

CIMON Xpanel

Total Solution For Industrial Automation

Installation Guide



CIMON Xpanel

The CIMON-Xpanel is a high performance touch panel HMI device, which has a high resolution and 65,535 color TFT LCD. The OS of the Xpanel is Windows CE of Microsoft. The CPU of the Xpanel is PXA25x or PXA27x series of Intel. All of the Xpanel has an ethernet port, Some of the Xpanel can add a mass storage to store large size of project and huge data

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Essential Safety Precautions

WARNING

System Design

- Do not create Xpanel graphic objects that could possibly endanger the safety of equipment and personnel. Damage to the Xpanel can cause an output signal to remain ON or OFF continuously and can cause a major accident. Therefore, design all monitoring circuits using limit switch to detect incorrect device movement.
- Do not create Xpanel graphic objects that control machine safety operations, such as an emergency stop. Switches to control machine safety operations must be installed as separated hardware switches.
- Design your system so that a communication fault between the Xpanel and the controller of the equipment can not make the equipment malfunction.
- Do not use the Xpanel as a warning device for critical alarms that can cause serious operator injury, machine damage or production stoppage.
- The Xpanel is not appropriate for use with aircraft control devices, aerospace equipments, central trunk data transmission (communication) devices, nuclear power control devices, or medical life support equipment, due to these devices' inherent requirements of extremely high levels of safety and reliability.
- When using the Xpanel with transportation vehicles (trains, cars and ships), disaster and crime prevention devices, various type of safety equipment, non-life support related medical devices, etc. redundant and/or failsafe system designs should be used to ensure the proper degree of reliability and safety.
- After the backlight of the Xpanel burns out, the touch panel of the Xpanel is still active. If an operator does not notice that the backlight burned out and touches the panel, a potentially dangerous machine miss-operation can occur. Therefore, do not use the Xpanel graphic objects for the control of any equipment safety mechanisms, such as Emergency Stop switches, etc. that protect humans and equipment from injury and damage.

Essential Safety Precautions

WARNING

- If the backlight of LCD suddenly turns OFF, use the following steps to determine if the backlight is actually burned out.
 - Step1. If your Xpanel is not set to “Standby Mode” and the screen has gone blank, the backlight of LCD is burned out.
 - Step2. Or, if your Xpanel is set to “Standby Mode” but touching the screen can not wake Xpanel up, your backlight is burned out.

Installation

- High voltage runs through the Xpanel. Do not disassemble the Xpanel. otherwise an electric shock can occur.
- Do not modify the Xpanel unit, since the modified Xpanel cause a fire or an electric shock.
- Do not use the Xpanel in flammable gasses, since operating the Xpanel in flammable gasses may cause an explosion.

Wiring

- To prevent an electric shock, be sure to confirm that the power cord of the Xpanel is not connected to the main power before connecting any cord, cables or line to the Xpanel.
- Do not use power beyond the specified voltage range of the Xpanel. Doing so may cause a fire or an electric shock.

Maintenance

- The Xpanel uses a lithium battery to back up its internal clock data. If the battery is incorrectly replaced, the battery may explode. To prevent this, please do not replace the battery yourself. When the battery needs to be replaced, please contact your local Xpanel distributor.

Essential Safety Precautions

CAUTIONS

Installation

- Be sure to securely connect all cable connectors to the Xpanel. A loose connection may cause incorrect input or output.

Wiring

- Ground the FG line of the Xpanel separately from FG lines of other units. Putting these FG lines too close may cause an electric shock or unit malfunction. Be sure to use a grounding resistance of $100\ \Omega$ or less and a 2mm^2 or thicker wire, or applicable standard of your country.
- Correctly wire the Xpanel, be sure that the rated voltage and terminal layout are within the designated range. If the voltage supplied differs from the rated voltage, or incorrect wiring or grounding is performed, it may cause a fire or unit malfunction.
- Use only the designated torque to tighten terminal block screws of the Xpanel. If these screws are not tightened firmly, it may cause a short circuit, fire or Xpanel malfunction.
- Be careful that the metal filings and wiring debris do not fall into the Xpanel, since they can cause a fire, Xpanel malfunction or incorrect operation.

Maintenance

- The LCD contains a powerful irritant and if for any reason the panel is damaged and this liquid contacts any part of your body, be sure to wash that area with running water for 15 minutes. If any of this liquid enters your eye, flush your eye for 15 minutes with running water and contact a physician.

Unit Disposal

- When this unit is disposed of, it should be done so according to your country's regulation for similar types of industrial waste.

General Safety Precautions

- Do not strike the touch panel with a hard or pointed object, or press on the touch panel with too much force, since it may damage the touch panel or the display.
- Do not install the Xpanel where the ambient temperature can exceed the allowed range. Doing so may cause the Xpanel to malfunction or shorten its operation life.
- Do not restrict or limit naturally occurring rear-face ventilation of the Xpanel, or storing or using the Xpanel in an environment that is too hot.
- Do not use the Xpanel in areas where large, sudden temperature changes can occur. These changes can cause condensation to form inside the unit, possibly causing the unit to malfunction.
- Do not allow water, liquids, metal or charged particles to enter inside the Xpanel, since they can cause either a Xpanel malfunction or an electrical shock. The allowable pollution degree is 2.
- Do not store or use the Xpanel in direct sunlight, or in excessively dusty or dirty environments.
- Do not store or use the Xpanel where strong jolting or excessive vibration can occur.
- Do not store or use the Xpanel where chemicals (such as organic solvents, etc.) and acids can evaporate, or where chemicals and acids are present in the air.
- Do not use paint thinner or organic solvents to clean the Xpanel.
- Do not store or operate the LCD display in areas receiving direct sunlight, since the sun's UV rays may cause the LCD display's quality to deteriorate.

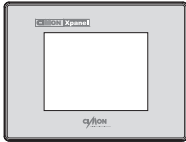
General Safety Precautions

- If you store the Xpanel in areas where the temperature is lower than allowed level, the liquid of the LCD will congeal and the LCD can be damage. Conversely, if the storage area's temperature becomes higher than the allowed level, the liquid of the LCD will become isotropic, causing irreversible damage to the LCD. Therefore, be sure to store the panel only in areas where temperatures are within those specified in this manual.
- After turning the Xpanel OFF, be sure to wait a few seconds before turning it ON again. If the Xpanel started too soon, it may not start up correctly.
- Due to the possibility of unexpected accidents, you must back up the project data of the Xpanel regularly.

Package Contents

The following items are contained in the package of the Xpanel. Before using the Xpanel, please confirm that all items listed here are present.

Xpanel Unit



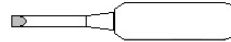
Fastener : 8ea



5P Connector



Screw Driver



USB Cable



CD



Installation Guide

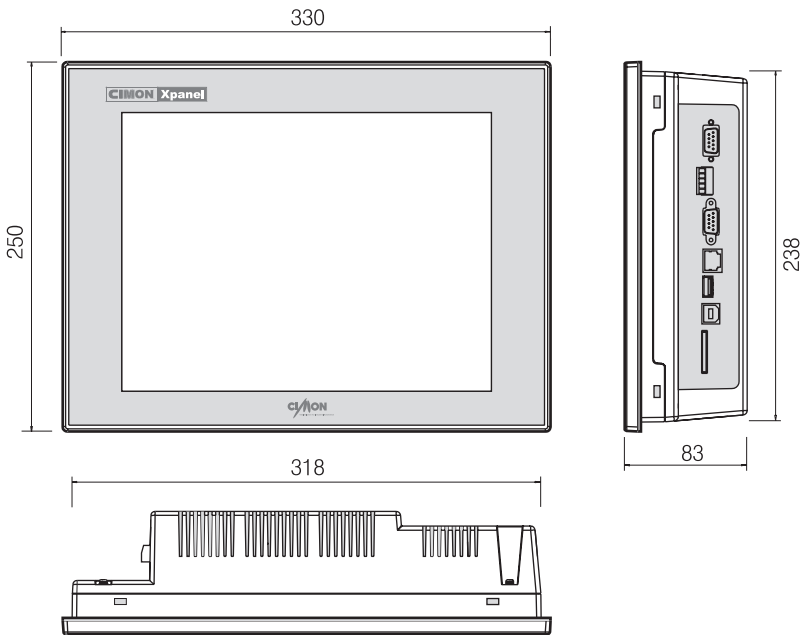


※ This unit has been carefully packed, with special attention to quality. However, should you find anything damaged or missing, please contact your local Xpanel distributor immediately.

1. Dimensions

Unit : mm

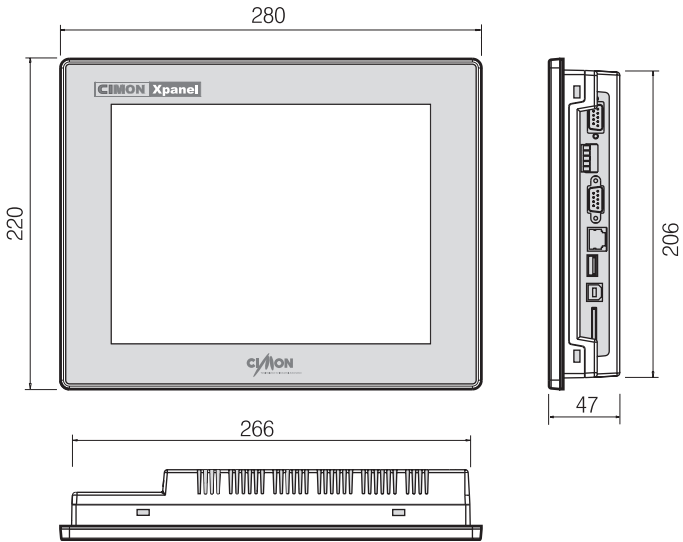
● XT12CA



1. Dimensions

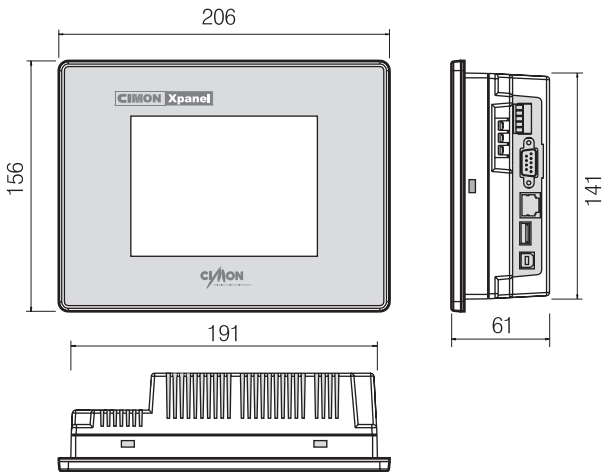
Unit : mm

● XT10CA



Unit : mm

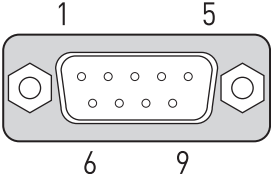
● XT06CA, XT05SA, XT05MA



2. Interfaces


● COM1: RS-232C

This interface is used to connect the Xpanel to the host (PLC), via an RS-232C cable. When you use COM1 RS-232C port, you must not use COM1 RS-485/422 port.

Connector	Pin No	Name	Description
	1	DCD	Data Carrier Detect
	2	RD	Receive Data
	3	TD	Transmit Data
	4	DTR	Data Terminal Ready
	5	SG	Signal Ground
	6	DSR	Data Set Ready
	7	RTS	Request To Send
	8	CTS	Clear To Send
	9	RI	Ring Indicator

● COM1: RS-422/485

This interface is used to connect the Xpanel to the host (PLC), via an RS-422/485 cable. When you use COM1 RS-422/485 port, you must not use COM1 RS-232C port.

Connector	Pin No	Name	Description
	1	RDB	Receive Data B
	2	RDA	Receive Data A
	3	GND	Ground
	4	SDB	Send Data B
	5	SDA	Send Data A

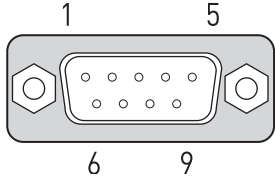


- If you connect the Xpanel to the host via an RS-485 cable (2wire), you must connect SDA and SDB lines.
- The RS-485 of the Xpanel runs under auto toggle mode.
- To reduce the risk of damaging the RS-422 circuit, be sure to connect the SG terminal.

● COM2: RS-232C

XT10A and XT12A series units have this interface.

This interface is used to connect the Xpanel to the host (PLC), via an RS-232C cable. You can use pin 2, 3, 5 of this interface.

Connector	Pin No	Name	Description
	1		
	2	RD	Receive Data
	3	TD	Transmit Data
	4		
	5	SG	Signal Ground
	6		
	7		
	8		
	9		



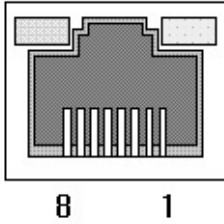
- The serial port of the Xpanel is not isolated. When the host(PLC) unit is also not isolated
- Inside the Xpanel unit, the SG (Signal Ground) and FG (Frame Ground) terminals are connected to each other.
- When connecting an external device to the Xpanel with the SG terminal, ensure that no short-circuit loop is created when you setup the system.

2. Interfaces

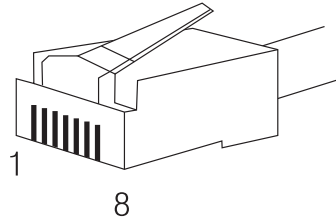
● Ethernet

This interface complies with the IEEE802.3 for Ethernet (10BaseT/100BaseTX).

RJ45 Connector



RJ45 Jack



Direct Cable : Host <-> HUB

Cable	No	Color	Color	No	Cable
	1	Orange/W	Orange/W	1	
	2	Orange	Orange	2	
	3	Green/W	Green/W	3	
	4	Blue	Blue	4	
	5	Blue/W	Blue/W	5	
	6	Green	Green	6	
	7	Brown/W	Brown/W	7	
	8	Brown	Brown	8	

Crossover Cable: Host <-> Host

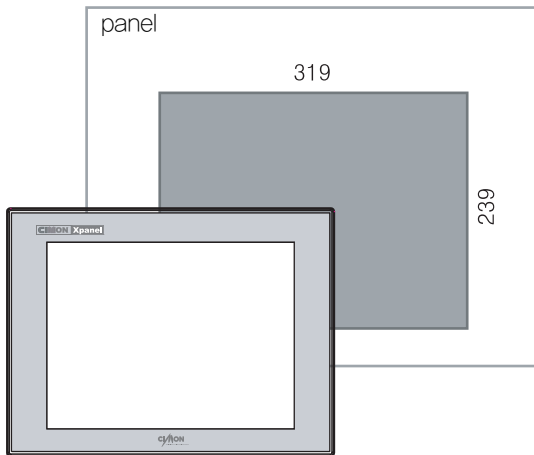
Cable	No	Color	Color	No	Cable
	1	Orange/W	Green/W	1	
	2	Orange	Green	2	
	3	Green/W	Orange/W	3	
	4	Blue	Blue	4	
	5	Blue/W	Blue/W	5	
	6	Green	Orange	6	
	7	Brown/W	Brown/W	7	
	8	Brown	Brown	8	

3. Installation

- Create a Panel Cut and insert the Xpanel into the panel from the front

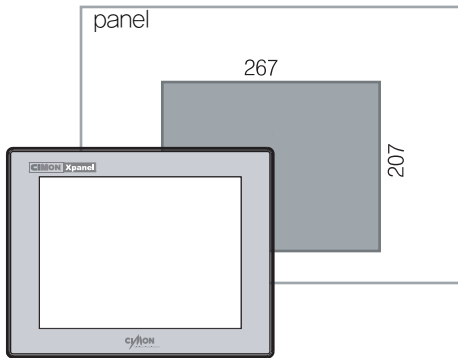
Unit : mm

- XT12CA

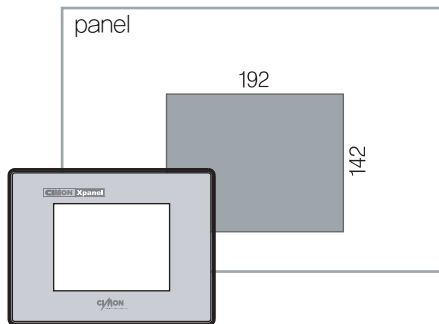


Unit : mm

● XT10CA



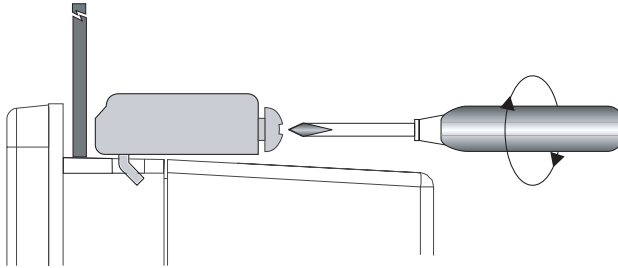
● XT06CA / XT05SA / XT05MA



3. Installation

● Attach the Installation Fasteners from inside the panel

Insert each the hook of faster into slot and tighten it with a screwdriver.



- Tightening the screws with too much force can damage the case of the Xpanel.
- The necessary torque is $0.5 \text{ N} \cdot \text{m}$.
- Depending on the thickness of installation panel, the number of installation fasteners used may need to be increased to provide the desired level of moisture resistance.

4. Wiring

WARNING

- To avoid an electric shock, when connecting the Xpanel power cord terminals to the power terminal block, confirm that the Xpanel power supply is completely turned OFF, via a breaker, or similar unit.
- Since there is no power switch on the Xpanel unit, be sure to attach a breaker-type switch to its power cord.



- To avoid a short caused by loose ring terminals, be sure to use ring terminals with an insulating sleeve.
- When the FG terminal is connected, be sure the wire is grounded. Not grounding the Xpanel unit will result in excess noise and vibration.

Connecting the Xpanel Power Cord

When connecting the power cord, be sure to follow the procedures given below.

- Confirm that the Power Cord is unplugged from the power supply.
- Unscrew the screws from the middle three (3) terminals, align the Ring Terminals and re-attach the screws.



- Confirm that the ring terminal wires are connected correctly.
- The torque required to tighten these screws is 0.5 to 0.6N · m.

5. Power Supply Caution

Please pay special attention to the following instructions when connecting the power cord terminals to the Xpanel unit.

- If the power supply voltage exceeds the Gp's specified range, connect a voltage transformer.
- Between the line and the ground, be sure to use a low noise power supply. If there is still an excessive amount of noise, connect a noise reducing transformer.
- The power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), or input/output signal lines.
- Connect a surge absorber to handle power surges.
- To reduce noise, make the power cord as short as possible.

6. Grounding Caution

- When grounding to the rear face FG terminal of the Xpanel, (on the Power Input Terminal Block), be sure to create an exclusive ground.
- Inside the Xpanel unit, the SG (Signal Ground) and FG (Frame Ground) terminals are connected to each other.
- When connecting an external device to the Xpanel with the SG terminal, ensure that no short-circuit loop is created when you setup the system.

7. Specification

	XT05MA	XT05SA	XT06CA	XT10CA	XT12CA
Panel Size	5.6"		6.4"	10.4"	12.1"
LCD	Mono LCD	CSTN LCD	Color TFT		
Resolution	320x240		640x480	800x600	
Color	16-Gray	256	65535		
RAM	SDRAM 64MB				
Flash	Flash 64MB				
OS	Microsoft Window CE 5.0				
Interface	Ethernet	10 Base T / 100 Base TX			
	COM1	RS-232C/422/485 (485 Auto Toggle)			
	COM2	None		RS-232	
	USB Host	1 CH			
	Tool	1 CH			
	SD Card	None		1 CH	
Power	A : 100~240VAC, D : DC24V				
Design Tool	Xpanel Designer				
Dimension	206x156x61			280x220x47	330x250x83
Panel Cut	192x142		267x207	319x239	

● Example of model name

XT05/06/10/12	LCD Size
M/S/C	Initial character of Mono/STN/Color
A	Revision
-A/-D	AC/DC (AC: 100~240, DC: 24V)

- XT05MA-D -> 5.6" Mono DC24V input
- XT10CA-A -> 10.4" Color TFT LCD AC input

MEMO

MEMO



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