

FATEK® P5070S/N/N1 HMI Installation Guide

Thank you for purchasing FATEK HMI. Before installing or operating the unit, please read this installation guide carefully to ensure correct use.

1. Safety Precautions (Read these precautions before use.)

1.1 General

- Unpack and check the delivery for transportation damage. If any damage or deformation is found, please notify the supplier.
- The supplier is not responsible for the disassembled, altered or modified device.
- Never allow fluid or any conductive particles to enter into the HMI. Otherwise, it may damage the HMI, cause fire or malfunction.
- Only qualified personnel may install the HMI, perform maintenance and inspection.
- The liquid crystal inside the LCD panel is a hazardous substance. If the panel is damaged, avoid contact with the leaked liquid crystal. If the liquid crystal spills on clothing or skin, use soap and wash off thoroughly. In case of eye contact the liquid, hold the eye open, flush with plenty water and get medical attention as soon as possible.
- Do not touch any terminals while the power is on. Otherwise, it may cause injury due to electrical shock.
- Disconnect the power supply before installing the HMI, do wiring operation, perform maintenance or inspection. Otherwise, it may cause damage or electrical shock.

1.2 Installation

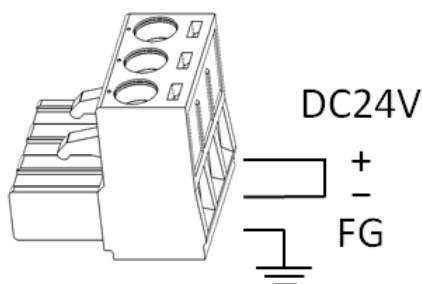
- The installation may be carried out by qualified personnel only.
- Install the HMI according to the installation procedures.
- Check the power source voltage is within the specified range and the polarity is correct before connecting the HMI.
- Keep signal and power supply cables away from high-voltage, large-current carrying cables.



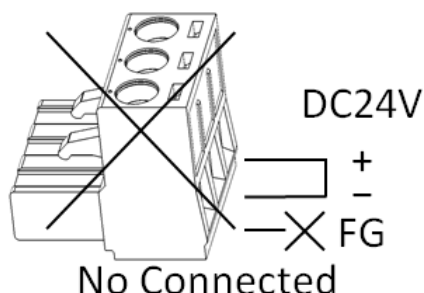
Caution

Make sure the HMI is properly grounded to prevent electrical shock, fire or malfunction.

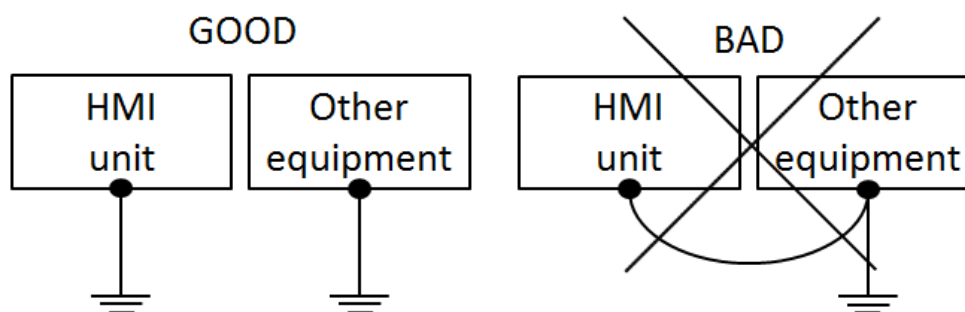
Recommended



Prohibited



- HMI unit and other equipment should have the same electrical grounding (reference voltage level), otherwise communication errors may occur.



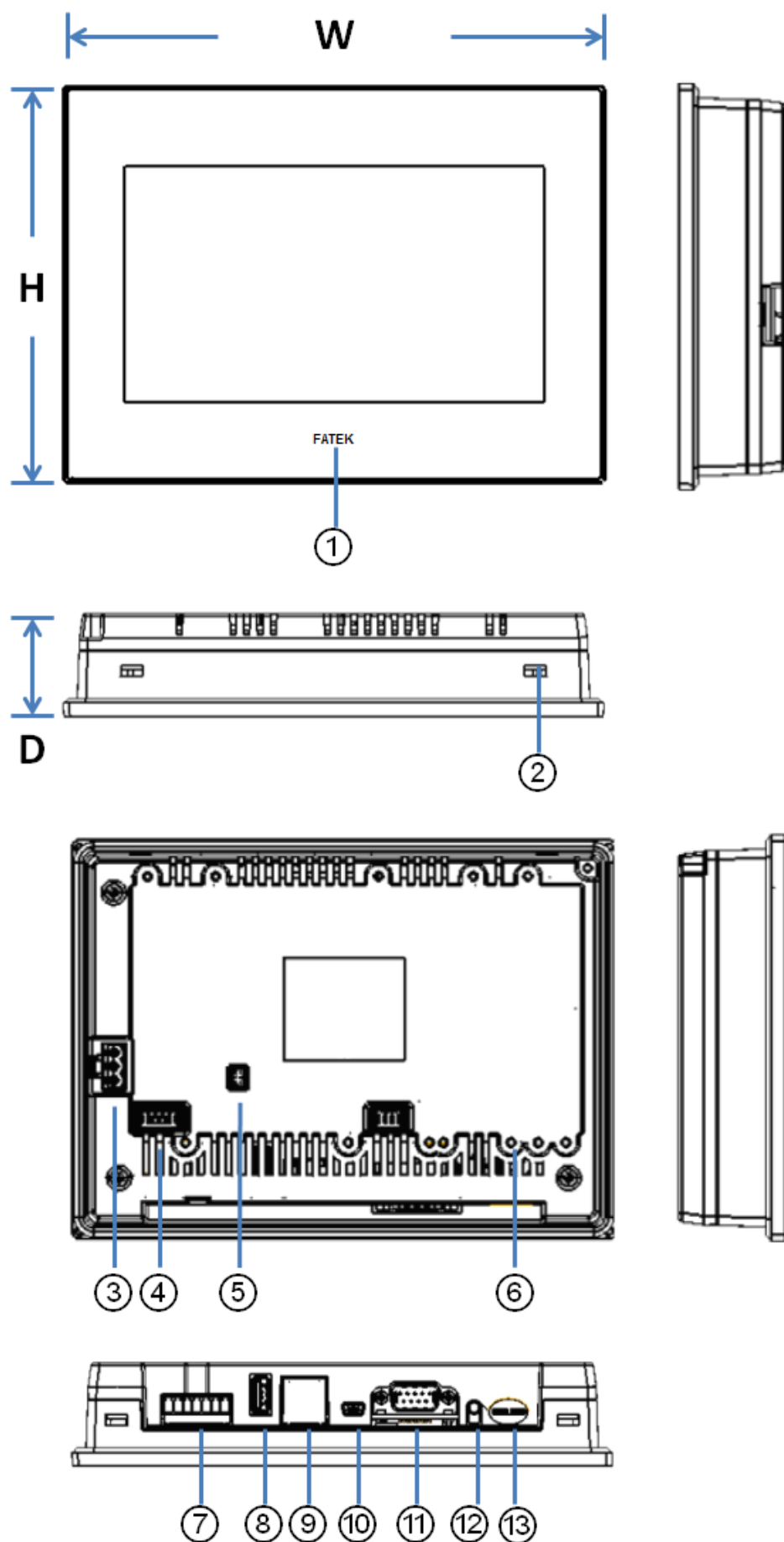
1.3 Operation

- Do not use sharp objects or excessive force to press the touch screen. This may damage the touch screen. HMSP070 screen protector can be applied to the HMI screen to protect it from damage, for ordering information, please contact our sales department.
- Do not use the output signal of the device as any safety function or system emergency stop. It may result in personal injury or equipment damage if a malfunction of the touch occurs.

1.4 Maintenance and Service

- The agreed guarantee applies.
- Only qualified personnel should make repairs and perform maintenance.
- Disconnect the device from the power supply before carrying out cleaning or maintenance.
- Clean the front panel with a soft cloth and mild detergent.
- Please use original replacement spare parts or accessories.

2. Part Names and Dimensions



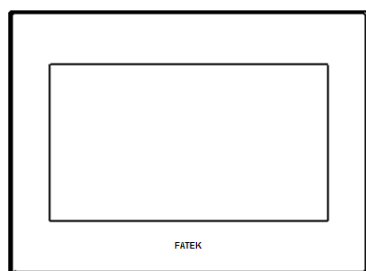
| | |
|---|--|
| ① | Power Indicator Light |
| ② | Mounting Hole |
| ③ | Power Connector |
| ④ | COM3/COM4 Termination Switch |
| ⑤ | HB1 PLC Connector |
| ⑥ | HB1 PLC Screw Hole |
| ⑦ | COM3/COM4: Pluggable Terminal Block |
| ⑧ | USB Connector |
| ⑨ | Ethernet RJ45 Connector (for N1/N model) |
| ⑩ | Mini USB Connector |
| ⑪ | COM1: DB-9 Male Connector |
| ⑫ | Audio Phone Jack (for N1 model) |
| ⑬ | Micro-SD Card Slot (for N1 model) |

| | |
|---|----------|
| W | 201.0 mm |
| H | 147.0 mm |
| D | 38.1 mm |

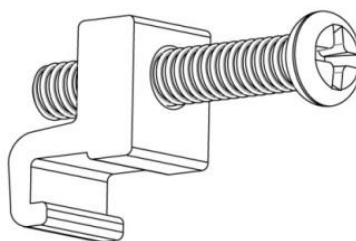
3. Specifications

| Model | | P5070S | P5070N | P5070N1 |
|--|-----------------------------|--|----------|----------|
| UL 61010-1 Technical Consideration | Type of item tested | Control | | |
| | Product Description | Operator Panel | | |
| | Connections to mains supply | Permanent | | |
| | Overvoltage category | II | | |
| | Pollution degree | 2 | | |
| | Means of Protection | Class III | | |
| | Environmental conditions | Operating Temp. 0~50°C Storage Temp. -20 ~ 60 °C | | |
| | For use in wet locations | No | | |
| | Equipment mobility | Built in | | |
| | Operating conditions | Continuous | | |
| | Overall size | 201.0 x 147.0 x 38.1 (mm) | | |
| | Weight | 610 (g) | 630 (g) | 650 (g) |
| | Marked degree of protection | Front panel: IP65 / Rear Case: IP20 to IEC 60529 Type 1 to UL 50E | | |
| | Equipment classification | Industrial, Professional, Commercial | | |
| | Equipment class | Class III | | |
| | Equipment type | Permanently connected, Fixed | | |
| I/O Port | Serial 1 | Connector: D-Sub 9-Pin COM1: RS-232 (4W) | | |
| | Serial 2 | Connector: Pluggable Terminal Block COM3: RS-422/485 (Isolation) COM4: RS-485 (Isolation) | | |
| | LAN | --- | 10M/100M | 10M/100M |
| | USB | USB2.0 Type-A (Host)x1 USB2.0 Type mini-B (Device)x1 | | |
| | Micro SD | --- | --- | Yes |
| | Audio | --- | --- | Yes |
| | PLC Extension | HB1 main units + B1 extension modules | | |
| | Termination Switch | Yes (For RS-422/485) | | |
| Power | Power Input | 24VDC±20% (Isolated Power) | | |
| | Consumption | 400mA@24VDC | | |
| | Insulation | 50MΩ at 500VDC | | |
| Environment | Relative Humidity | 10%~90%@ 40°C (non-condensing) | | |
| | Withstand Voltage | AC500V/20mA/1 Min. (between charger & FG terminals) | | |
| | Vibration | 5 to 9Hz Half-amplitude: 3.5mm 9 to 150 Hz Constant acceleration: 19.6m/s ² (2G) 3 directions of X, Y, Z: 10times (IEC61131-2 complaints) | | |
| | Noise Suppression | 1000Vp-p, width 1us, rising time 1ns | | |
| | Grounding Resistance | Below 100Ω | | |
| Dimension | Cut-out | 191.5 x 137.5 (mm) | | |

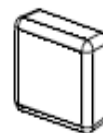
4. Unpacking the Unit



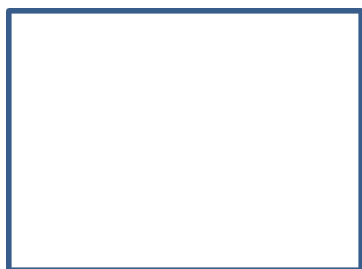
FATEK HMI x1



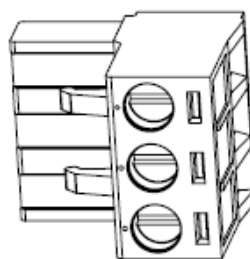
Hook and Screw x4



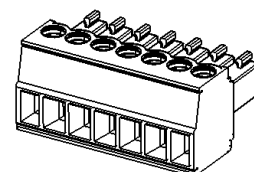
FATEK PLC
Connector Rubber
Cover x1



A4 Double-sided Installation Guide x1

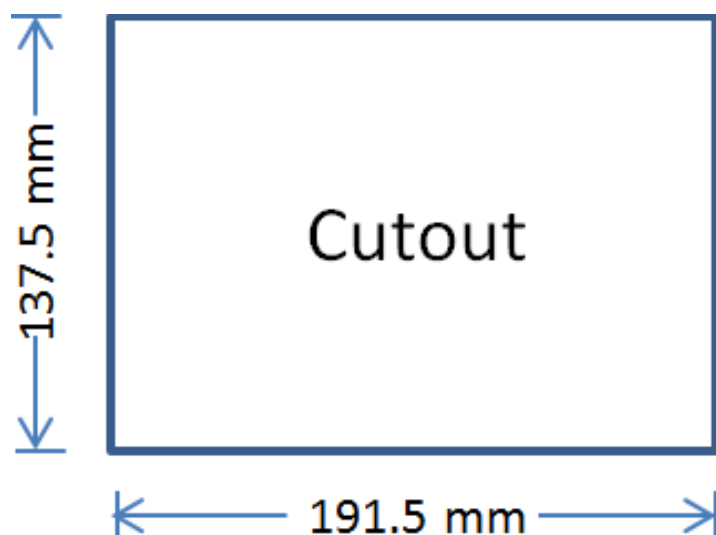
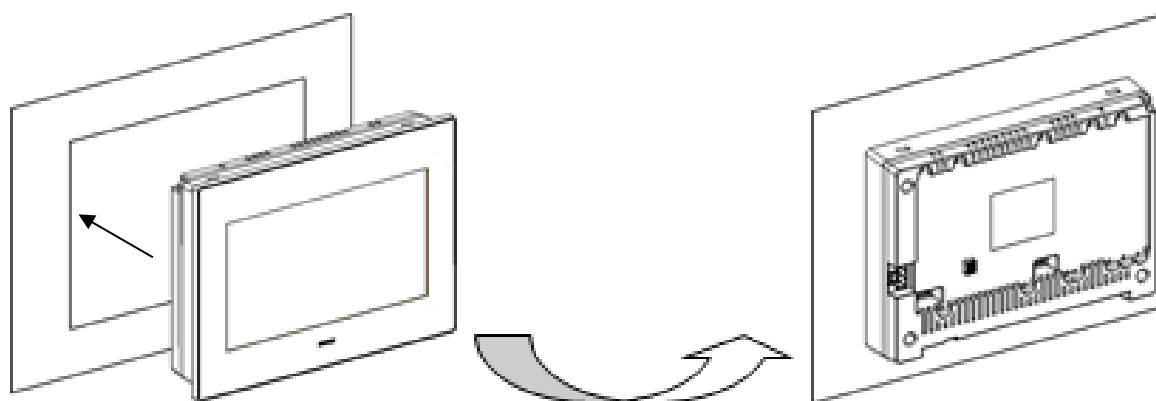


Power Connector x1



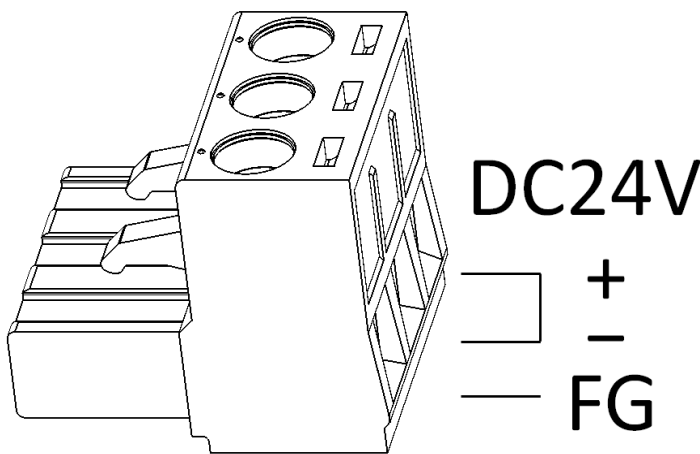
Pluggable Terminal
Block x1

5. Installation Procedures



- Push the HMI into the cutout until the waterproof ring contacts the plate.
- Insert a hook into each mounting hole on the HMI, and then tighten the screws evenly with a moderate torque.
- Failure to tighten the screws may cause the HMI to fall, malfunction or short-circuit. Excessive tightening may cause deformation. The necessary torque is about 0.16N·m.

6. Power Connection

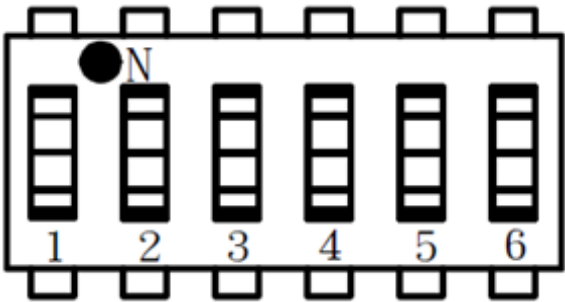


- Be sure to connect the ground FG terminal to a class-3 ground (Ground resistance should not exceed 100Ω). Try to make the ground wire as short as possible.
- Use 28 – 12 AWG (0.5 – 1.5 mm²) wire for the power connections.

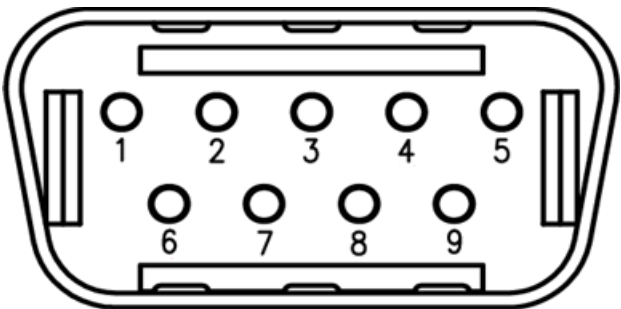
7. Termination Switch

- P5070S/N/N1 HMI has a built-in termination resistor switch.
To enable or disable the termination resistor please follow the configuration shown in the table below. The termination switch is for COM3 [RS-422 / RS-485] and COM4 [RS-485].
- Configuration of Termination Resistor Switch.

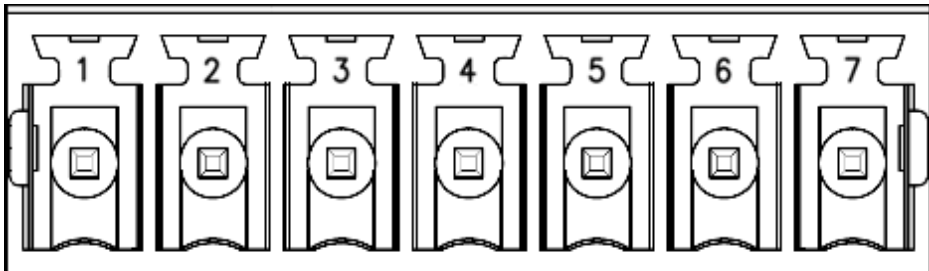
| Termination Resistor | | | | | | |
|----------------------|---------------|---------|---------------|---------|---------------|---------|
| No. | COM3 [RS-422] | | COM3 [RS-485] | | COM4 [RS-485] | |
| | Enable | Disable | Enable | Disable | Enable | Disable |
| 6 | OFF | OFF | OFF | OFF | ON | OFF |
| 5 | OFF | OFF | OFF | OFF | ON | OFF |
| 4 | ON | OFF | ON | OFF | OFF | OFF |
| 3 | ON | OFF | ON | OFF | OFF | OFF |
| 2 | ON | OFF | OFF | OFF | OFF | OFF |
| 1 | ON | OFF | OFF | OFF | OFF | OFF |



8. Pin-out of COM Ports

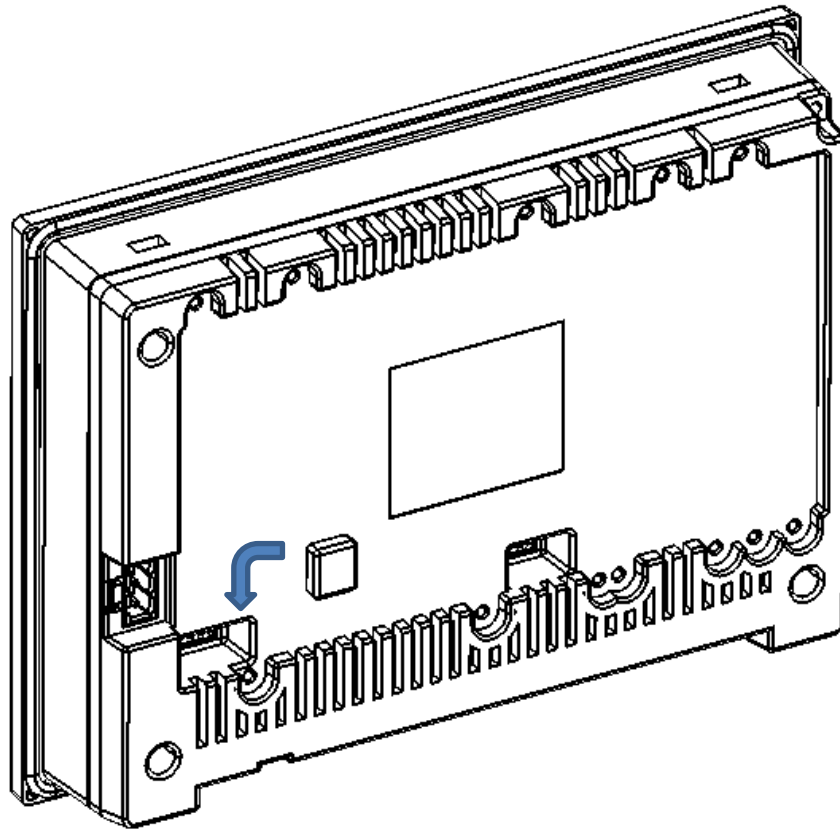
| DB-9 Male Connector | |
|--|------------------|
|  | |
| PIN# | COM1 [RS-232] |
| 1 | NC ^{*1} |
| 2 | RX |
| 3 | TX |
| 4 | NC |
| 5 | GND |
| 6 | NC |
| 7 | RTS |
| 8 | CTS |
| 9 | NC |

*1 NC: No Connection

| Pluggable Terminal Block | | | |
|--|------------------|------------------|------------------|
|  | | | |
| PIN# | COM3 [RS-422] | COM3 [RS-485] | COM4 [RS-485] |
| 1 | NC | NC | DATA+ |
| 2 | NC | NC | DATA- |
| 3 | ISO_GND | ISO_GND | ISO_GND |
| 4 | RX+ | NC | NC |
| 5 | RX- | NC | NC |
| 6 | TX+ | DATA+ | NC |
| 7 | TX- | DATA- | NC |

9. PLC Extension Tips

- For compact size and saving space, using FATEK HB1 main units + B1 extension modules is recommended.
- The rubber cover of the PLC connector can be taken off and placed into the termination switch slot.



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