.de/*.

Danger

Warning

Connecting devices

The Panel-PC must never be connected or disconnected in an area that is subject to explosion hazard! Risk of explosion!

The power supply plug must be withdrawn!

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

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

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

Connecting cables

The connections are located at the top of the Industrial PC and are documented in the *Product Description* chapter.

When connecting the cables to the Industrial PC, proceed according to the following sequence:

- Switch off all the devices that are to be connected.
- Disconnect all the devices that are to be connected from the power supply.
- Connect all the cables between the Industrial PC and to the devices that are to be connected.
- Connect all data transfer cables (if present) to the appropriate plug-in receptacles of the data/telecommunication networks.
- Reconnect all devices to the power supply.

Check voltage rating and connect

Fitted with the 24 V_{DC} power supply unit:

1. Check that the external power supply is providing the correct voltage.
2. Insert the power supply cable that you have assembled into the Industrial PC's power supply socket. Then connect it to your external 24 V power supply.

Warning

If a 24 V UPS is installed, the same type of rechargeable battery must be used.

Operating Instructions

Please also refer to chapter *General Notes*.

Switching the Industrial PC on and off

Switch on

The Industrial PC does not have its own mains switch. The Industrial PC will start when the equipment is switched on, or when it is connected to the power supply.

Shutting down and switching off

When the plant is switched off, or when it is disconnected from its power supply, the Industrial PC will be switched off.

Control software such as is typically used on Industrial PCs permits various users to be given different rights. A user who may not close software may also not switch the Industrial PC off, since data can be lost from the hard disk by switching off while software is running.

Warning

First shut down, then switch off the PC!
If the Industrial PC is switched off as the software is writing a file to the hard disk, the file will be destroyed. Control software typically writes something to the hard disk every few seconds, so that the probability of causing damage by switching off while the software is running is very high.

Warning

When you have shut down the Industrial PC, you have to switch off power supply for at least 10 seconds before rebooting the system.
After resetting power supply the PC will start booting automatically.

First switching on and driver installation

When you switch on the Industrial PC for the first time, the pre-installed operating system (optional) will be started. In this case, all the required drivers for any additional, optional hardware components ordered with the PC will already have been installed.

If the PC was ordered without operating system, you have to install the operating system and the driver software for any auxiliary hardware yourself. Please follow the instructions in the documentation for the operating system and the additional devices.

Servicing and maintenance

Please also refer to chapter *General Notes*.

Cleaning the Industrial PC

⚠ Danger

Switch off the Industrial PC and all connected devices, and disconnect the Industrial PC from the power supply.

The Industrial PC can be cleaned with a soft, damp cloth. Do not use any aggressive cleaning materials, thinners, scouring material or hard objects that could cause scratches.

Replacing the battery on the motherboard

A used battery on the motherboard has to be replaced according to the rules of the board manufacturer. See also chapter *Access to memory and battery.*

⚠ Danger

Danger of Explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Servicing

The Build in Panel PC requires no maintenance.

Shutting down

Disposal

Dismantling the Industrial PC

The device must be fully dismantled in order to dispose of it. The housing can be sent for metal recycling.

Observe national electronics scrap regulations

Electronic parts such as disk drives and circuit boards must be disposed of in accordance with national electronics scrap regulations.

UPS Software Components (optional)

Installing the UPS driver software

For operating the power supply unit as a UPS, the UPS driver software and the associated UPS driver must be installed on the Industrial PC.

On delivery of the Beckhoff Industrial PC with operating system the software is already installed. Should the software not be installed on your PC, the drivers can be installed from the driver CD provided.

Installation on the PC

Installation

To install the UPS driver software, execute file **Beckhoff_UPS_vx.xx.xx.exe** from the subdirectory of **UPS\…** from the CD provided on the Industrial PC (Driver-archive for the Industrial-PC, C9900-S700-xxxx).

The program is self-extracting and will guide the user through the installation routine.

Help files

Beckhoff Information System

The driver software comes with a detailed help function.
The help files can be called up either directly from the configuration register by clicking the Help button, or under via *Start > Programs > Beckhoff > UPS software components*.

Troubleshooting

Please also refer to chapter *General Notes*.

| i **Note** | **Pixel errors in the TFT display are production-caused and represent no complaint-reason!** |

Fault correction

Fault	Cause	Procedure
Nothing happens after the Industrial PC has been switched on	No power supply to the Industrial PC.	Check power supply cable.
	Other cause.	Call Beckhoff Service.
The Industrial PC does not boot fully	Setup settings are incorrect.	Check the setup settings.
	Other cause.	Call Beckhoff Service.
Computer boots, software starts, but control does not operate correctly	Cause of the fault is either in the software or in parts of the plant outside the Industrial PC.	Call the manufacturer of the machine or the software.
The Industrial PC functions only partially or only part of the time, e.g. no or dark picture, but disk drive responds when switching on	Defective components in the Industrial PC.	Call Beckhoff Service.

Service and Support

Beckhoff and their partners around the world offer comprehensive service and support, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

Beckhoff's branch offices and representatives

Please contact your Beckhoff branch office or representative for local support and service on Beckhoff products!

The addresses of Beckhoff's branch offices and representatives round the world can be found on her internet pages:
http://www.beckhoff.com

You will also find further documentation for Beckhoff components there.

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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
e-mail:	service@beckhoff.com

Quote the project number   If servicing is required, please quote the **project number** of your Industrial PC.

Assembly dimensions

The illustrations show the measurements of the Panel-PCs. Please refer to the tables for the dimensions of the Control Panel. All Dimensions in mm.
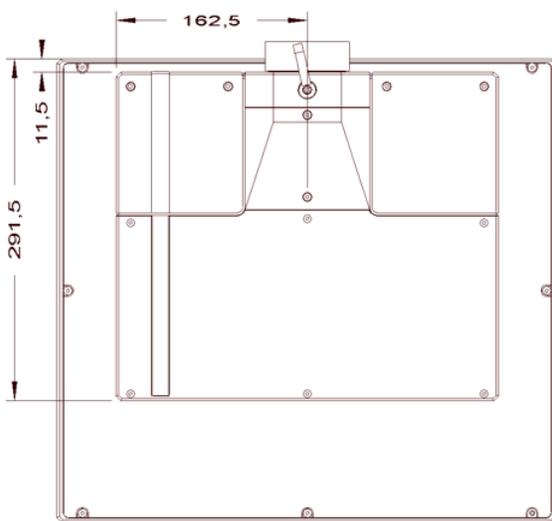
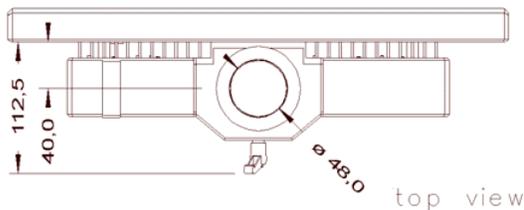CP72xx   *Mounting arm installation from top, rotatable*
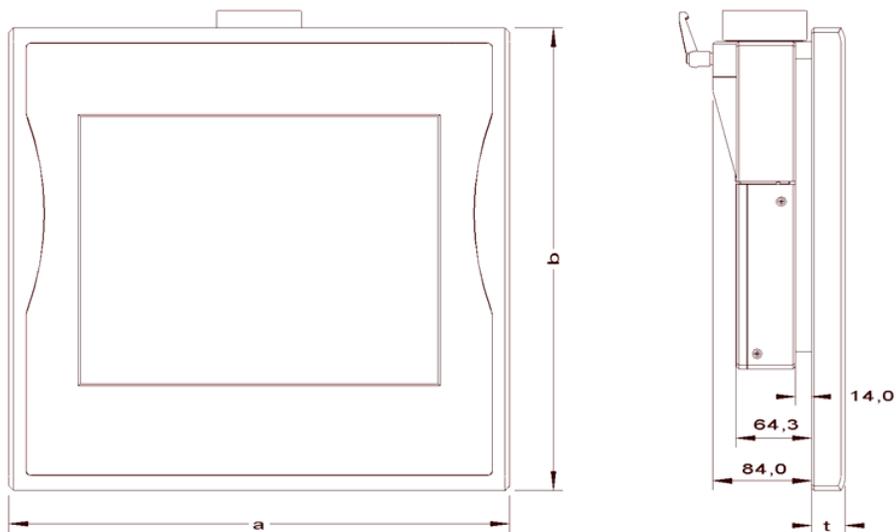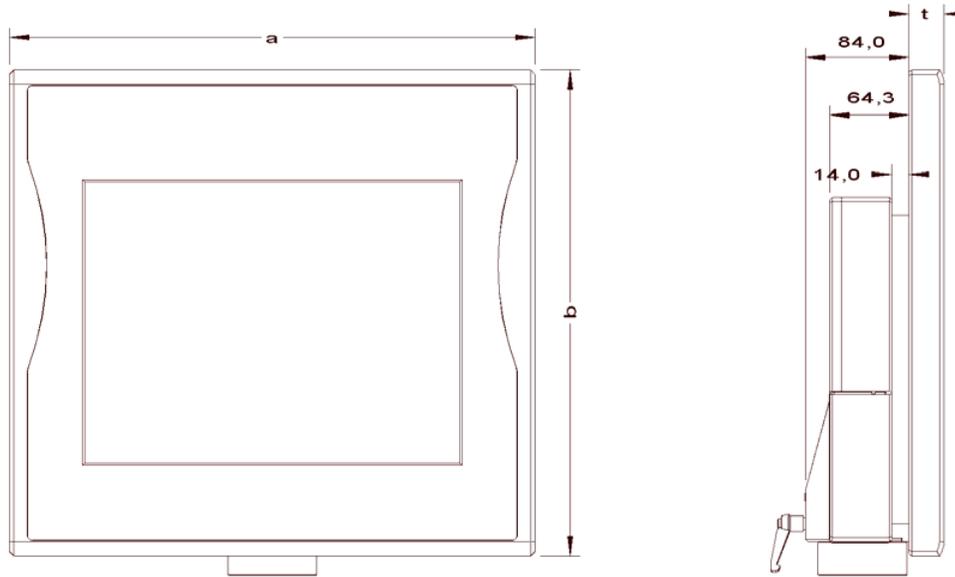

front view   left view

14,0
64,3
84,0
t

162,5
11,5
291,5

rear view

112,5
40,0
⌀ 48,0

top view
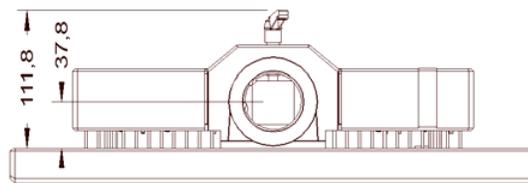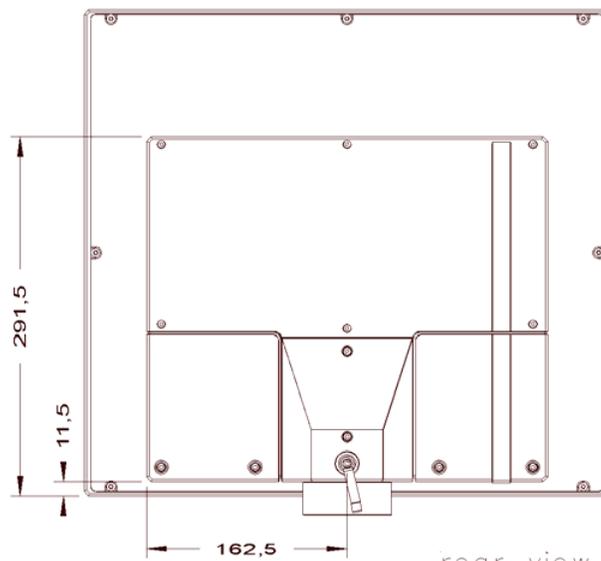
CP72xx   *Mounting arm installation from bottom, rotatable*

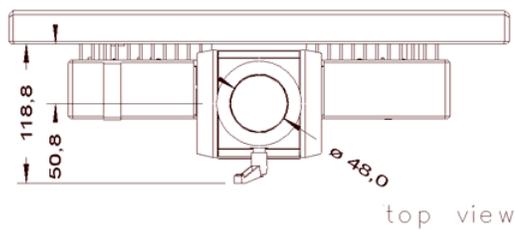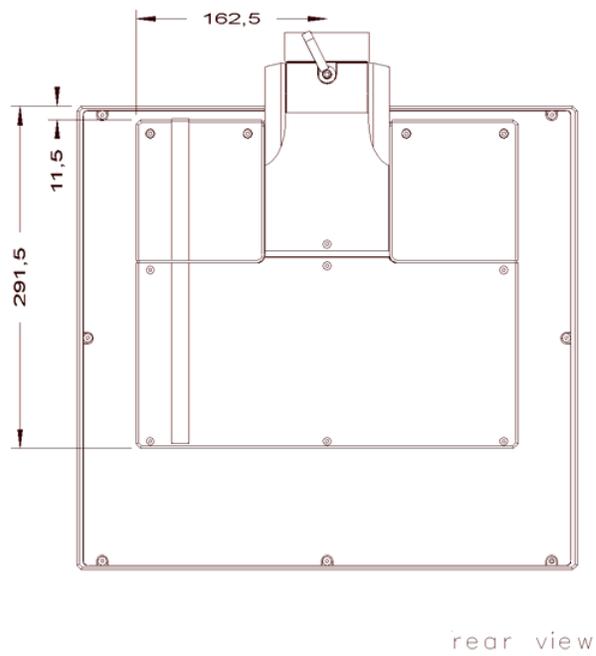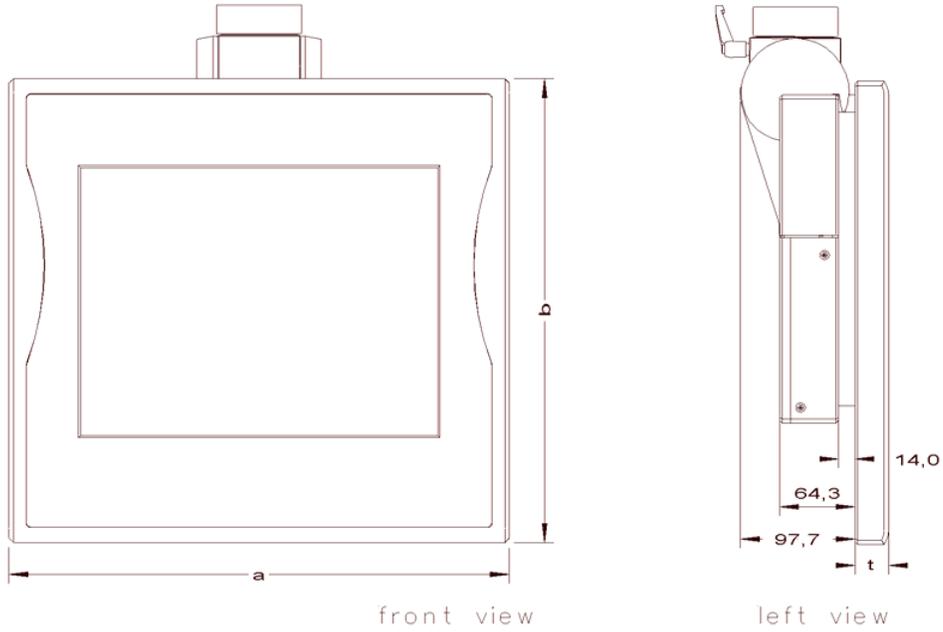front view   left view

bottom view

rear view

CP72xx   25

CP72xx   *Mounting arm installation from top, rotatable and tiltable*

front view   left view

14,0

64,3

97,7

t

b

a

162,5

11,5

291,5

rear view

118,8

50,8

⌀ 48,0

top view

CP72xx

Mounting arm installation from bottom, rotatable and tiltable
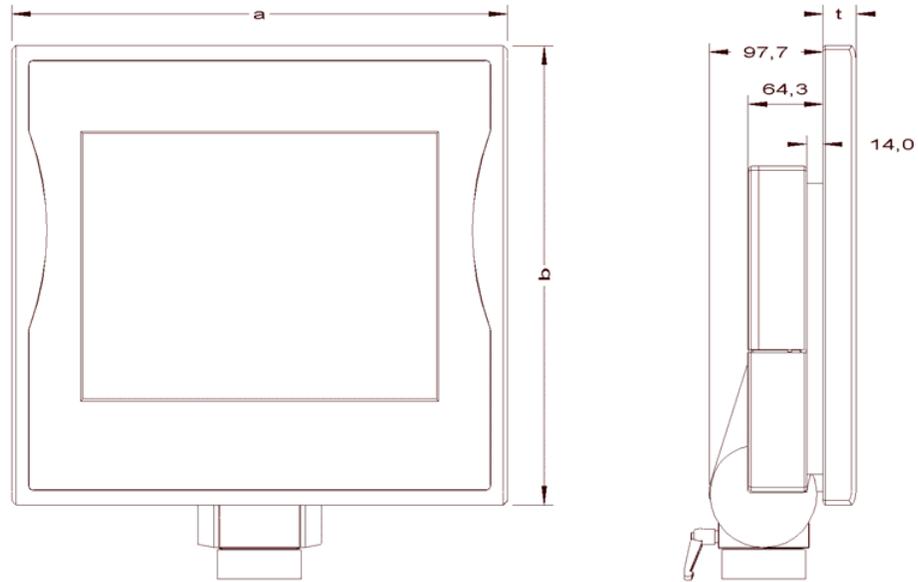
front view

left view

bottom view

rear view

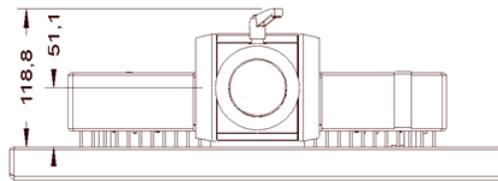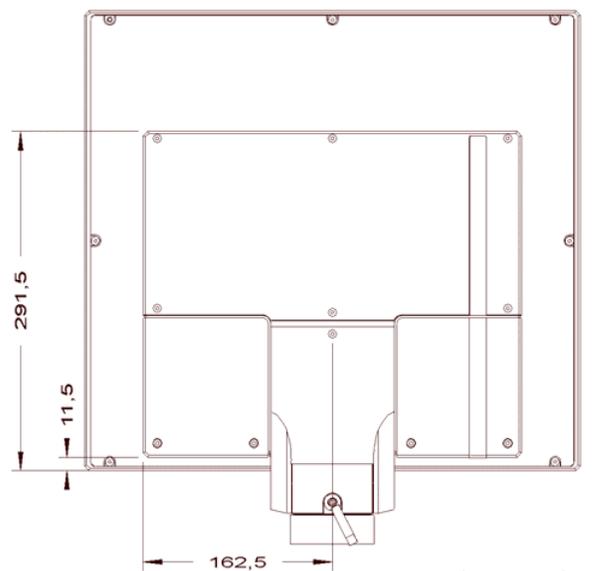## Dimensions and total weight

Display only — without touch screen

Dimensions		a	b	t	Weight
CP7201-0000	12" Display	353.8	326.3	27.5	9.7 kg
CP7202-0000	15" Display	426	395	28.5	11.4 kg
CP7203-0000	19" Display	504	455	45	16.3 kg

with touch screen

Dimensions		a	b	t	Weight
CP7201-0001	12" Display	353.8	326.3	27.5	9.7 kg
CP7202-0001	15" Display	426	395	28.5	11.6 kg
CP7203-0001	19" Display	504	455	45	16.1 kg

With function keys — without touch screen

Dimensions		a	b	t	Weight
CP7211-0000	12" Display	353.8	326.3	27.5	9.7 kg
CP7212-0000	15" Display	426	395	28.5	11.4 kg
CP7213-0000	19" Display	504	455	45	16.3 kg

with touch screen

Dimensions		a	b	t	Weight
CP7211-0001	12" Display	353.8	326.3	27.5	9.7 kg
CP7212-0001	15" Display	426	395	28.5	11.6 kg
CP7213-0001	19" Display	504	455	45	16.1 kg

Numeric keyboard — without touch screen

Dimensions		a	b	t	Weight
CP7221-0000	12" Display	406	308.3	27.5	9.9 kg
CP7222-0000	15" Display	515	370.2	28.5	12.0 kg
CP7223-0000	19" Display	563	426	45	16.6 kg

with touch screen

Dimensions		a	b	t	Weight
CP7221-0001	12" Display	406	308.3	27.5	10.0 kg
CP7222-0001	15" Display	515	370.2	28.5	12.3 kg
CP7223-0001	19" Display	563	426	45	16.5 kg

with touch pad

Dimensions		a	b	t	Weight
CP7221-0002	12" Display	406	308.3	27.5	10.2 kg
CP7222-0002	15" Display	515	370.2	28.5	12.0 kg
CP7223-0002	19" Display	563	426	45	16.6 kg

Alphanumeric keyboard — without touch screen

Dimensions		a	b	t	Weight
CP7231-0000	12" Display	426	370.2	27.5	10.6 kg
CP7232-0000	15" Display	483	410.2	28.5	12.3 kg
CP7233-0000	19" Display	504	535	45	17.8 kg

with touch screen

Dimensions		a	b	t	Weight
CP7231-0001	12" Display	426	370.2	27.5	10.7 kg
CP7232-0001	15" Display	483	410.2	28.5	12.5 kg
CP7233-0001	19" Display	504	535	45	17.6 kg

with touch pad

Dimensions		a	B	t	Weight
CP7231-0002	12" Display	426	370.2	27.5	10.8 kg
CP7232-0002	15" Display	483	410.2	28.5	12.3 kg
CP7233-0002	19" Display	504	535	45	17.7 kg

Appendix

Technical data

Dimensions and weight	See section *Assembly dimensions*
Do not use the PC in areas of explosive hazard	**The Industrial PC may not be used in areas of explosive hazard.**

The following conditions must be observed during operation:

Environmental conditions
Ambient temperature: 0 to 45°C
Atmospheric humidity: Maximum 95%, non-condensing

Shock resistance
Sinusoidal vibration:
(EN 60068-2-6) 10 to 58 Hz: 0.035 mm
58 to 500 Hz: 0.5 G (~ 5 m/ s^2)

Impact:
(EN 60068-2-27/ -29) 5 G (~ 50 m/ s²), duration: 30 ms

Protection class
Protection class: IP 65

Power supply
24 V$_{DC}$ power pack
Supply voltage: 24 V$_{DC}$ (22 - 30 V$_{DC}$)
Power consumption: approx. 55 W for the basic version,
approx. 69 W with 12" display
approx. 80 W with 15" display
approx. 87 W with 19" display

If operated with USV: additional 30 W (while charging)

EMC compatibility
Resistance to interference: conforms to EN 61000-6-2
Emission of interference: conforms to EN 61000-6-4

Transport and storage
The same values for atmospheric humidity and shock resistance are to be observed during transport and storage as in operation. Suitable packaging of the Industrial PC can improve the resistance to impact during transport. The ambient temperature during storage and transport must be between -20°C and +65°C.

i Note
Pixel errors in the TFT display are production-caused and represent no complaint-reason!

Approvals

FCC: Federal Communications Commission
Radio Frequency Interference Statement

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

FCC: Canadian Notice

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