CENTRAL CONTROL SC-SL5-E INSTALLATION MANUAL

PJZ012D200
202602

MITSUBISHI HEAVY INDUSTRIES

This installation manual provides information on the installation methods and precautions related to the unit.
Use this manual alongside the user manuals for the indoor and outdoor units, as well as for other optional equipment. Please read this manual carefully before starting installation work to ensure the unit is installed correctly.
As the product is precision equipment, please handle it with care to prevent damage to the unit caused by dropping it or stepping on it. Once installation is complete, carry out a test run to confirm that everything is working correctly, and show customers how to use the unit according to the user manual. Please ask customers to keep the installation manual to hand.

Please note:
The user manual is not included in the package.
Please download it from the following website:
https://www.mhi-mth.co.jp/en/products/detail/air-conditioner_users_manual.html#SC-SL5-E

Safety precautions

- Please read this manual carefully before installation work to ensure the unit is installed correctly. All of the following instructions are important and must be strictly followed.
  - ⚠WARNING — Failure to follow these instructions may result in serious consequences, such as death, severe injury, etc.
  - ⚠CAUTION — Failure to follow these instructions may result in personal injury or damage to property. It could have serious consequences depending on the circumstances.
- The pictograms used in the text have the following meanings.
  - ⃠ Never do.
  - ❗ Always follow the instructions given.
- Keep this manual in a safe place where you can refer to it whenever necessary. Show this manual to the installer when moving or repairing the unit.
  When the ownership of this unit is transferred, this installation manual should be given to the new owner.

WARNING ⚠

- **● Consult your dealer or a professional contractor for installation of the unit.**
  Improper installation may result in electric shock, fire or the unit dropping.
- **● Installation work must be carried out properly in accordance with this installation manual.**
  Improper installation work may result in electric shock, fire or breakdown.
- **● Be sure to use the specified parts and accessories for the installation work.**
  Using unspecified parts may result in the unit dropping, catching fire or causing electric shock.
- **● Install the unit properly in a place that can support its weight.**
  If this place cannot support its weight, the unit may fall and cause injury.
- **● Be sure to have the electrical wiring carried out by qualified electrician and use an exclusive circuit.**
  Improper work on the power source can cause electric shock and fire.
- **● Switch off the main power supply before starting electrical work.**
  Failure to do so could cause electric shock, breakdown or malfunction.
- **● Be sure to turn off the power circuit breaker before repairing/inspecting the unit.**
  Repairing or inspecting the unit with the power circuit breaker turned on could cause electric shock or injury.
- **● Use the specified cables for wiring and connect them securely, taking care to protect electronic components from external forces.**
  Improper connections or fixing could generate heat, cause fire, etc.
- **● When installing the unit in a hospital, telecommunications facility, etc, implement measures to suppress electrical noise.**
  Hazardous effects on the inverter, private power generator, high-frequency medical equipment, radio communication equipment, etc. could cause malfunction or breakdown.
  Influences transmitted from the unit to medical or communication equipment could disrupt medical activities or video broadcasting or cause noise interference.
- **● When wiring, ensure connections are solid and fasten specified cables securely so that terminal connections are not subject to external forces from cables.**
  Incomplete or improper connection of terminal wiring may cause electric shock or fire.
- **● Do not modify the unit.**
  Doing so could cause electric shock, fire, or breakdown.
- **● Do not install the unit in an environment where flammable gas could be generated, enter, accumulate or leak.**
  If the unit is used in places where the air contains dense oil mist, steam, organic solvent, vapour, corrosive gases (such as ammonium, sulphuric compound, acids, etc) or acidic or alkaline solutions, special sprays, etc, it could result in electric shock, breakdown, smoke or fire due to significant deterioration in performance or corrosion.
- **● Do not install the unit where excessive water vapour is generated excessively or condensation occurs.**
  Doing so could cause electric shock, fire, or breakdown.
- **● Do not use the unit in a place where it gets wet, such as a laundry room.**
  Doing so could cause electric shock, fire, or breakdown.
- **● Do not operate the unit with wet hands.**
  Doing so could cause electric shock.
- **● Do not wash the unit with water.**
  Doing so could cause electric shock, fire, or breakdown.
- **● This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have received supervision or instruction in the use of the unit from a person responsible for their safety. Supervised children to ensure they do not play with the unit.**
  In order to avoid a hazard, the supply cord must be replaced by the manufacturer, its service agent or similarly qualified persons if it is damaged.
- **● Cleaning and user maintenance must not be carried out by children without supervision.**

CAUTION ⚠

- ● Do not install the unit in the following places,
  as doing so could cause the unit to break down or deform:
  ·Where it is exposed to direct sunlight
  ·Where the ambient temperature is 0 °C or below or 40 °C or above
  ·Where dust is present
  ·Where the surface is uneven
  ·Where the installation area cannot support the weight of the unit
  ·In places with high humidity (above 85% RH) and condensation on the unit
  ·Where the unit gets wet.
- ● Provide a ground connection.
  Never connect the ground line to the gas or water supply piping, the lightning conductor rod or the telephone ground. Incorrect grounding may result in electric shock.
- ● Be sure to install a leakage breaker in the installation location.
  Failure to install a leakage breaker may result in electric shock.
- ● The device must not be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have received correct supervision and/or instruction.
- ● Children must be supervised to ensure they do not play with the device.
- ● Clearances, creepage distances and solid insulation must be observed.
  ·The primary and secondary wires must be reinforced and insulated.
  Keep the wires at least 5 mm apart or add a protective tube to them.

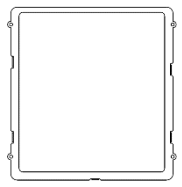
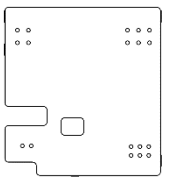
  Refer to the chapter 'Electrical wiring'. If there is wiring on the side of the unit for wall hanging, keep the wires at least 2 mm apart between the basic insulation and reinforced insulation.
  Install the wiring for the basic insulation and reinforced insulation in each of the insulation distribution pipes. Failure to do so could cause electric shock and disconnect the unit by adding tension.
  *Refer to the chapter 'Electrical wiring'.
- ● Make sure you remove any static electricity from your body before connecting the terminals or touching the unit.
  Either use an antistatic wristband or touch the metal part on the back of the device to discharge any static electricity from your body before connecting the terminals.
  Incomplete removal of static electricity may cause a malfunction.
- ● Touching the burr in the knockout hole can cause injury. Remove the burr from the knockout hole.

1 Applicable models

All models for Superlink and other models (*) specified by our company.
(*)Refer to the user manual.

2 Accessories

Check the following accessories:

Central control	1 unit	Image
Installation bracket for wall embedding (front)	1 piece	
Installation bracket for wall embedding (rear)	2 pieces	
Installation bracket for wall hanging	1 piece	
Pan head screw for fixing bracket (M4 x 20 mm)	4 pieces	
Wood screw for fixing bracket (4.1 x 25 mm)	4 pieces	
Pan head screw for fixing unit (M4 x 6 mm)	1 piece	
Round crimping terminal for power supply (M3)	3 pieces	
Wiring crimp	5 pieces	
Pan head SEMS M3 x 8 mm	2 pieces	

• Prepare the flathead driver (M2) for wiring to the terminal block for the connection and external input/output.
• Ensure that all parts other than the provided accessories are procured locally.

3 Installation work

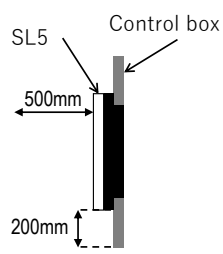
Install the central control after turning off the power to prevent electric shock.
Arrange or protect the wiring so that excessive force is not applied to the electrical cables.

3.1 Selecting the installation place

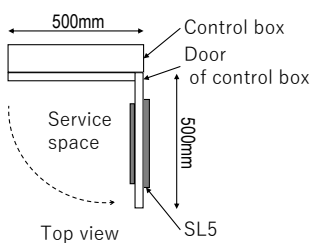
Install the unit in an indoor location that is not exposed to electromagnetic waves, water, dust or other foreign substances.
The operating temperature range of this product is 0 °C to 40 °C.
Install it in a location where the ambient temperature remains within this range.
However, if this range is exceeded, be sure to implement corrective measures such installing a cooling fan.
Please note that continued use of this central control outside the operating temperature range may result in operational issues.

3.2 Space required for installation

(1) If installing on the control box:
• Use a control box measuring 500 mm × 500 mm × 120 mm or more.
• Be sure to lock the control box to protect against electric shock.
Avoid using heat-retaining or heat-insulating materials, as these can result in heat build-up and adversely affect the operation of the central control.



Caution
Do not install devices that can cause the ambient temperature to rise in the same control box.
Do not install multiple controllers in the same control box either.
These can cause heat to build up and result in incorrect operation.
If multiple central controls are to be installed in the same control box, take corrective measures to ensure the temperature in the control box does not exceed 40 °C such as by installing cooling fans.

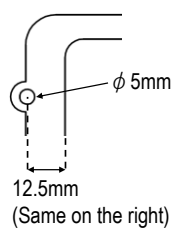


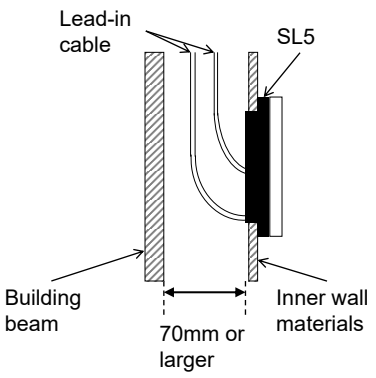
< Service space >
• Front of the central control 500 mm or more
• Bottom of the central control 200 mm or more (for fixing unit with screw)

(2) If embedding in a wall:
Please Note the following important points to ensure safety and proper installation:
• Use the attach installation brackets for wall embedding.
• Use to protect against electric shock.
• Check that sufficient space is available in the wall. When the inside of the wall is divided and has a cavity, create more than 0.11 m^3 of space.
Refer to the table below. If there is no partition on the left, right, top or bottom of the central control, create a space that is 70 mm or deeper.

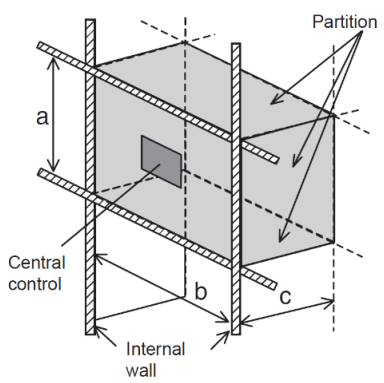
	a) Height (mm)	b) Width (mm)	c) Depth (mm)	Space (m^3)
Example 1	1,860	825	70	0.11
Example 2	3,720	410	70	0.11
Example 3	2,070	410	130	0.11

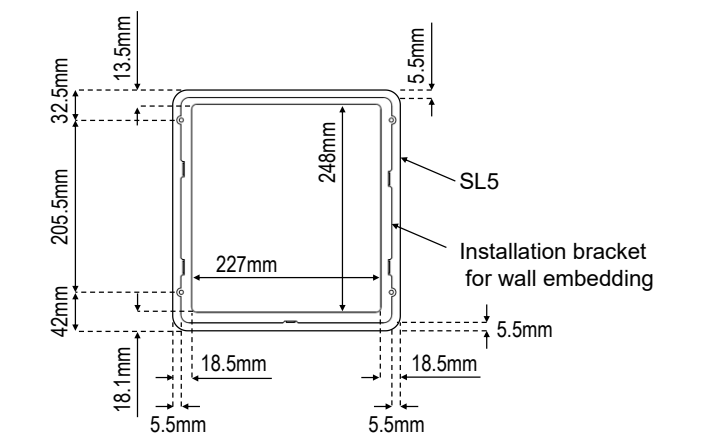
<No partition>



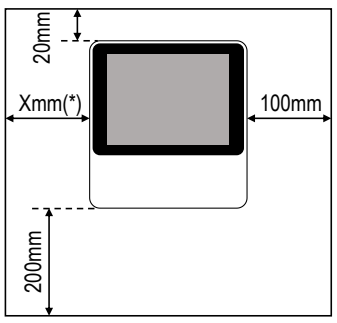


<With partition>

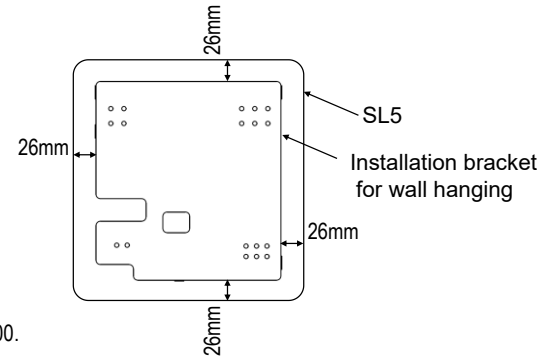




(3) If hanging on the wall:
Please note the following important points to ensure safety and proper installation:
• Use the attached installation brackets for wall-hanging.
• Check that sufficient space is available in the wall.
• Create a clearance as shown on the right or a larger clearance.

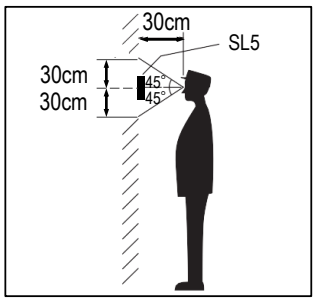


(*)In case of wiring from the side of the unit, X = 100.
In case of wiring behind the wall, X = 30.



3.3 Installation position

Install the central control so that the centre of the screen is at eye level of people who frequently use the unit.
The recommended position is for the centre of the screen to be within 45 degrees above or below eye level.



3.4 Installation procedure

(1) Install bracket
(a) If embedding in a wall:
- Use the installation brackets for wall embedding.
- Make a hole (length 248 mm x width 227 mm) in the wall where you want to install it (Fig. 3.4.1).
- Insert the rear bracket (*1, 2) through the hole into the back of the wall (Figs. 3.4.2, 3).
- Fix the front and rear brackets with pan head screws. Secure four points with these screws.
- When fastening the brackets, ensure the front and rear installation brackets are installed in the correct direction. (Fig. 3.4.4).

*1. This bracket has no left or right direction.
*2. Be careful not to drop the bracket into the wall.

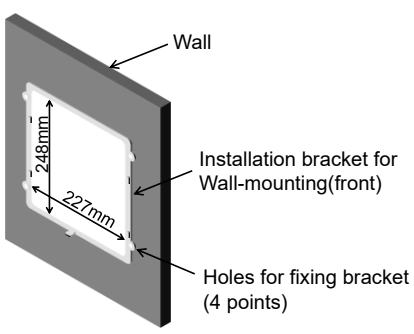


Fig. 3.4.1

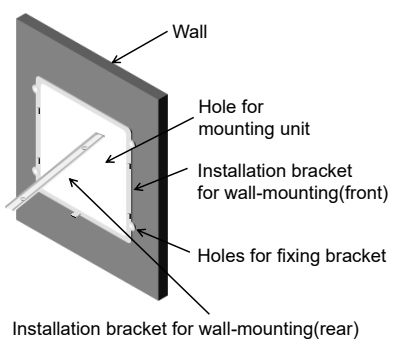


Fig. 3.4.2

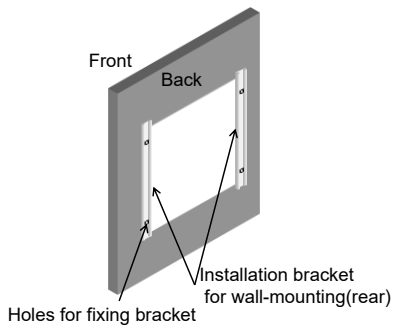


Fig. 3.4.3

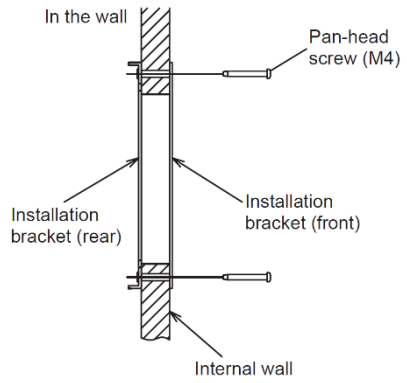


Fig. 3.4.4

(b) If hanging on the wall:
- Use the installation bracket for wall hanging.
- Place the bracket on the wall where you want to install it. Next, secure the bracket with wood screws (Fig. 3.4.5).
- If there is a hole on the wall where the screws are to be secured before installation, use spare holes nearby.
- If the unit is to be installed on gypsum board, use a metal sheath board anchor.

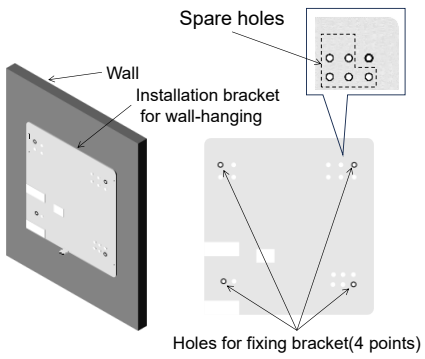


Fig. 3.4.5

(2) Install the unit (secure bracket and unit)
(a) If embedding in a wall:
- Embed the signal wire and power supply wire in the wall beforehand.
- Connect the wires to the terminal block.
- Confirm the power supply voltage and ensure the correct connection.

- Check the hook embedding position (hole) on the back of the unit (Fig. 3.4.5). Please note that the hook embedding position differs between wall embedding and wall hanging.
- Hook the unit onto the bracket hook. Check the position of the hook slit on the back of the unit (Fig. 3.4.6). Align the four holes in the unit with the four hooks on the bracket, using the slit as a guide. Make sure the four holes are hooked onto each hook. If they are not, the installation bracket and unit cannot be secured properly.
- Once you have set the unit, secure it and the installation bracket using the fixing unit's pan head screw. Tighten the screw from the bottom up (Fig. 3.4.7).

(b) If hanging on the wall:
- Connect the wires to each terminal block on the back of the unit beforehand.
- Confirm the power supply voltage and ensure the correct connection.

- Check the hook embedding position (hole) on the back of the unit (Fig. 3.4.5). Please note that the hook embedding position differs between wall embedding and wall hanging.
- Hook the unit onto the bracket hook. Check the position of the hook slit on the back of the unit (Fig. 3.4.6). Align the four holes in the unit with the four hooks on the bracket, using the slit as a guide. Make sure the four holes are hooked onto each hook. If they are not, the installation bracket and unit cannot be secured properly.
- Once you have set the unit, secure it and the installation bracket using the fixing unit's pan head screw. Tighten the screw from the bottom up (Fig. 3.4.8).

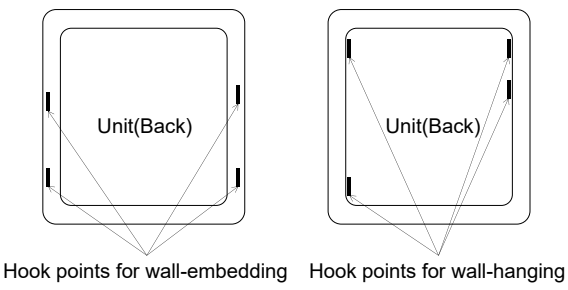


Fig. 3.4.5

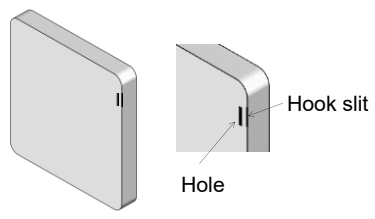


Fig. 3.4.6

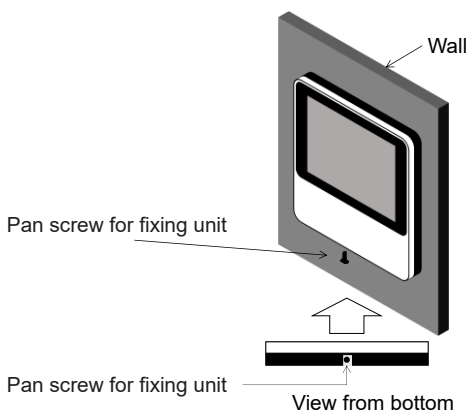


Fig. 3.4.7

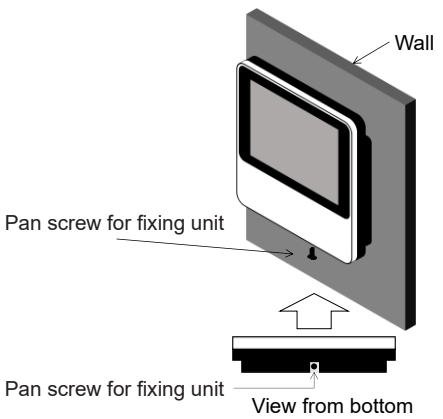


Fig. 3.4.8

4 Electrical wiring

- Carry out the grounding work. Do not connect the earth line to gas pipes, water pipes, lightning rods or the telephone grounding line.
- Do not turn on the power supply (local switch) until all the work is complete.
- Wait at least two minutes after the indoor and outdoor units are turned on before turning on the power supply.
- All of the components, except for those included in the wiring outline and the central control, are obtained at the site. These include wires, switches, relays, power supplies, lamps, etc.
- Be sure to build the circuit breaker which is easily accessible with building equipment's wiring.
- Remove the wiring cover to connect the wires to the terminal block. (Fig. 4.1).
- Be sure to use the included round crimped terminals when connecting wires to the power supply terminal block.

● Do not remove the microSD or Dip-SW cover. (Fig. 4.1).
● For wiring to the communication and external input/output terminal block, remove 6 mm of covering from the wires and insert them from the horizontal direction of the terminal block. Secure the wires by tightening the screw from the top of the terminal block (Fig. 4.2).
● Take care not to pinch the sheath. Tighten the wiring connection by hand (power supply: 0.7 Nm or less, other supply: 0.2 Nm). Do not tighten it using an electric driver. Doing so could cause malfunction or deformation.
● For wiring from the back of the wall, cut the knockout on the wiring cover.
● For wall hanging, there are two kinds of cable wiring methods:
(1) Wiring from the side of the unit
Cut the slits on the side of the wiring cover according to the number of wires (Fig. 4.3).
Completed installation image (Fig. 4.6).
(2) Wiring behind the wall
Cut the knockout on the front of the wiring cover (Fig. 4.4).
Completed installation image (Fig. 4.7).

Please note:

● Do not place the central control directly on a table with the display facing down. This could damage or scratch the LCD screen.
Please note: If the central control is installed upside down in the inner box, you can connect the wires to the terminal block without risking damage to the display screen. Please see Fig. 4.8.
● The wire insertion point on the terminal block shown in Fig. 4.2 can be closed. Open the insertion point before inserting.

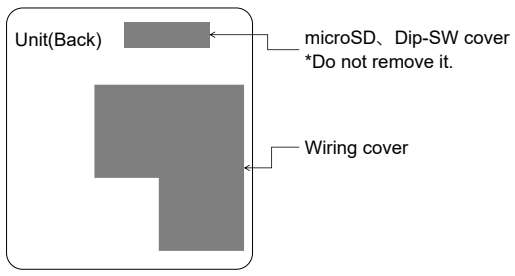


Fig. 4.1

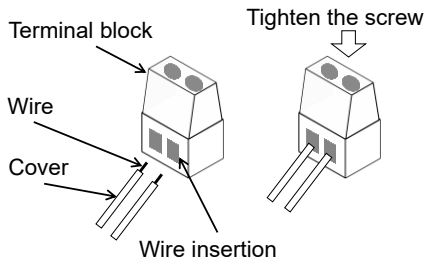


Fig. 4.2

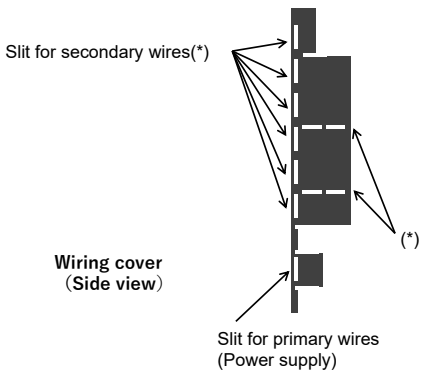


Fig. 4.3

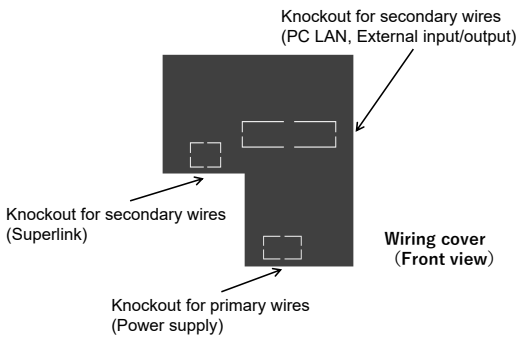
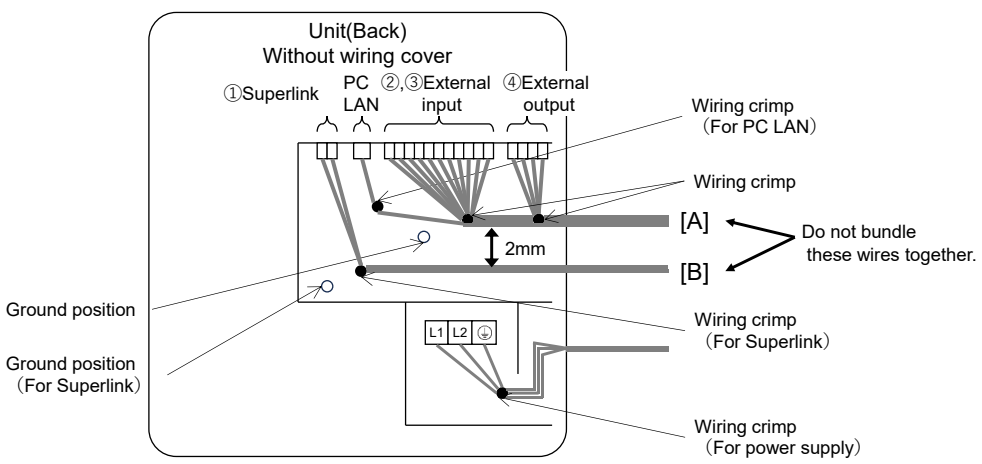


Fig. 4.4



[A] : PC LAN , External input/output(PI1,PI2,…PI8,DI1,DI2,DI3,COM)
[B] : Superlink(A1,A2,B1,B2)

Fig. 4.5

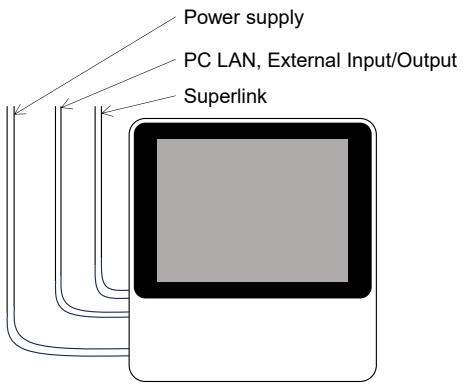


Fig. 4.6

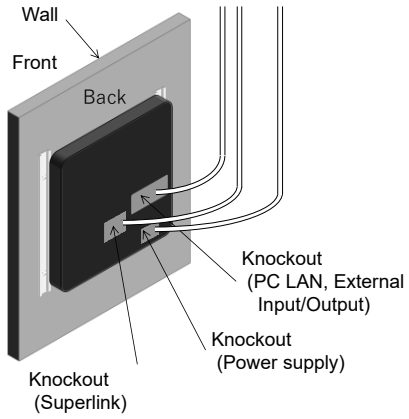


Fig. 4.7

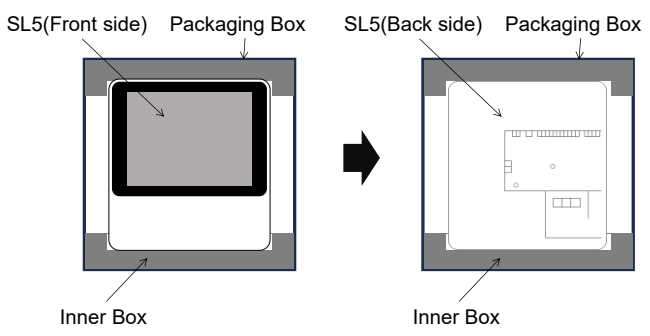
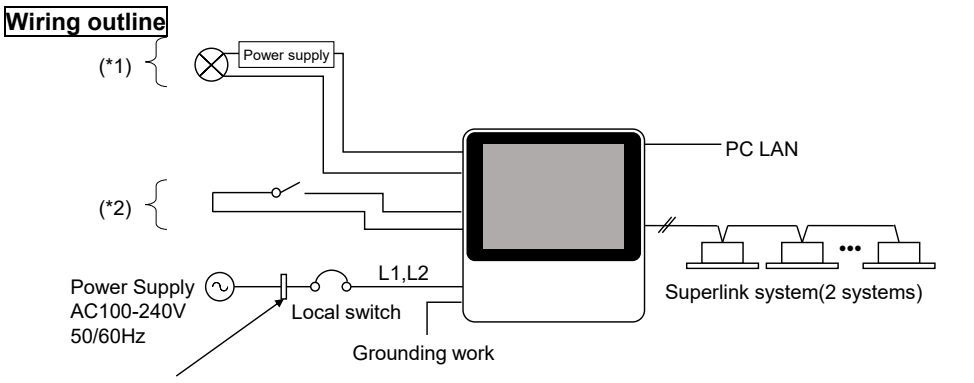


Fig. 4.8

Wiring outline



(*1) ● Operation output
● Malfunction output
● Refrigerant leakage output
● Other
(4 points)

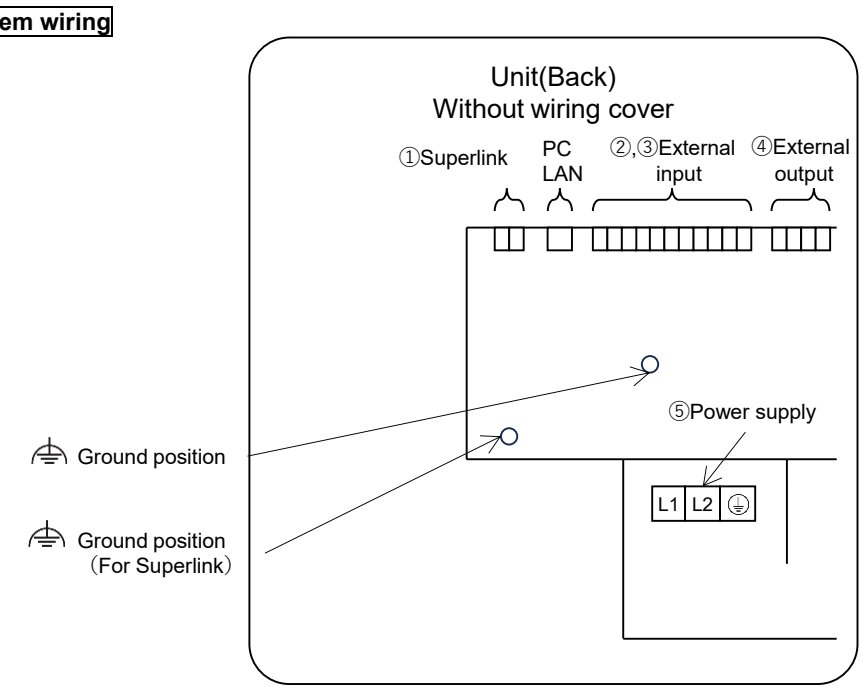
(*2) ● Emergency stop signal input
● Demand signal/Accounting period time input (2 points)
● Power pulse input from gas meter or watt-hour meter (8 points)

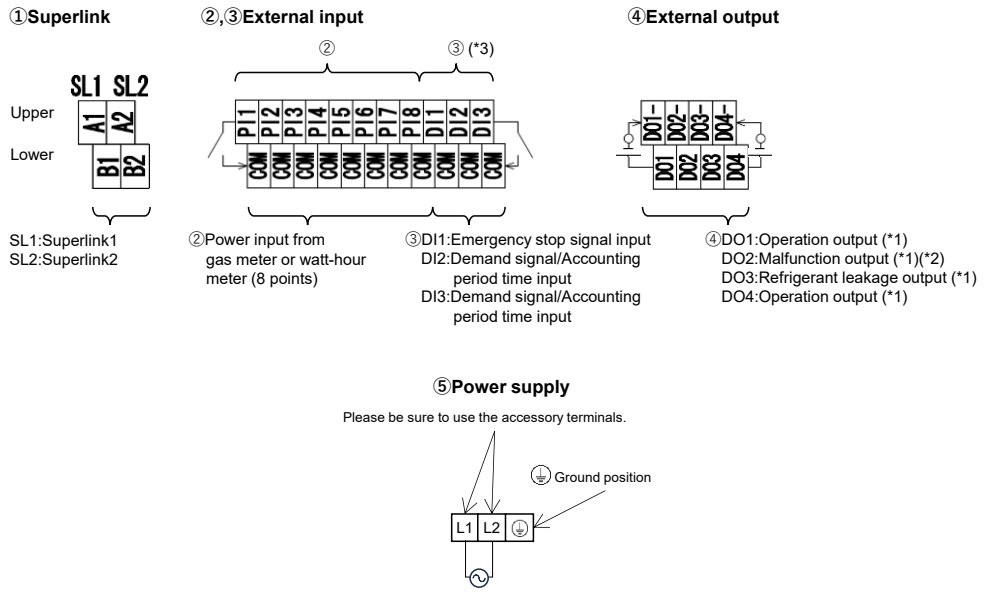
Wiring specification

Power supply wire (3 lines: L1, L2, ground)	1.25 mm² (60245 IEC 53)
Local switch	10A
Leakage breaker rating	15A, 30mA, 0.1sec
Superlink signal wire (notes 1 and 2)	Shielded wire (double-core, 0.75–1.25 mm²). Max. 1,000 m per line (max. distance: 1,000 m, total wire length: 1,000 m)
Wire for operation output, malfunction output, refrigerant leakage output, emergency stop and demand input	Shielded wire (double-core, 0.75–1.25 mm²). Maximum length: 200 m per system
Wire for gas meter or watt-hour meter	Shielded wire (double-core, 0.75–1.25 mm²). Maximum length: 200 m per system

Note 1: When using this central control, use a shielded wire for the Superlink signal wire. Ground both ends of the shielded wire.
(Please wire the ground of the central control in the ground position for Superlink, as shown in System wiring.)
Note 2: If all the indoor and outdoor units connected to the network are compatible with New Superlink, a total wire length of 1,500 m per line is possible (maximum distance: 1,000 m). However, be sure to use a wire diameter of 0.75 mm² if the total wire length exceeds 1,000 m. For further information, please contact your sales representative or dealer.
Note 3: If wiring the ground in the ground position, please prepare for crimping terminal(M3) locally. If wiring the ground in the ground position with multiple shielded wires, please combine them into one in advance.

System wiring





(*1) Power supply: DC 24 V
Maximum rating current: 40 mA
These functions are default settings. Each function of external output terminal is selectable. For instructions on how to set the function, refer to the SL5 user's manual.
(*2) The factory default setting for error output during normal operation is a closed status. You can select the 'Open' status for malfunction output during normal operation. Please refer to the user manual.
Please note that when the power is off or the unit is reset, the contact will temporarily switch to 'OFF'.
(*3) No-voltage A-contact input.
Contact capacity: DC 12 V, 10 mA

For using RLD-KIT-E as alarm

By connecting RLD-KIT-E (Sold separately) to the central control SL5, RLD-KIT can be used as an audible alarming device.
In this case, RLD-KIT-E and SL5 need to be connected by RLD-WR (Sold separately). RLD-WR and system wiring are respectively shown in Fig.4.9 and 4.10.

● Connect the RLD-WR wires to terminal DO3(*) on SL5, and plug the other end of the cable into connector CNMA on the RLD-KIT.
● For instructions on how to connect to RLD-KIT-E, refer to the installation manual provided with RLD-WR.
● For instructions on how to set RLD-KIT-E, refer to the installation manual provided with RLD-WR.
● "OPEN/CLOSE" default setting of Refrigerant leakage output (Normal) is "OPEN". Please don't change the setting.
* Using "DO3" is an example. Other "DO" can be used by changing terminal functionality.
For instructions on how to change the terminal functionality, refer to the SL5 user's manual.
● Cable length of RLD-WR is 110mm. Please prepare for extended cable between RLD-WR and SL5 locally.

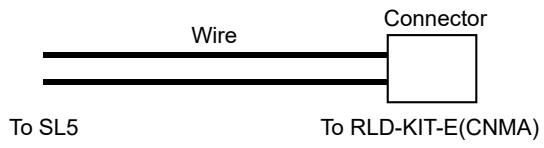


Fig.4.9

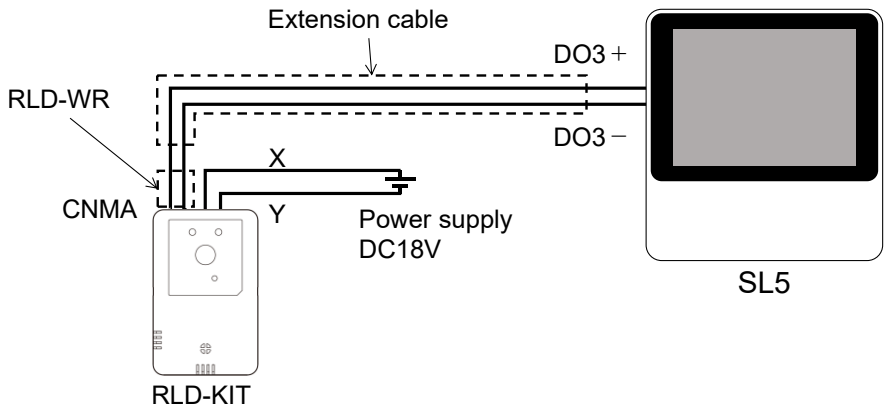


Fig.4.10

Caution
● Do not connect the power supply wire to another terminal block.
If you connect it by mistake, it can cause damage and fire to the electrical parts, which is very dangerous. Please check the wiring thoroughly again before switching on the power.
● The demand signal input is configured for two points. To configure the level 3 setting, please refer to the user manual.
● Please connect a gas meter or watt-hour meter that meets the specifications below:
• The meter must have a pulse transmitter.
• The meter must have a pulse width of 100 ms or more.
● The energy consumption calculated by this central control does not conform to OIML, and there are no guarantees as to calculation results.
● Please note that that the accuracy of air conditioning fee calculations cannot be guaranteed in the event of equipment malfunctions or other issues

Notice
● Please note that each communication line is wired at the upper and lower of each system.
● Please select the new or previous setting Superlink (SL) setting on the main unit display. (See user manual.)
This needs to be changed if the connection network is for the previous Superlink. Whether the actual connection network is for the new or previous Superlink depends on the type of connected indoor and outdoor units, etc. Contact agents or dealers for more information.
When selecting the new Superlink Communication setting, one system wiring can connect up to 128 units.
● If units other than Superlink are connected to the SL5, refer to the user manual for the settings and the connection numbers.

Please note:
● Please remove the screen's protective sheet when handing the central control over to customers.
● If embedding in the wall (hanging on the wall), the accessories for hanging on the wall (embedding in the wall) are not needed. Please discard them.

Other information
The installer menu shown in the user manual is provided for installers and qualified professionals responsible for maintaining the central control units. When logging in with a normal operator ID, you are not permitted to operate the installer menu. Please refer to the user manual.
Please do not disclose the ID and password to anyone except installers. ID: Installer, password: Installer
After inputting the default ID and password, you need to change the password.
After logging in, you can change the ID and password. Please refer to the user manual.