MHI

TECHNICAL MANUAL

Collection data

Manual No. '08·SRK-T·080

AIR-CONDITIONER CONTROL SYSTEM

INTERFACE KIT
SC-BIKN-E

MITSUBISHI HEAVY INDUSTRIES, LTD.

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INTERFACE KIT (OPTIONAL PARTS)

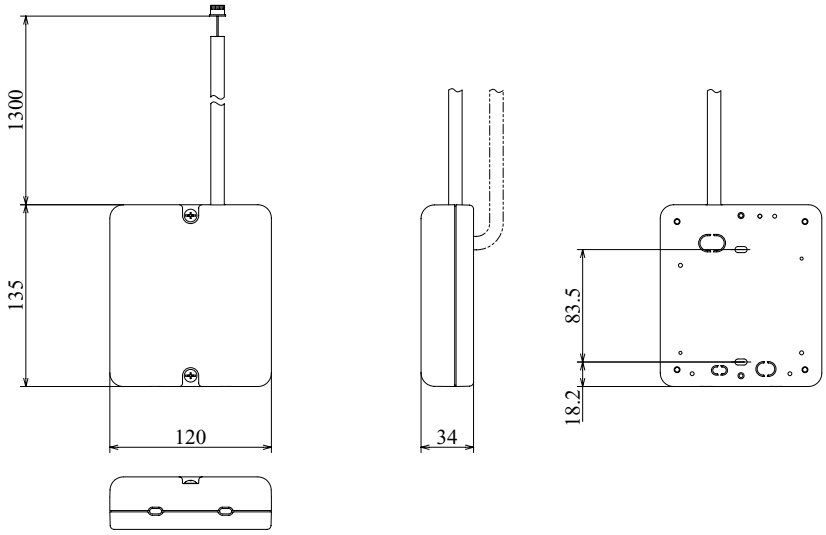
1. Applicable model

Name	Type	
Interface kit	SC-BIKN-E	SRK50ZHX-S SRK60ZHX-S

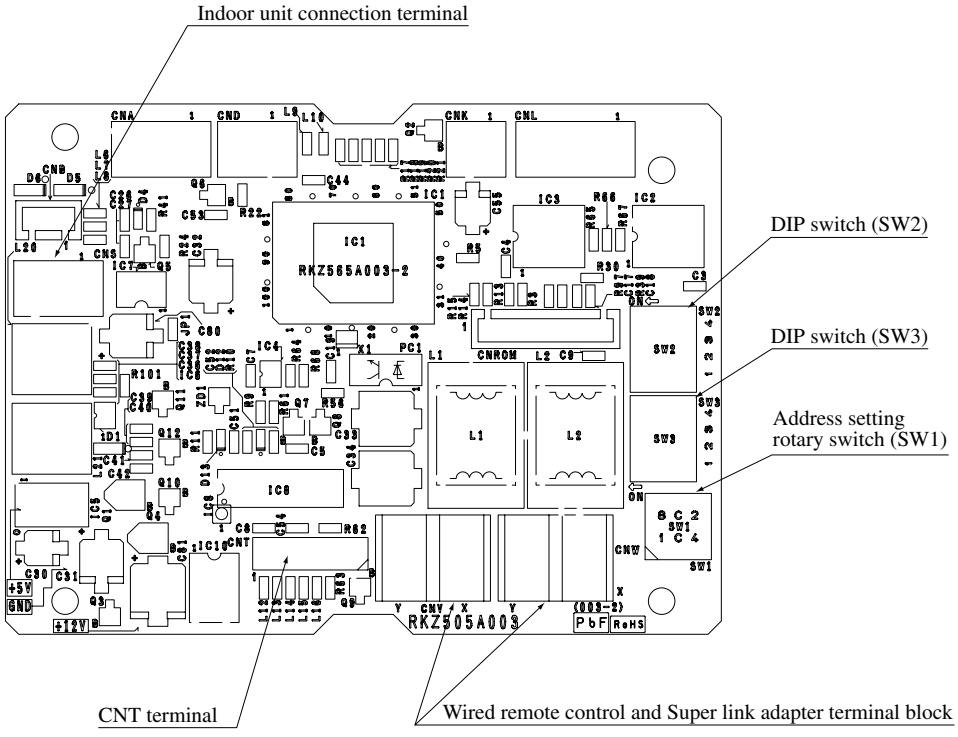
2. List of connectable devices

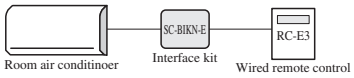
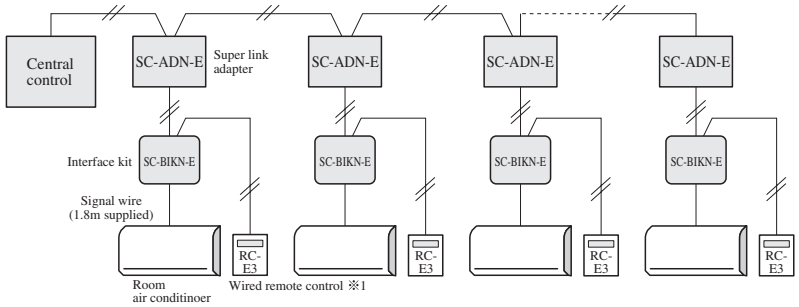
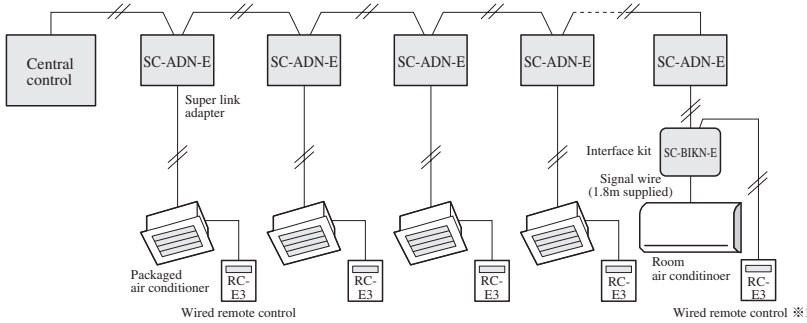
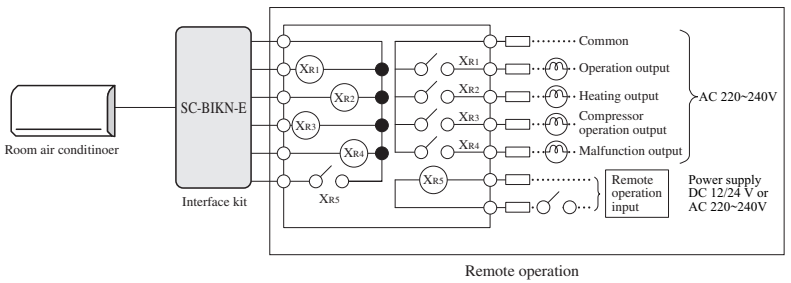
Name	Type
Wired remote control	RC-E3
Super link adapter	SC-ADN-E
Central control	SC-SL1N-E, SC-SL2N-E, SC-SL3N-AE/BE

3. Exterior dimensions



4. Circuit board component layout



System configuration	Control contents	Use	Parts used
① Wired remote control system 	Using the wired remote control system, users can run and stop the unit, switch operations, adjust the temperature, fan speed and air flow direction (up or down), and control timer operation .	Use a wired remote control for retirement homes, school classrooms and similar locations.	• Wired remote control (RC-E3) • Interface kit (SC-BIKN-E)
② Control of multiple units with a remote control 	Multiple units (16units~48units) can be cotrolled with a single remote control. Contact your dealer when you connected 48 units or more.	For hotels and similar facilities with multiple units installed, the remote control is used to turn multiple air conditioning units ON or OFF.	• Interface kit (SC-BIKN-E) • Super link adapter (SC-ADN-E) • Central control (SC-SL1N-E, SC-SL2N-E, SC-SL3N-AE/BE) • Wired remote control (RC-E3) ※1 Either wireless remote control or wired remote control can be selected. If it is necessary to control each room separately, use the wired remote control.
	Multiple units (16units~48units) can be cotrolled with a single remote control. Contact your dealer when you connected 48 units or more.	For users who want to exercise central control together with a package air conditioning system, such as an office.	
③ Remote operation 	• Using the remote start/stop switch timer, etc., the unit can be started and stopped by inputting level or by inputting pulses. • The run signal, heating signal, compressor ON signal and check signal can be received by non-voltage contacts.	Remote start and stop and remote monitoring.	• Inrterface kit (SC-BIKN-E) • Remote ON/OFF monitor kit (Customer arrangements)

6. Installation of interface kit

Accessories included in package

Please check to make sure all the accessories have been included.

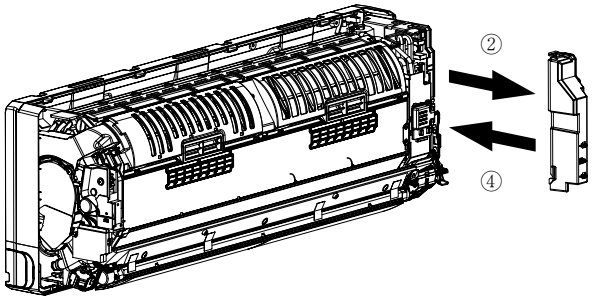
Part name	Quantity
Indoor unit connection cable (total cable length: 1.8 m)	1
Wood screws (for mounting the interface: ø4 × 25)	2
Tapping screws (for mounting the clamp and interface mounting bracket)	3
Interface mounting bracket	1
Clamp (for the indoor unit)	1

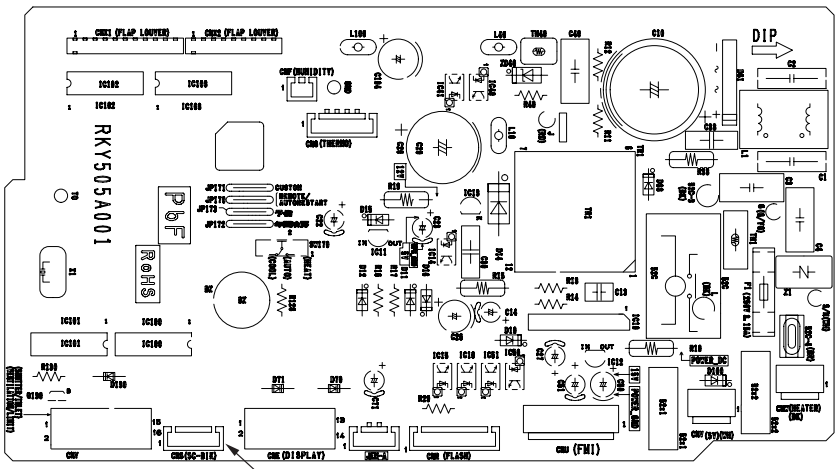
Connecting the interface and indoor unit

① Remove the air inlet panel, lid and front panel.

② Take the control lid out of the control box.

③ There is a terminal (marked with CNS) for the indoor control boad.
In connecting an interface, connect to the terminal securely with the connection harness supplied with an optional “Interface connection kit SC-BIKN-E”.

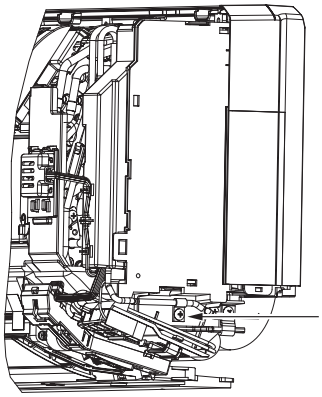




④ House the control lid in the control box.

⑤ Fasten the connection harness onto the indoor control box with clamp supplied with the kit.

⑥ Reinstall the front panel, lid and air inlet panel.



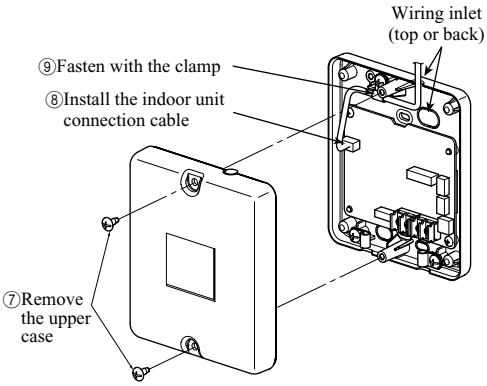
Connecting the interface and the indoor unit

⑦Remove the upper case of the interface.
- Take out the 2 screws in the interface case.

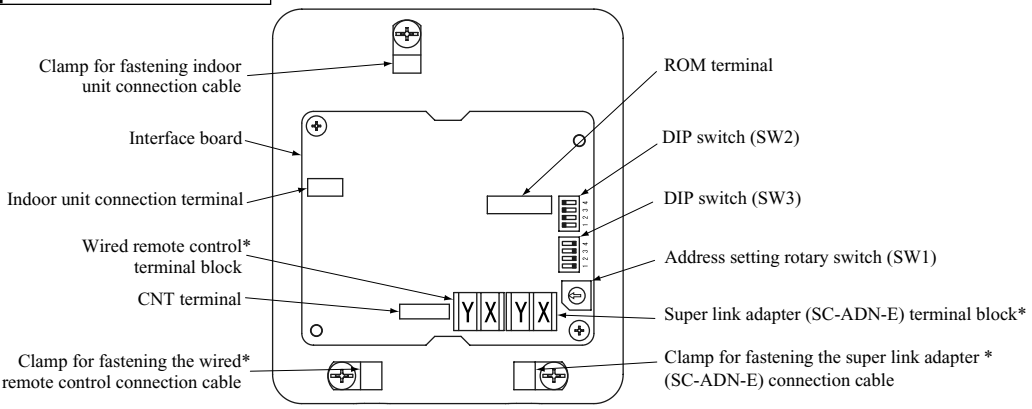
⑧Install the indoor unit's connection cable in the interface.
- Connect the connector of the indoor unit connection cable to the connector on the interface's circuit board.

⑨Fasten the indoor unit connection cable using clamp.
- Cable can be brought in from the top or from the back.
- Use side cutters, etc. to cut out the thin knockouts used to run wires into the case.

⑩Connect the indoor unit's connection cable to the control board in the indoor unit.
- Connect the indoor unit connection cables' connector securely to the indoor unit's control board.
- Use the clamp provided as an accessory to fasten the connection cable, fastening it securely to the control box.
- Read the installation manual for the indoor unit concerning connections inside the indoor unit.



Names of each part of the interface unit

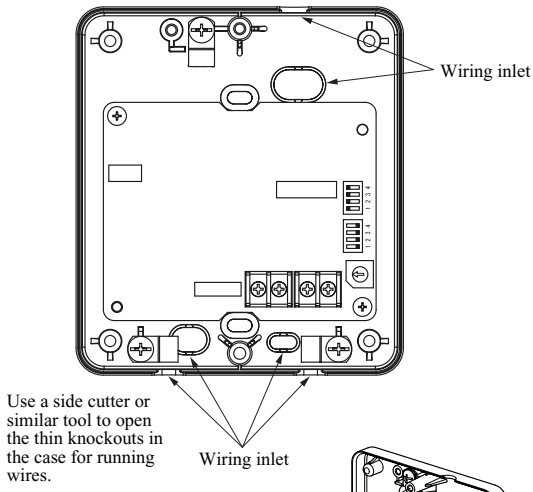


* Either the super link adapter (SC-ADN-E) cable or the wired remote control connection cable can be connected.

Interface installation

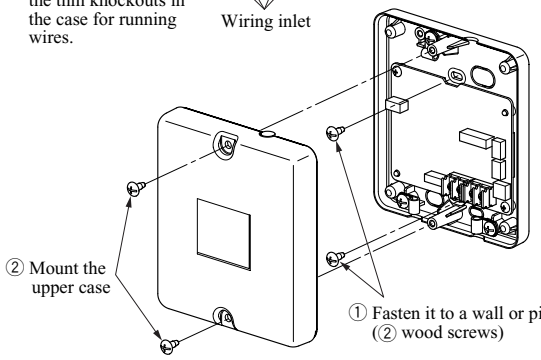
Install the interface so that the connection cable can reach the indoor unit (approximately 1.3 m).
If the connection cable is extended, operation will be faulty, so do not extend the cable.
Fasten the unit to a wall, pillar or similar location.

●DO NOT install interface and wired remote control on the following places
- ○Places exposed to direct sunlight
- ○Places near heat devices
- ○High humidity places
- ○Hot surface or cold surface enough to generate condensation
- ○Places exposed to oil mist or steam directly
- ○Uneven surface



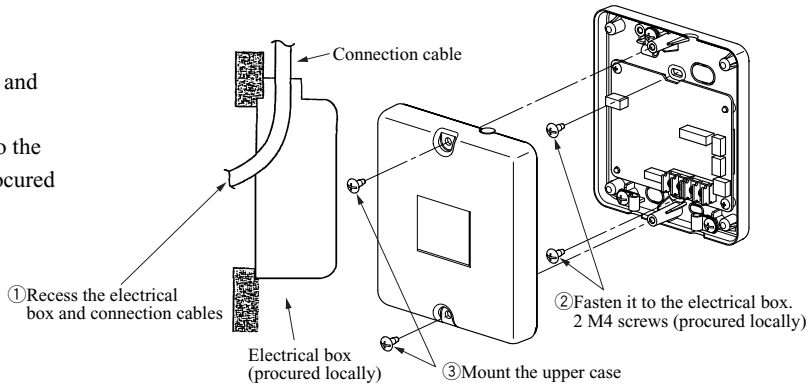
If the unit is mounted directly to a wall

①Mount the lower case of the interface unit to a flat surface using the wood screws supplied with the unit.
②Mount the upper case.



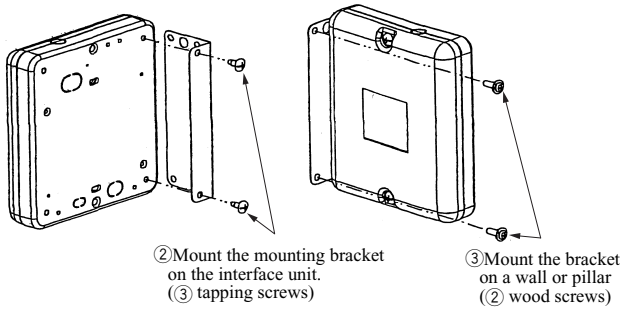
Recessing the unit in a wall

①Recess the electrical box (procured locally) and each connection cable inside the wall.
②Fasten the lower case of the interface unit to the electrical box using screws (M4 screws, procured locally).
③Mount the upper case to the lower case.



Mounting with the mounting bracket

①Mount the interface unit's upper case.
②Mount the mounting bracket to the interface unit using the tapping screws supplied with the unit.
③Mount the mounting bracket to a wall surface, etc. using the wood screws provided.



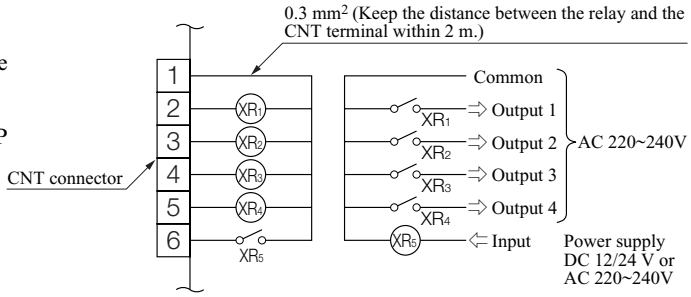
CNT connector functions

Turning the contacts ON/OFF, the running status of the air conditioner can be monitored from the External control unit (remote display).

①Connect a locally procured remote control unit to the CNT terminal.

②In case of the pulse input, switching "OFF" the DIP switch SW2-1 on the main unit PCB.

③When setting at Operation permission/prohibition Mode, switching "OFF" the DIP switch SW2-3.

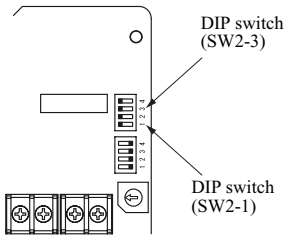


Input Output	Content			
Output 1	Operation output	ON output (X_{R1} = ON) during air conditioner operation		
Output 2	Heating output	ON output (X_{R2} = ON) during heating operation		
Output 3	Compressor operation output	ON output (X_{R3} = ON) during compressor operation		
Output 4	Malfunction output	ON output (X_{R4} = ON) during an abnormal stop		
Input	Remote control input	Level input (At shipment)	External control (At shipment)	X_{R5} OFF ⇒ON Air conditioner ON X_{R5} ON ⇒OFF Air conditioner OFF
		Level input (At shipment)	Operation permission/ prohibition (SW2-3: OFF)	X_{R5} OFF ⇒ON Air conditioner OFF X_{R5} ON ⇒OFF Air conditioner OFF
		Pulse input (SW2-1: OFF)	External control (At shipment)	X_{R5} Air conditioner ON/OFF is inverted depending on the pulse signal at OFF ⇒ON.
		Pulse input (SW2-1: OFF)	Operation permission/ prohibition (SW2-3: OFF)	X_{R5} Air conditioner ON depending on the level signal at OFF ⇒ ON.

In the operation permission/prohibited mode, wired/wireless remote control operations are allowed only when the input is turned ON.

- $X_{R1\sim4}$ are for the DC 12V relay
- X_{R5} is a DC 12/24 or AC 220~240V relay
- CNT connector (local) maker, model

Connector	Molex	5264-06
Terminals	Molex	5263T

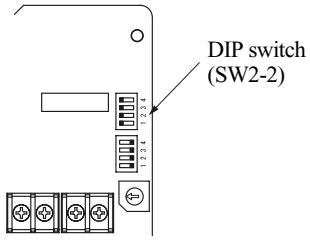


Super link adapter connection

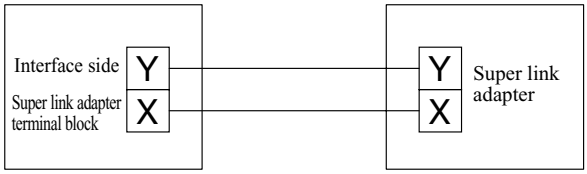
See the super link adapter's manual concerning connections to the super link adapter.
For electrical work, the power supply of all appliance on the super link line must be turned off.

①Switching "ON" the DIP switch SW2-2 on the circuit board.

Caution: You can use the wireless remote control, which is attached to the indoor unit, even after connecting the wired remote control. However, some of functions other than the basic functions such as the RUN/STOP, setting temperature change, etc. may not operate properly. On some functions, it may occur also a mismatch between the display and actual actions.



②Connections between the interface and super link adapter

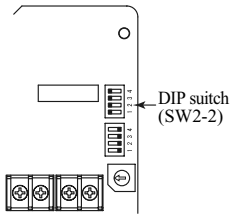


No.	Names of recommended signal wires
1	Shielded wire
2	Vinyl cabtyre round cord
3	Vinyl cabtyre round cable
4	Vinyl insulated wirevinyl sheathed cable for control

Within 200 m 0.5 mm² × 2 cores
Within 300 m 0.75 mm² × 2 cores
Within 400 m 1.25 mm² × 2 cores
Within 600 m 2.0 mm² × 2 cores

③Fasten the super link adapter cable with clamps.

Wired remote control connection



Please see the instruction in the wired remote control's manual concerning connection to the wired remote control.

①Set to ON the DIP switch “SW2-2” on the PCB.

Caution: You can use the wireless remote control, which is attached to the indoor unit, even after connecting the wired remote control. However, some of functions other than the basic functions such as the RUN/STOP, setting temperature change, etc. may not operate properly. On some functions, it may occur also a mismatch between the display and actual actions.

②Connect the interface and remote control.

Installation and wiring of remote control

Ⓐ Install remote control referring to the attached installation manual.

Ⓑ Wiring of remote control should use 0.3mm^2 x2 core wires or cables. (on-site configuration).

Ⓒ Maximum prolongation of remote control wiring is 600 m.

If the prolongation is over 100m, change to the size below.

But, wiring in the remote control case should be under 0.5mm^2. Change the wire size outside of the case according to wire connecting. Waterproof treatmnet is necessary at the wire connecting section. Be careful about contact failure.

100-200m·····0.5mm^{2}x2 cores, Under 300m·····0.75mm^{2}x2 cores, Under 400m·····1.25mm^{2}x2 cores, Under 600m·····2.0mm^{2}x2 cores.

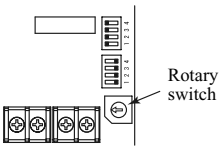
Ⓓ Avoid using multi-core cables to prevent malfunction.

Ⓔ Keep remote control line away from earth (frame or any metal of building).

Ⓕ Make sure to connect remote control line to the remote control and terminal block of interface kit (No polarity)

③Fasten the connection cables with clamps.

Control of multiple units by a single remote control.



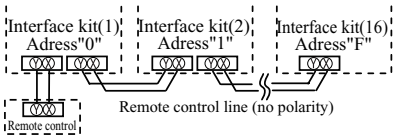
A remote control can control multiple units (Up to 16).

In above setting, all multiple units will operate under same mode and temperature setting.

①Connect all interface kits with 2 core remote control line.

②Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW1 on the interface kit's PCB.

③After a unit is energized, it is possible to display an indoor unit address by pressing AIR CON NO. button on the remote control unit. Press the ▲or ▼ button to make sure that all indoor units connected are displayed in order.

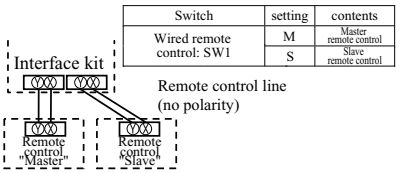


Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)

①Set SW1 (wired remote control) to "Slave" for the slave remote control unit. It was factory set to "Master" for shipment.

○ Caution: Remote control sensor is disabled.

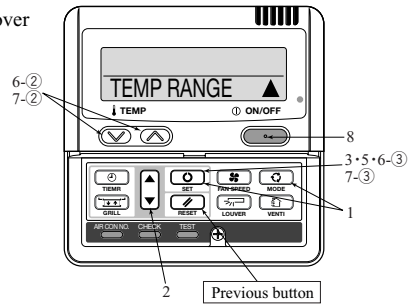


●When using the wired remote control in parallel with the wireless remote control:

It is necessary to change the setting temperature range for the wired remote control. (The setting temperature may not be displayed correctly unless it is changed.) Change the setting temperature for the wired remote control with the following procedure.

How to set upper and lower limit value

1. Stop the air-conditioner, and press ○ (SET) and ⟲ (MODE) button at the same time for over three seconds.
   The indication changes to"FUNCTION SET▼"
2. Press ▼ button once, and change to the "TEMP RANGE▲" indication.
3. Press ○ (SET) button, and enter the temperature range setting mode.
4. Confirm that the "Upper limit ▼ " is shown on the display.
5. Press ○ (SET)button to fix.
6. ①Indication: "☜∨ ∧ SET UP"→"UPPER 28˚C ∨ ∧"
   ②Select the upper limit value 30˚C with temperature setting button △."UPPER30˚C∨" (blinking)
   ③Press ○ (SET) button to fix. "UPPER 30˚C" (Displayed for two seconds)
   After the fixed upper limit value displayed for two seconds, the indication will retum to"UPPER LIMIT▼".
7. Press ▼ button once, "LOWER LIMIT ▲ " is selected, press ○ (SET) button to fix.
   ①Indication: "☜∨ ∧ SET UP" → "LOWER 20˚C ∨ ∧"
   ②Select the lower limit value 18˚C with temperature setting button ▽."LOWER18˚C∧" (blinking)
   ③Press ○ (SET) button to fix. "LOWER 18˚C" (Displayed for two seconds)
   After the fixed lower limit value displayed for two seconds, the indication will retum to"LOWER LIMIT▼"
8. Press ON/OFF button to finish.



- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press ⟲ (RESET) button, you return to the previous screen.

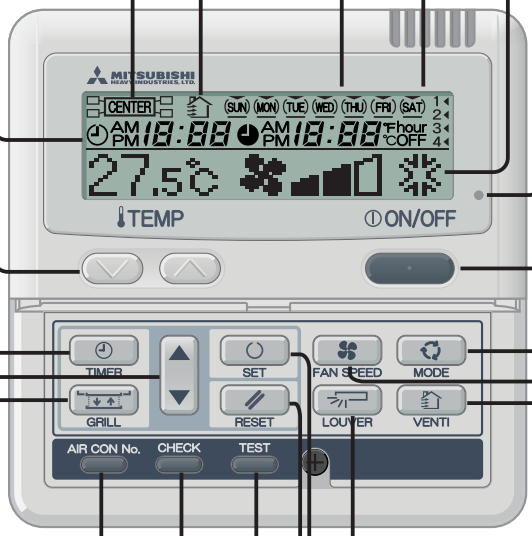
7. Wired remote control (Optional parts)

The figure below shows the remote control with the cover opened. Note that all the items in the liquid crystal display (LCD) area are shown for explanation purpose.

Characters displayed with dots in the liquid crystal display (LCD) area are abbreviated.

Note (1) The SRK models do not support the buttons and functions displayed in【 】.

Pull the cover downwards to open.



【Ventilation display】
Cannot be used.

Central control display
Displayed when the air conditioning system is controlled by centralized remote control.

Timer operation display
Displays the timer operation setting.

Temperature setting buttons
These buttons are used to set the temperature of the room.

Timer button
This button is used to set the timer mode.
(The comfortable timer or sleep operation cannot be selected.)

Timer setting buttons
These buttons are used to set the timer mode and the time.

【GRILL button】
Cannot be used.

AIR CON No. button
•Display the indoor unit number connected to this remote control.
•This button is used for indoor unit address setting. ("00" appears.)

CHECK button
Display the data of the control.

【TEST button】
Cannot be used.

Weekly timer display
Displays the settings of the weekly timer.

Operation setting display area
Displays setting temperature, airflow volume, operation mode and operation message.

Operation/check indicator light
During operation: Lit in green
In case of error: Flashing in red

Operation/stop button
This button is used to operate and stop the air conditioning system.
Press the button once to operate the system and press it once again to stop the system.

MODE button
This button is used to change the operation mode.
(The clean operation or allergen clear operation cannot be selected.)

FAN SPEED button
This button is used to set the airflow volume.
(AUTO, HI POWER or ECONO cannot be selected)

【VENT button】
Cannot be used.

LOUVER button
This button is used to operate/stop the swing louver.
(Up/down swing only)

SET button
This button is used to apply the timer operation setting.

【RESET button】
Cannot be used.

* If you press any of the buttons above and " INVALID OPER" is display, the button has no function.
But it does not mean a failure.

8. Installation of wired remote control

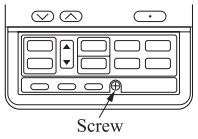
(1) Selection of installation location

Avoid the following locations

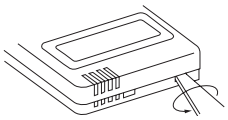
(a) Direct sunlight.
(b) Close to heating device.
(c) Highly humid or water splashing area.
(d) Uneven surface.

(2) Installation procedure

(a) Open the cover of remote control , and remove the screw under the buttons without fail.

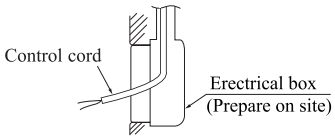


(b) Remove the upper case of remote control.
Insert a flat-blade screwdriver into the dented part of the upper part of the remote control, and wrench slightly.

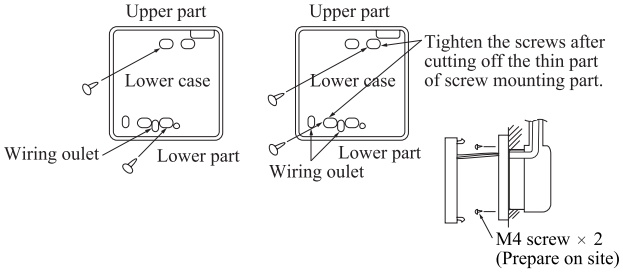


[In case of embedding cord]

① Embed the erectrical box and remote control cord beforehand.



② Prepare two M4 screws (recommended length is 12-16mm) on site, and install the lower case to erectrical box. Choose either of the following two positions in fixing it with screws.

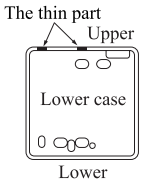


③ Connect the remote control cord to the terminal block. Connect the terminal of remote control (X,Y) with the terminal of interface kit (X,Y). (X and Y are no polarity)

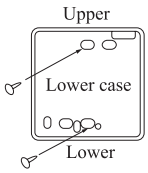
④ Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.

[In case of exposing cord]

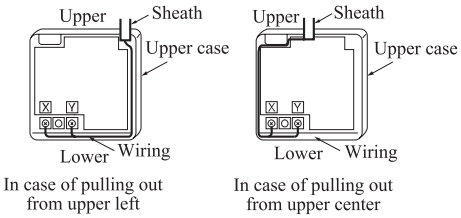
① You can pull out the remote control cord from left upper part or center upper part. Cut off the upper thin part of remote control lower case with a nipper or knife, and grind burrs with a file etc.



② Install the lower case to the flat wall with attached two wooden screws.

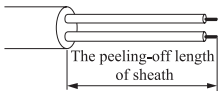


③ Connect the remote control cord to the terminal block. Connect the terminal of remote control (X,Y) with the terminal of interface kit (X,Y). (X and Y are no polarity) Wiring route is as shown in the below diagram depending on the pulling out direction.



The wiring inside the remote control case should be within 0.3mm² (recommended) to 0.5mm². The sheath should be peeled off inside the remote control case. The peeling-off length of each wire is as below.

Pulling out from upper left	Pulling out from upper center
X wiring : 215mm Y wiring : 195mm	X wiring : 170mm Y wiring : 190mm



④ Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.

⑤ In case of exposing cord, fix the cord on the wall with cord clamp so as not to slack.

Installation and wiring of remote control

① Wiring of remote control should use 0.3mm² × 2 core wires or cables. (on-site configuration)

② Maximum prolongation of remote control wiring is 600 m. If the prolongation is over 100m, change to the size below. But, wiring in the remote control case should be under 0.5mm² . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

100-200m…….0.5 mm² × 2 cores
Under 300m…….0.75 mm² × 2 cores
Under 400m…….1.25 mm² × 2 cores
Under 500m…….2.0 mm² × 2 cores

9. Setting functions using the wired remote control

(1) The initial function setting for typical using is performed automatically for a remote control unit and an indoor unit by the outdoor unit connected, when remote control and inside unit are connected.

As long as they are used in a typical manner, there wiil be no need to change the initial settings.
If you would like to change the initial setting marked " ○ ", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.
As for detail of setting, refer to the installation manual of remote control.

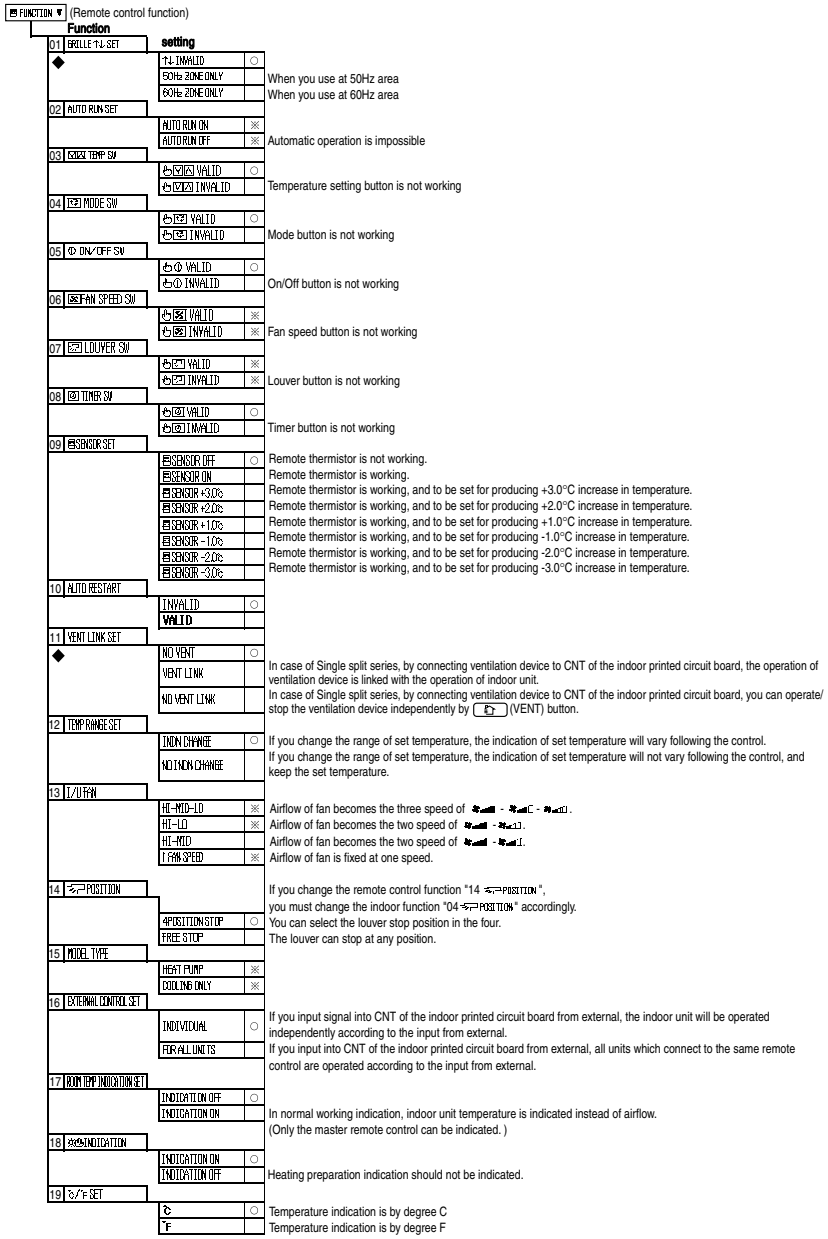
(2) Flow of function setting

Start : While indoor unit do not operate, press " (SET) " (SET) and " (MODE) " (MODE) button for 3 seconds at the same time.
Finalizea : Press " (SET) " (SET) button.
Reset : Press " (RESET) " (RESET) button.
Select : Press ▲ ▼ button.
End : Press [ON/OFF] button.
It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
" ○ " : Initial settings
" ※ " : Automatic criterion
" ◆ " : The SRK model cannot set the items described in ◆ in the function.

(3) Clearing the function setting

Pressing [CHECK] (CHECK) + (TIMER) (TIMER) + (MODE) (MODE) buttons simultaneously reverts the function setting data to the data which are set at the shipping from factory.

① Remote control unit functions (FUNCTION▼)

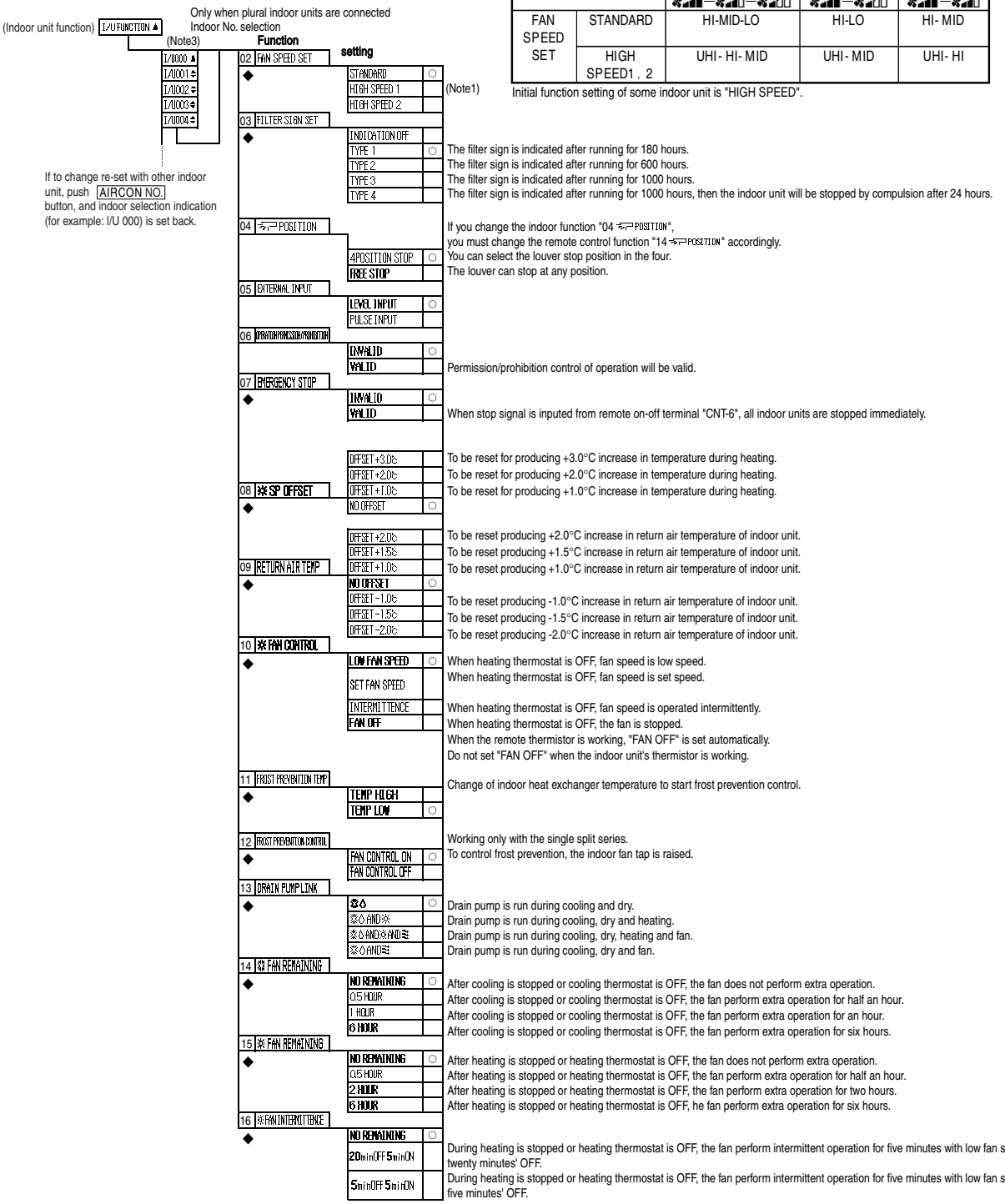


② Indoor unit functions (I/U FUNCTION▲)

Note1: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting		
		🌀—🌀—🌀	🌀—🌀	🌀—🌀
FAN SPEED SET	STANDARD	HI-MID-LO	HI-LO	HI- MID
	HIGH SPEED1，2	UHI- HI- MID	UHI- MID	UHI- HI

Initial function setting of some indoor unit is "HIGH SPEED".



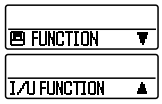
(4) How to set function

1) Stop air-conditioner and press ( ) (SET) ( ) (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼ " will be displayed.

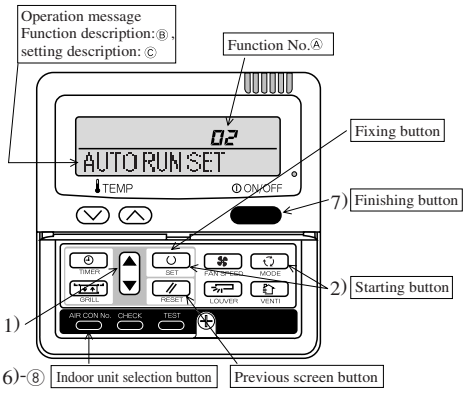
2) Press ( ) (SET) button.

3) Make sure which do you want to set, FUNCTION▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function).

4) Press ▲ or ▼ button.
Selecct " FUNCTION ▼ " (remote control function) or "I/U FUNCTION ▲" (indoor unit function).



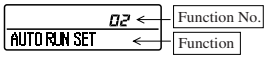
5) Press ( ) (SET) button.



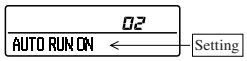
6) 【On the occasion of remote control function selection】

① "DATA LOADING" (Indication with blinking)
↓
Display is changed to "01 GRILLE ↑↓ SET".

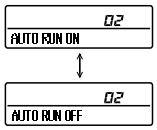
② Press ▲ or ▼ button.
"No. and function"are indicated by turns on the remote control function table, then you can select from them.
(For example)



③ Press ( ) (SET) button.
The current setting of selected function is indicated.
(for example) "AUTO RUN ON" ← If "02 AUTO RUN SET" is selected



④ Press ▲ or ▼ button.
Select the setting.



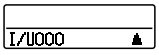
⑤ Press ( ) (SET)
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, Set as the same procedure if you want to set continuously ,and if to finish, go to 7.

7) Press ON/OFF button.
Setting is finished.

【On the occasion of indoor unit function selection】

① "DATA LOADING" (Blinking for 2 to 23 seconds to read the data)
↓
Indication is changed to "01 AUTO FILTER CLEANING".
Go to ② .

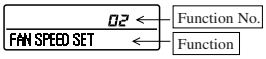
[Note]
(1) If plural indoor units are connected to a remote control, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.



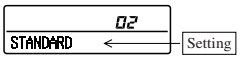
(2) Press ▲ or ▼ button.
Select the number of the indoor unit you are to set
If you select "ALL UNIT ▼ ", you can set the same setting with all unites.

(3) Press ( ) (SET) button.

② Press ▲ or ▼ button.
"No. and function" are indicated by turns on the indoor unit function table, then you can select from them.
(For example)



③ Press ( ) (SET) button.
The current setting of selected function is indicated.
(For example) "STANDARD" ← If "02 FAN SPEED SET" is selected.



④ Press ▲ or ▼ button.
Select the setting.

⑤ Press ( ) (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7).

※ When plural indoor units are connected to a remote control, press the AIRCON NO. button, which allows you to go back to the indoor unit selection screen. (example "I/U 000▲ ")

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press ( ) (RESET) button, you return to the previous screen.
- Setting is memorized in the control and it is saved independently of power failure.

【How to check the current setting】

When you select from "No. and funcion" and press set button by the previous operation, the "Setting" displayed first is the current setting.
(But, if you select "ALL UNIT ▼ ", the setting of the lowest number indoor unit is displayed.)

(5) The range of temperature setting.

When using the wired remote control in parallel with the wireless remote control:
It is necessary to change the setting temperature range for the wired remote control. (The setting temperature may not be displayed correctly unless it is changed.) Change the setting temperature for the wired remote control with the following procedure 2).
When shipped, the range of set temperature differs depending on the operation mode as below.

Heating : 16~30°C (55~86°F)
Except heating (cooling, fan, dry, automatic) : 18~30°C (62~86°F)

1) Upper limit and lower limit of set temperature can be changed with remote control.

Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30°C (68 to 86°F).
Lower limit setting: valid except heating (automatic, cooling, fan, dry) Possible to set in the range of 18 to 26°C (62 to 79°F).
When you set upper and lower limit by this function, control as below.

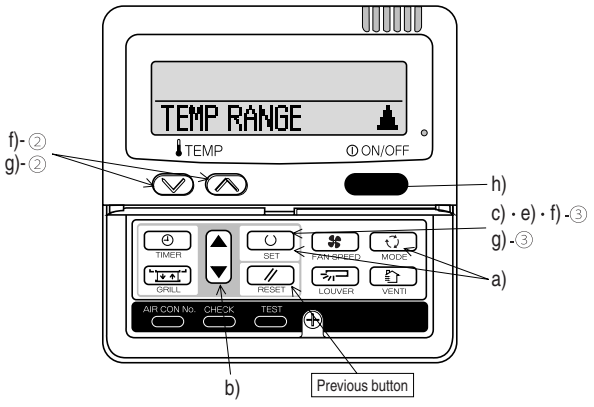
a) When ⑫ TEMP RANGE SET, remote control function of function setting mode is "INDN CHANGE" (factory setting),
[If upper limit value is set]
During heating, you cannot set the value exceeding the upper limit.
[If lower limit value is set]
During operation mode except heating, you cannot set the value below the lower limit.

b) When ⑫ TEMP RANGE SET, remote control function of function setting mode is "NO INDN CHANGE"
[If upper limit value is set]
During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit.
But, the indication is the same as the temperature set.
[If lower limit value is set]
During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit.
But, the indication is the same as the temperature set.

2) How to set upper and lower limit value

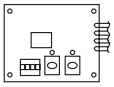
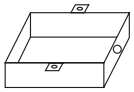
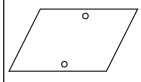
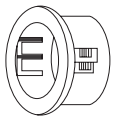
a) Stop the air-conditioner, and press (SET) and (MODE) button at the same time for over three seconds.
The indication changes to "FUNCTION SET▼"
b) Press ▼ button once, and change to the "TEMP RANGE▲" indication.
c) Press (SET) button, and enter the temperature range setting mode.
d) Confirm that the "Upper limit ▼ " is shown on the display.
e) Press (SET)button to fix.
f) ①Indication: "☝∨ ∧ SET UP" → "UPPER 28˚C ∨ ∧ "
②Select the upper limit value 30˚C with temperature setting button △. "UPPER30˚C∨" (blinking)
③Press (SET) button to fix. "UPPER 30˚C" (Displayed for two seconds)
After the fixed upper limit value displayed for two seconds, the indication will retum to "UPPER LIMIT▼".
g) Press ▼button once, "LOWER LIMIT ▲ " is selected, press (SET) button to fix.
①Indication: "☝∨ ∧ SET UP" →"LOWER 20˚C ∨∧"
②Select the lower limit value 18˚C with temperature setting button ▽. "LOWER18˚C∧" (blinking)
③Press (SET) button to fix. "LOWER 18˚C" (Displayed for two seconds)
After the fixed lower limit value displayed for two seconds, the indication will retum to "LOWER LIMIT▼"
h) Press ON/OFF button to finish.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.



10. Super link adapter (SC-ADN-E)

1 Accessories

SL E board	Metal box	Metal cover	Screw for Ground
			M4×8L 2 pieces 
Pan head screws	**Locking supports**	**Binding band**	**Grommet**
ø4×8L 2 pieces 	To secure the print board and the metal box Made of nylon 4 pieces 		

3 Control switching

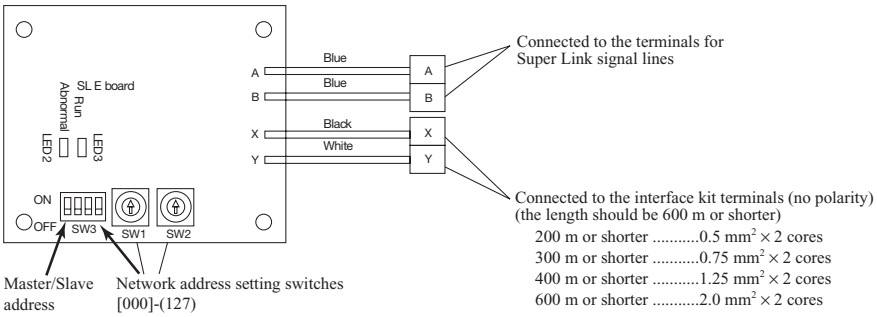
Settings can be changed by the switch SW3 on the SL E board as in the following.

Switch	Symbol	Switch	Remarks
SW3	1	ON	Master
		OFF (default)	Slave
	2	ON	Fixed previous protocol
		OFF (default)	Automatic adjustment of Super Link protocol
	3	ON	Indicates the forced operation stop when abnormality has occurred.
		OFF (default)	Indicates the status of running/stop as it is, when abnormality has occurred.
	4	ON	The hundredth address activated "1"
		OFF (default)	The hundredth address activated "0"

2 Function

Allowing the central control SL1N-E, SL2N-E, and SL3N-AE/BE to control and monitor the room air conditioning unit.

4 Connection Outline

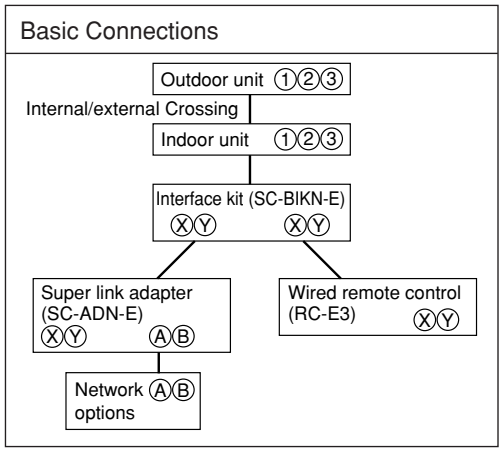


Signal line specification

Communication method	New Super Link
Line type	MVVS
Line diameter	0.75/1.25mm²
Signal line (total length)	up to 1500/1000m (*1)
Signal line (maximum length)	up to 1000m

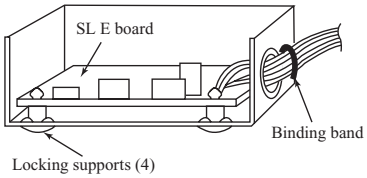
(*1) Up to 1500 m for 0.75 mm², and up to 1000 m for 1.25mm². Do not use 2.0 mm². It may cause an error.
(*2) Connect grounding on both ends of the shielding wire. For the grounding method, refer to the section " 5 Installation".

(1) Set the Super Link network address with SW1 (tens place), SW2 (ones place), and SW3-4 (hundreds place).
(2) Set the SL E board SW3-1 to be ON (Master) when using this without any remote control (no wired remote control nor wireless remote control).
(3) Set up the plural master/slave device using the dip switches on the indoor unit board.
(4) Set up the remote control master/slave device using the slide switch on the remote control board.
(5) Set up "0" to "F" using the address rotary switch on the indoor unit board when controlling the indoor unit with the multiple remote control.

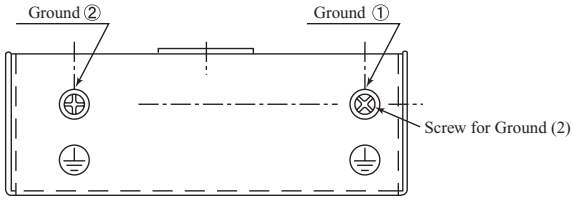


5 Installation

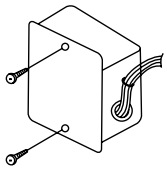
1. When using the metal box (mounted on the indoor unit / mounted on the back of the remote control):
   (1) Mount the SL E board in the metal box using the locking supports.
   (2) Wiring should go through the provided grommet since then through the wiring to the hole on the Metal box.
   Secure the grommet after inserting the grommet into the Metal box as shown in below figure, then tie the wiring at the outlet of the unit using a binding band.



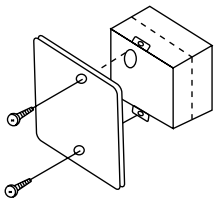
Connect grounding. Connect grounding for the power line to Ground ①, and grounding for the signal line to Ground ② or to the Ground on the indoor unit control box.



▶ When installed outside the indoor unit, put the metal cover on.



▶ When installed on the back of the remote control, mount it directly on the remote control bottom case.



Location of installation

Install the device at the location where there are no electromagnetic waves nor where there is water and dust. The specified temperature range of the device is 0 to 40˚C. Install the device at the location where the ambient temperature stays within the range. If it exceeds the specification, make sure to provide solution such as installing a cooling fan. When used outside of the range, it may cause abnormal operation.

6 Indicator display

Check the LED 3 (green) and LED 2 (red) on the SL E board for flashing.

SL E board LEDs		Inspection mode	Display on the integrated network control device
Red	Green		
Off	Flashing	Normal communication	
Off	Off	• Disconnection in the remote control communication line (X or Y) • Short-circuit in the remote control communication line (between X and Y) • Faulty indoor unit remote control power • Faulty remote control communication circuit • Faulty CPU on SL E board	No corresponding unit number
One flash	Flashing	• Disconnection in the Super Link signal line (A or B) • Short-circuit in the Super Link signal line (between A and B) • Faulty Super Link signal circuit	
Two flashes	Flashing	• Faulty address setting for the SL E board (Set up the address for more than 128)	
Three flashes	Flashing	• SL E board parent not set up when used without a remote control • Faulty remote control communication circuit	E1
Four flashes	Flashing	• Address overlapping for the SL E board and the Super Link network connected indoor unit	E2
Off	Flashing	• Number of connected devices exceeds the specification for the multiple indoor unit control	E10

11. Operation permission/prohibition control

The air conditioner operation is controlled by DIP switch SW2-3 on the interface kit board and inputting the external signal into the CnT.

(1) The operation mode is switched over between Permission and Prohibition by DIP switch SW2-3 on the interface kit control board.

When the DIP switch SW2-3 is ON	When the DIP switch SW2-3 is OFF
Normal operation is enable (when shipping) When CnT input is set to ON, the operation starts and if the input is set to OFF, the operation stops. For the CnT and remote control inputs, the input which is activated later has priority and can start and stop the operation.	Permission / Prohibition mode When CnT input is set to ON, the operation mode is changed to permission and if input is set to OFF the operation is prohibited.

(2) When the CnT input is set to ON (Operation permission)

(a) The air conditioner can be operated or stopped by the remote control signal.
(When the "CENTER" mode is set, the operation can be controlled only by the center input.)

(b) When the CnT input is changed from OFF to ON, the air conditioner operation mode is changed depending on the status of the DIP switch SW2-1 on the interface kit board.

When the DIP switch SW2-1 is ON	When the DIP switch SW2-1 is OFF
The signal (a) above starts the air conditioner. (Shipping status)	When the CnT input is set to ON, the air conditioner starts operation. After that, the operation of the air conditioner depends on (a) above. (Local status)

(3) When the CnT input is set to OFF (Prohibition)

(a) The air conditioner cannot be operated or stopped by the remote control signal.

(b) The air conditioner operation is stopped when the CnT input is changed from ON to OFF.

(4) When the operation permission / prohibition mode is set to effective by the indoor function setting selected by the remote control, the operation depends on (1) above.

12. External control (remote display)/control of input signal

(1) External control (remote display) output

Following output connectors (CnT) are provided on the printed circuit board of interface kit.

- **Operation output:** Power to engage DC 12V relay (provided by the customer) is outputted during operation.
- **Heating output:** Power to engage DC 12V relay (provided by the customer) is outputted during the heating operation.
- **Compressor OPERATION output:** Power to engage DC 12V relay (provided by the customer) is outputted while the compressor is operating.
- **MALFUNCTION output:** When any error occurs, the power to engage DC 12V relay (provided by the customer) is outputted.

(2) Control of input signal

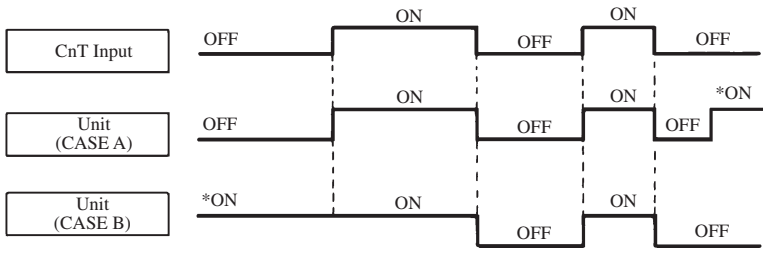
Control of input signal (switch input, timer input) connectors (CnT) are provided on the control circuit board of interface kit.

However, when the operation of air conditioner is under the Center Mode, the remote control by CnT is invalid.

(a) Level input

If the factory settings (DIP switch SW2-1 EXTERNAL INPUT on the PCB of interface kit) are set, or "LEVEL INPUT" is selected in the wired remote control's indoor unit settings.

1) Input signal to CnT OFF → ON – – – – Air conditioner ON
2) Input signal to CnT ON → OFF – – – – Air conditioner OFF

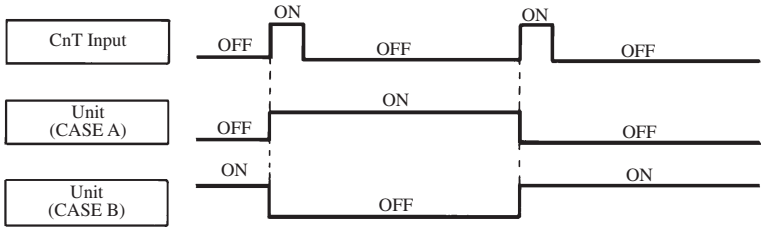


Note (1) The ON with the * mark indicates an ON operation using the remote control unit switch, etc.

(b) Pulse input

When DIP switch SW2-1 on the PCB of interface kit is OFF at the field or "PULSE INPUT" is selected in the wired remote control's indoor unit settings.

Input signal to CnT becomes valid at OFF → ON only and the motion of air conditioner [ON/OFF] is inverted.



AIR-CONDITIONER CONTROL SYSTEM

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