

MPC-3101/MPC-3121 Series Quick Installation Guide

Version 1.0, May 2026

Technical Support Contact Information
www.moxa.com/support



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P/N: 1802030001020



Overview

The MPC-3101 and MPC-3121 Series Panel PCs with Intel Atom® x6425E quad-core processors deliver a reliable and durable platform of wide versatility for use in industrial environments. All interfaces come with IP66-rated M12 connectors to provide anti-vibration and waterproof connections. With a software selectable RS-232/422/485 serial port and two Gigabit Ethernet ports, the panel PCs support a wide variety of serial interfaces as well as high-speed IT communications.

Package Checklist

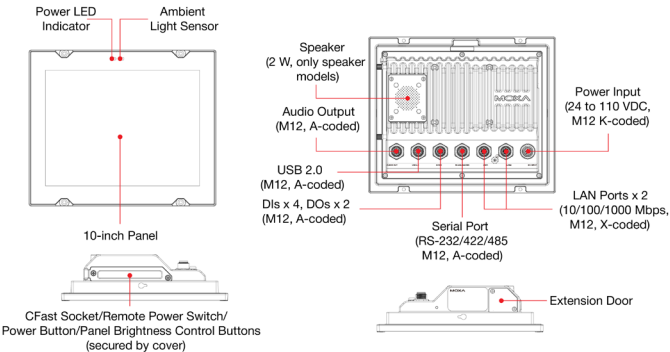
Before installing the MPC-3101/MPC-3121, verify that the package contains the following items:

- 1 MPC-3101/MPC-3121 Series panel PC
- 1 2-pin terminal block for DC power input
- Panel-mounting kit
- 1 M12 Type A USB cable
- Quick installation guide (printed)
- Warranty card

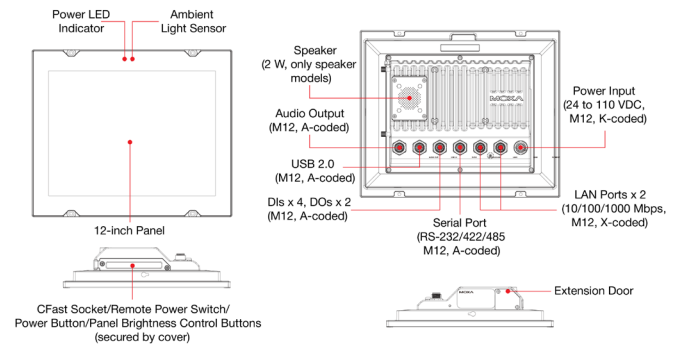
NOTE Please notify your sales representative if any of the above items are missing or damaged.

Appearance

MPC-3101



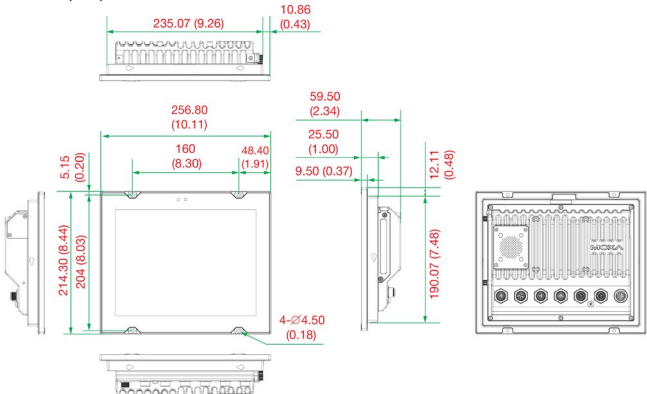
MPC-3121



Dimensions

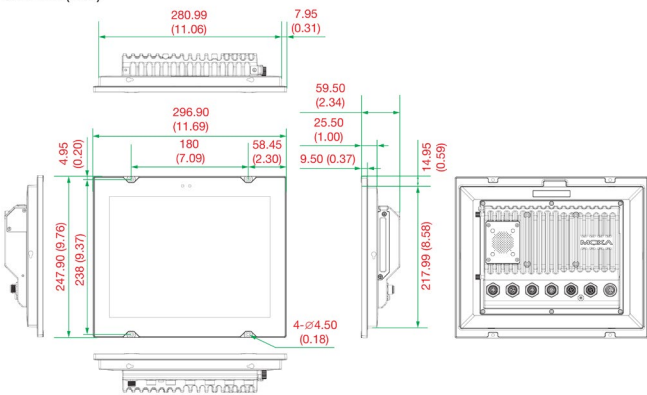
MPC-3101

Unit: mm (inch)



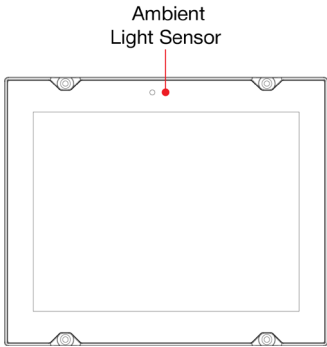
MPC-3121

Unit: mm (inch)



Ambient Light Sensor

The MPC-3101 and MPC-3121 panel PCs come with an ambient light sensor located on the upper part of the front panel.



The ambient light sensor helps automatically adjust the brightness of the panel with the ambient light condition. This function is enabled by default. For instructions to disable the function, refer to the Windows or Linux User Manuals for the MPC-3101 and MPC-3121 Series.

Installing the MPC-3101 and MPC-3121

The MPC-3101 and MPC-3121 panel PCs can be mounted using both the front panel and the rear panel.

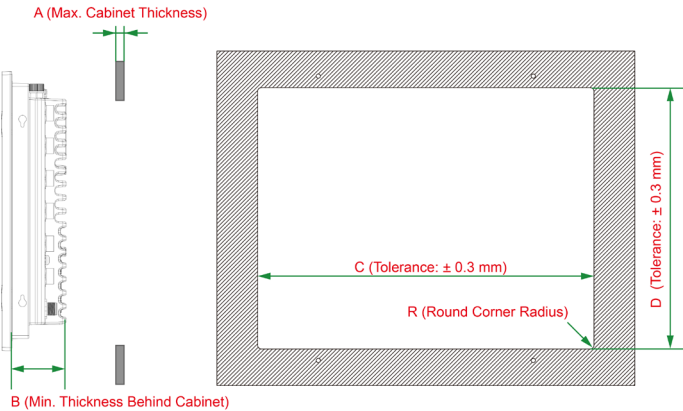


CAUTION

Ensure only trained staff handle installation, adjustments, and maintenance to avoid damage to equipment.

Rear-panel Mounting

A panel-mounting kit is provided in the product package of the MPC-3101 and MPC-3121 panel PCs. The dimensions and the cabinet space required for panel mounting are shown in the following illustrations.

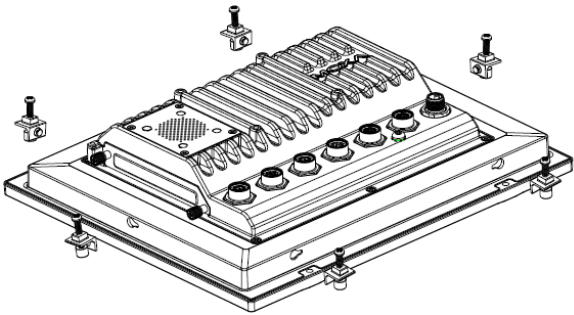
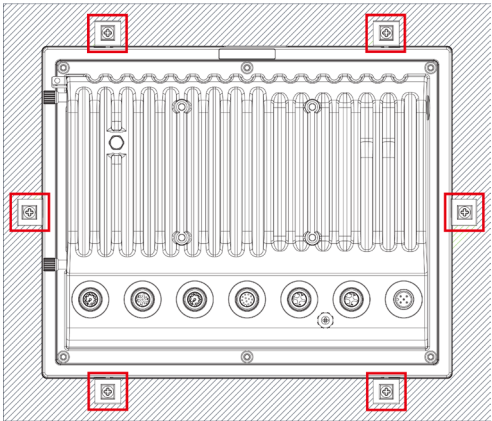


Unit: mm

A	B	C	D	R	Mounting Kit (pcs)
5	50	281.59	218.59	3	6

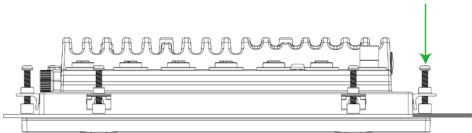
To install the panel-mounting kit on the MPC-3101 and MPC-3121, do the following:

1. Insert the six mounting units into the apertures provided on the rear panel and push to the left to attach them.



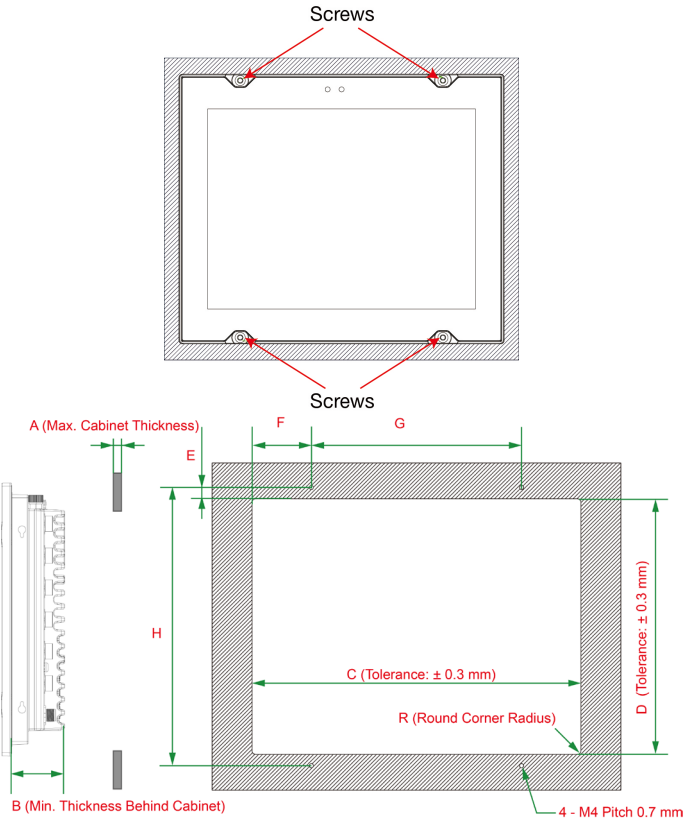
2. Use a torque of 4Kgf-cm to fasten the screws on the mounting units to secure the panel PC to a cabinet.

M4 x 25 mm SUS screws with cushion
(Torque needed: 4 Kgf-cm)



Front-panel Mounting

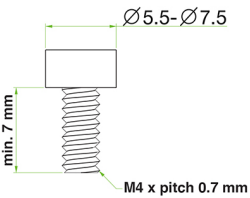
The MPC-3101 and MPC-3121 panel PCs can also be mounted using the front panel. Use four screws (M4 x pitch 0.7 mm; not included in the package) to attach the front panel to a cabinet. The location of the screw apertures are shown in the following illustrations:



Unit: mm

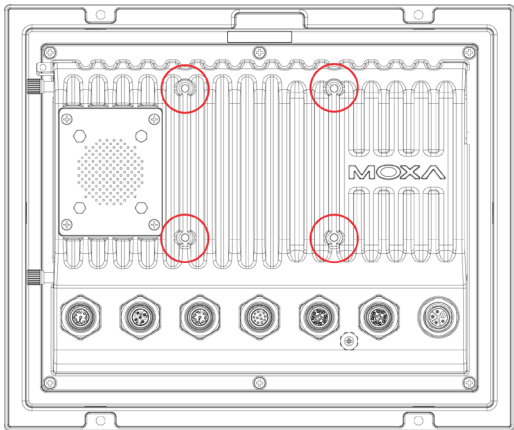
A	B	C	D	R	E	F	G	H
5	50	281.59	218.59	3	9.71	50.79	179	238

The specifications of the front-panel mounting screws are shown in the figure on the right. The screws are not included in the package and need to be purchased separately.



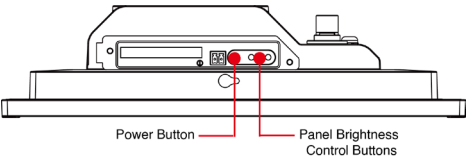
VESA Mounting (optional)

The MPC-3101 and MPC-3121 panel PCs are provided with VESA-mounting apertures on the back panel, which you can used directly without the need for adapters. The VESA mounting dimensions are 75 mm x 75 mm. You will require four screws (M4 x 10 mm; not included in the package) to VESA mount the MPC-3101 and MPC-3121.



Display-control Buttons

The MPC-3101 and MPC-3121 panel PCs are provided with two display-control buttons and a power button on the right panel.



The usage of buttons is described in the following table:

Symbol and Name	Usage	Function
 Power	Press	• Power on. • Enter sleep or hibernation mode. • Wake up. NOTE: You can modify the function of the power button in the OS settings menu.
	Press and hold for 4 seconds	Power off.
 Brightness + Brightness -	Press	Manually increase the brightness of the panel.
	Press	Manually decrease the brightness of the panel.



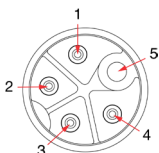
CAUTION

The MPC-3101 and MPC-3121 Series come with a 1000-nit display. The brightness of the display is adjustable up to level 10 and it is optimized for use in the -40 to 70°C temperature range. However, if you are operating the MPC-3121 at an ambient temperature of 60°C or higher, we recommend setting the brightness level of the display to 8 or lower to extend the lifetime of the display.

Connector Descriptions

DC Power Input

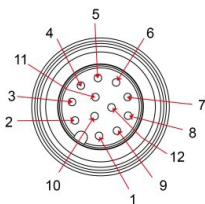
The MPC-3101 and MPC-3121 panel PCs can be powered through the DC power input with M12 connector. The DC pin assignments are as follows:



Pin	Definition
1	V+
2	V-
3	V-
4	N/A
5	PE

Serial Ports

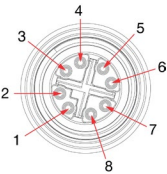
The MPC-3101 and MPC-3121 panel PCs come with one software-selectable RS-232/422/485 serial port with an M12 connector. The pin assignments are as follows:



Pin	RS-232	RS-422	RS-485
1	RI	-	-
2	RXD	TX+	-
3	DTR	RX-	D-
4	DSR	-	-
5	CTS	-	-
6	DCD	TX-	-
7	TXD	RX+	D+
8	RTS	-	-
9	GND	GND	GND
10	GND	GND	GND
11	GND	GND	GND
12	-	-	-

Ethernet Ports

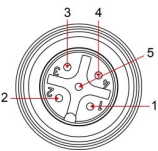
The MPC-3101 and MPC-3121 panel PCs come with two Ethernet 10/100/1000 Mbps ports with M12 connectors. The pin assignments are as follows:



Pin	Definition
1	DA+
2	DA-
3	DB+
4	DB-
5	DD+
6	DD-
7	DC-
8	DC+

USB Port

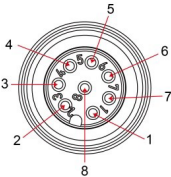
The MPC-3101 and MPC-3121 panel PCs come with one USB 2.0 port with an M12 connector on the rear panel. Use this port to connect a mass-storage drive or other peripheral devices. The pin assignments are as follows:



Pin	Definition
1	D-
2	VCC
3	-
4	D+
5	GND

Audio Port

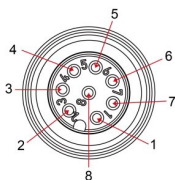
The MPC-3101 and MPC-3121 panel PCs come with an audio output port with an M12 connector. The pin assignments are as follows:



Pin	Definition
1	Detect
2	Line out, L
3	Line out, R
4	GND
5	Speaker out-
6	Speaker out+
7	GND
8	GND

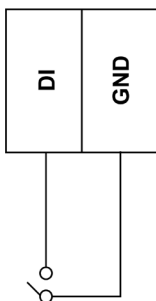
DIO Port

The MPC-3101 and MPC-3121 panel PCs come with one DIO interface, which has a 8-pin M12 connector and includes 4 DIs and 2 DOs. The pin diagrams and wiring instructions are as follows:

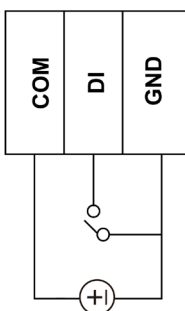


Pin	Definition
1	COM
2	DI_0
3	DI_1
4	DI_2
5	DI_3
6	DO_0
7	GND
8	DO_1

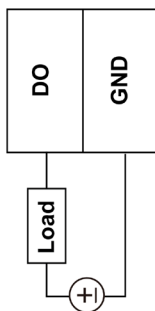
DI Dry Contact



DI Wet Contact



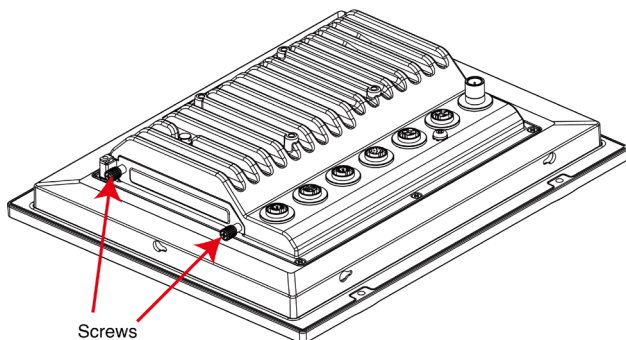
DO Contact Sink



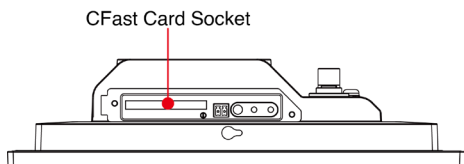
Installing a CFast Card

The MPC-3101 and MPC-3121 panel PCs provide a CFast card socket located on the left panel. To install the storage devices, do the following:

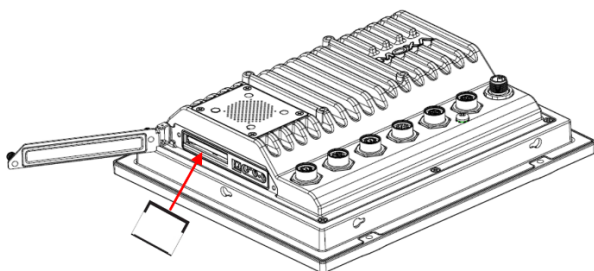
1. Unfasten the two screws on the storage cover and open the cover.



The CFast card socket is shown here.



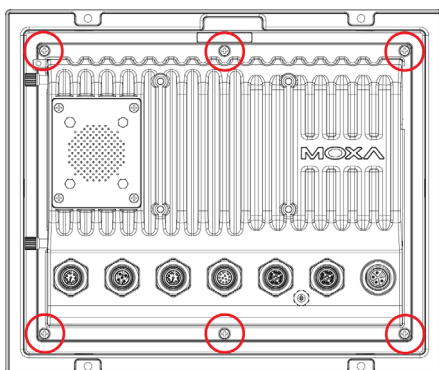
2. Insert a CFast card into the socket using the push-push mechanism.
3. Close the storage cover and fasten the screws to secure it.



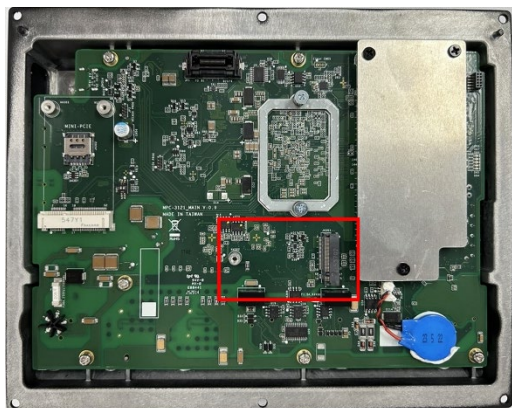
Installing a M.2 SSD Module

The MPC-3101 and MPC-3121 panel PCs provide a M.2 2242 (M-key) socket for storage expansion. To install or replace the M.2 module, do the following:

1. Unfasten the 6 screws on the back cover and remove the cover to access the M.2 socket.



The location of the M.2 socket is marked in the following picture:



2. Install the M.2 module in the socket and fasten the screw to secure the module to the socket.
3. Replace the cover and secure it by fastening the six external screws using a torque of 6 kgf-cm.

NOTE To maintain the IP66 rating of rear cover (applicable to models without an embedded speaker), ensure that the gasket and sealing surfaces are clean and free of dust before attaching the rear cover. Using a calibrated torque screwdriver to tighten the screws onto the rear cover with a torque of 6 kgf-cm to ensure a secure seal.

Real-time Clock

The real-time clock (RTC) is powered by a lithium battery. We strongly recommend that you do not replace the lithium battery without help from a qualified Moxa support engineer. If you need to change the battery, contact the Moxa RMA service team at:

http://www.moxa.com/rma/about_rma.aspx.



CAUTION

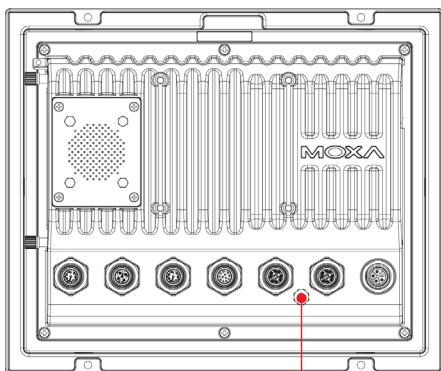
There is a risk of explosion if the clock's lithium battery is replaced with an incompatible battery. Dispose of used batteries according to the Instructions.

Grounding the MPC-3101 and MPC-3121

Proper grounding and wire routing help to limit the effects of noise from electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting the power source.

The minimum cross-sectional area required for the protective earthing conductor is 3.31 mm². A mandatory external bonding facility with a cross-sectional area of at least 4 mm² must be installed for effective conductivity.

The grounding screw (M6 x P1.0, length 10 mm) comes fixed to the device. The recommended torque value for the screw is 5 kgf-cm.



Grounding Screw



ATTENTION

To ground this product to the earth ground, use a green and yellow grounding cable with AWG 18 or higher.

Powering On/Off the MPC-3101 and MPC-3121

Connect a M12 connector to power jack converter (not included in the package) to the M12 connector on the MPC-3101 and then connect a 50 W power adapter to the converter. Supply power through the power adapter. After you have connected a power source, the system power turns on automatically. It takes about 10 to 30 seconds for the system to boot up. You can change the power-on behavior of your panel PC by changing the BIOS settings.

To power off the MPC-3101 and MPC-3121, we recommend using the shut-down function provided by the OS. If you use the power button, you will enter one of the following states depending on the power management settings in the OS: standby, hibernation, or system shutdown mode. If you encounter problems, press and hold the power button for 4 seconds to force a hard shutdown of the system.



CAUTION

This equipment is intended to be supplied by an external power source, which is evaluated according to UL/EN/IEC 62368-1 or UL/IEC 60950-1. The power source shall comply with LPS/PS2, the output rating is 24 VDC, minimum 1.82 A or 110 VDC, minimum 0.35 A, at an ambient temperature of 70°C max.