INSTALLATION & OWNER'S MANUAL

Switch module & expansion board

MIA-SM (KEB-01)

Original manual.

Read this manual carefully before using the product, and keep it handy for future reference.

Foreword

This manual is prepared for the switch module.
It is applicable to the switch module (MIA-SM).
The actual accessories may vary with the model.

Contents

Safety Warning

Safety Warning

Please read this manual carefully before installation, and keep it in a proper place for future reference. If you are unsure about the installation or operation plan, contact your dealer or technical support personnel for advice and necessary information.

⚠ Warnings and Precautions

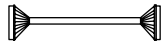
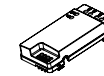
- All onsite wires and components must be installed by licensed electricians and must comply with local and national laws and regulations. Users are prohibited from installing these wires and components by themselves.
- Onsite wiring must follow the wiring diagrams and the following instructions. Incorrect installation or connection of equipment or accessories may lead to electric shock, short circuits, leaks, fires or other damage.
- Be careful not to bend the circuit board when inserting or removing a connection wire.
- Before cleaning or maintenance, ensure the power supply is cut off.
- Do not clean the board with water to avoid electric shock.
- Do not operate with wet hands to avoid electric shock.
- Do not use pesticides, disinfectants, or flammables directly on the board as they may damage the board or cause fires.
- Do not connect the communication wire when the power is on. Otherwise, the circuit board will be damaged.
- Do not connect the power cable (high voltage) to the communication (low voltage) terminal. Otherwise, the circuit board will be damaged.
- Note the distinction between the communication port of the upstream IDU and that of the downstream IDU. Be careful not to confuse the two. Otherwise, communication failure will occur.
- Use the specified cables as communication wires and do not place any heavy objects on the wiring terminals.
- Do not install the device in an environment that exposes the unit to corrosive, flammable or explosive materials or oil mist (such as a kitchen).
- Do not install the expansion board outdoors or in a wet place, and protect it from direct sunlight. Do not knock, throw, or randomly disassemble the board.
- Please install the expansion board after painting the wall to prevent water, lime and sand from entering the board.

Accessories

⚠ CAUTION

- Check the accessory package for the above items and contact your local dealer for any missing items.
- Do not throw away any accessories that may be required for installation until the installation is complete.

Switch Module Assembly (Model: MIA-SM)

Name	Image	Quantity	Name	Image	Quantity
Adapter wire		1	Mounting box cover*		1
Switch module		1	Installation and Operation Manual		1

*: The mounting box cover is only applicable to circular cassette IDUs.

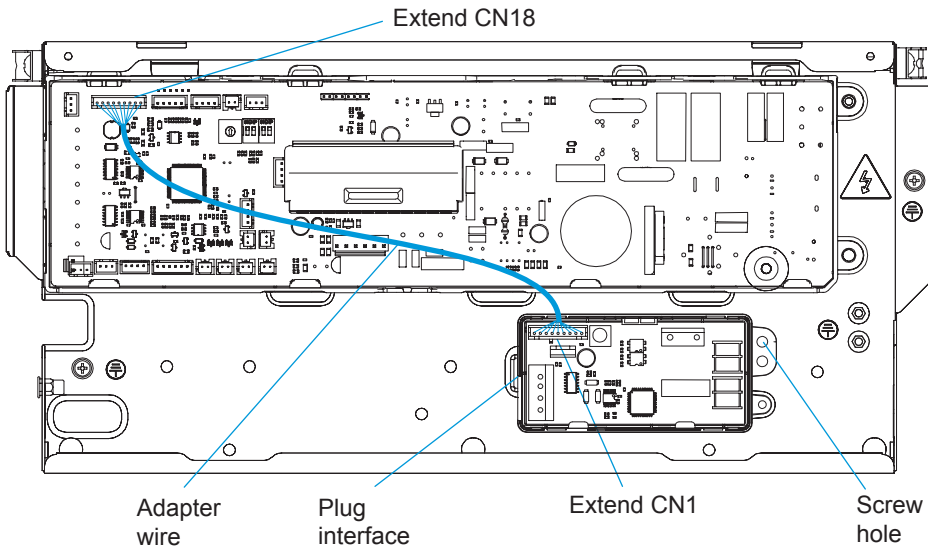
Installation Instructions

Installation of Switch Module

1. Connection between switch module and compact four-way cassette

Step 1: Take the switch module out from the accessory package, insert the connector extended from one end of the plastic base of the switch module into the socket reserved in the electric control box, and secure the connector to the screw hole reserved in the electric control box with 10 screws (ST3.9) provided in the accessory package, as shown in the figure below.

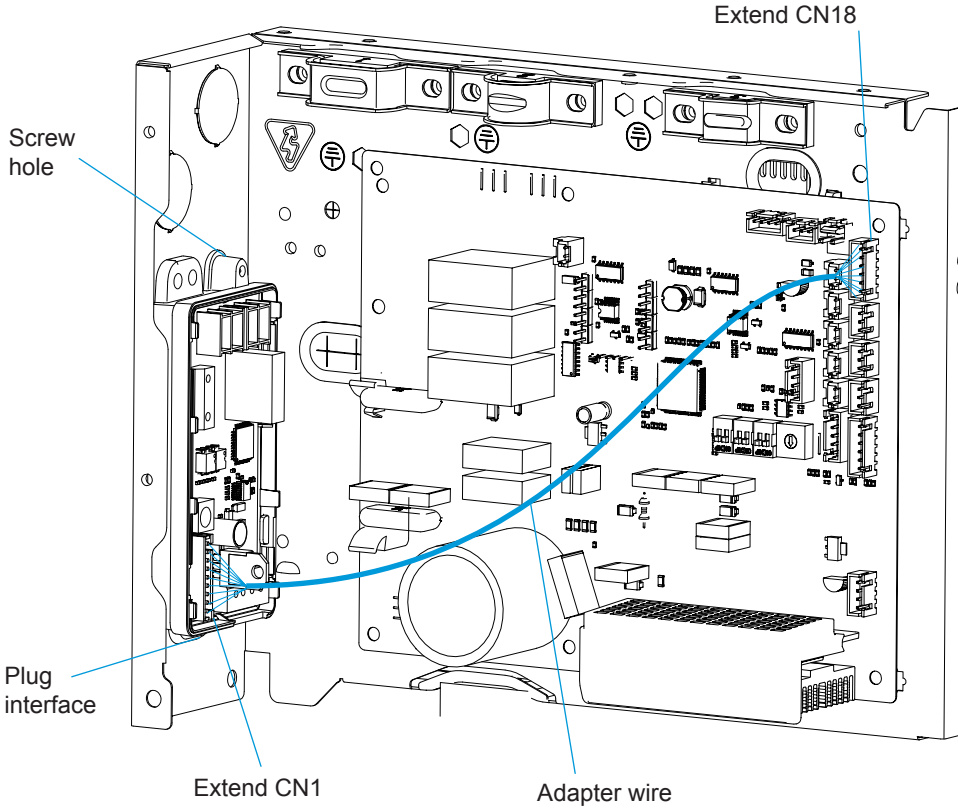
Step 2: Take the communication adapter wire out from the switch module accessory package, and connect the terminals of the wire to the Extend CN18 port on the IDU main control board and the Extend CN1 port on the switch module respectively as shown in the figure below. Ensure that the terminals are securely connected to the ports to prevent loosening.



2. Connection between switch module and ARC duct

Step 1: Take the switch module out from the accessory package, insert the connector extended from one end of the plastic base of the switch module into the socket reserved in the electric control box, and secure the connector to the screw hole reserved in the electric control box with 10 screws (ST3.9) provided in the accessory package, as shown in the figure below.

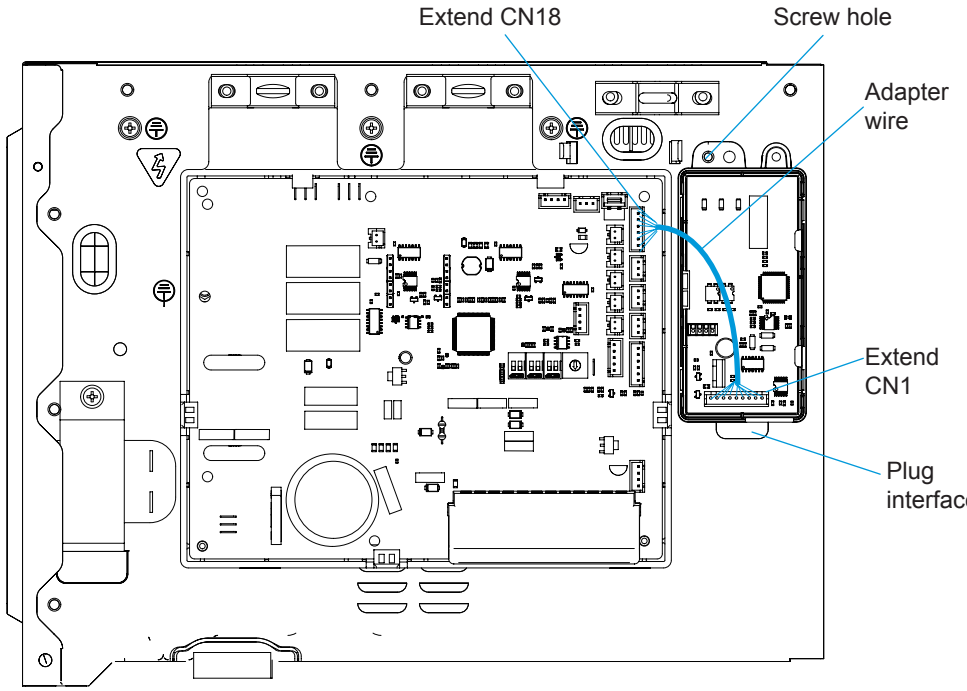
Step 2: Take the communication adapter wire out from the switch module accessory package, and connect the terminals of the wire to the Extend CN18 port on the IDU main control board and the Extend CN1 port on the switch module respectively as shown in the figure below. Ensure that the terminals are securely connected to the ports to prevent loosening.



3. Connection between switch module and medium static pressure duct

Step 1: Take the switch module out from the accessory package, insert the connector extended from one end of the plastic base of the switch module into the socket reserved in the electric control box, and secure the connector to the screw hole reserved in the electric control box with 10 screws (ST3.9) provided in the accessory package, as shown in the figure below.

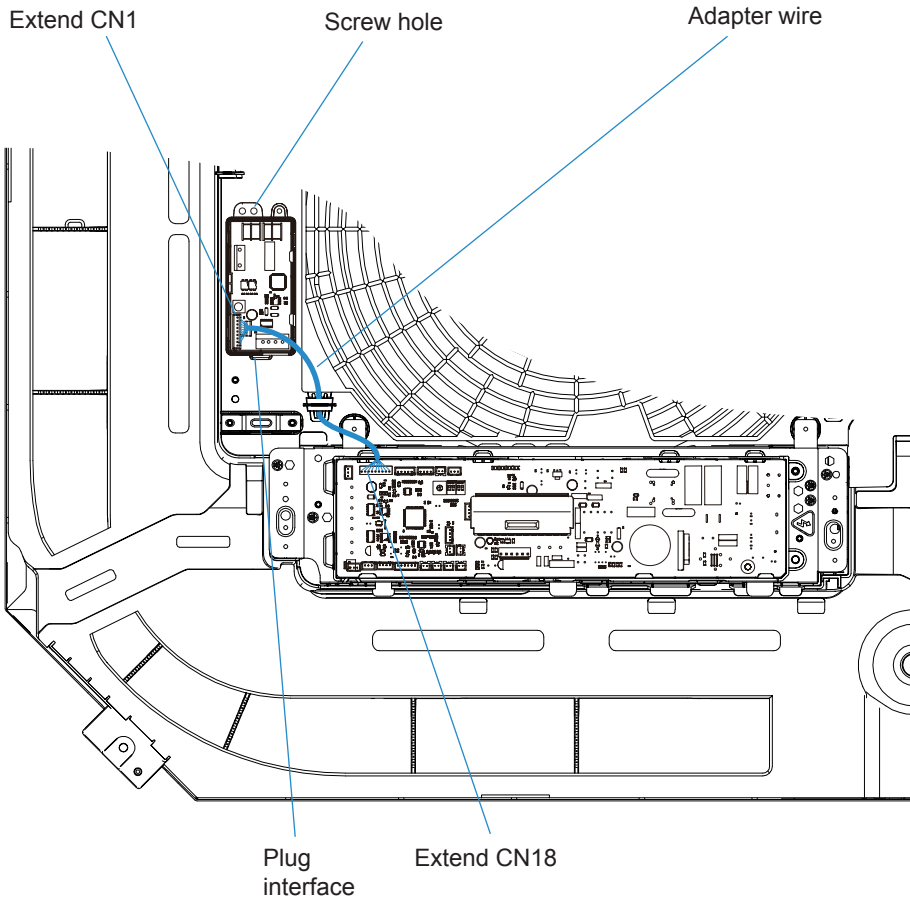
Step 2: Take the communication adapter wire out from the switch module accessory package, and connect the terminals of the wire to the Extend CN18 port on the IDU main control board and the Extend CN1 port on the switch module respectively as shown in the figure below. Ensure that the terminals are securely connected to the ports to prevent loosening.



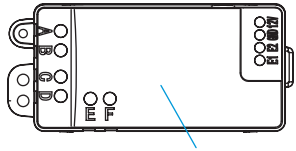
4. Connection between switch module and four-way cassette

Step 1: Remove the switch module from the accessory package, and insert the connector extended from one end of the plastic base of the switch module into the socket reserved on the air guide ring, and fix the assembly to the screw hole reserved on the air guide ring with 10 screws (ST3.9) provided in the accessory package, as shown in the figure below.

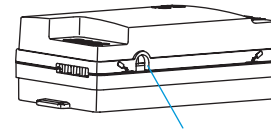
Step 2: Take the communication adapter wire out from the switch module accessory package, and connect the terminals of the wire to the Extend CN18 port on the IDU main control board and the Extend CN1 port on the switch module respectively as shown in the figure below. Ensure that the terminals are securely connected to the ports to prevent loosening.



Step 3: Remove the mounting box cover from the accessory package, and fasten the cover to the base of the adaptor board as shown in the figure below. Note that the communication adaptor wire should be led out from the outgoing wire hole.



Mounting box cover

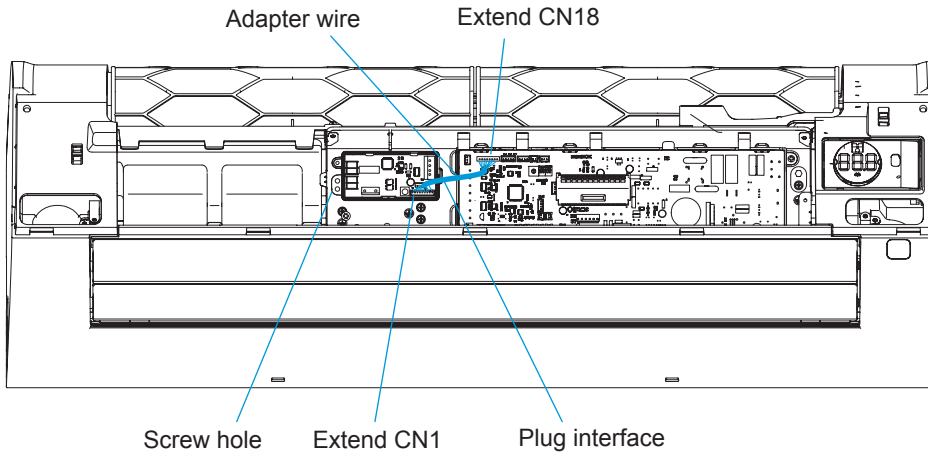


Wiring hole

5. Connection between switch module and wall-mounted IDU

Step 1: Take the switch module out from the accessory package, insert the connector extended from one end of the plastic base of the switch module into the socket reserved in the electric control box, and secure the connector to the screw hole reserved in the electric control box with 10 screws (ST3.9) provided in the accessory package, as shown in the figure below.

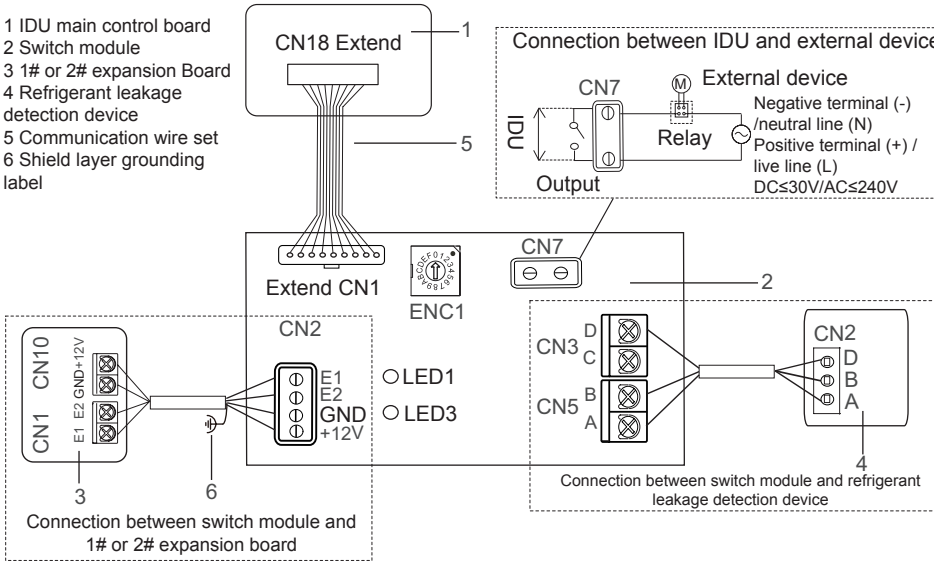
Step 2: Take the communication adapter wire out from the switch module accessory package, and connect the terminals of the wire to the Extend CN18 port on the IDU main control board and the Extend CN1 port on the switch module respectively as shown in the figure below. Ensure that the terminals are securely connected to the ports to prevent loosening.



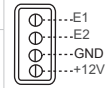
Port Definition and Function Description

1. Switch module (model: MIA-SM)

1 IDU main control board
2 Switch module
3 1# or 2# expansion Board
4 Refrigerant leakage detection device
5 Communication wire set
6 Shield layer grounding label



No.	Port	Attribute	Function	Electrical Characteristics	Wire Specifications
1	CN5-A	Input	Connect the R32 refrigerant leakage fault signal transmission port. See Table 3.1.1-1 for the description on port input signals.	1) The refrigerant leakage detection device is a DC device (≤ 30 V, 3 mA). 2) The refrigerant leakage detection device is an AC device (≤ 240 V, 3 mA). Note: The refrigerant detection device can be purchased from the factory, or purchased from a third party based on the electrical characteristics.	Provided on site: flexible polythene sheathed 3-core cords (cross section ≥ 0.75 mm^2, length up to 50 m), R32 refrigerant leakage detection devices (purchased from the factory, or purchased from a third party based on the electrical characteristics).
	CN5-B		Connect the fault signal transmission port of the R32 refrigerant leakage detection device. See Table 3.1.1-1 for the description on port input signals.		
	CN3-D	Input	Connect the common port of R32 refrigerant detection device		
2	CN3-C	Input	Reserved	/	/
3	CN7	Output	For linkage between external devices (such as FAPUs and air valves) and the IDU. See Table 3.1.1-1 for the description on port output signals.	1) For DC external devices, select DC power supply (≤ 30 V, 1 A). 2) For AC external devices, select AC power supply (≤ 240 V, 1 A).	Provided on site: flexible polythene sheathed cords (cross section ≥ 1.5 mm^2, length up to 50 m), external devices supply. Whether to use relays depends on the working characteristics of the external devices.
4	CN1	Output	Connect the CN18 port of the IDU main control board for communication between the switch module and the IDU main control board	GND2 GND +5V+ 12V GND2 GND +5V +12V Count from right to left Between the 5th pin and the 6th pin: +12 VDC; between the 8th pin and the 9th pin: +5 VDC	Provided by the factory: See adapter wires in the accessory package.

<table>
<tr><th>No.</th><th>Port</th><th>Attribute</th><th>Function</th><th>Electrical Characteristics</th><th>Wire Specifications</th></tr>
<tr><td rowspan="4">5</td><td>CN2-E1</td><td rowspan="4">Commu-nication</td><td>Connect the CN1-E1 port of the expansion board for communication between the switch module and the expansion board</td><td rowspan="4"> 

Between the 1st pin and the 2nd pin (+12V and GND): +12 VDC, ≤ 1 A; between the 3rd pin and the 4th pin (E2 and E1): max +5 VDC, ≤ 1 mA (counting from the bottom up)</td><td rowspan="4">Provided on site: flexible polythene sheathed 4-core cords (cross section ≥ 0.75 mm^2, length up to 50 m). Note that the shielding layer should be grounded to the sheet metal of the electric control box, as shown in the figure above (No. 6).</td></tr>
<tr><td>CN2-E2</td><td>Connect the CN1-E2 port of the expansion board for communication between the switch module and the expansion board</td></tr>
<tr><td>CN2-GND</td><td>Connect the CN10-GND port of the expansion board</td></tr>
<tr><td>CN2-+12V</td><td>Connect the CN10-+12V port of the expansion board to supply power for the CN10 port of the expansion board</td></tr>
<tr><td>6</td><td>ENC1</td><td>Setting</td><td colspan="3">Notes:
1) Do not set the DIP switch until the AC power supply is cut off (because DIP switch setting is invalid when the power supply is on).
2) The factory default dial value for ENC1 dial is 0. During on-site installation, please select the appropriate dial value according to the port signal definition in the table below.

Waring:
1) It is prohibited to select a total of 6 digits A~F on the ENC1 dial, otherwise it will cause the indoor unit to malfunction and fail to start or the adapter board to be damaged!</td></tr>
</table>

Table 3.1.1-1 Mapping between ENC1 DIP switch value and CN5-A/CN5-B/CN7 port signal

DIP Switch Value	Description on refrigerant leakage fault signal (port: CN5-A)	Description on refrigerant leakage detection device fault signal (port: CN5-B)	Description on signal for linkage between IDU fan and external load (port: CN7)
0 (default)	Invalid setting	Invalid setting	The IDU fan starts and the port is closed
1	The input voltage of the port is 0 V, and the refrigerant leakage fault is triggered	Invalid setting	The IDU fan starts and the port is closed
2	The input voltage of the port is 0 V, and the refrigerant leakage fault is triggered	The input voltage of the port is 0 V, and the detection device fault is triggered	The IDU fan starts and the port is closed
3	Invalid setting	Invalid setting	The IDU fan stops and the port is closed
4	The input voltage of the port is 0 V, and the refrigerant leakage fault is triggered	Invalid setting	The IDU fan stops and the port is closed
5	The input voltage of the port is 0 V, and the refrigerant leakage fault is triggered	The input voltage of the port is 0 V, and the detection device fault is triggered	The IDU fan stops and the port is closed
6	The input voltage of the port is larger than or equal to 12 V, and the refrigerant leakage fault is triggered	Invalid setting	The IDU fan starts and the port is closed
7	The input voltage of the port is larger than or equal to 12 V, and the refrigerant leakage fault is triggered	The input voltage of the port is larger than or equal to 12 V, and the detection device fault is triggered	The IDU fan starts and the port is closed
8	The input voltage of the port is larger than or equal to 12 V, and the refrigerant leakage fault is triggered	Invalid setting	The IDU fan stops and the port is closed
9	The input voltage of the port is larger than or equal to 12 V, and the refrigerant leakage fault is triggered	The input voltage of the port is larger than or equal to 12 V, and the detection device fault is triggered	The IDU fan stops and the port is closed

<table>
<tr><th>No.</th><th>Port</th><th>Attribute</th><th>Function</th><th>Electrical Characteristics</th><th>Wire Specifications</th></tr>
<tr><td>7</td><td>LED1
LED3</td><td>Indication</td><td colspan="4"><table>
<tr><th>Indicator</th><th>Display</th><th>Description</th></tr>
<tr><td rowspan="2">LED1: Power-on indicator (green)</td><td>Off</td><td>The switch module is powered off</td></tr>
<tr><td>Stays on</td><td>The switch module is powered on</td></tr>
<tr><td rowspan="3">LED3: Communication indicator (red)</td><td>Off</td><td>Communication between the switch module and the IDU main control board fails</td></tr>
<tr><td>Stays on</td><td>Normal communication between the switch module and the IDU main control board</td></tr>
<tr><td>Blink</td><td>Abnormal communication between the switch module and IDU main control board</td></tr>
</table></td></tr>
</table>

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