Installation and Operating instructions for

CP22xx

Multi-touch built-in Panel PC

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BECKHOFF

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1 Foreword

1.1 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. It is essential that the following notes and explanations are followed when installing and commissioning these 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.

1.1.1 Liability Conditions

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.

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1.1.5 State at Delivery

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

1.1.6 Delivery conditions

In addition, the general delivery conditions of the company Beckhoff Automation GmbH apply.

1.2 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	**Acute risk of injury!** If you **do not** adhere the safety advise adjoining this symbol, there is immediate danger to life and health of individuals!

WARNING	**Risk of injury!** If you **do not** adhere the safety advise adjoining this symbol, there is danger to life and health of individuals!

CAUTION	**Hazard to individuals!** If you **do not** adhere the safety advise adjoining this symbol, there is obvious hazard to individuals!

Attention	**Hazard to devices and environment** If you **do not** adhere the notice adjoining this symbol, there is obvious hazard to materials and environment.

Note	**Note or pointer** This symbol indicates information that contributes to better understanding.

1.3 Basic safety measures

Before the Panel PC is switched off, software that is running must be properly closed.
Otherwise it is possible that data on the storage medium is lost. Please read the section *Switching the Panel PC on and off*.

⚠ **!** **Warning**	**Switch off all parts of the equipment, then uncouple the Panel PC** Before opening the housing, and whenever the Panel PC is not being used for control purposes (such as during functional checks after a repair), all parts of the equipment must first be switched off, after which the Panel PC is to be disconnected from the equipment.

Disconnect the device by unplugging the connectors on the rear side of the Panel PC.
Items of equipment that have been switched off must be secured against being switched on again.

⚠ **!** **Warning**	**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 Panel PC can result in damage: • if metal objects such as screws or tools fall onto operating circuit boards • if connecting cables internal to the Panel PC are removed or inserted during operation.

1.4 Operator's obligation to exercise diligence

The operator must ensure that

- the product is only used as intended (see chapter *Product Description*)
- the product is in a sound condition and in working order during operation
- the product 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
- the operation manual is in good condition and complete, and always available for reference at the location of the product.

i **Note**	**Do not open the housing of the Panel PC!** For technical support contact *Beckhoff Service*.

1.4.1 National regulations

Depending on the type of machine and plant in which the Panel 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.

1.4.2 Procedure in the event of a fault

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

1.4.3 Operator requirements

Anyone who uses the Panel PC must have read these operating instructions and must be familiar with all the functions of the software installed on the Industrial PC to which he has access.

2 Product Description

2.1 Product overview

The high-performance multi-touch built-in Panel PC

The new Beckhoff Panel PC generation with industry-standard multi-touch display offers a feature-laden solution for any application. The wide selection of models offers different display sizes and formats as well as custom designs. Even for single-touch users, this new Panel PC generation offers an excellent price-to-performance ratio and represents an economical alternative to other systems.

The multi-touch built-in Panel PCs offer the following benefits:

- aluminium housing with glass front
- all connectors at the bottom of the rear side
- 1 slot for one 2½-inch hard disk or SSD and 1 slot for one CFast card, accessible from outside
- 2 connector brackets to lead out interfaces of the motherboard at the connection section
- fan cartridge at the PC top side, accessible from outside
- protection class front side IP 65, rear side IP 20
- multi-finger touch screen
- TFT display in seven sizes

2.2 Appropriate Use

The multi-touch built-in Panel PC CP22xx is designed for industrial application in machine and plant engineering. A multi-touch display is accommodated in an aluminium housing. The Panel PC is installed in the front of control cabinets.

⚠️ **Danger**	**Risk of explosion!** The Panel PC must not be used where there is a risk of explosion.

2.3 Access to the connectors

The connectors of the Panel PC are located at the bottom of the housing.

Picture: CP2212, bottom view

Picture: CP2216, bottom view

2.4 Interfaces

X102	X103	X104-X107	X108	X109	X110	Ground
COM1	DVI-I out	USB	LAN1	LAN2	Power	
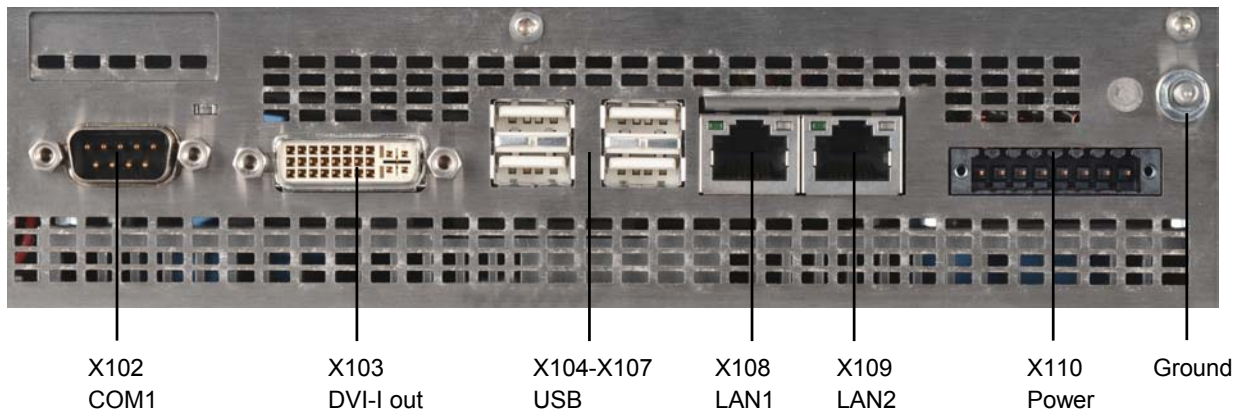
2.4.1 Serial interface COM1 (X102)

The Panel PC has one serial interface COM1 (**X102**) using the type RS232, which is brought to a 9 pin SUB-D plug connector.

2.4.2 DVI-I out (Digital Visual Interface) (X103)

The DVI connection (**X103**) is used for transferring the video signal. DVI-I standard is supported.

2.4.3 USB output (X104 - X107)

The four USB interfaces (**X104 - X107**, connector type A) are used for connecting peripheral devices with USB connection. USB2.0 standard is supported.

2.4.4 Network connection LAN1, LAN2 (X 108, X109)

The RJ-45 connectors (**X108**, **X109**) allow the PC to be connected to a 10/100/1000BASE-T Local Area Network (LAN).

2.4.5 Power Supply (X110)

The power supply for the Panel PC is established via the socket (**X110**). The power supply connector is included in delivery.

2.4.6 Ground connection (Ground)

The Panel PC is grounded via the screw connection (**Ground**).

i **Note**	**Malfunction possible with missing ground connection** A proper ground connection of the device is absolutely necessary for the correct function of the touchscreen.

2.5 Access to memory devices, battery and fan

The slots for the memory devices, the battery and the fans are located behind a cover at the top side of the Panel PC.

2.5.1 Removing the Cover

For removing the cover unlock the two clips (see arrows). The cover can now be folded out.
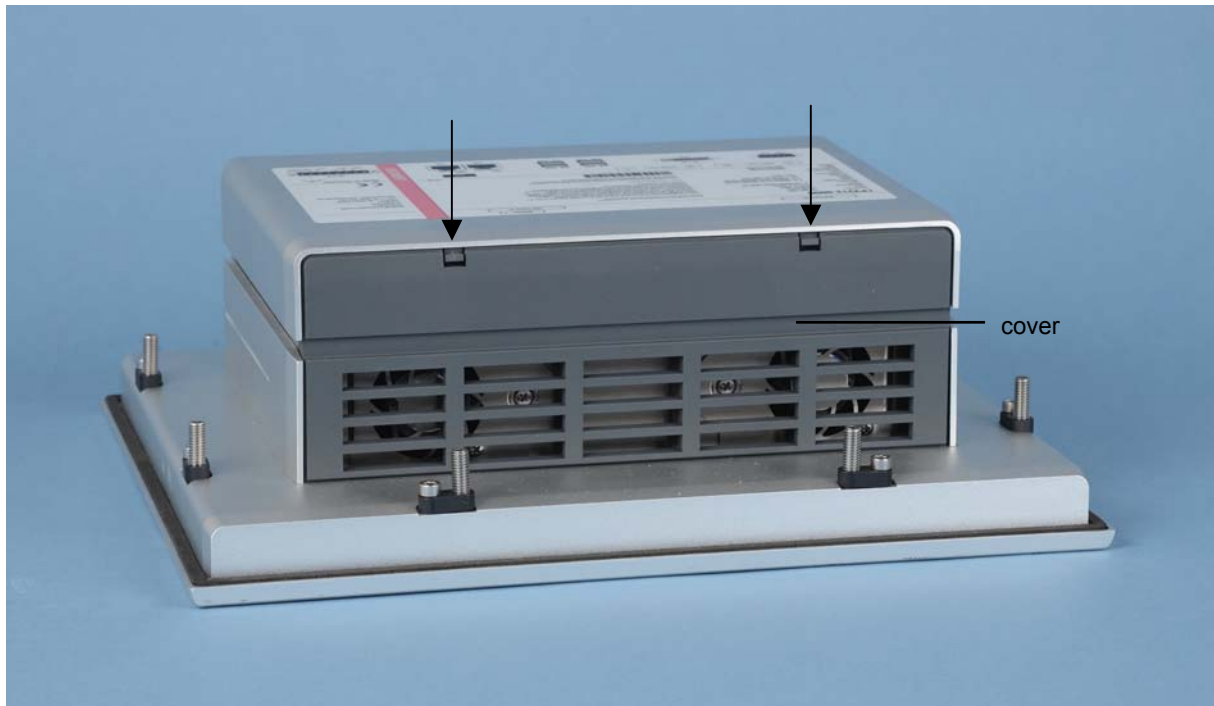
Picture: CP2212, view from the top
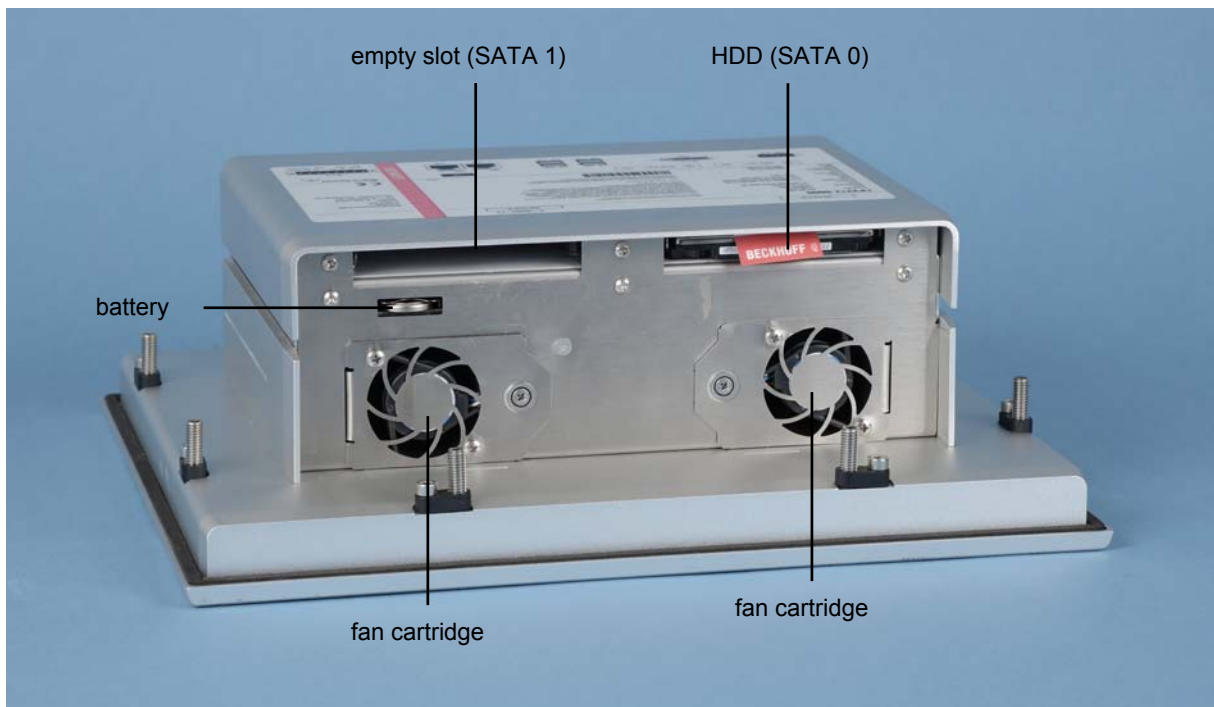
Picture: CP2212, view at the memory devices, the battery and the fan cartridges.
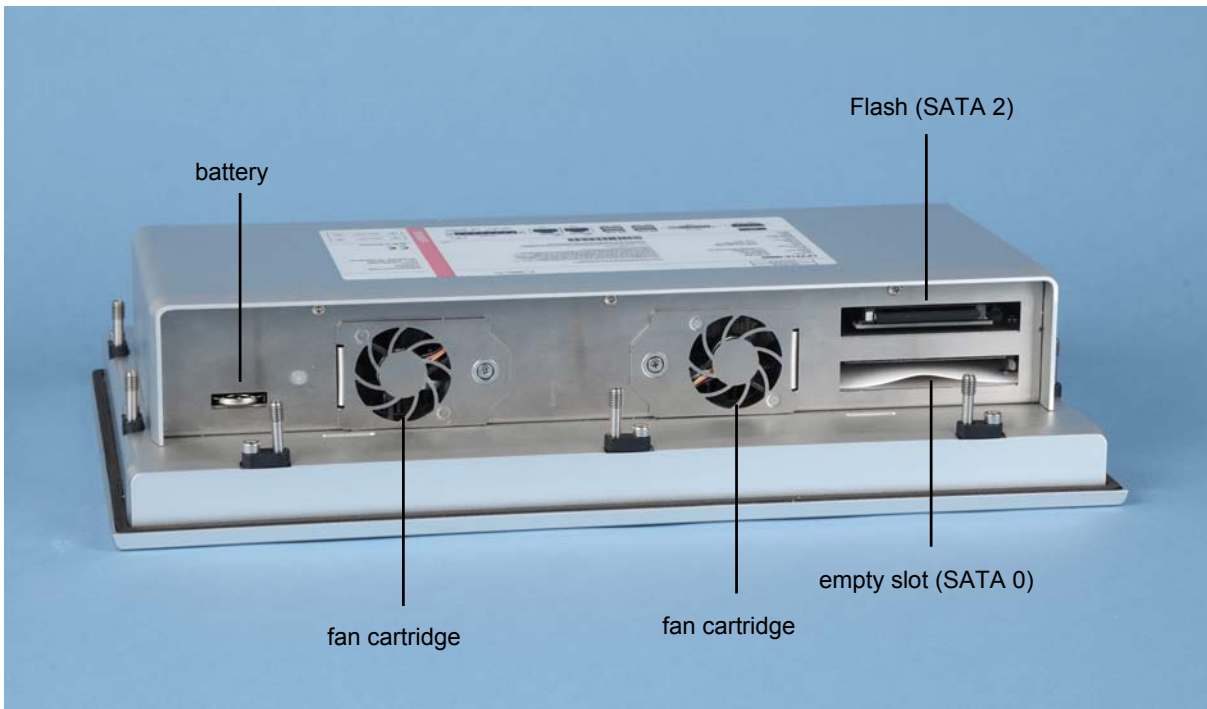
Picture: CP2216, view at the memory devices, the battery and the fan cartridges.

2.5.2 Mounting the Cover

For mounting the cover click it into the PC housing.

2.5.3 Exchanging the fan cartridges

For optimal cooling the CP22xx Industrial PC is equipped with two fan cartridges. The fan cartridges can be exchanged.

! **Attention**	**Exchanging the fan cartridges** Replace the fans only with the identical type or an alternative type approved by Beckhoff.
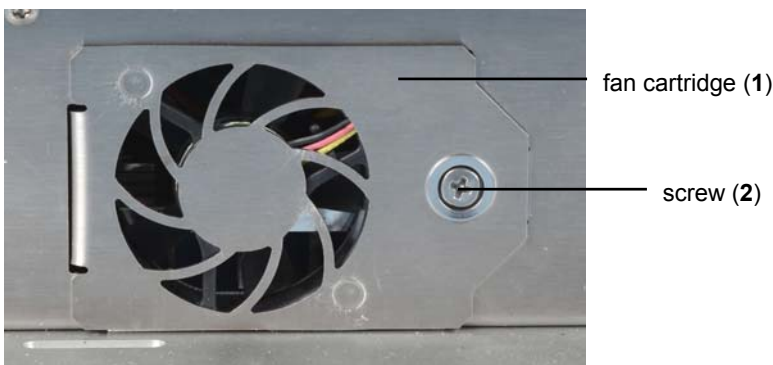
For exchanging the fan cartridge (**1**), first unloose the screw (**2**). The cartridge can now be folded out and removed.

2.5.4 Extension for PCIe plug-in cards

When ordered with the corresponding option the Panel PC can be extended by two additional plug-in card slots:

Option	Extension
C9900-B517	2 PCIe module slots, integrated in the CP22xx for plugging-in Beckhoff-PCIe modules

2.5.5 Access to the module slots

The PCIe module slots are located behind the cover plate next to the interfaces of the Panel PC.

cover plate (**1**)
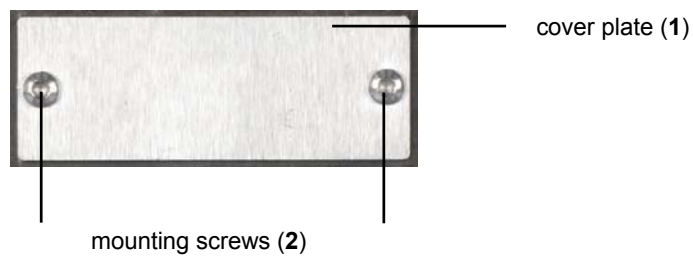
mounting screws (**2**)

For mounting of a plug-in card first unloose the screws (**2**). The cover plate (**1**) can now be removed and allows to plug in the card.

3 Installation

3.1 Transport and Unpacking

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

3.1.1 Transport

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

! **Attention**	**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.

3.1.2 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.

If you notice any shipping damage or inconsistencies between the contents and your order, you should notify Beckhoff Service.

3.2 Installation in the control cabinet

The Panel PC CP22xx is designed for mounting in control cabinets in machine and plant engineering applications. The ambient conditions specified for operation must be observed (see chapter *Technical Data*).

3.2.1 Preparation of the control cabinet

The control cabinet wall must be prepared with the required mounting opening according to the Panel PC's dimensions (see chapter *Assembly dimensions*).

i Note	**Circulation of air** When the unit is installed in an enclosure, adequate space for ventilation must be provided. The clearance above and below the housing must be at least 5 cm in order to ensure adequate ventilation of the Panel PC.

Please note the following points during installation of the Panel PC:

- Position the Panel 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 Panel PC should not be exposed to direct sunlight.

- When the unit is in its mounting position, the ventilation openings must not be obstructed.

! Attention	**Avoid extreme environmental conditions** Extreme environmental conditions should be avoided as far as possible. Protect the Panel PC from dust, moisture and heat. The ventilation slots of the Panel PC must not be covered.

3.2.2 Installation in a control cabinet wall

For installation of the Panel PC proceed as follows:

1. Insert the Panel PC at the intended control cabinet wall position and protect it from falling out, prior to final mounting.
2. Release the clamping levers, turn the clamping levers to the side and retighten the screws (see chapter *Mounting of the Panel PC*).

3.2.3   Mounting of the Panel PC

The Panel PC is installed in the cabinet wall with clamping levers. For the cutout dimension of the Panel PC see chapter *Technical Data*, the wall thickness is between 1 mm and 5 mm.

1. Insert the Panel PC into the cutout.

2. Release the clamping levers with a 3.0 mm Allen key.
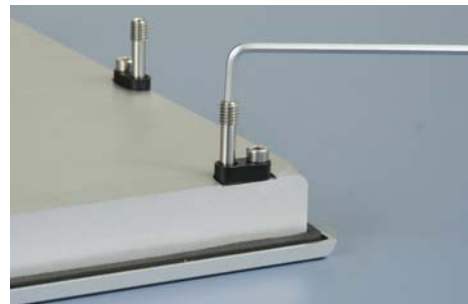
3. Turn the clamping levers to the side through 90°.
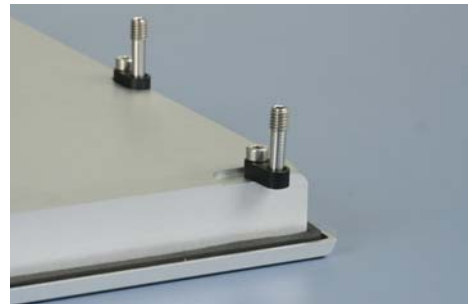
4. Retighten the screws.

3.3 Power Supply of the Industrial PC

The Industrial PC is fitted with a 24 V_{DC} power supply unit.

![i] **Note**	**Uninterruptible power supply (UPS)** When the Industrial PC is provided with a power supply unit with integrated UPS (order option) you can realize an uninterruptible power supply (UPS) using the battery pack C9900-U330.

⚠ **WARNING**	**Danger of Explosion!** Danger of Explosion if using other battery packs!

3.3.1 Beckhoff power supply technology

Example: Schematic diagram of power supply unit wirings
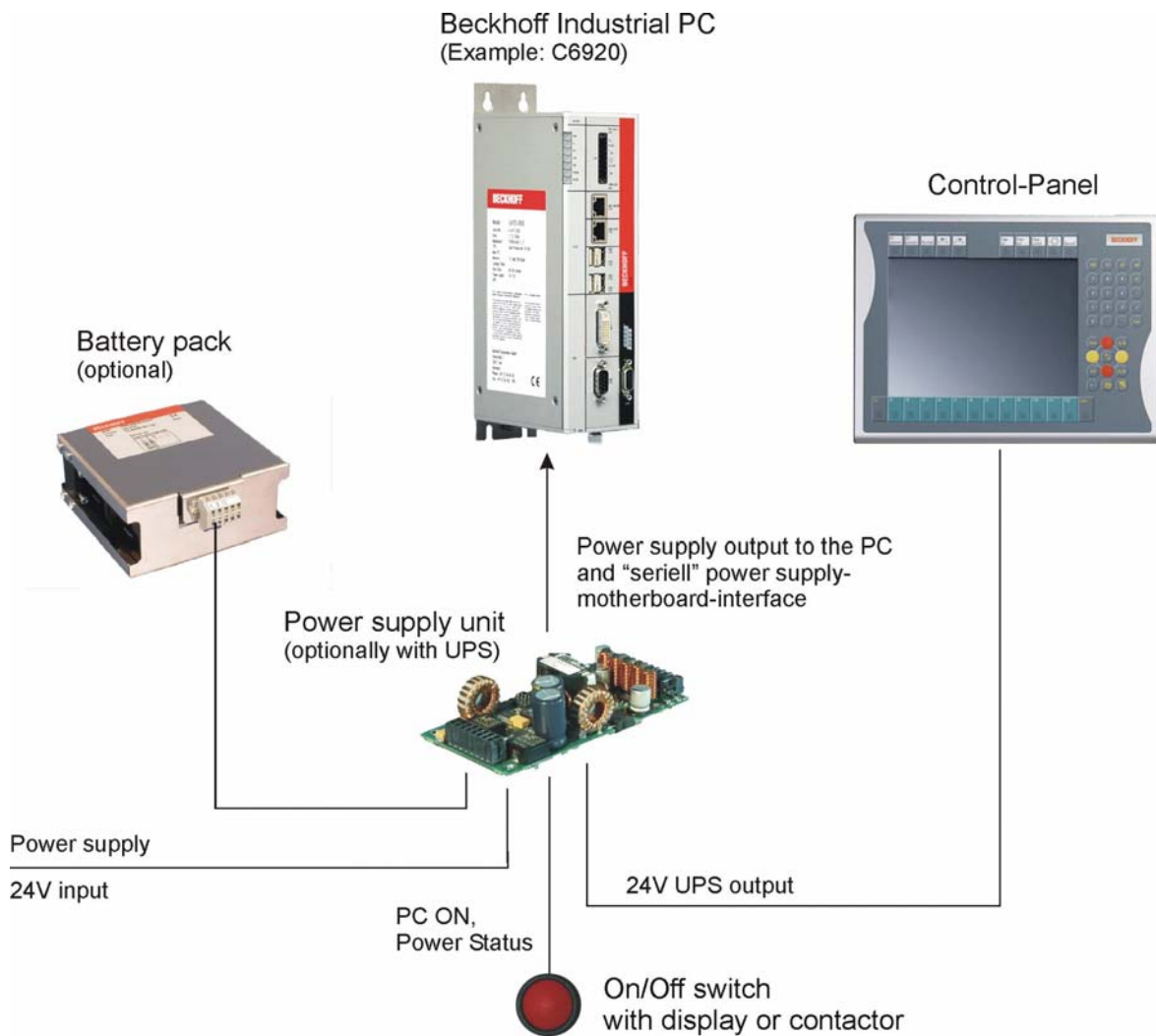
Innovative solution for shutting down Industrial PCs

Industrial PCs equipped with a UPS are in actual use frequently switched off by simply turning off the supply voltage. In this case the PC shuts down via the battery. However, over time this reduces the service life of the battery.

The new Beckhoff power supply technology approach addresses this problem and now offers the user the option of switching the PC off without the need for using the battery, thereby reducing the load on the battery.

In addition to the main switch this innovative solution uses an ON/OFF switch for the machine. Basically, the main switch remains switched on and provides the power supply for the PC during shutdown. Via the PC ON-input of the power supply the PC gets the command to shut down the operating system.

Once the PC has shut down, the PC power supply unit sets the Power Status-output (P-S) to 0, what indicates that the process is complete and that the main voltage can be switched off. This can be done manually via a signal lamp connection or via a contactor. With this solution the main switch generally only has to be switched off if the control cabinet has to be opened. The battery will only be used in the event of a power failure.

In order to maintain a screen display for the Industrial PC in the event of a power failure, the power supply unit is equipped with a UPS output 27 V / 1.4 A for connecting a Control Panel with a display dimension up to 19 inches. This enables a power failure to be visualized and displayed to the user. Once the PC has shut down, the UPS output is switched off.

For a detailed functional description please refer to section *Connecting Power Supply*.

3.3.2 Pin assignment of the connector

The power supply and the external circuit for switching the Industrial PC on and off are connected via the 8-pole plug connector.

1 2 3 4 5 6 7 8

Pin	Function		Pin	Function	
1	-	Battery Pack	5	-	24 V_{DC} Power Supply
2	+	(with UPS only)	6	+	
3	UPS+ (Output)		7	PC_ON	
4	⏚		8	Power-Status	

3.4 Fitting the power supply cable

Fit the cables for the power supply of the Industrial PC, the connection of the battery pack as well as the connection of the power-switch in accordance with the wiring diagram, using the included material for assembling the connectors:

Material for assembling the connectors

Plug connector 8-pole, Strain relief housing with lacing cord
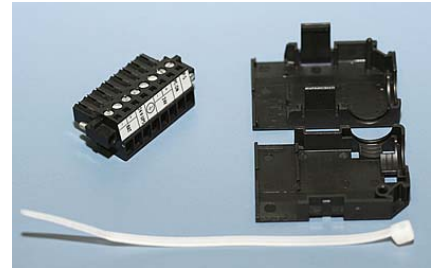
	Conductive cross-section
i **Note**	The connector is specified for 16 A and can lift conductive cross-sections until 1.5 mm^2.

So the connector is fitted to the cable:

1. Strip insulation from the cable ends (Length of stripped conductor is 8 – 9 mm).

2. Screw together the cable ends in the 8-pole plug connector in accordance with wiring diagram.

Applying the strain relief

Thread the lacing cord into that lower part of the strain relief housing.

Putting in the plug connector

Put the plug connector into that lower part of the strain relief housing.

Tighten the lacing cord and pinch off the plastic strap.
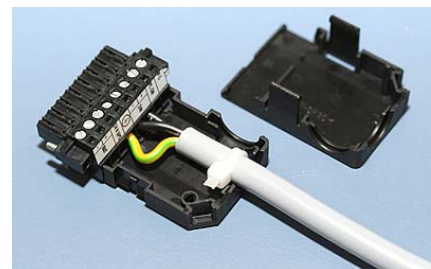
Fixing the upper part of the strain relief housing

Fix the upper part of the strain relief housing by snapping it onto the lower part.

3.5 Connecting Power Supply

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

3.5.1 Cable Cross Sections

For the connection of the power supply, wiring with a cable-cross-section of 1.5 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.

! Attention	**Insert fuse** The power supply must be protected with maximum 16 A.

3.5.2 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.

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

3.5.3 Configuration for shutting down the PC

The connections for shutting down the Industrial PCs are established via the **PC_ON** input and the **Power Status** output.

3.5.4 PC_ON and Power Status functions

- If the **PC_ON** input is connected to 24 V via a switch, the PC shuts down according to the rules. The PC_ON signal is inverted, i.e. the PC shuts down if the 24 V connection is live.

- If the **PC_ON** input is *NOT* connected by the user, the PC can be booted in the familiar way by connecting the supply voltage and shut down via the battery by switching off the supply voltage.

! Attention	**Service life of the rechargeable battery** This procedure significantly reduces the service life of the rechargeable battery and should therefore not be used.

- Once the PC has shut down, the **Power Status** output is switched from 24 V to 0 V. Via this output a signal lamp can be connected or a contactor for de-energizing the whole system. The maximum load for the **Power Status** output is 0.5 A and a suitable fuse should be provided.

3.5.5 UPS output

In order to maintain a screen display for the PC in the event of a power failure, the power supply unit is equipped with a **UPS output** for connecting a Control Panel. The maximum load for the output is 1.4 A.

3.5.6 UPS output function

- The 24 V DC connection at the UPS output is live even after a power failure. The maximum load is 1.4 A.

- Once the PC has been de-energized via the UPS software, the **UPS output** is switched to 0 V. Any connected panel is thus switched off, and total discharge of the rechargeable battery is prevented.

3.5.7 Wiring diagram

Wiring according to the wiring diagram (the circuit of PC_ON and Power-Status is symbolical):
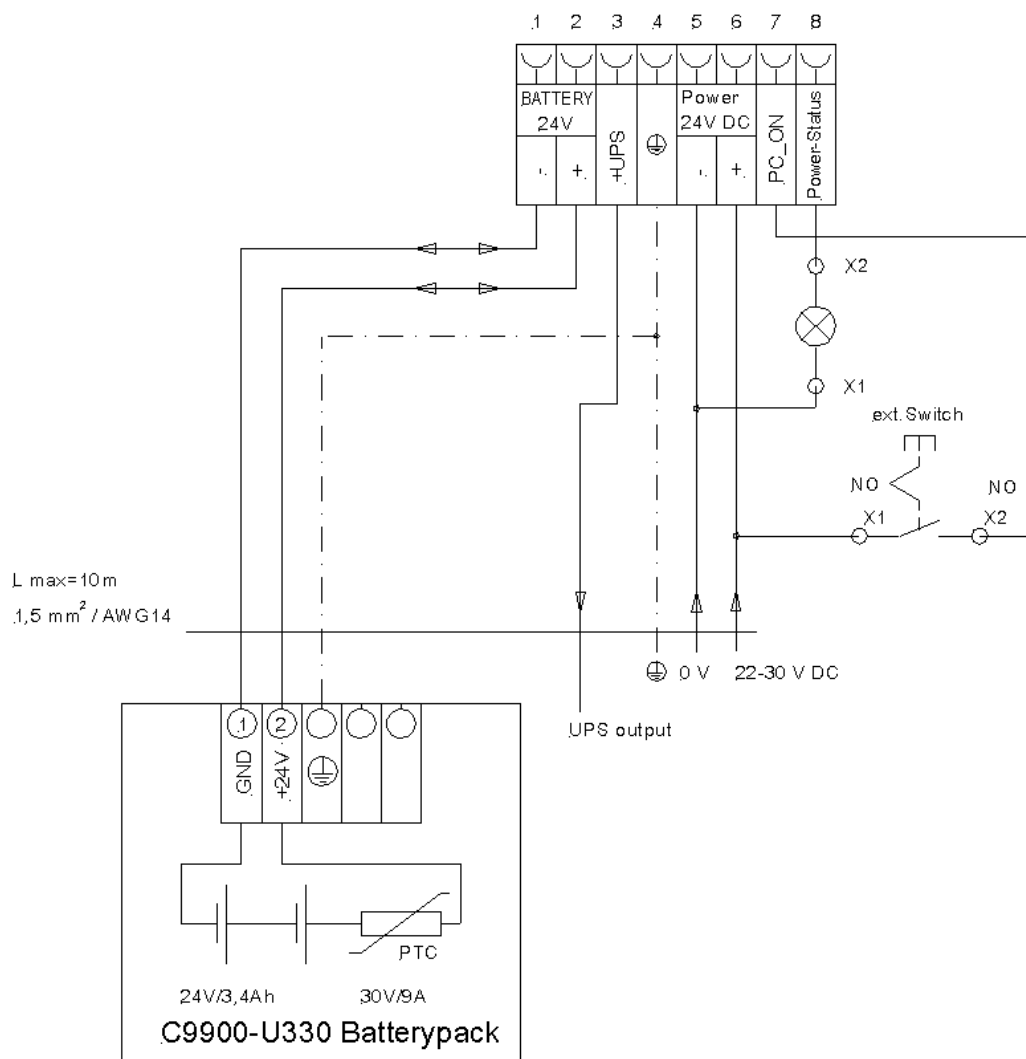
	Connection of the Battery Pack and UPS Output
i **Note**	Connection of the Battery Pack and UPS Output only in combination with integrated UPS (order option).

3.6 Connecting the Panel PC

! Attention	**The mains plug must be disconnected**
	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!

3.6.1 Connecting cables

The connections are located at the bottom of the Panel PC and are documented in the chapter *Interfaces*.

When connecting cables to the Panel PC, please adhere to the following order:

- Disconnect the Panel PC from the power supply.
- Connect all cables at the Panel PC and at the devices to be connected.
- Ensure that all screw connections between connectors and sockets are tight!
- Reconnect all devices to the power supply.

3.6.2 Earthing measures

Earthing connections dissipate interference from external power supply cables, signal cables or cables to peripheral equipment. Establish a low-impedance connection from the earthing point on the Panel PC housing (see chapter *Ground connection (Ground)*) to the central earthing point on the control cabinet wall, in which the computer is being installed.

i Note	**Malfunction possible with missing ground connection**
	A proper ground connection of the device is absolutely necessary for the correct function of the touchscreen.

4 Operating Instructions

4.1 Switching the Panel PC on and off

4.1.1 Switching on

The Panel PC does not have its own mains power switch. As soon as the power supply is switched on the Panel PC is activated.

4.1.2 Shutting down and switching 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 Panel PC off, since data can be lost from the storage medium by switching off while software is running.

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

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

4.1.3 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.

4.2 Operation

The operation of the Panel PC occurs via the Touch Screen.

! **Warning**	**Risk of damaging the Touch Screen** The touch screen may only be actuated by finger tips or with the touch screen pen. The operator may wear gloves but there must be no hard particles such as metal shavings, glass splinters embedded in the glove.

! **Warning**	**Properly installation of the system and the multi-touch device** Capacitive Touch Screens use the functional principle of capacitive alternation of the electrical field. Strong electrical fields can influence the functionality of the multi-touch devices. To ensure the correct function of the Touch Screen take care of a standardized installation of all parts of the system and an EMC-environment conforming to standards.

4.3 Servicing and maintenance

4.3.1 Cleaning

⚠️ **DANGER**	**Disconnect power supply** Switch off the device and all connected devices, and disconnect the device from the power supply.

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

4.3.2 Maintenance

The Panel PC is maintenance-free.

4.3.3 Replacing the battery on the motherboard

A used battery on the motherboard has to be replaced. See also chapter *Access to memory devices, battery and fan*.

⚠️ **WARNING**	**Danger of Explosion!** Replace battery only with the identical type or an alternative type recommended by the manufacturer. Notice correct polarity!

The used battery must be disposed of in accordance with national electronics scrap regulations.

4.4 Emergency procedures

In case of fire, the Panel PC should be extinguished with powder or nitrogen.

4.5 Shutting down

4.5.1 Disposal

ℹ️ **Note**	**Observe national electronics scrap regulations** Observe the national electronics scrap regulations when disposing of the device.

In order to dispose of the device, it must be removed and fully dismantled:

- Housing components (polycarbonate, polyamide (PA6.6)) are suitable for plastic recycling.

- Metal parts can be sent for metal recycling.

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

5 UPS Software Components (optional)

5.1 Installation on the PC

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.

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.

5.2 Help files

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*.

6 Troubleshooting

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

i **Note**	**Anomalies of the Touchscreen** Anomalies of the touchscreen sensor are production-caused and represent no complaint-reason!	

Fault	Cause	Measures
The Panel PC shows no function	No power supply to the Panel PC Cable not connected	Check power supply cable 1. Correctly connect cable 2. Call Beckhoff Service
Panel PC 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 Panel PC	Call the manufacturer of the machine or the software
The Panel PC functions only partially or only part of the time, e.g. no or dark picture	Faulty backlight in the display Defective components in the Panel PC	Call Beckhoff Service Call Beckhoff Service
Malfunction of the touchscreen	Bad or missing ground connection of the device	Establish ground connection
	Bad or missing ground connection of the user	User must stand on the floor with ordinary shoes

7 Assembly dimensions

For the assembly dimensions of the Panels PC please visit our homepage. Here you will find the actual drawings using the link:

http://www.beckhoff.de/german/download/technical_drawings.htm

⚠ **Warning**	**Notice mounting orientation** The assembly of the unit must take place with the orientation diagrammed here.

8 Technical Data

	Risk of explosion!
Danger	Do not use the Panel PC in areas of explosive hazard!

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

	Anomalies of the Touchscreen
Note	Anomalies of the touchscreen sensor are production-caused and represent no complaint-reason!

Product name	**CP22xx**
Dimensions (B x H x T)	See chapter *Assembly dimensions*
Weight Landscape/ Portrait	CP2212: 5.2 kg/ 5.2 kg CP2215: 5.9 kg/ 5.9 kg CP2216: 6.7 kg/ 6.5 kg CP2218: 7.5 kg/ 7.7 kg CP2219: 7.8 kg/ 8.0 kg CP2221: 8.3 kg/ 8.5 kg CP2224: 9.6 kg/ 9.8 kg
Supply voltage	24 V_{DC} (20.4 – 28.8 V_{DC})
Power consumption	approx. 58 W with 12" display approx. 62 W with 15" display approx. 64 W with 15,6" display approx. 67 W with 18,5" display approx. 67 W with 19" display approx. 77 W with 21,5" display approx. 87 W with 24" display
UL-compliance	in progress
Interfaces	2 Ethernet adapter 10/100/1000BASE-T with RJ-45 connection 4 USB 2.0 interfaces 1 serial interface RS232
Protection class	Front side IP65, rear side IP20
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)
Shock resistance (Shock)	EN 60068-2-27: 5 G (~ 50 m/ s^2), duration: 30 ms
EMC compatibility	Resistance to interference conforms to EN 61000-6-2
EMC compatibility	Emission of interference conforms to EN 61000-6-4
Permissible ambient temperature	0°C to +55°C (operation) -25°C to +65°C (transport/ storage)
Permissible relative humidity	to 95%, no condensation
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 Panel PC can improve the resistance to impact during transport.
Certifications	CE

9 Appendix

9.1 Beckhoff Support and Service

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

9.1.1 Beckhoff branches and partner companies

Please contact your Beckhoff branch office or partner company for local support and service on Beckhoff products!
The contact addresses for your country can be found in the list of Beckhoff branches and partner companies: www.beckhoff.com. You will also find further documentation for Beckhoff components there.

9.1.2 Beckhoff company headquarters

Beckhoff Automation GmbH
Eiserstraße 5
33415 Verl
Germany

Phone: + 49 (0) 5246/963-0
Fax: + 49 (0) 5246/963-198
E-mail: info@beckhoff.de
Web: http://www.beckhoff.de/

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:
- world-wide 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
E-mail: service@beckhoff.com

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

9.2 Approvals for USA and Canada

9.3 FCC Approvals for the United States of America

FCC: Federal Communications Commission Radio Frequency Interference Statement
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.

i **Note**	**Technical modifications** Technological changes to the device may cause the loss of the FCC approval.

9.4 FCC Approval for Canada

FCC: Canadian Notice
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.