



EC series

Easy use Easy read



Warning

- To prevent electrical shock or equipment damage, unplug the EC210 unit's power cord from the power supply prior to installing or wiring the EC210.
- After completing any EC210 wiring work, be sure the terminal block's protective plastic cover is reattached. If this cover is not reattached, an electrical shock could easily occur.
- To prevent an electric shock be sure to disconnect your EC210 unit's power cord from the power supply before wiring the EC210.
- Do not use voltage beyond the EC210 unit's specified range. Doing so may cause a fire or an electric shock.
- The cables connected to the EC210 should be secured by cable clamps to prevent weight or tension of the cables added to the connectors or terminals.
- The EC210 unit's wiring should be checked to confirm that both the operating voltage and wiring terminal locations are correct. If either the voltage or the wiring terminal location is incorrect, it can cause a fire or accident.
- Do not connect or disconnect Host and EC210 unit communication cables while the EC210 is turned ON.
- Do not replace the EC210 unit's battery yourself. The EC210 uses a lithium battery for backing up its internal clock data and the battery may explode if it is replaced incorrectly. When replacement is required, please contact your local EC210 distributor.

- To prevent a EC210 unit malfunction due to excessive noise, isolate all EC210 input/output signal lines from all power wiring or power cables via a separate wiring duct.
- Be sure all cable connectors are securely attached to the EC210 unit. A loose connection may cause incorrect input or output signals.
- Be sure to ground the EC210 unit's FG wire separately from other equipment FG lines. Also, be sure to use a grounding resistance of 100. or less and a 2mm² or thicker wire, or your country's applicable standard. Otherwise, electric shock or malfunctions may result.
- Be sure to use only the designated torque to tighten the EC210 unit's terminal block screws. If these screws are not tightened firmly, it may cause a short-circuit, fire or incorrect unit operation.
- Be sure that metal particles and wiring debris do not fall inside the EC210 unit. They can cause a fire, malfunction or incorrect unit operation.
- Be sure to read the EC210 unit's manual carefully before performing program changes, entering forced output, or using the RUN, STOP, or PAUSE commands while the EC210 is operating. Mistakes made when using these items can cause machine accidents or damage.

I. Specifications

General Specifications

| Item | | EC210-CT-00 | EC210-CT-11 |
|-----------------|---|----------------------------------|-------------|
| Display section | Display color | 64K colors | |
| | Screen type | TFT LCD | |
| | Screen size | 10.2 | |
| | Resolution W x H (dots) | 800x 480 | |
| | Display angle (Vertical) | -65° to + 45° | |
| | Display angle(Horizontal) | -65° to + 65° | |
| | Intensity of LCD only (cd/m2) | 350 | |
| | Back light off automatically | Always ON, Random Setting | |
| | Backlight | LED (Life approx. 30000h / 25°C) | |
| Touch panel | Touch Control Panel | 4-wire resistive | |
| | Type | Analog Resistance Film Type | |
| | Touch Resolution | 2mm and above | |
| | Life | 1 million times Min | |
| | Hardness of surface | 4H | |
| | The Number of Switch Can Be Set (Number/Screen) | 960(40X24) | |
| Text | TrueType Font Support Unicode | | |

Interface Specifications

| | | |
|-----------------------|--------------------------|---|
| Interface | Serial COM Port | COM1/COM2 (RS-232C / RS422/RS485), COM3(RS-232C), Ethernet 1. COM1、COM2 and COM3 port Baud Rate、Data Length、Parity and Stop Bit can be set on the HMI. 2. COM1、COM2 及 COM3 three types of communication ports that can be used simultaneously. 3. Supporting various brands'PLC models as well as Shihlin inverters、Shihlin thermostats and Shihlin SERVO. 4. RS-485 When selecting MODBUS communication, as many as 31 sets can be connected by setting the station number from 1 to 31. 5. Communicated with PLC via Ethernet. ※(1) 6. COM1(RS-232C) can be connected with the Barcode Scanner. |
| | Data transfer (PC - HMI) | USB, Ethernet : Project data upload/download ,OS installation. ※(2) |
| | Several HMI connection | Ethernet. ※(2) |
| Memory Expansion ※(3) | SD Card and USB | |

(1) 『Ethernet Multifunctional』 support for Mitsubishi FX3U-ENET and QJ71E71-100 module.

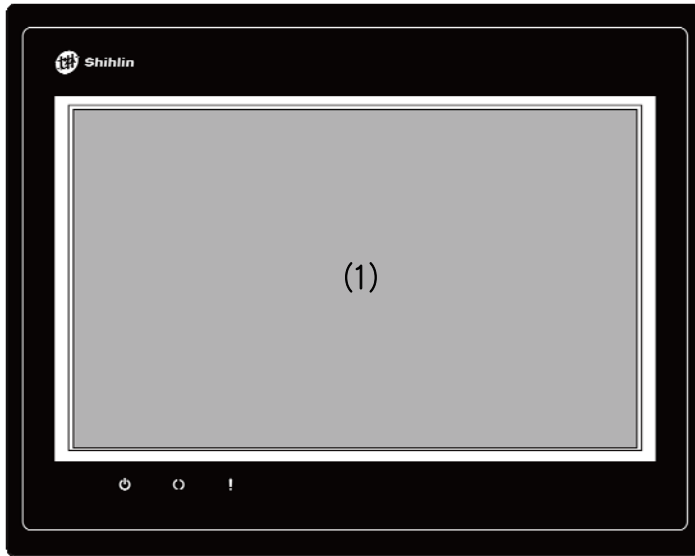
(2) 『Ethernet Multifunctional』 support for Ethernet port.

(3) SD Card Maximum 16G SDHC Support.
USB Maximum 16G Support.

General Specifications




| | | |
|--------------|-------------------------------|---|
| Power | Input Voltage | DC 24V |
| | Rated Voltage | DC 24V ± 10% |
| | Range for Instantaneous Stop | Within 10ms |
| | Power Consumption | 15W(Max) |
| Physical | Operating Ambient Temp. | 0°C ~ 45°C |
| | Storage Ambient Temp. | -20°C ~ 60°C |
| | Operating Ambient Humidity | 10%~85%RH (An Environment without Condensation) |
| | Environmental Tolerance | Non-corrosive Environment; Non-conductive Environmen |
| | Vibration Resistance | IEC 61131-2 Compliant , Vibration frequency : 5~150Hz , Acceleration : 9.8m/s ² (1.0G) , X , Y , Z directions for 12 times |
| | Noise Resistance | Compliant with IEC61000-6-2 : 2001 |
| Installation | Grounding | D Class Grounding |
| | Water Resistance | Front: IP65 (Dust-proof/Anti-drop Design); Back: IP20 |
| | Cooling Method | Natural Cooling |
| | Weight | 1.4kg |
| | Exterior Dimensions WxHxD(mm) | 271x213x50 |
| | Hole-cutting Size (mm) | 259x201 |

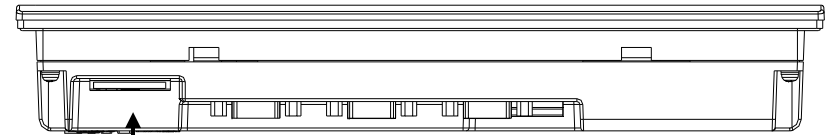
II、 Part Names



(2)

Front :

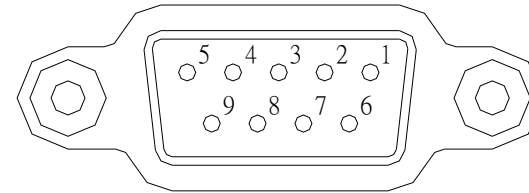
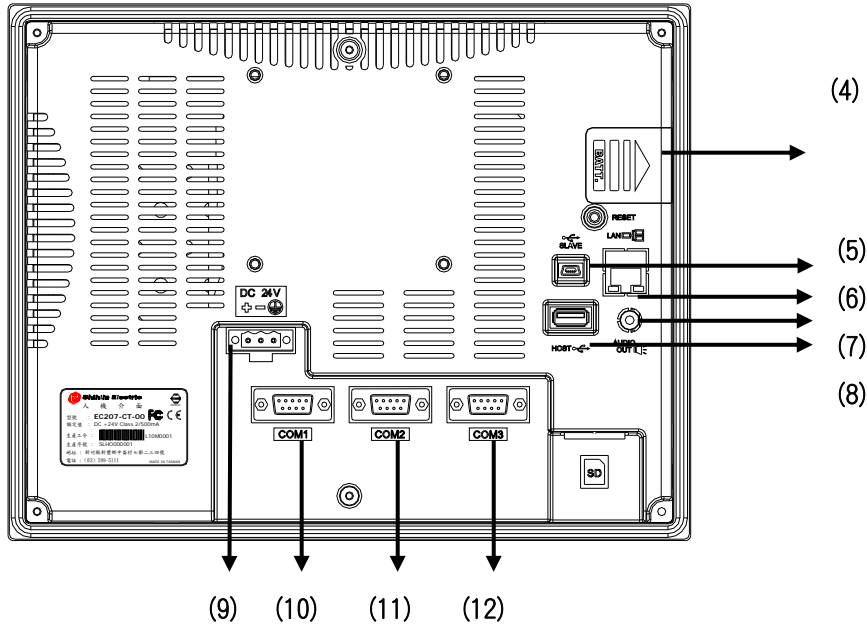
| No | Name | Description |
|----|----------------|--|
| 1 | Display screen | Displays the Utility and the user creation screen. |
| 2 | LED |  Power LED : When power is turned on. |
| | |  Run LED : Screen run. |
| | |  Alarm LED : Communication Error. |



(3)

Bottom :

| No | Name | Description |
|----|-------------------|------------------------|
| 3 | SD card interface | For installing SD card |



PIN definition of serial communication :

| PIN NO. | COM1 | COM2 | COM3 |
|---------|---------|---------|------|
| 1 | TX+ / A | TX+ / A | - |
| 2 | TX | TX | TX |
| 3 | RX | RX | RX |
| 4 | RX+ | RX+ | - |
| 5 | GND | GND | GND |
| 6 | RX- | RX- | - |
| 7 | RTS | - | RTS |
| 8 | CTS | - | CTS |
| 9 | TX- / B | TX- / B | - |

RS-232 : TX/RX/CTS/RTS/GND

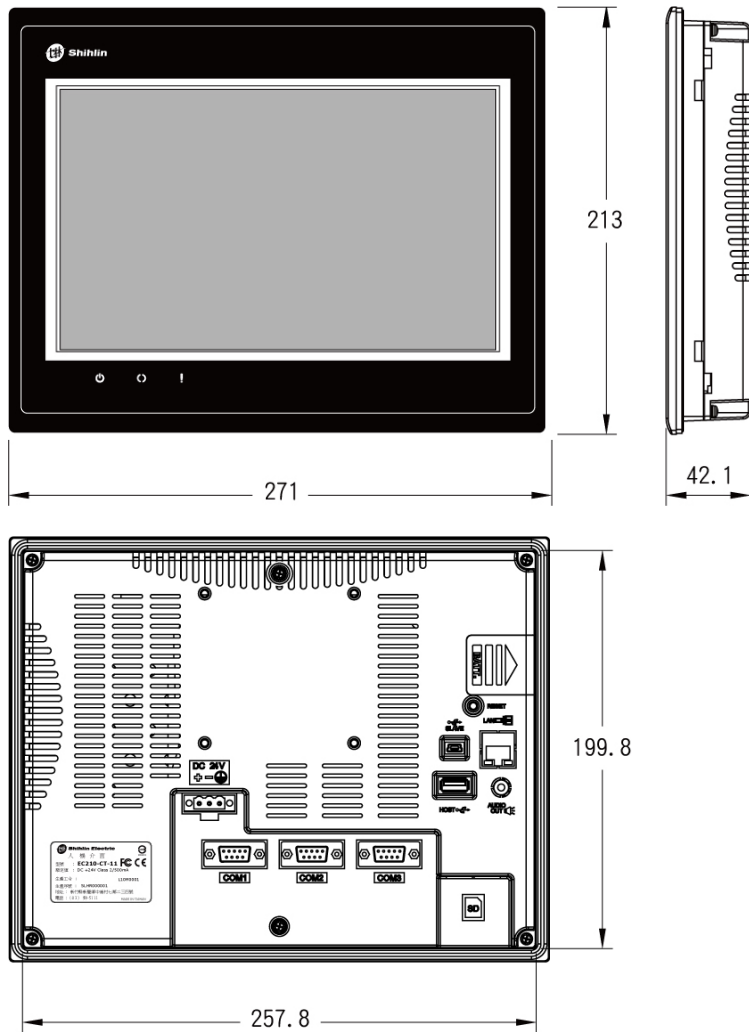
RS-422 : TX+/TX-/RX+/RX-

RS-485 : A/B

Back :

| No | Name | Description |
|----|----------------------|---------------------------------------|
| 4 | Battery Holder | Houses the Battery |
| 5 | USB Device interface | For connecting a PC. |
| 6 | Ethernet interface | The Ethernet transmission interface |
| 7 | Sound interface | Sound output , support for Sound play |
| 8 | USB Host interface | For installing USB storage Device |
| 9 | Power terminal | DC24V |
| 10 | COM1 | RS232C / RS422 / RS485 |
| 11 | COM2 | RS232C / RS422 / RS485 |
| 12 | COM3 | RS232C |

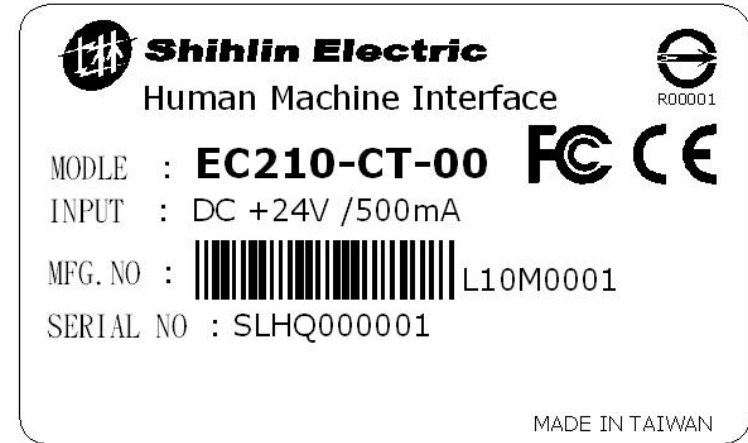
III、External Dimensions



NOTE

- ◆ Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

IV、EU200 Series Model Name Indication

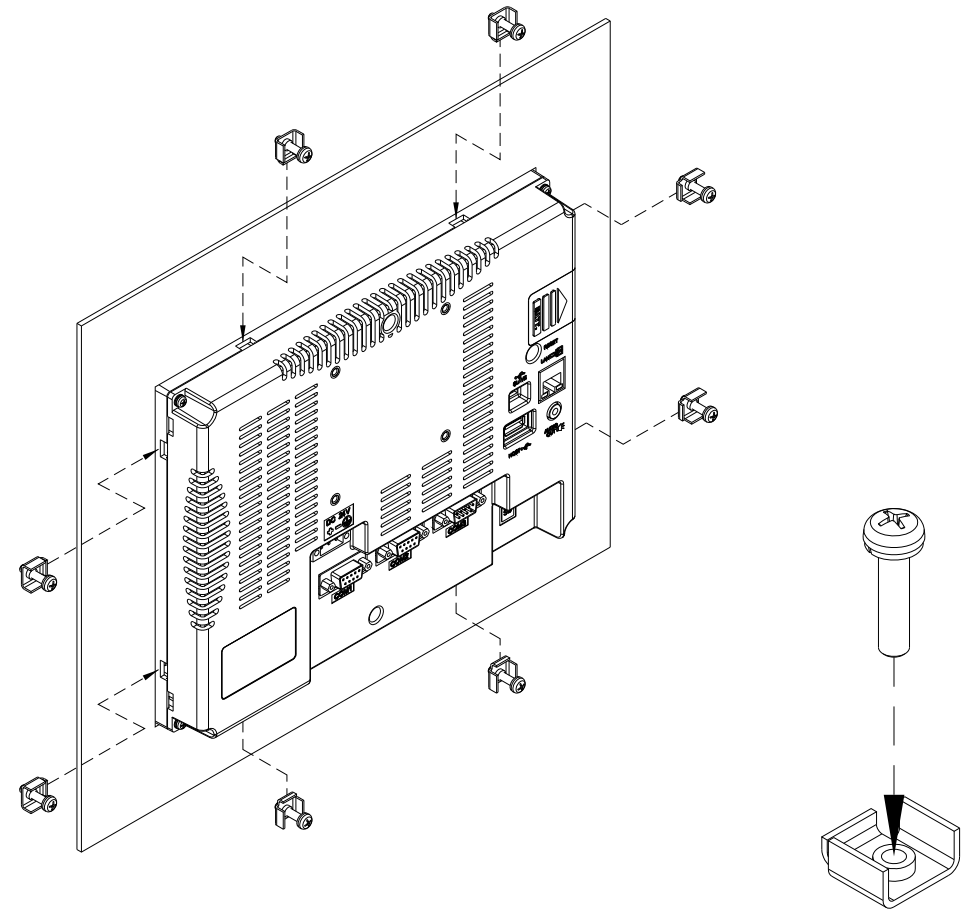
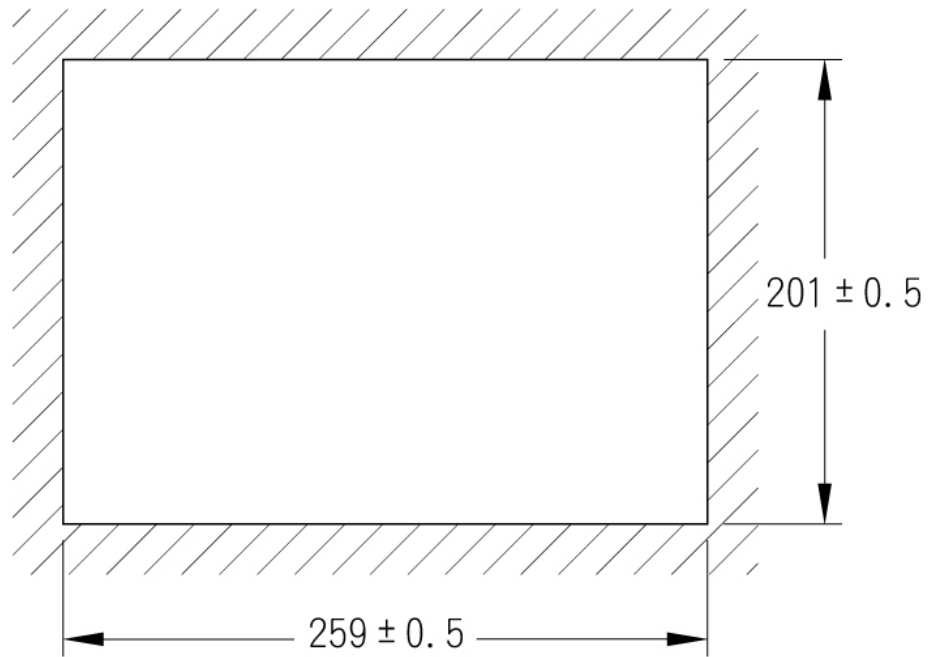


EC2 10 - CT - 00
 (1) (2) (3) (4)

| NO | Description |
|----|--|
| 1 | EC200 series |
| 2 | 10.2" Display Screen size |
| 3 | Colors TFT LCD |
| 4 | 00 : Standard Type 11 : High-Performance Type |

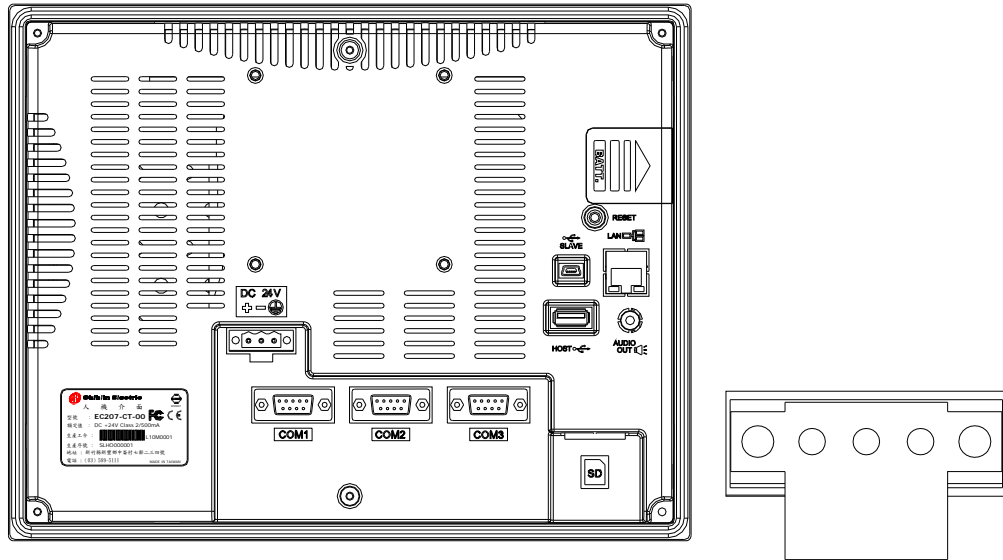
V、Installation

Make an installation hole on the control panel the dimensions shown below.(Unit: mm)



◆ Max torque:0.3 Nm (2.65 lb-in).

VI · Connecting the Power Cord



- To avoid an electric shock, prior to connecting the EC210 unit's power cord terminals to the power terminal block, confirm that the EC210 unit's power supply is completely turned OFF, via a breaker, or similar unit.
- Supplying a power voltage other than that specified will damage the power source and the EC210 unit.
- Since there is no power switch on the EC210 unit, be sure to attach a breaker-type switch to its power cord.
- When the FG terminal is connected, be sure the wire is grounded.
- Not grounding the EC210 unit will result in excess noise and vibration.
- The SG and FG terminals are connected internally in the EC210 unit.
- When connecting the SG wire to another device, be sure that the design of the system/connection does not produce a shorting loop.



- ◆ Before plugging or unplugging the power terminal, make sure to cut off the power supply or it may damage the electric communication components of the human machine interface.
- ◆ It is recommended that the user add a core to the input terminal of the power line.