MPC-3000 Series
Quick Installation Guide

Version 1.0, July 2024

Technical Support Contact Information
www.moxa.com/support

P/N: 1802030001010

Overview

The MPC-3000 Series panel computers with dual-core x6211E or quad-core x6425E processor deliver a reliable, durable, and versatile platform for use in industrial environments. With two software selectable RS-232/422/485 serial ports and two Gigabit Ethernet ports, the MPC-3000 Series panel computers support a wide variety of serial interfaces as well as high-speed IT communications, all with native network redundancy. Both regular and wide-screen models are available to meeting the display needs of various field applications.

Package Checklist

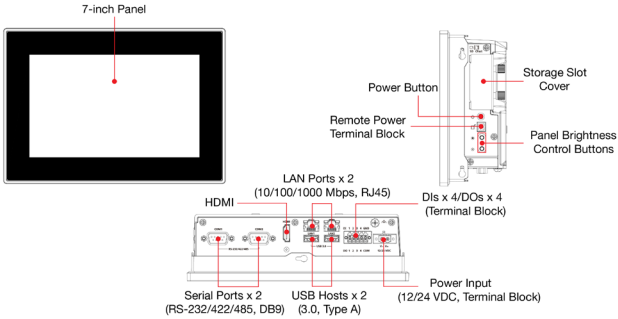
Before installing the MPC-3000, verify that the package contains the following items:

- 1 MPC-3000 Series panel computer
- 1 2-pin terminal block for DC power input
- 1 10-pin terminal block for DIO
- 1 2-pin terminal block for remote power switch
- Panel-mounting kit
- Quick installation guide (printed)
- Warranty card

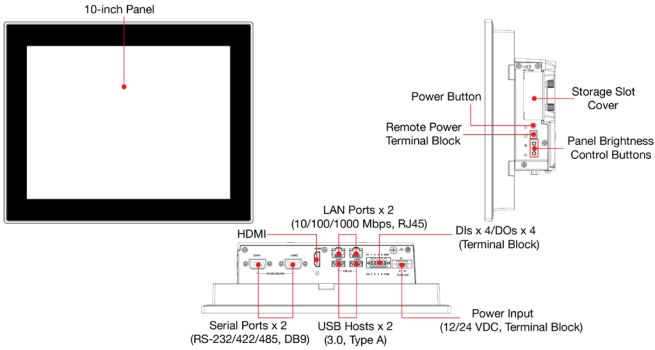
NOTE: Please notify your sales representative if any of the above items are missing or damaged.

Appearance

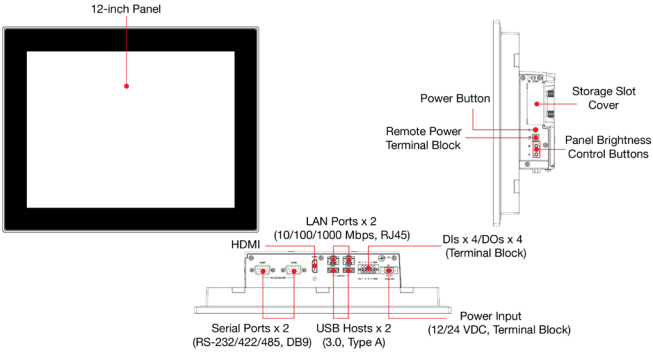
MPC-3070W



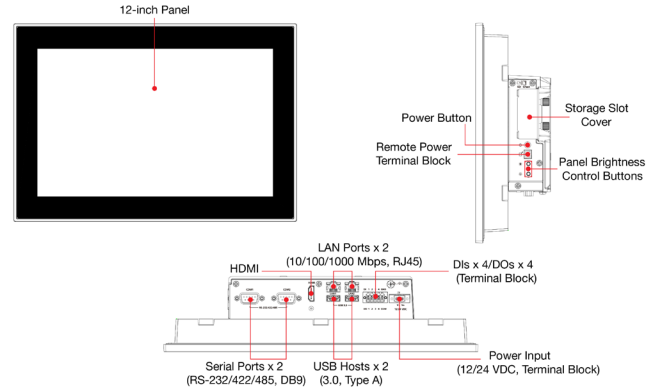
MPC-3100



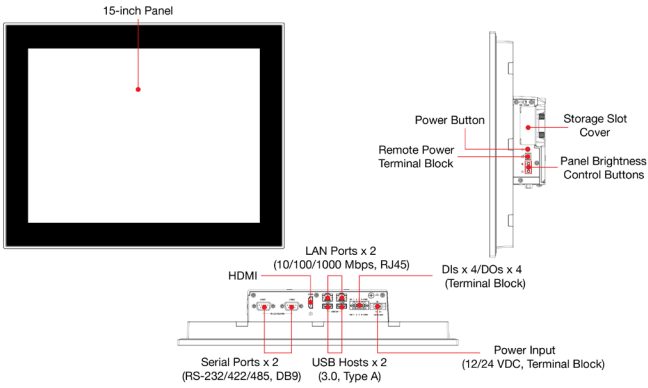
MPC-3120



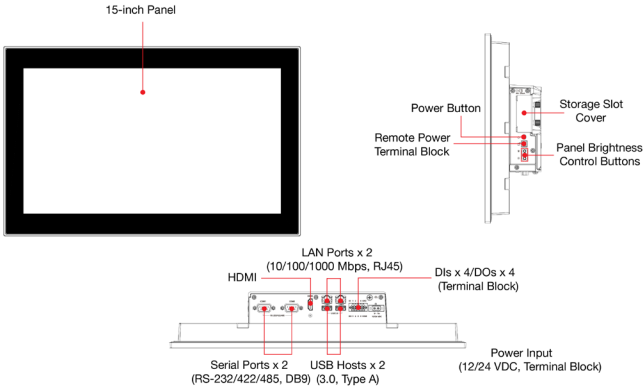
MPC-3120W



MPC-3150



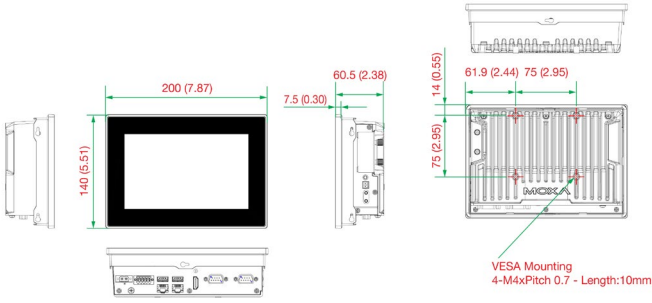
MPC-3150W



Dimensions

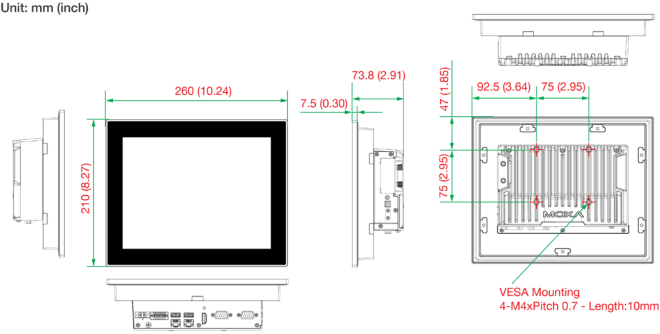
MPC-3070W

Unit: mm (inch)



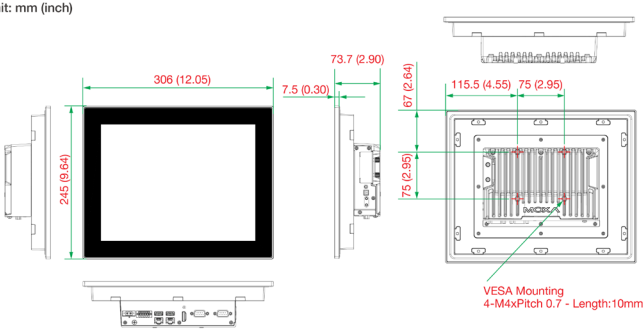
MPC-3100

Unit: mm (inch)



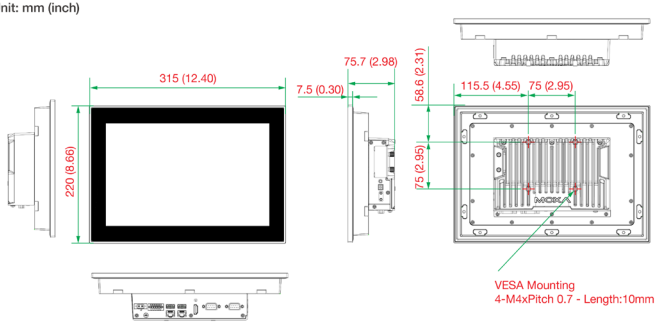
MPC-3120

Unit: mm (inch)



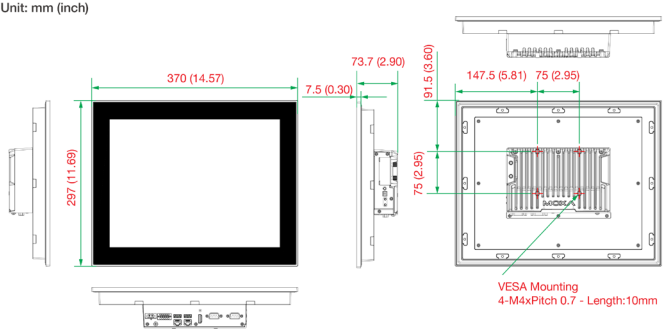
MPC-3120W

Unit: mm (inch)



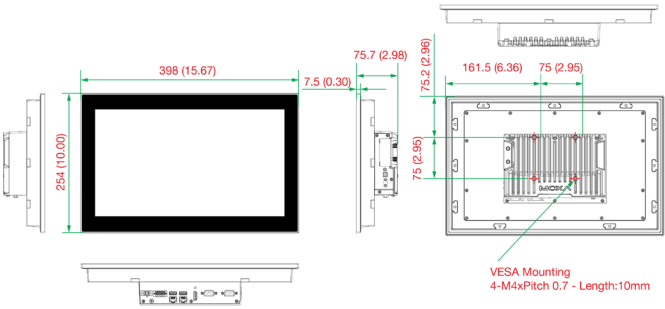
MPC-3150

Unit: mm (inch)



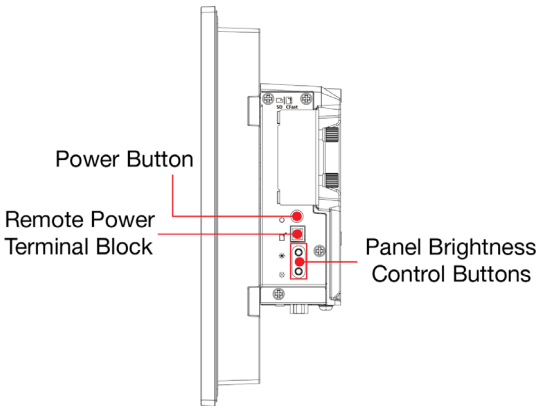
MPC-3150W

Unit: mm (inch)



Display-control Buttons

The MPC-3000 is provided with three display-control buttons on the right panel.



The display-control buttons can be used as described in the following table:

Symbol and Name	Usage	Function
Power	Press	Power on OR Enter sleep or hibernation mode OR 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 +	Press	Manually increase the brightness of the panel
Brightness -	Press	Manually decrease the brightness of the panel

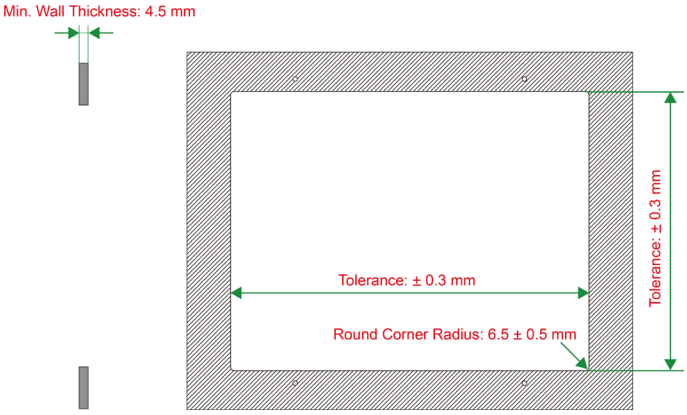
Hardware Installation

ATTENTION

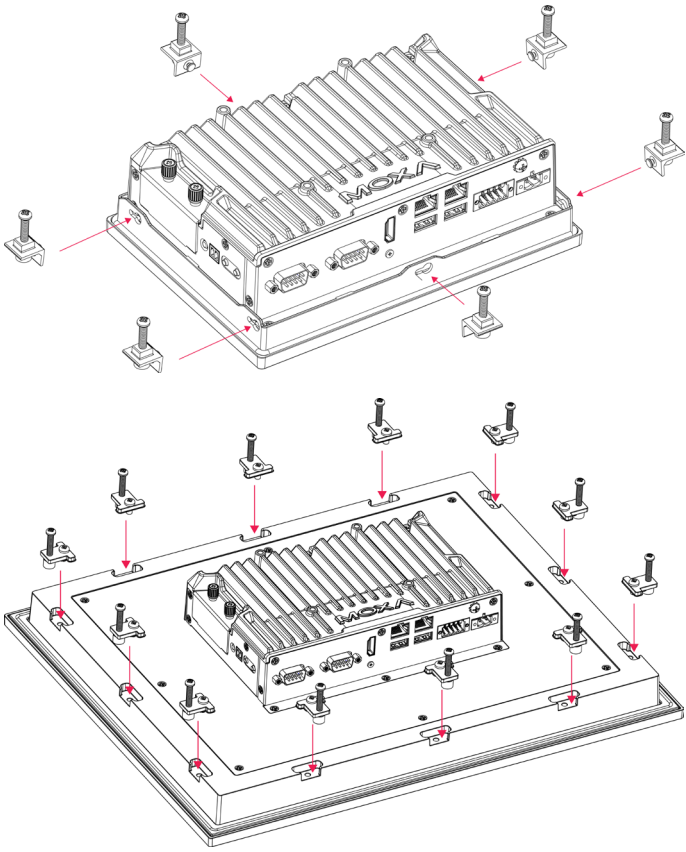
All the installations must be installed by skilled persons to avoid any equipment damage.

Panel Mounting

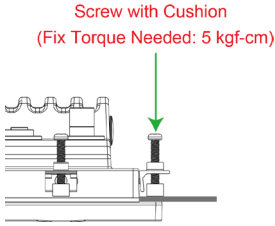
A panel-mounting kit consisting of 6 (MPC-3070W), 7 (MPC-3100), 10 (MPC-3120/3120W), 11 (MPC-3150W) or 12 (MPC-3150) mounting clamps is provided in the MPC-3000 package. Details on the dimension tolerance and the cabinet space required to panel mount the MPC-3000 are illustrated in the following sections:



To install the panel-mounting kit on the MPC-3000, insert the mounting clamps in the mounting holes provided on the rear panel and slide the clamps to the ends of the panel as shown in the following figures:



Use a torque of 5 kgf-cm to secure the mounting screws to fasten the panel-mounting kit onto the wall.



Ensure that there is adequate space behind the panel for ventilation, and that the panel material and thickness can support the weight of the device.

VESA Mounting (optional)

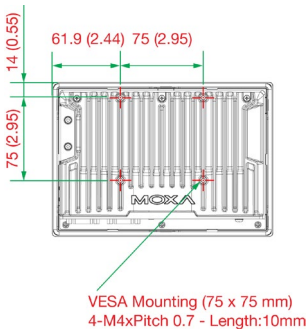
ATTENTION

VESA mounting is not applicable to the marine applications.

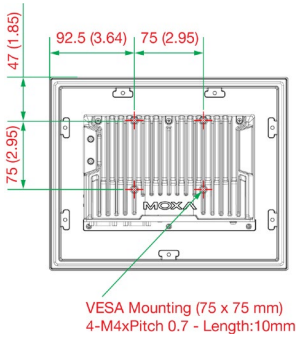
The MPC-3000 is provided with VESA-mounting holes on the back panel, which you can use directly without the need for an adapter. The dimensions of the VESA mounting area are 75 mm x 75 mm. You will require four 10-mm M4 screws to VESA mount the MPC-3000.

The VESA mounting installation directions are shown below.

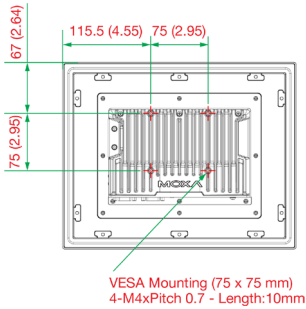
MPC-3070W



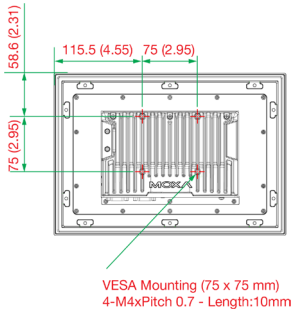
MPC-3100

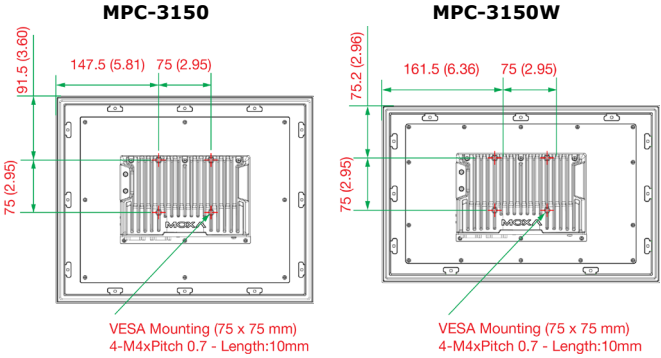


MPC-3120



MPC-3120W

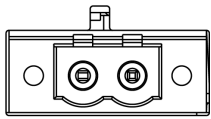




Connector Descriptions

DC Power Input

The MPC-3000 uses a DC power input. The DC pin assignments are shown in the figure. To connect the power source to the 2-pin terminal block, use the 60-W power adapter. The terminal block is available in the accessories package. The required wire size is 12-18 AWG (wire type: Cu) and the torque value 0.5 N-m (4.425 lb-in) should be applied.



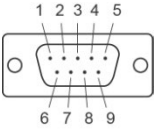
V- V+

12/24 VDC

Nominal Voltage:12/24 VDC

Serial Ports

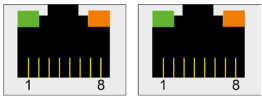
The MPC-3000 offers two software-selectable RS-232/422/485 serial ports over a DB9 connector. The pin assignments for the ports are shown in the following table:



Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–

Ethernet Ports

The pin assignments for the two Fast Ethernet 10/100/1000 Mbps RJ45 ports are shown in the following table:



LAN1 LAN2

Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	–	TRD(2)+
5	–	TRD(2)-
6	ERx-	TRD(1)-
7	–	TRD(3)+
8	–	TRD(3)-

The LEDs on the LAN ports indicate the following:

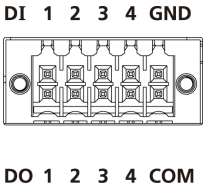
LAN 1/LAN 2 (indicators on the connectors)	Green	100 Mbps Ethernet mode
	Yellow	1000 Mbps Gigabit Ethernet mode
	Off	No activity / 10 Mbps Ethernet mode

USB Ports

Two USB 3.0 ports are available on the bottom panel. Use these ports to connect mass-storage drives and other peripherals.

DIO Port

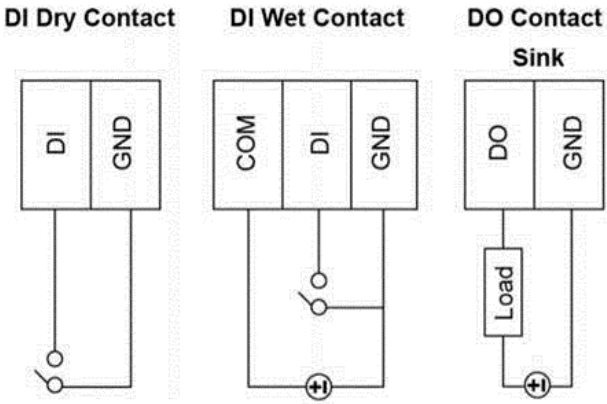
The MPC-3000 is provided with a DIO port, which is a 10-pin terminal block that includes 4 DIs and 4 DOs as illustrated in the following figure.



DIO Voltage: 30 VDC

DO Output: 100 mA (single port)

DIO terminal block (plug matched with socket) with wire size 30 and torque value 0.5 N-m (4.425 lb-in)

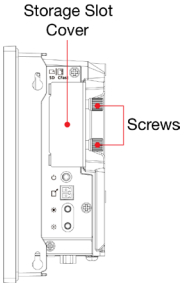


Installing a CFast or SD Card

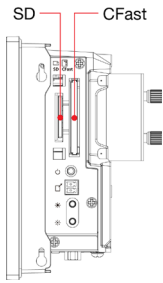
MPC-3000 provides two storage options—CFast and SD card. The storage slots are located on the right panel. You can install the OS on the CFast card and save your data into the SD card. For a list of compatible CFast models, check the *MPC-3000 component compatibility report* available on Moxa's website.

To install the storage devices, do the following:

1. Remove the 2 screws holding the storage-slot cover to the MPC-3000.



2. Insert a CFast or SD card into the slot using the push-push mechanism.



3. Reattach the cover and secure it with screws.

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. The contact details are available at: http://www.moxa.com/rma/about_rma.aspx.

ATTENTION

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.

Powering On/Off the MPC-3000

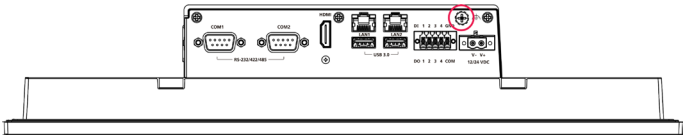
Connect a **Terminal Block to Power Jack Converter** to the MPC-3000 terminal block and connect a 60 W power adapter to the converter. Supply power through the power adapter. After you have connected a power source, the system Power button turns on automatically. It takes about 10 to 30 seconds for the system to boot up. You can change the power-on behavior of your computer by changing the BIOS settings.

To power off the MPC-3000, we recommend using the "shut down" function provided by the OS installed on the MPC. If you use the **Power** button, you may 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, you can press and hold the **Power** button for 4 seconds to force a hard shutdown of the system.

Grounding the MPC-3000

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.



ATTENTION

This equipment is intended to be supplied by the external power source, which is evaluated according to UL/EN/IEC 62368-1 or UL/IEC 60950-1. The power source shall comply with ES1/SELV and LPS requirements, output rating is 12 VDC, 5.6 A (min.) or 24 VDC, 2.8 A (min.), and an ambient temperature of 60°C minimum.
If you are using a Class I adapter, the power cord should be connected to an outlet with an earthing connection.