

PPCCOA-xxxC Panel-PC Serie

Installation instructions



07.04.2026



Table of Contents

1. Foreword	3
2. Safety instructions	3
2.1 General Information	3
2.2 Intended use	3
2.3 Qualified personnel	3
2.4 Residual risks	3
2.5 Liability	4
2.6 CE conformity	4
3. Technische Daten	5
3.1 Eigenschaften	5
3.2 Dimensions	7
3.3 Overview of the interfaces	8
3.4 ON/OFF switch	9
3.5 LEDs	9
3.6 Electrical properties	9
3.7 Serial ports COM1 and COM2	10
3.8 HDMI	11
3.9 USB	12
3.10 Ethernet	13
4. Switch Button Description	14
4.1 Maximum Number of Keys	16
5 Installation	17
5.1 Installation Overview	17
5.2 Removing and Installing the Rear Cover	18
5.3 Cable and Wire Connections	18
5.4 2.5" SATA Drive Installation	19
5.5 Support ARM System Installation	20
5.5.1 Mounting Flange Overview	20
5.5.2 Wachendorff Mounting Flange Installation	22
5.5.3 Installation of Rings to the Tubes	22
5.5.4 Installing Support Arm Tubes	24
5.5.5 Rittal's Support Arm Systems Installation	24
5.5.6 Square Tube Arm Systems Installation	26
5.5.7 Keyboard Holder Installation	27
5.6 Positioning the bracket	28
5.7 BUTTONS installation	29
5.8 Uninstalling the key module	30
5.9 SATA-Installation	32
5.10 mSATA-Installation	32
5.11 Fitting of aluminium cooling fins	33
5.12 CPU installation	34
5.13 Memory installation	35
6. Copyright	37
7. Disclaimer	37
8. Other provisions and standards	37
9. Technical consulting & Service	37



1. Foreword

Dear Customer,

We would like to thank you for choosing to use one of our products and congratulate you on this decision. Panel PCs from Wachendorff Prozesstechnik GmbH & Co. KG can be used on-site for a wide range of applications. To ensure you make the most of the full range of functions these devices offer, please note the following:

Anyone responsible for commissioning or operating this device must have read and understood the operating instructions, and in particular the safety instructions!

2. Safety instructions

2.1 General Information

To ensure safe operation, the appliance must only be operated in accordance with the instructions in the user manual. When using the appliance, the legal and safety regulations applicable to the specific application must also be observed. This also applies mutatis mutandis to the use of accessor

2.2 Intended use



Panel PCs must not be used as the sole means of preventing hazardous conditions on machinery and plant.

Machinery and plant must be designed in such a way that faulty conditions cannot lead to a situation that is hazardous to operating personnel (e.g. by means of independent limit switches, mechanical interlocks, etc.).

2.3 Qualified personnel

Panel PCs must only be used by qualified personnel and strictly in accordance with the technical specifications. Qualified personnel are individuals who are familiar with the installation, assembly, commissioning and operation of this device and who possess the appropriate qualifications for their role.

2.4 Residual risks

A Wachendorff panel PC is state-of-the-art and reliable in operation. The device may pose residual hazards if it is used or operated incorrectly by untrained personnel. In this manual, residual hazards are indicated by the following symbol:



WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



NOTE: Provides the reader with additional information or refers to detailed sources of information.

2.5 Liability

Liability for material defects and defects of title in this documentation, in particular for its accuracy, freedom from errors, freedom from third-party intellectual property and copyright rights, completeness, and/or usability – except in cases of intent or fraudulent intent – is excluded.

2.6 CE conformity

We have a copy of the Declaration of Conformity available. Please feel free to request a copy.



3. Technische Daten

3.1 Eigenschaften

The PPCCOA Control Series is a fanless range of industrial panel PCs designed for mounting on support arms, developed to deliver maximum flexibility and performance in modern manufacturing. A standout feature is the freely configurable front buttons, which allow for precise adaptation to any industrial control task. The series includes display sizes of 15', 15.6', 18.5' and 21.5'. Equipped with Intel Celeron as well as Core i3/i5 processors of the 11th generation, it combines efficiency with robust computing power. The COMLAC modular design enables easy upgrades, while the IP65-rated aluminum chassis guarantees durability in harsh environments. With side-accessible USB ports and flexible swing arm options, the PPCCOA Control Series is the ideal solution for demanding applications.

- 15" / 15.6" / 18.5" / 21.5" capacitive touchscreen for precise multi-touch operation
- Customisable front panel with integrated buttons for industrial control (emergency stop buttons, selection buttons, push buttons)
- 2 or 4 LAN ports (Intel 1000 Mbit/s) for reliable network connections
- 4 x USB 3.0, 2 x RS232/485 for versatile I/O options
- 1 x M.2 and 1 x mSATA for flexible storage and Wi-Fi upgrades
- Arm mount for ergonomic and space-saving installation
- Wide-range voltage input (DC 12 to 24 V $\pm$ 10 %) with protection functions
- Full IP65 protection rating
- Fanless Design for reliability and dust-free operation

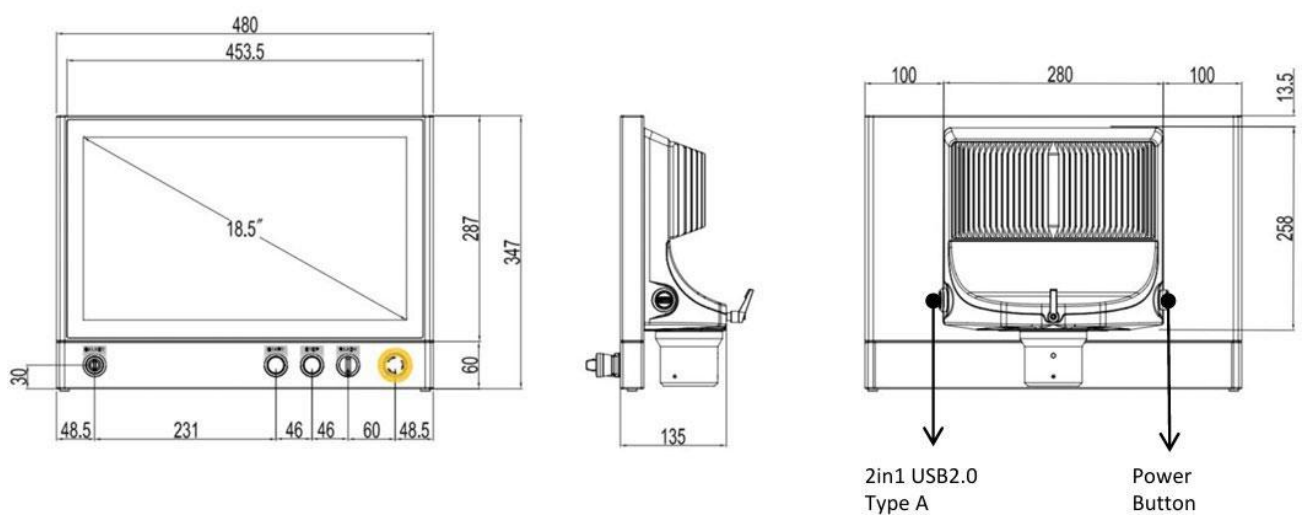
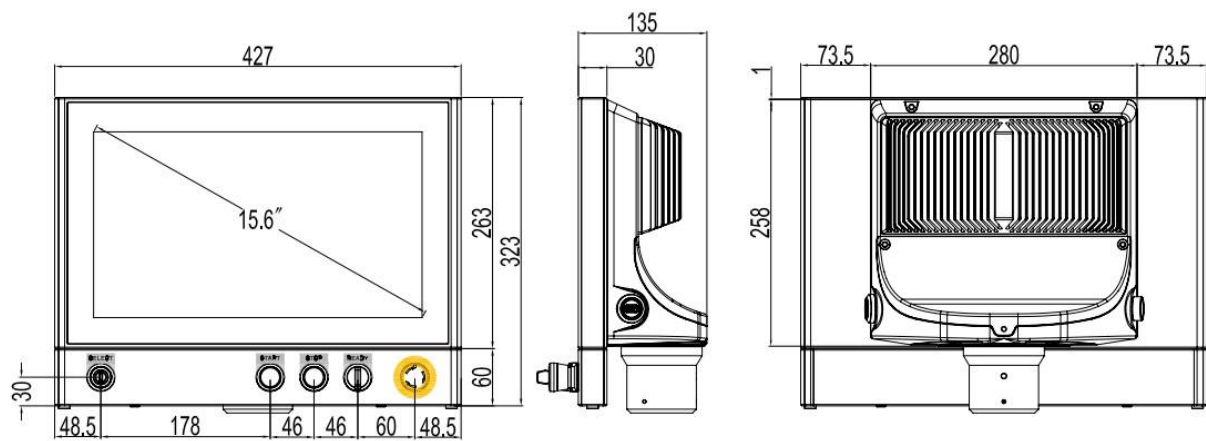
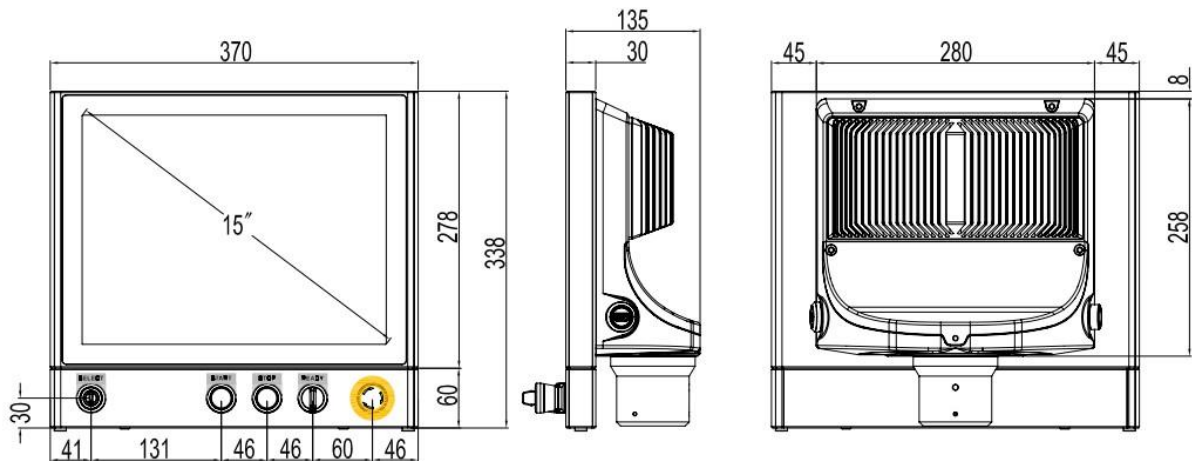




	PPCCOA-xxxC Series
System	
Processor	Intel® Celeron® J6412 4/4K 2.0GHz Intel® Core™ i5-11500T 6/12K 1.5GHz
Chipset	Intel 500-Series
Memory (RAM)	2x260-Pin-DDR4-SODIMM, supports up to 32 GB
BIOS	AMiUEFI128Mbit
Storage	1x2.5" HDD/SSD+1xmSATA
Touchscreen – Projected capacitive	
Interface	USB
Light transmittance (%)	80 %
Power supply	
Input voltage	12 to 24 VDC ±10%, with reverse polarity protection, overvoltage protection and overcurrent protection
Power consumption	at least 35 W
Housing	
Installation	Rotatable mounting arm adapter for mounting arm systems, for top or bottom mounting
Materials	anodised aluminium + die-cast aluminium
Supported operating systems	
Operating systems	Windows 10 Enterprise LTSC 2021, Windows 11 Enterprise LTSC 2024, Linux
Environmental conditions	
Operating temperature (°C)	0 °C bis +50 °C für SSD 0 °C bis +45 °C für HDD
Storage temperature (°C)	-20 °C bis +60 °C
Humidity	5 % bis 95 % @ 40 °C, nicht kondensierend
Vibration	SSD: 1,5 grms, IEC 60068-2-64, zufällig, 5 bis 500 Hz, 1 Stunde/Achse
Shock	Operational shock with a peak acceleration of 10 g (duration: 11 ms), in accordance with IEC 60068-2-27
Protection rating	IP65
EMC	Klasse B

PPCCOA-xxxC-Series:

	PPCCOA-150C	PPCCOA-156C	PPCCOA-185C	PPCCOA-215C
Technical Specifications				
Display	15" TFT LCD	15,6" TFT LCD	18,5" TFT LCD	21,5" TFT LCD
Resolution	1024*768	1366*768	1366 x 768	1920 x 1080
Contrast ratio	1000:1	800:1	1000:1	3000:1
Brightness (cd / m²)	350	400	250	250
Backlight (h) MTBF	30.000	30.000	30.000	30.000
Viewing angles	(L)85/(R)85/(T)80/(B)80	(L)85/(R)85/(T)50/(B)80	(L)89 / (R)89 / (T)89 / (B)89	(L)89/(R)89/(T)89/(B)89
Dimensions (BxHxT) (mm)	370x338x135	427x323x135	480x347x135	553x387,5x135



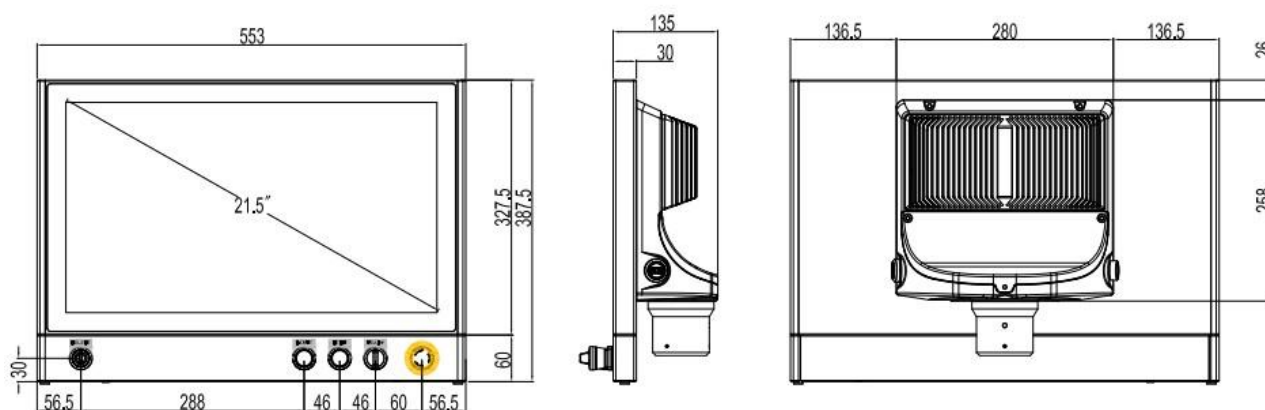
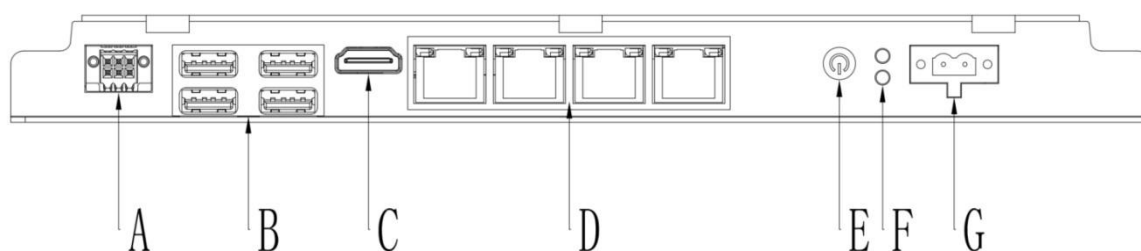


Fig. 3.4: Dimensions of PPCCOA-215C

3.3 Overview of the interfaces



Definition of the I/O panel interface:

Nr	Interface type
A	Serial Port
B	4 × USB 3.0/2.0
C	HDMI
D	4 × GbE LAN
E	Power Button
F	Power/HDD LEDs
G	DC IN

3.4 ON/OFF switch

There is a power button on the side panel which can be used to switch the PANEL PC on or off.

	Action	Description
	Press and release	Switch the system on or off
	Press and hold	Force a shutdown
	LED-Status	ON: System switched on (Power ON) OFF: System switched off (Power OFF)

Note:

Press and release: Turns the device on or shuts down the operating system and then turns the device off.

Press and hold: Cuts off the power supply without shutting down the device properly (this may result in data loss!)

3.5 LEDs

There are two LEDs on the I/O panel which indicate the operating status and the hard disk status.

	LED-NAME	Colour	Status	Description
	PWR LED	Green	Off	No power supply
			On (green)	System switched on
	HDD LED	Orange	Flashing (orange)	Indicates that the hard drive (HDD/SSD) is being accessed

3.6 Electrical properties

The 2-pin connector for connecting the power supply is included in the scope of delivery. Please refer to the table below for the pin configuration.

	PIN	Definition
	1	GND
	2	VCC



Installation instructions PPCCOA-xxxC

The total power consumption is calculated as the sum of the display's rated power and the rated power of the device being used. The figures below represent the minimum requirements, excluding any additional devices (such as USB devices, etc.).

DC power supply	Electrical properties
Rated voltage	12 bis 24V±10% DC
Rated current	Minimum 3 A
Overvoltage protection	Yes
Overcurrent protection	Yes
Reverse polarity protection	Yes

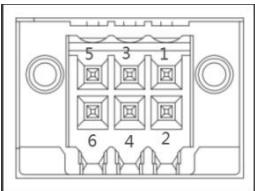


1. When switching on the PC, ensure that the output voltage of the power supply unit meets the PC's requirements.
2. Observe the positive and negative terminals marked on the housing. Do not reverse the connections, as this may result in damage to the hardware or an electric shock.
3. Do not connect the device directly to the mains supply (110/230 VAC).

3.7 Serial ports COM1 and COM2

Use 2.54 mm connectors with crimp terminals.

COM1/COM2:

	Pin	Definition	Pin	Definition
	1	TX1/A1	2	GND
	3	RX1/B1	4	TX2/A2
	5	RX2/B2	6	GND

Electrical properties

RS232	Specification
Typ	2,54 mm terminals
Insulated	Not electrically isolated
Cable length	Max. 15 m

RS485	Specification
Typ	2,54 mm terminals
Insulated	Not electrically isolated
Cable length	Max. 100 m / 115200



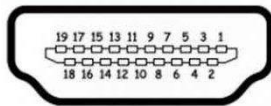
Terminating resistor	N/A
Number of slave stations	Max. 31

Note:

The selection between RS232 and RS485 is made via internal jumpers.

3.8 HDMI

The products feature an HDMI interface for high-definition multimedia video display and use standard HDMI Type A connectors. The pin assignments are listed below.

HDMI-A			
Pin Nr.	Allocation	Pin Nr.	Allocation
1	TMDS DATA 2+	11	TMDS CLOCK SHIELD
2	TMDS DATA 2 SHIELD	12	TMDS CLOCK-
3	TMDS DATA 2-	13	CEC
4	TMDS DATA 1+	14	N.C.
5	TMDS DATA 1 SHIELD	15	DDC CLOCK
6	TMDS DATA 1-	16	DDC DATA
7	TMDS DATA 0+	17	GND
8	TMDS DATA 0 SHIELD	18	+5V PWR
9	TMDS DATA 0-	19	HOT PLUG DETECT
10	TMDS CLOCK+		

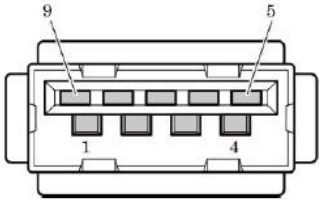
Note:



1. Hot-plugging of output devices to the interface for maintenance purposes is supported by the hardware and the graphics drivers of compatible operating systems. Touchscreen devices may require recalibration.
2. The maximum cable length for DVI transmission is limited to 5 m.
3. If you do not connect an HDMI cable before accessing the BIOS settings, the monitor may not be able to display the relevant content. In this case, start-up information will be displayed during system start-up.
4. When using DVI, ensure that the ambient temperature is between 0 and +45 °C.

3.9 USB

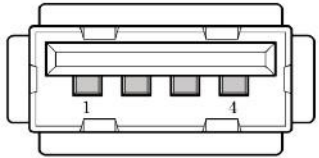
The circuit board has four USB 3.0 Type-A ports. Pin configuration of the USB 3.0 ports:

	Pin Nr.	Signal
	1	USB_VCC
	2	DATA-
	3	DATA+
	4	USB_GND
	5	SSRX-
	6	SSRX+
	7	USB_GND
	8	SSTX-
	9	SSTX+

USB 3.0 Electrical Characteristics:

Type	Specificationen
Type	Type A, female
USB3.0	Max. 1A
USB2.0	Max. 0,5A
Cable Length	Max. 5 m (without Hub)

USB2.0 Pin Definition:

	Pin Nr.	Signal
	1	VCC5
	2	DATA-
	3	DATA+
	4	GND

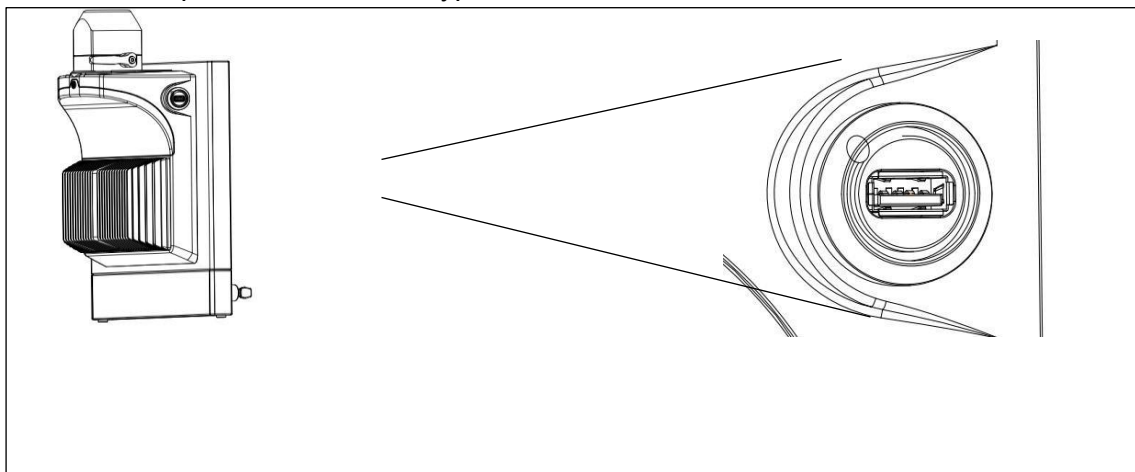
USB-Interface:

Type	Specification
Type	Type A, female
USB2.0	Max 0,5A
Cable Length	Max. 5 m (without Hub)

Hinweis:

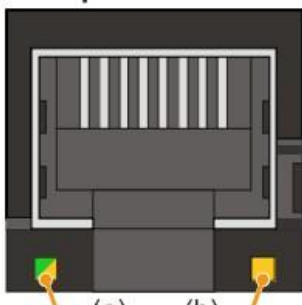
1. The interfaces available on the device or module are numbered for easy identification. This numbering may differ from that used by the operating system
2. Each USB port is protected by a maintenance-free USB current-limiting circuit breaker (max. 0.5 A).

3. The side USB ports are USB 2.0 Type A.



3.10 Ethernet

There are four gigabit Ethernet ports on the carrier board, which are LAN1, LAN2, LAN3, and LAN4.

	Pin Nr.	100BASE-TX	1000BASE-T
	1	TX+	TRD+(0)
	2	TX-	TRD-(0)
	3	RX+	TRD+(1)
	4	N.C.	TRD+(2)
	5	N.C.	TRD-(2)
	6	RX-	TRD-(1)
	7	N.C.	TRD+(3)
	8	N.C.	TRD-(3)

Electrical Characteristics

Connector Type	RJ45, female	
Wiring	S/STP (Cat 5e)	
Controller	Intel	
Transfer Rate	1000M/100M/10M bps	
Cable Length	Max. 100 m/Segment	
LED "Speed" LED	ON	OFF
Green	100 Mbit/s	10 Mbit/s
Orange	1000 Mbit/s	
LED "Link" LED	ON	OFF
Orange	Link (a connection to an Ethernet network exists)	Activity (blinks) (data is being transferred)

4. Switch Button Description



Selector switch

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+
Manufacturer number	1.30.272.102/2200
Quantity	1
Illumination	White
Contact function	latching
Angle of rotation	1 x 90°, L Form
Lifespan	300.000
B10-value	390.000



Pushbutton "grün"

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+
Manufacturer number	1.30.270.021/2500
Quantity	1
Illumination	Grün
Contact function	tastend (Momentfunktion)
Lebensdauer/ Zyklen	1.000.000
Lifespan	1.300.000



Pushbutton "red"

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+
Manufacturer number	1.30.270.021/2300
Quantity	1
Illumination	red
Contact function	Momentary
Lifespan	1.000.000
B10-value	1.300.000



Key switch

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+
Manufacturer number	1.30.275.222/0000
Quantity	1
Contact function	latching
Number of possible closings	500
Angle of rotation	1 x 90°, L Form
Key removal position	0+1
Lifespan	50,000 latching / 30,000 key removal switching cycles
B10-value	65,000 latching / 40,000 key removal switching cycles



Installation instructions PPCCOA-xxxC

E-stop

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+ Not-Halt-Taster "Plus 1"
Manufacturer number	1.30.273.502/0300
Quantity	1
Contact function	latching
Resetting	By rotating to the right
Service life	50.000
B10-value	65.000



Switching element

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+ - universal, 2 S
Manufacturer number	1.20.126.003/9000
Quantity	1
Contact system	Self-cleaning bridge contact
Contacts	1NC+1NO
Normally closed contact positive opening operation in accordance with IEC 947-5-1	Yes
Lifespan	1.000.000 at 10 mA / 24 VDC
B10-value	1.300.000
Min. AC/DC- operating voltage	5 V
Max. AC/DC- operating voltage	35 V
Min. AC/DC- operating voltage	1 mA
Max. AC/DC- operating voltage	100 mA
Max. switching capacity	250 mW



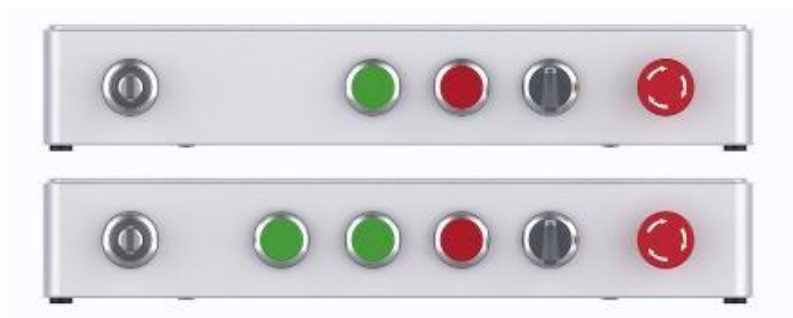
Switching element

Manufacturer	RAFI Example image
Type	RAFIX 22 FS+ – PCB-Gold, Not-Aus
Manufacturer number	1.20.126.404/0000
Quantity	1
Contact system	Self-cleaning bridge contact
Contacts	2 normally closed contacts
Normally closed contact positive opening operation in accordance with IEC 947-5-1	Yes
Lifespan	1.000.000 (10 mA / 24 VDC)
B10-value	1.300.000 (10 mA / 24 VDC)
Min. AC/DC- operating voltage	5 V
Max. AC/DC- operating voltage	35 V
Min. AC/DC- operating voltage	1 mA
Max. AC/DC- operating voltage	100 mA
Max. switching capacity	250 mW

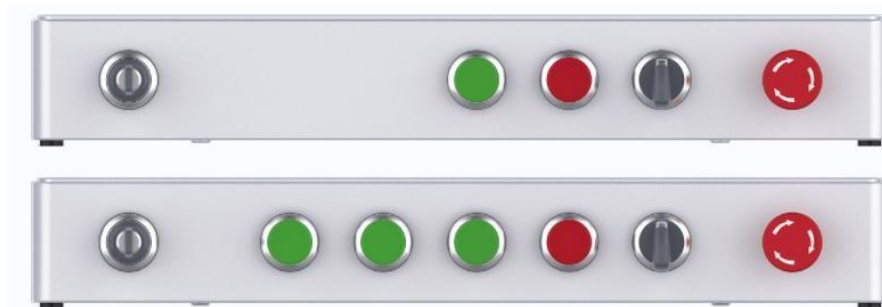


4.1 Maximum Number of Keys

- 15": Maximum of 6 buttons



- 15,6": Maximum of 7 buttons



- 18,5": Maximum of 7 buttons
- 21,5": Maximum of 8 buttons

Note:

The reserved height under the panel should not exceed 30 mm

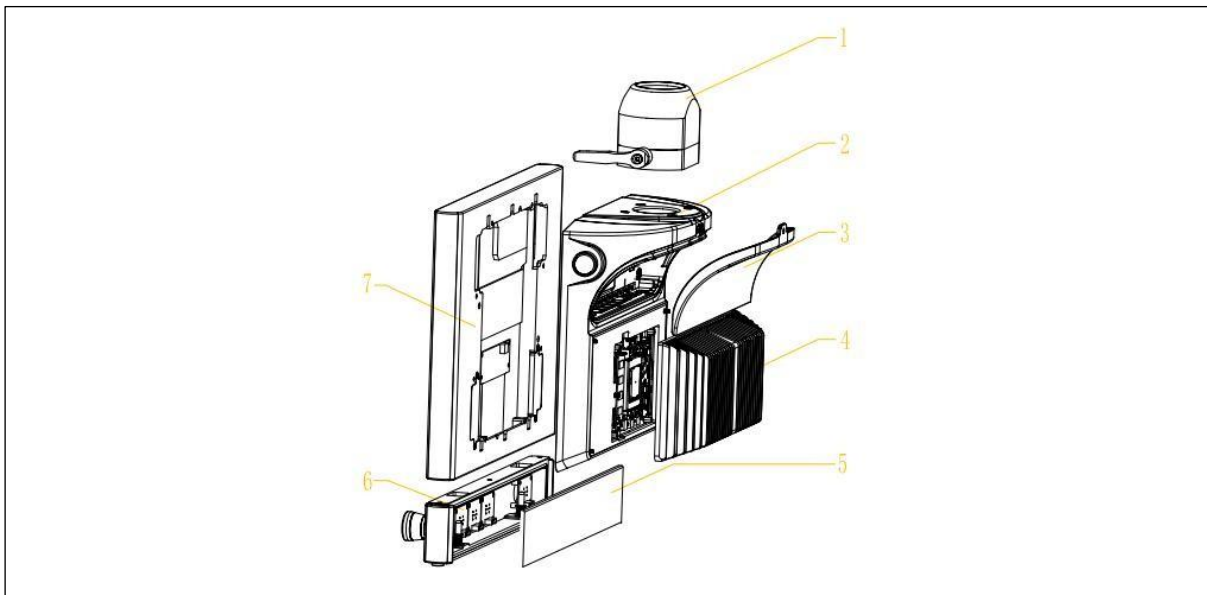


5 Installation

This chapter contains detailed instructions on how to install the Control PPCCOA series panel PCs.

5.1 Installation Overview

The PPCCOA series features a modular design that allows for flexible mounting and positioning to ensure optimum access for the operator. The key components of the installation include a rear mounting unit, a button panel, a cable access and I/O panel, mounting flanges and extension tubes.

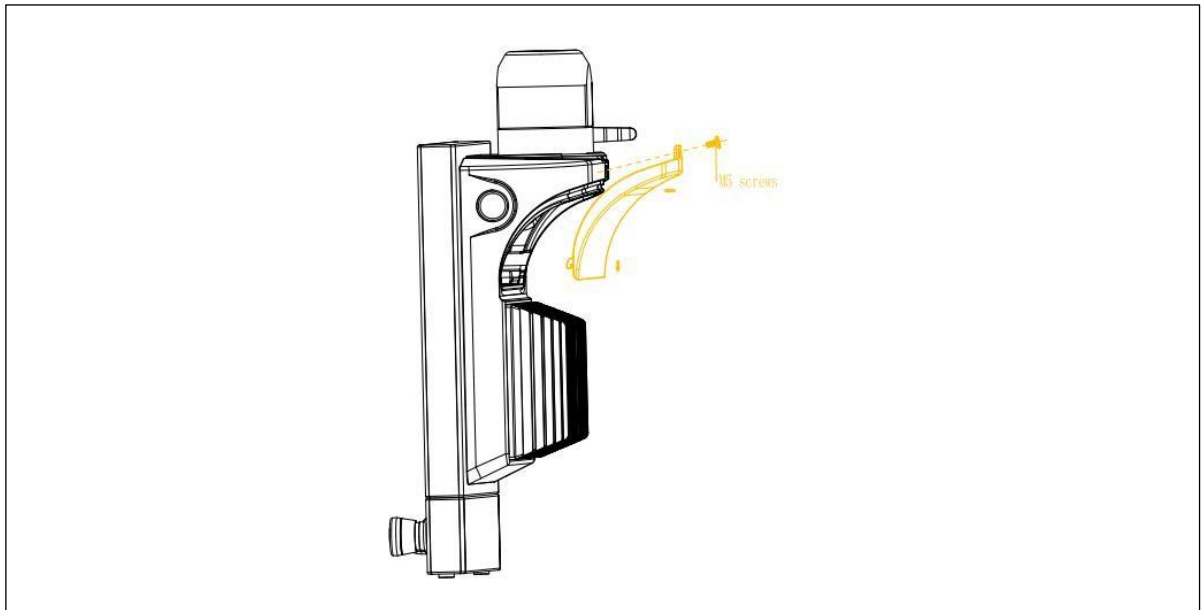


1. **Mounting Flange:** Facilitates connection between the arm and the HMI unit.
2. **Rear Mounting Unit:** Serves as the main housing for internal components and provides secure mounting points.
3. **Cable access cover:** Used to protect and organise the cables connected to the mounting adapter and the I/O ports.
4. **Heatsink:** Provides efficient cooling for CPU and other components.
5. **Button Access Cover:** Shields the button compartment and provides easy access for cabling and replacement.
6. **Button Compartment:** Integrated with pushbuttons, emergency stops, and selector switches.
7. **HMI Display Panel:** Available in multiple sizes, featuring a touchscreen interface with mounting points for top or bottom arm mount systems.

5.2 Removing and Installing the Rear Cover

The steps for removing and installing the rear cover are as follows:

1. Remove the cruciform slot screw shown in the image below. Then, remove the cover plate. Avoid irreversible damage to the gasket!
2. Retain the removed cruciform slot screws for reinstalling the cover plate.
3. The housing must be properly installed to ensure IP65 protection.
4. After connecting the cable, reinstall it in the reverse disassembly sequence.



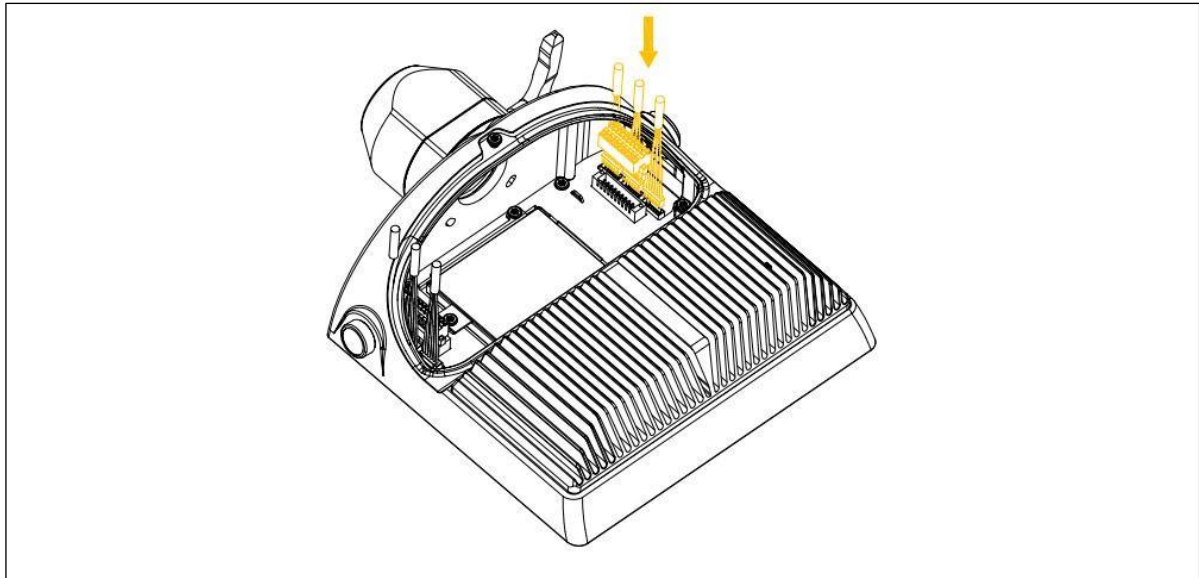
Note:

1. Screw Type: Cruciform slot panhead screw, M5 × 10 (L = 6 mm–10 mm)
2. Max Torque: 3 N·m
3. Do not operate while the power is on.
4. Disconnect the power supply before disassembling.
5. Be cautious of electrostatic discharge.

5.3 Cable and Wire Connections

For standard cable connections, refer to 3.3 Interfaces Overview for information about all connectors.

Connect the front buttons to the terminal Block using the cables supplied. The connections vary depending on the button configuration. If the cables for the buttons are already connected to the circuit board, please refer to the connection diagram on the cover for the pin assignments to the terminal blocks.



Wire Requirements:

The wire diameter must be **0.2–1.0 mm²**, and the strip length must be **8–9 mm**.

Terminal Block Specifications :

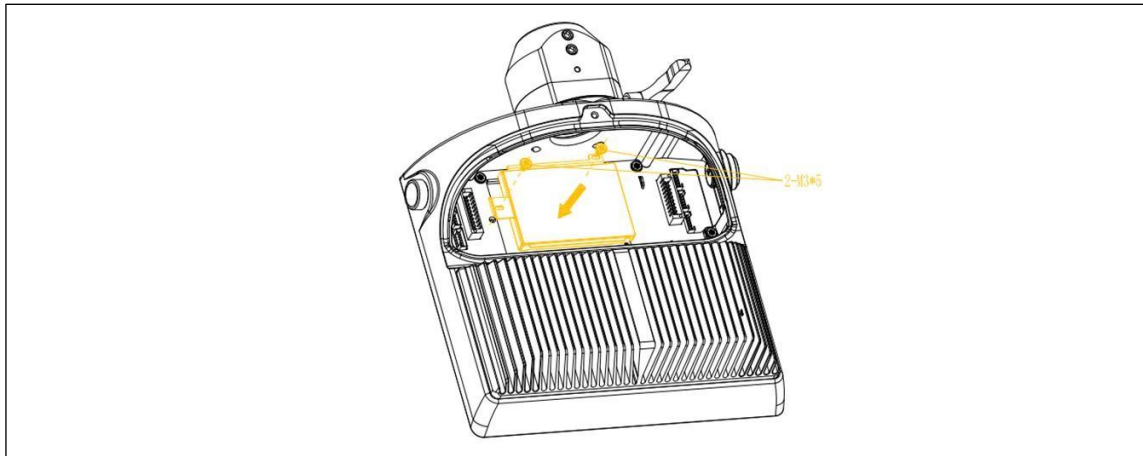
Electrical Characteristics	
Rated Voltage	300V
Rated Current	8A
Surge Voltage	2KV
Pin-Pitch	3.5mm
Materials and Plating	
Plating	PA66, UL94V-0
Material	Stainless Steel

Note:



1. Inductive loads cannot be connected.
2. The access voltage must be less than 50V, and the current must be less than 50 mA.
3. Do not operate while the power is on.
4. Disconnect the power supply before disassembling
5. Pay attention to electrostatic discharge

5.4 2.5" SATA Drive Installation



Step 1: Open the rear cover and refer to 5.2 Removing and Installing the Rear Cover for detailed instructions.

Step 2: Remove the M3×5 screws securing the drive bay.

Step 3: Attach the 2.5" SATA drive to the bracket, insert it into the guide, push it into the holding position, and secure it with screws.

Step 4: Connect the SATA data and power cables to the drive securely.

Step 5: Follow the reverse disassembly sequence to reinstall the rear cover and tighten the screws to ensure proper sealing of the entire machine.

Note:



1. Ensure that the SATA drive is secured in the correct direction on the support.
2. The SATA drive must be fully inserted into the fixed position.
3. Pay attention to electrostatic discharge during installation.
4. Do not operate while the power is on.
5. Disconnect the power supply before disassembling.
6. Be cautious of electrostatic discharge.

5.5 Support ARM System Installation

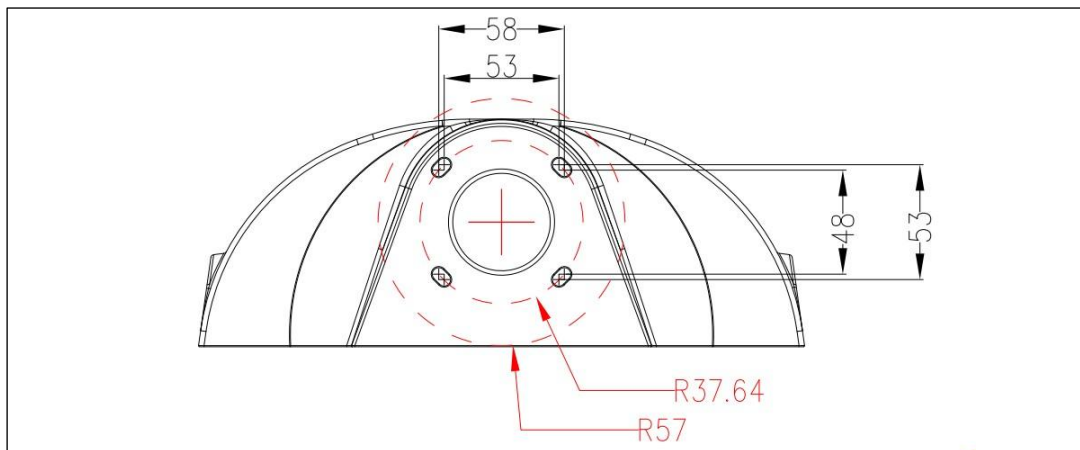
This section provides instructions for installing support arm connectors and tubes.

5.5.1 Mounting Flange Overview

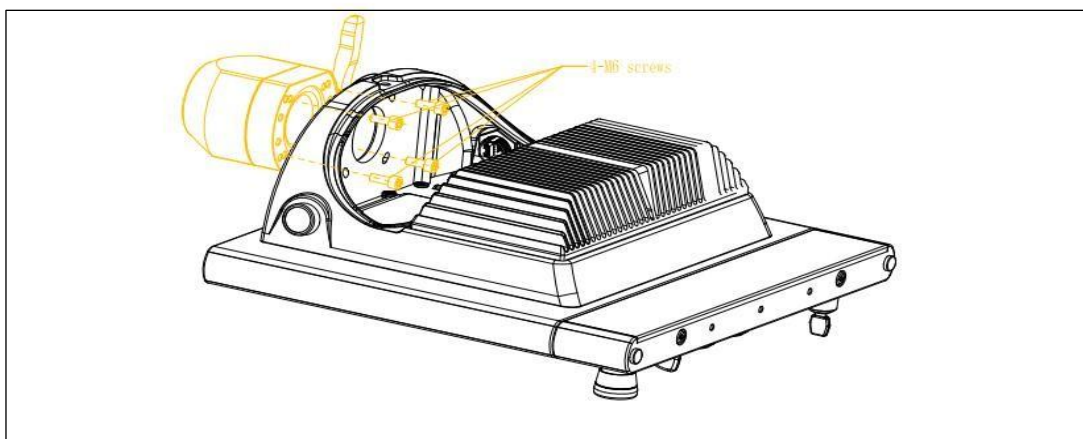
The support arm system is designed to accommodate various types of mounting flanges, including round tube flanges and square tube flanges, providing flexibility and ease of assembly and disassembly.

Installation instructions PPCCOA-xxxC

- Mounting Hole Patterns: Supports screw hole center distances of 53×53 mm and 48×58 mm.
- Flange Screw Radius: Compatible with a radius (R) of 37.64 mm from the center point for secure installation.
- Mounting Hole Size: Uses M6 screws for attachment.



- Open the Rear Cover: Refer to Section 3.4 for detailed instructions.
- Remove the Mounting Flange: Unscrew the four M6 screws to detach the flange.
- Reinstallation: Follow the disassembly steps in reverse order for reinstallation.



1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling.
3. Be cautious of electrostatic discharge.

5.5.2 Wachendorff Mounting Flange Installation

The installation here covers the circular mounting flange provided by Wachendorff. The flange is designed to securely attach support arm tubes with an outer diameter of less than 48.5 mm.

Key Components:

- Upper Hoop: Secures the tube by clamping from the top.
- Lower Hoop: Provides additional stability and support.
- Bearing Seat: Ensures smooth rotation and alignment of the tube.
- M6 Threaded Holes: Used for securing the assembly with screws.
- M5 Threaded Hole: Facilitates precise alignment and locking.

1. Prepare the Tube:

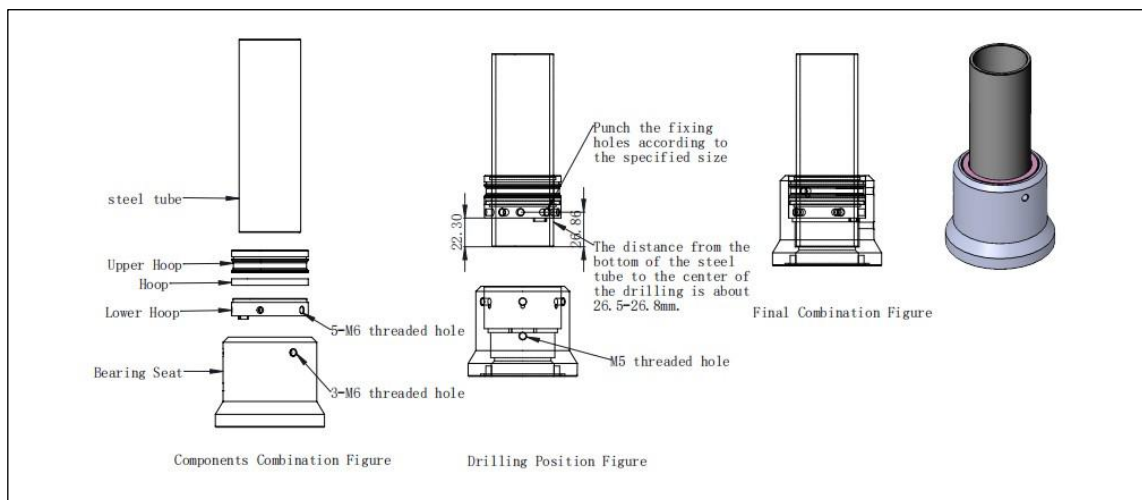
- Ensure the tube has an outer diameter less than 48.5 mm.
- Drill the fixing holes according to the specified dimensions.

2. Assemble the Flange:

- Align the upper and lower hoops on the tube.
- Attach the bearing seat and secure it using M6 screws.

3. Attach to Rear Box:

- Position the assembled flange on the rear box.
- Use the M5 threaded hole for precise alignment and fix with screws.



The outer diameter of the pipe used must be less than **48.5mm**



1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

5.5.3 Installation of Rings to the Tubes

The outer diameter of the support arm tube must be between 47.8 mm and 48.3 mm. The End of the swinging arm shaft connected to the mounting flange must be tilted at a 45° angle and deburred.

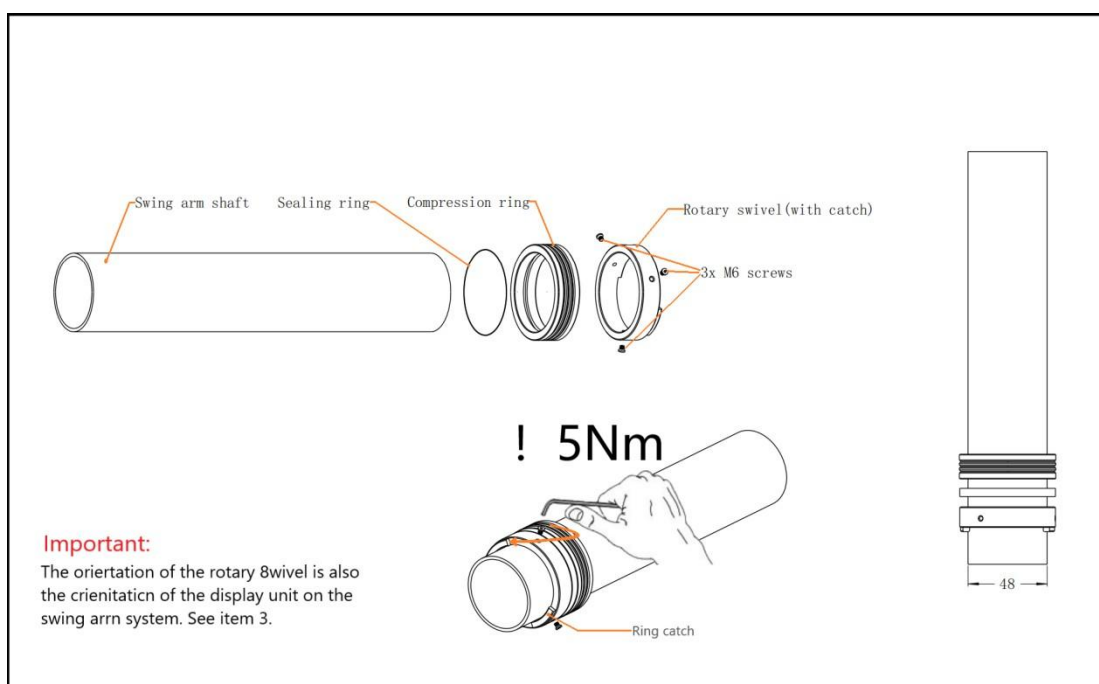
To install the panel onto the support arm system:

Installation instructions PPCCOA-xxxC

1. Install the sealing ring, compression ring, and rotary swivel (with catch) onto the support arm tube. Ensure that the Ring window catch of the rotary swivel points forward towards the display unit.
2. Align the upper ring flush with the mounting flange.
3. Secure the assembly to the support arm tube using five M6 headless screws (hex recess, size 3). Tighten to a torque of 5 Nm.

Important:

Ensure that the orientation of the rotary swivel matches the display unit's orientation on the support arm system.



Note:

1. Insert the sealing ring into the slot of the compression ring.
2. Slide the rotary swivel and compression ring onto the support arm tube and secure them with five M6 headless screws (size 3, hexagonal holes) tightened to 5 Nm. Ensure that the rotary table (with latch) is inserted correctly into the flange.

The distance between the bottom edge of the support arm tube and the bottom edge of the rotary table must be 22.3 mm.



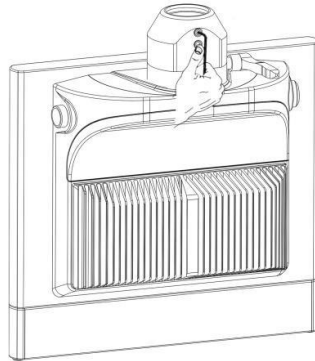
1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling
3. Pay attention to electrostatic discharge

5.5.4 Installing Support Arm Tubes

Installation on a support arm system can be performed from the top or bottom, depending on how the mounting unit is attached to the display unit and the position of the flange output.

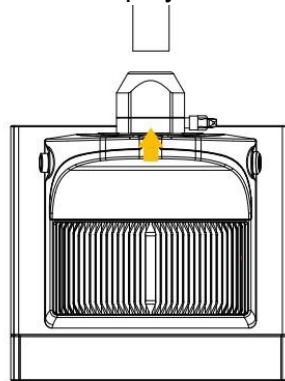
To install the support arm tube:

- Position the Mounting Flange against the support arm tube and secure it using a tightening ring.
- Align the components and tighten the screws in place.
- Fasten the assembly with three M6 screws.



To adjust the lever:

- When the handle is tightened, the monitor is locked and cannot rotate.
- When the handle is released, the display can be freely rotated.



1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

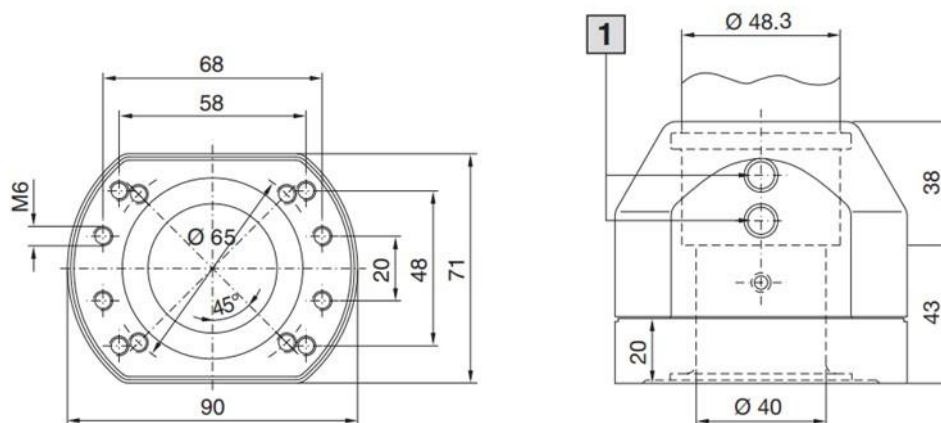
5.5.5 Rittal's Support Arm Systems Installation

The PPCCOA series supports integration into Rittal's support arm systems using the 'Kuplung CP 40' mounting flange. This flange acts as an adapter and enables secure fastening between the automation panel and the support arm. Correct installation ensures stability and efficient operation.

Installation instructions PPCCOA-xxxC

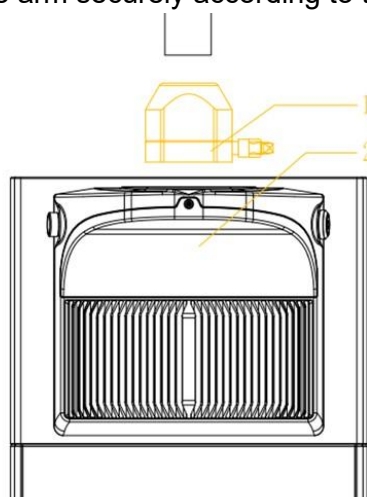
Flange Specifications:

- Mounting Hole Pattern: Ø65 mm circle with M6 threaded holes.
- Center Hole Diameter: Ø40 mm.
- Overall Dimensions: 90 mm width, 71 mm height.



Installation Procedure:

1. Prepare the Rear Mounting Unit:
 - Remove the rear cover as instructed in section 5.2.
 - Align the CP 40 mounting flange with the pre-drilled mounting holes on the rear unit.
2. Secure the Flange:
 - Attach the flange using four M6 screws.
 - Tighten the screws uniformly to ensure even pressure.
3. Connect the Support Arm:
 - Insert the support arm into the mounted flange.
 - Fasten the arm securely according to the manufacturer's specifications.





Note:

- Ensure that the flange is aligned correctly to avoid strain on the support arm.
- Check all connections for stability before powering on the unit.

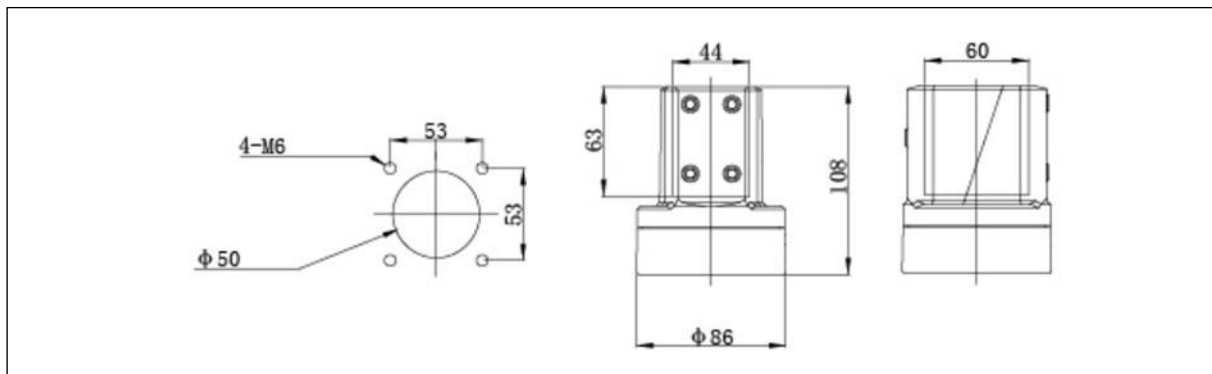


1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling
3. Pay attention to electrostatic discharge.

5.5.6 Square Tube Arm Systems Installation

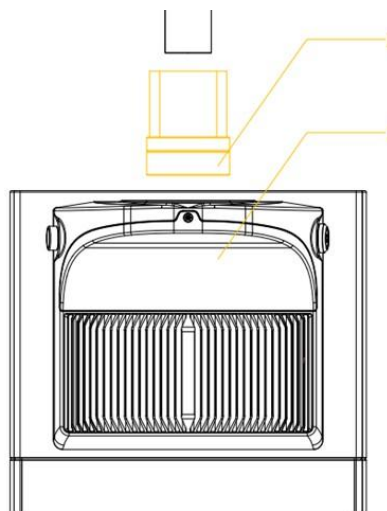
The PPCCOA series enables the fitting of square tube adapter flanges to connect 44 mm x 60 mm square tubes to the rear bracket using the square tube adapter flange (4460).

Outer diameter requirements: The outer diameter of the square tube must be 44 mm x 60 mm. The dimensions of the adapter are listed below.



Mounting Procedure:

1. Attach the Square Tube Adapter Flange (4460) to the rear mounting unit using M6 screws as indicated in the diagram.
2. Align the square tube with the adapter flange and secure it in place.
3. Ensure that the adapter is tightened properly to prevent movement.



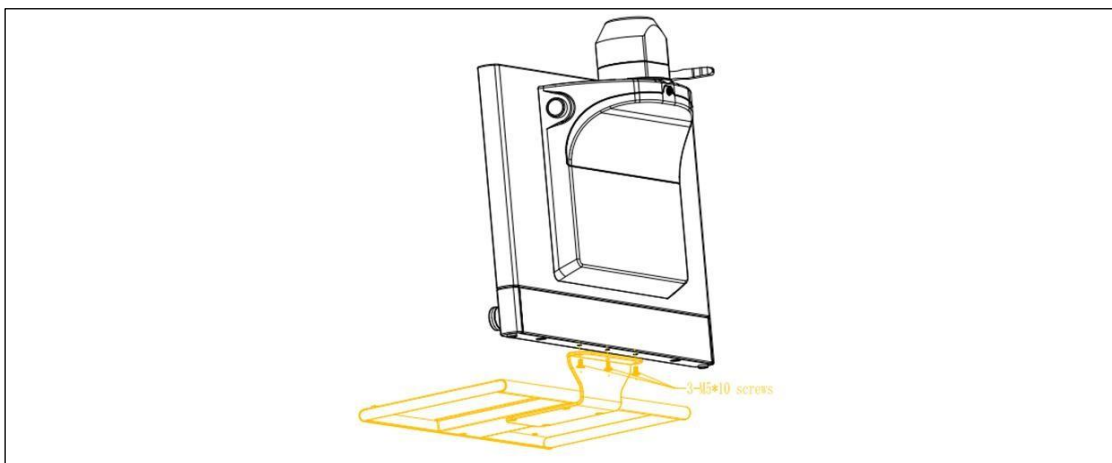
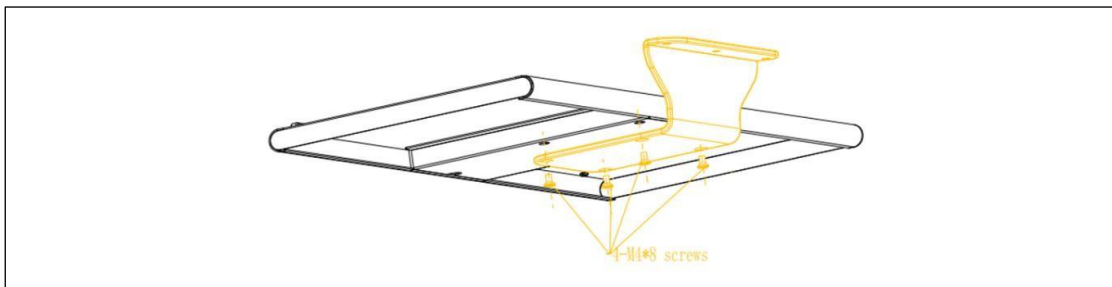


1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling
3. Pay attention to electrostatic discharge.

5.5.7 Keyboard Holder Installation

Installation Steps

1. Install the Keyboard Rack Assembly:
 - Position the keyboard rack and secure the tray and bracket using four M4 x 8 screws.
 - Tighten the screws to a maximum torque of 3 N·m.
2. Attach the Keyboard Rack to the Panel PC:
 - Align the keyboard rack with the mounting points on the panel.
 - Secure it using three M5 x 10 screws, ensuring all screws are tightened properly.



- Screw Type: Cruciform slot panhead screws (M4 x 8 and M5 x 10).
- Maximum Torque: 3 N·m for M4 screws.
- The keyboard rack is compatible with the PPCCOA Series.
- Different keyboard rack options are available based on requirements.
- Customized products may not support mounting keyboard racks.



1. Do not operate while the power is on.
2. Disconnect the power supply before disassembling
3. Pay attention to electrostatic discharge.

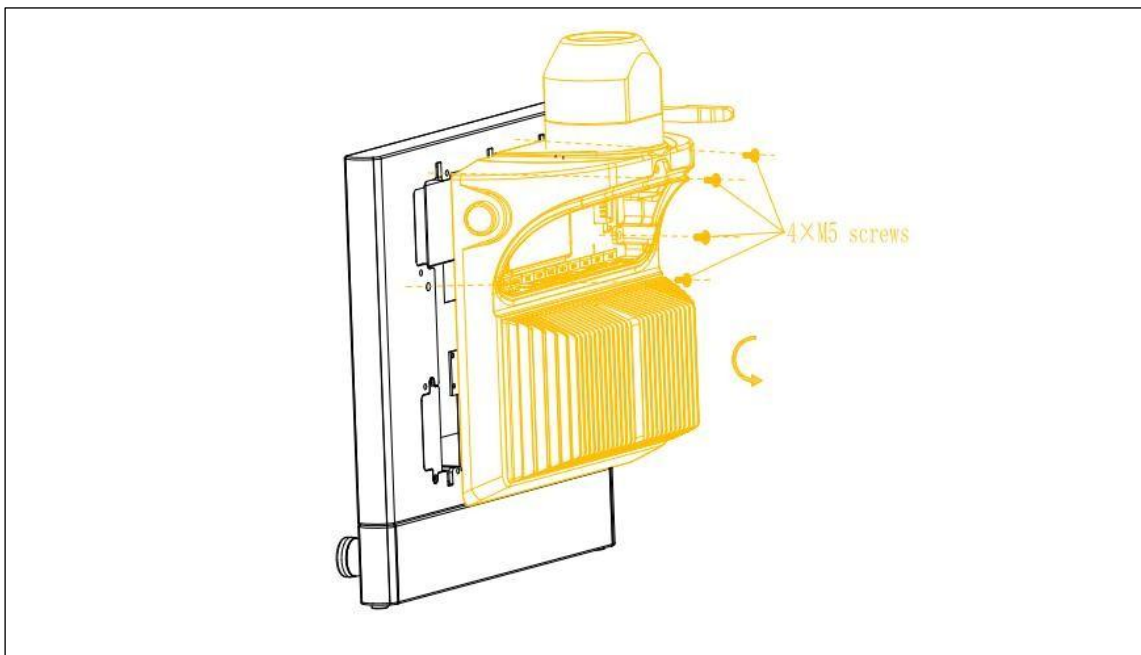
5.6 Positioning the bracket

The steps for install the rear models as follows :

Step 1 : Remove rear cover , reference“5.2 Removing and Installing the rear cover”

Step 2 : Removed cruciform slot screws should be reserved for installing the rear modules

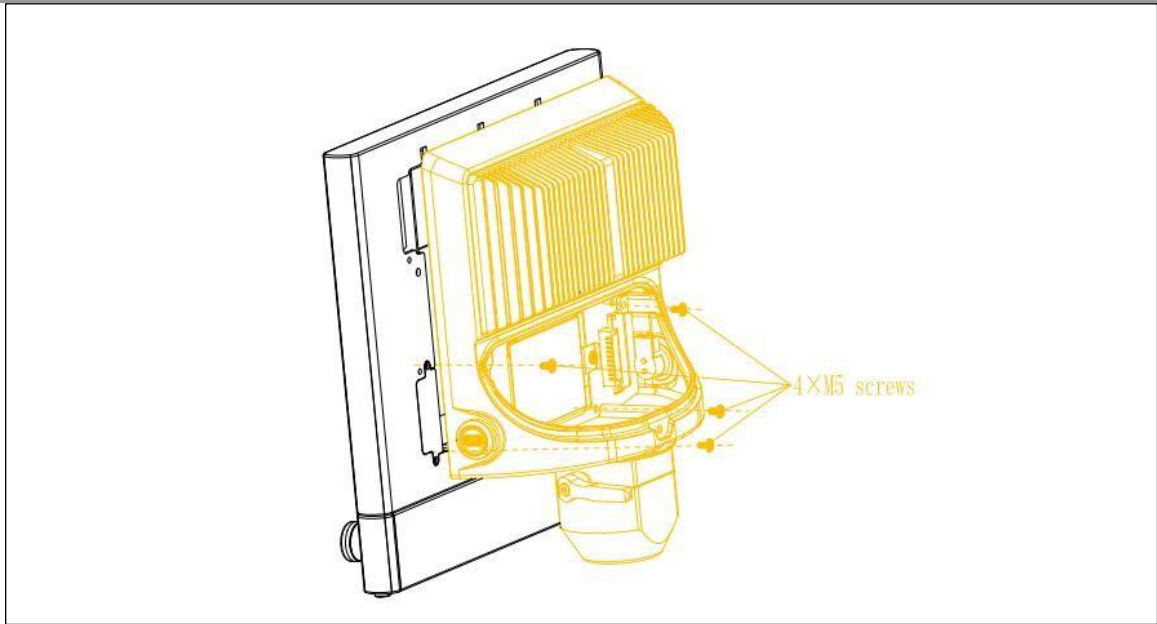
Step 3 : Lift the rear modules at 15° from the connector end and remove it, according to the need, remove the internal cables (LVDS/USB TOUCH/backlight/button cables and remove the glue from the interface



Note :

1. Repair equipment, need to remove the internal connection line
2. If it is the direction of the rotating connector, there is no need to remove the internal connection line.

Step 4 : Rotate direction after installation



Step 5 : Install sequence, install it in the reverse disassembly sequence.

Note :

1. Rotate the rear modules, change the terminal of the button to the opposite fixed position and modify the connection definition according to the actual situation.
2. The connection line is too long. Hide the shadow inside, The connection line is too long, and the extra part should be hidden inside



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

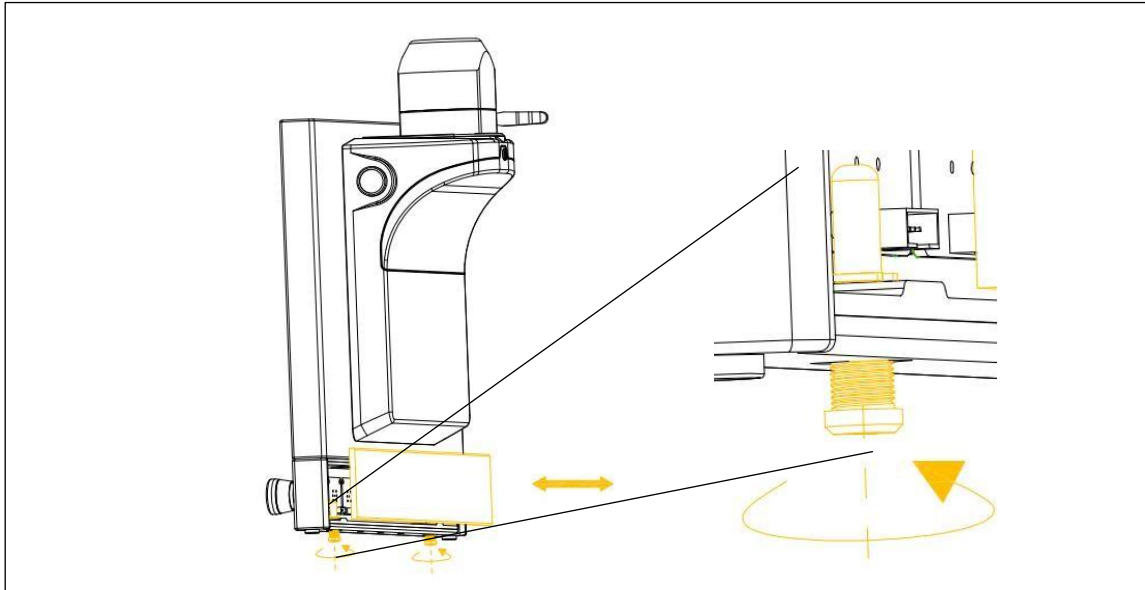
5.7 BUTTONS installation

The steps for install the buttons as follows

Step 1: Remove the crosshead screws holding the back shell (M8)

Step 2: Replace or install the buttons

Step 3: Install sequence, install it in the reverse disassembly sequence. tighten the screws to ensure good sealing of the whole machine. Torque is recommended 2Nm



Note:

1. M8 screws with anti-trip rings, do not force disassembly
2. Before installing the back shell, it is necessary to comb the wire



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

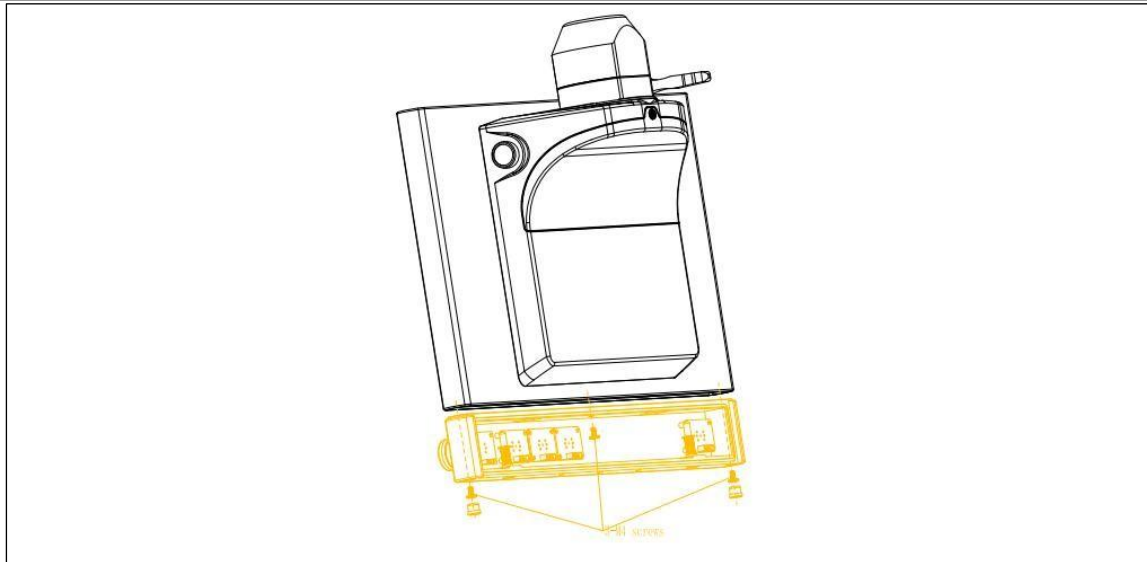
5.8 Uninstalling the key module

The steps for uninstalling the keypad module are as follows:

Step 1: Remove the Phillips-head screws (M8) securing the rear panel (see '5.7 Installing the keypad').

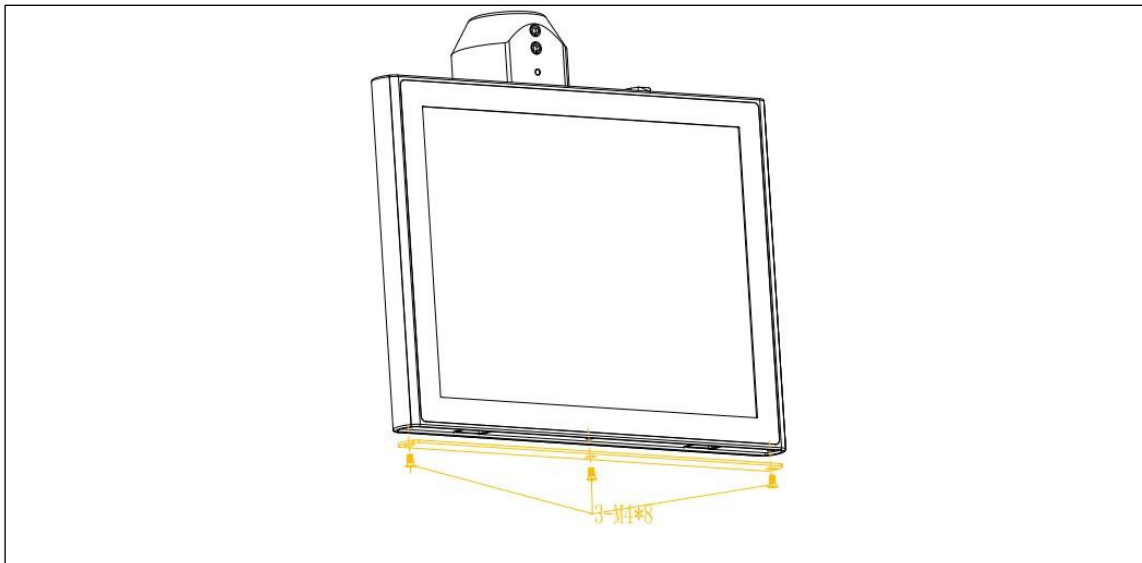
Step 2: Disconnect the connectors from the keypad module, taking care with the cables.

Step 3: Remove the dust cover and loosen the three M4 Phillips-head screws.



Step 4: Fitting the lower frame components

Step 5: Fitting procedure: Fit the parts in the reverse order to that used for dismantling. Tighten the screws to ensure a good seal. The recommended torque is 1.5 Nm.



Note:

Before fitting the frame cover, check the cable routing. Do not pinch any cables.



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

5.9 SATA-Installation

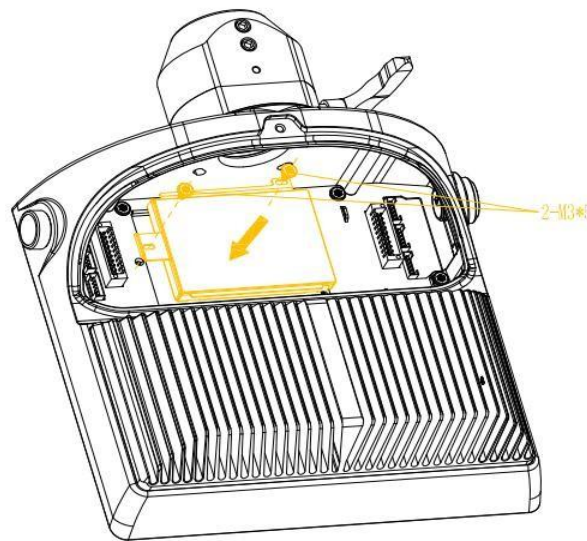
The steps for installing the SATA hard drive are as follows:

Step 1: Open the rear cover (see '5.2 Removing and fitting the rear cover').

Step 2: Remove the M3*5 screws.

Step 3: Secure the hard drive to the bracket and insert it into the guide. Slide it into place and tighten the screws.

Step 4: Reassembly: Reassemble the unit in the reverse order to that used for disassembly. Tighten the screws to ensure the entire unit is properly sealed.



Hinweis:

1. Pay attention to the direction in which the hard disk is secured to the support
2. The hard disk must be pushed to a fixed position



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

5.10 mSATA-Installation

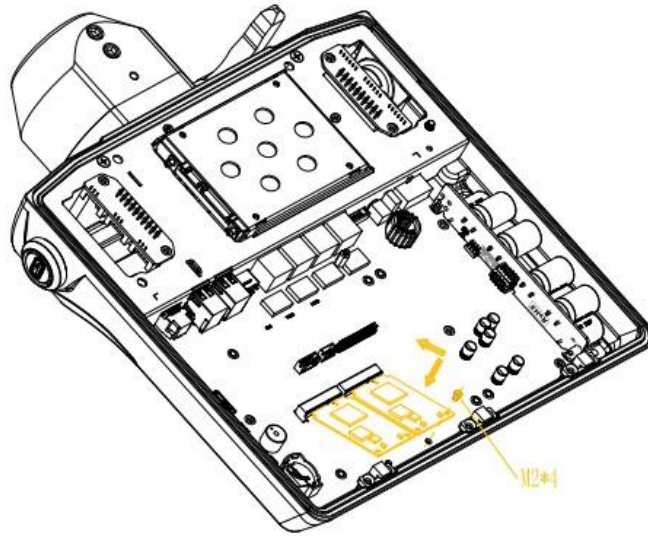
The steps for installing the mSATA drive are as follows:

Step 1: Remove the rear module (see 5.6 'Installing the rear modules').

Step 2: Insert the mSATA drive into the designated slot and secure it with M2*4 screws.



Step 3: Reassembly is carried out in the reverse order to removal. Tighten the screws securely to ensure a good seal for the entire unit.



Note:

1. mSATA slot; the relevant slot is labelled 'mSATA' to prevent incorrect use
2. mPCIe slot; the relevant slot is labelled 'mPCIe'; in addition to the SIM card slot



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

5.11 Fitting of aluminium cooling fins

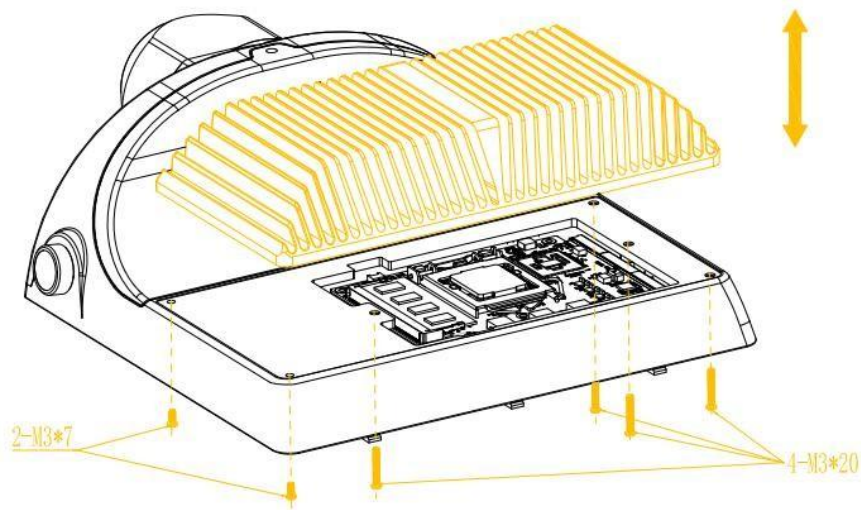
The steps for fitting the aluminium finned heat sink are as follows:

Step 1: Remove the rear cover; see 5.6 'Positioning the rear bracket

Step 2: Remove the internal wiring

Step 3: Remove the M3 screws on the underside

Step 4: Assembly: Reassemble the unit in the reverse order to that used for disassembly. Tighten the screws to ensure a good seal for the entire unit.

**Note:**

1. The screws to be removed are marked, and the lengths of the various fixing points differ from one another.
2. Assemble the part on a flat surface to prevent it from falling and the slat from becoming warped.



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

5.12 CPU installation

The steps for installing the CPU are as follows:

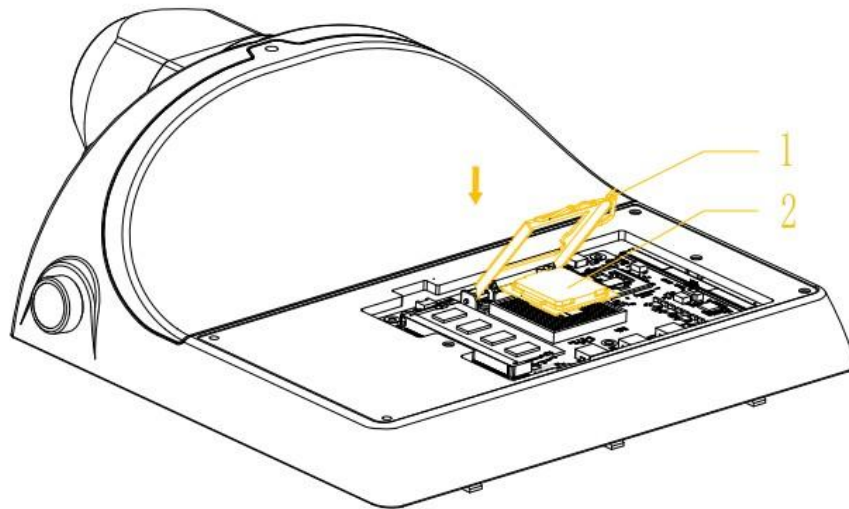
Step 1: Remove the rear module (see '5.6 Positioning the bracket').

Step 2: Release the latch on the CPU socket.

Step 3: Insert the CPU into the socket.

Step 4: Apply thermal paste.

Step 5: Reassembly is carried out in the reverse order to removal. Tighten the screws to ensure a good seal for the entire unit.



Note:

1. Be mindful of the distance from the CPU socket and carefully insert the CPU into the socket.
2. The thermal paste should be applied evenly.



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.

5.13 Memory installation

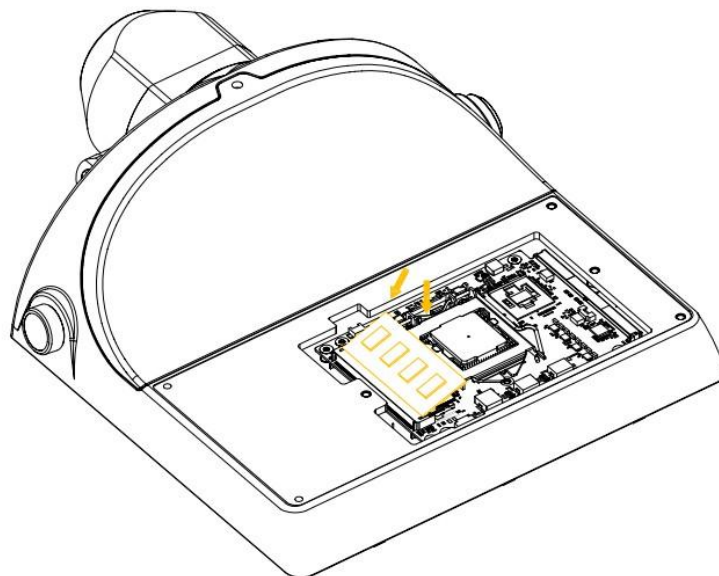
The steps for installing the memory modules are as follows:

Step 1: Remove the rear module (see '5.6 Positioning the rear bracket').

Step 2: Insert the memory module into the slot at a 45° angle.

Step 3: The brackets on both sides must click into place to secure the memory module.

Step 4: Reassembly: Reassemble the unit in the reverse order to that used for disassembly. Tighten the screws to ensure the entire unit is properly sealed.



Note:

Please be aware of the upper limit on storage capacity; any excess storage capacity will not be recognised by the system.



1. Do not operate with power on.
2. Disconnect the power supply before disassembling.
3. Pay attention to electrostatic discharge.



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This device has been tested and found to comply with Class A of the FCC regulations. Operation is subject to the following two conditions:

- (1) This device must not cause harmful interference.
- (2) This device must accept any interference received, including interference caused by unintended operation.

WEEE Informationen



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— This symbol on the product or on the packaging means that this product must not be treated as household waste. Instead, this product should be taken to the appropriate disposal point for the recycling of electrical and electronic equipment. If the product is disposed of correctly, you will help to prevent negative environmental impacts and damage to health that could be caused by improper disposal. Recycling material will preserve our natural resources. For more information on how to recycle this product, please contact your local city office, your household waste collection service or the retailer where you purchased this product

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- For technical Support after a purchase (commissioning, project planning, parameterization, configuration, programming, etc) please call **+49 6722 9965-966** or send an e-mail to: support@wachendorff.de
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**Please note:**

The return shipment number (RSN) is generated specifically for your return shipment. It regulates the conditions and ensures direct allocation and faster processing of your return. It is therefore extremely important that the RSN is enclosed with your return



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