

INSTALLATION MANUAL FOR A-Control Sub Interface Unit

PAC-SK82SI-E

For models in which this component is used, see the page 2.

SAFETY PRECAUTIONS

- Before starting installation, read the "Safety Precautions" described below.
- The following precautions must be observed as it describes the serious matters for safety.
- The safety precautions are described with the degree of danger.

WARNING	Incorrect handling, it can lead to death or serious injury.
CAUTION	Incorrect handling, it can lead to injury or damage to building and furniture.

- After installation, make a test operation and confirm that it works properly, and explain the safety precautions, operation method, and maintenance to your customers.
Tell your customers to keep this installation manual together with the operation manual with them, and when they give or sell this machine to other person put this installation manual and operation manual with it.

WARNING

<p>The installation must be done by dealer or qualified person.</p> <ul style="list-style-type: none"> ● If the customer does the installation by themselves and it is not perfectly installed it can cause water leak, electric shock, or fire. 	<p>The wiring must be securely done by using proper cable. The wires should be connected to the terminals so as not to exert external force on the cable.</p> <ul style="list-style-type: none"> ● Unperfect connections can cause heat or fire.
<p>The installation must be done in accordance with this manual.</p> <ul style="list-style-type: none"> ● If the installation is not perfectly done, it can cause water leak, electric shock, or fire. 	<p>The terminal cover (panel) of the unit must be installed securely.</p> <ul style="list-style-type: none"> ● Unperfect installation can cause fire or electric shock by dust or water.
<p>Never try any modification.</p> <ul style="list-style-type: none"> ● For repair, ask your dealer. If the machine is modified or repaired unperfectly, it can cause water leak, electric shock, or fire. 	<p>The electric installation must be done by a qualified person in accordance with this installation manual. Use the separate circuit only for this machine and use the rated voltage and a circuit breaker.</p> <ul style="list-style-type: none"> ● If the electric circuit power is not sufficient or the wiring is not properly done, it can cause electric shock or fire.
<p>Never move or reinstall the machine by the customers.</p> <ul style="list-style-type: none"> ● If the installation is not perfectly done, it can cause water leak, electric shock, or fire. Ask your dealer or qualified person. 	

Before electric wiring

CAUTION

<p>Install a circuit breaker depending upon the location.</p> <ul style="list-style-type: none"> ● Without a circuit breaker, it can cause electric shock. 	<p>Ground wire location</p> <ul style="list-style-type: none"> ● Never ground to gas pipe, water pipe, lightning conductor, or telephone ground wire. Unperfect ground can cause short-circuit.
<p>Use standard wires which meet current capacity.</p> <ul style="list-style-type: none"> ● Otherwise, it can cause short-circuit, heat, or fire. 	<p>Use proper fuses</p> <ul style="list-style-type: none"> ● If you use larger size fuses or needle wire, it can cause failure or fire.
<p>Wires must not have tension.</p> <ul style="list-style-type: none"> ● It can cause snapping, heat, or fire. 	

Before test operation

CAUTION

<p>Turn the power on 12 hours or more before operation.</p> <ul style="list-style-type: none"> ● If you start operation as soon as the power is on, it can cause failure. Never turn the power off during the season. 	<p>Never operate the switches with wet hands.</p> <ul style="list-style-type: none"> ● It can cause electric shock.
<p>Never operate the machine with the panel or guard off.</p> <ul style="list-style-type: none"> ● It can cause serious injury being caught by a rotating part or burns or electric shock by high voltage part. 	<p>Never touch refrigerant pipes while the machine is running.</p> <ul style="list-style-type: none"> ● The refrigerant pipes become high and low temperature while the machine is running. If you touch the pipes by hand, it can cause chilblain or burns.
<p>Never operate the machine with the air filter off.</p> <ul style="list-style-type: none"> ● It can cause failure by dust. 	<p>Never turn the power off as soon as the machine stops.</p> <ul style="list-style-type: none"> ● Wait for 5 minutes or more. It can cause water leaks or failure.

PAC-SK82SI-E

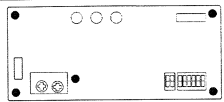
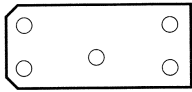

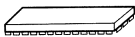
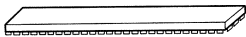

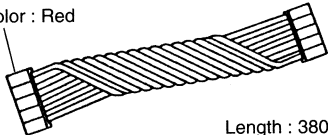
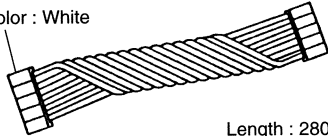
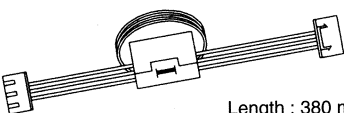

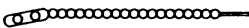
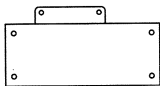
List of Models

Group	Applicable model	Page
A:	PUHZ-RP1.6/2VHA PUHZ-RP35/50VHA PUHZ-RP35/50VHA ₁ PUHZ-RP35/50VHA ₂ PUHZ-RP35/50VHA ₂ ₁ PUHZ-RP35/50VHA ₃	5
B:	PUHZ-RP2.5~6VHA PUHZ-RP3~6VHA-A PUHZ-RP60~140VHA PUHZ-RP71~140VHA-A PUHZ-RP60~140VHA ₁ PUHZ-RP71~140VHA ₁ -A PUHZ-RP60~140VHA ₂ PUHZ-RP60~140VHA ₂ ₁ PUHZ-RP71~140VHA ₂ -A PUHZ-RP60~100VHA ₃ PUHZ-RP100VHA ₃ #1 PUHZ-RP125/140VHA ₂ #2 PUHZ-RP71~140VHA ₂ #1-A PUHZ-RP80NHA PUHZ-RP80NHA ₂ PUHZ-P100~140VHA PUHZ-P100~140VHA ₁ PUHZ-P100~140VHA ₂ PUHZ-P125/140VHA ₂ ₁ PUHZ-P50~140VHA-S PUHZ-BP100~140VHA-A PUHZ-HRP71/100VHA	6
C:	PUH-P1~4VGA PUH-P1~4VGAA PUH-P25~100VGAA PU-P1~4VGA PU-P1~4VGAA PU-P25~100VGAA PUH-P1.6~6YGA PUH-P1.6~6YGAA PUH-P35~140YGAA PU-P1.6~6YGA PU-P1.6~6YGAA PU-P35~140YGAA	7

Group	Applicable model	Page
D:	PUHZ-RP4~6YHA PUHZ-RP100~140YHA PUHZ-RP100~140YHA ₂ PUHZ-RP100~140YHA ₂ ₁ PUHZ-RP100YHA ₃ PUHZ-RP100YHA ₃ #1 PUHZ-RP125/140YHA ₂ #2 PUHZ-HRP100/125YHA	8
E:	PUHZ-RP8/10YHA PUHZ-RP8/10YHA-A PUHZ-RP200/250YHA PUHZ-RP200/250YHA-A PUHZ-RP200/250YHA ₁ PUHZ-RP200/250YHA ₁ -A PUHZ-RP200/250YHA ₂ PUHZ-RP200/250YHA ₂ -A PUHZ-RP280XHA	9
F:	PUH-P71/100VHA PU-P71/100VHA PUH-P71~140YHA PU-P71~140YHA	9
G:	PUHZ-P200/250YHA PUHZ-BP200/250YHA-A PUHZ-RP200/250YHA ₂ PUHZ-RP280XHA ₂ PUHZ- RP100~140YHA ₂ -A PUHZ- RP100~140YHA ₂ #1-A	10

1. Parts List

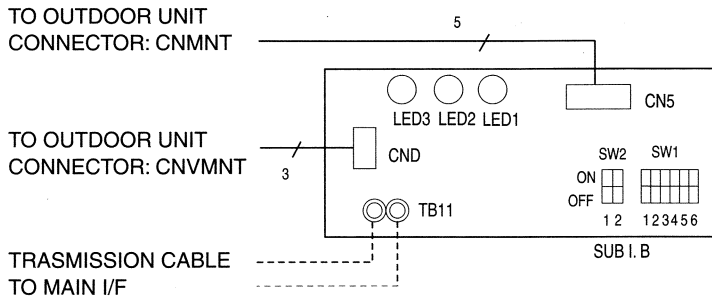
Attached parts

No.	Description	Figure	Q'ty	Applicable models							Note
				A	B	C	D	E	F	G	
①	Sub I/F board (with insulation sheets and supports)		1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
②	Plate (For mounting circuit board)		1	<input type="radio"/>							
③	Insulation sheets A, B, C	A 	A	1	<input type="radio"/>						
		B 	B	1	<input type="radio"/>						
		C 	C	1	<input type="radio"/>	<input type="radio"/>					
④	Screw (M4×8)		2	<input type="radio"/>			<input type="radio"/>				
⑤	Lead wire-A (5 wires)	Color : Red  Length : 380 mm	1	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	Wire Marking: INV type Always make sure that the markings and the applicable model match. If used incorrectly, parts could be damaged.
⑥	Lead wire-B (5 wires)	Color : White  Length : 280 mm	1			<input type="radio"/>			<input type="radio"/>		Wire Marking: NON-INV Always make sure that the markings and the applicable model match. If used incorrectly, parts could be damaged.
⑦	Lead wire-C (3 wires)	 Length : 380 mm	1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
⑧	Core		2			<input type="radio"/>					
⑨	Pull tight		4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
⑩	Plate 2 (For mounting circuit board)		1				<input type="radio"/>				

2 Other required equipment

Part name	Specification	Note
A-Interface cable (Transmission cable)	Non-polar 2-Wires, 0.3 mm ² to 1.25 mm ² maximum length = 500 m Use wire of 0.75 mm ² or more if the length of the wire is to exceed 100 meters. Use an applicable cable with supplemented insulation.	Never use transmit wires of different system with a cable which contains multi wires. The communication of transmit signals will not work properly and it can cause wrong operation.

2. Electrical wiring diagram



SYMBOL	NAME
SUB I.B	SUB I/F BOARD
SW1	SWITCH (ADDRESS SELCTION)
SW2	SWITCH (FUCTION SELCTION)
TB11	TERMINAL BLOCK (TRANSMISSION: MAIN I/F-SUB I/F)
CN5	CONNECTOR (TRANSMISSION)
CND	CONNECTOR (POWER SUPPLY)
LED1	TRANSMISSION (MAIN I/F-SUB I/F) : SENDING*
	TRANSMISSION (SUB I/F-OUTDOOR) : SENDING*
LED2	TRANSMISSION (MAIN I/F-SUB I/F) : RECEIVING*
	TRANSMISSION (SUB I/F-OUTDOOR) : RECEIVING*
LED3	POWER SUPPLY (SUB I/F BOARD)

*. LEDs 1 to 3 can be used for performing simple checks of the SUB I/F BOARD.
The display function LEDs 1 and 2 can be changed by the on/off setting of SW2-1.

① When SW2-1 is set to off.

Displays communication status between the MAIN I/F and SUB I/F.

- LED1 flashes when the SUB I/F is sending.
- LED1 flashes when the SUB I/F is receiving.

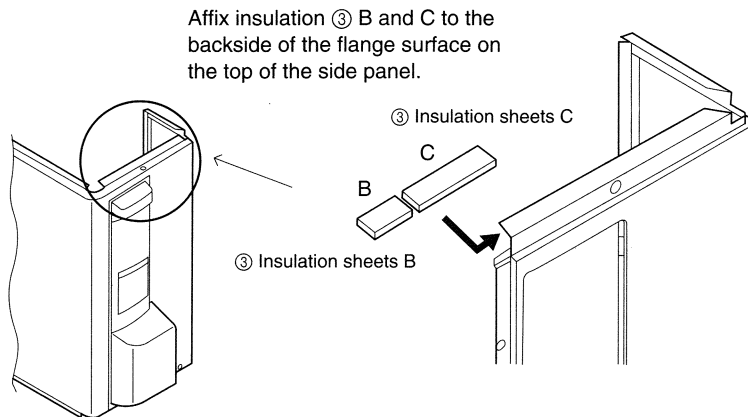
② When SW2-1 is set to on.

Displays communication status between the outdoor unit and SUB I/F.

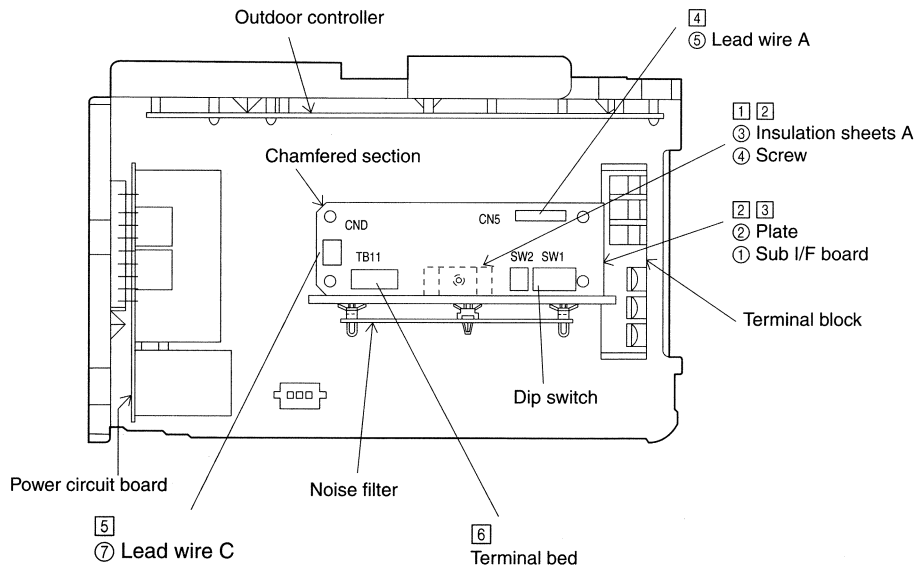
- LED2 flashes when the SUB I/F is sending.
- LED2 flashes when the SUB I/F is receiving.

3. Installation procedure [Applicable models: Group A]

Before beginning the operation shown below, affix insulation to the edge of the panel sheet metal in order to protect the wiring connected to the Sub I/F board from the edge of the sheet metal part.



Top view of Electric box

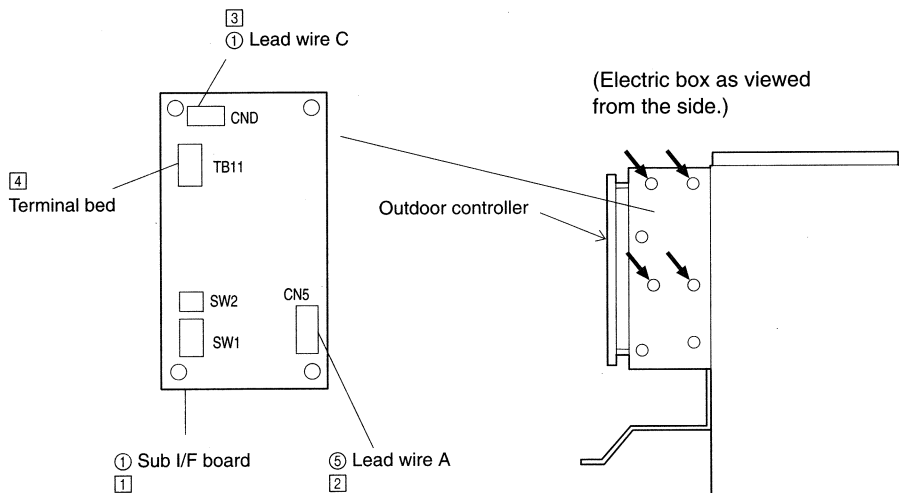
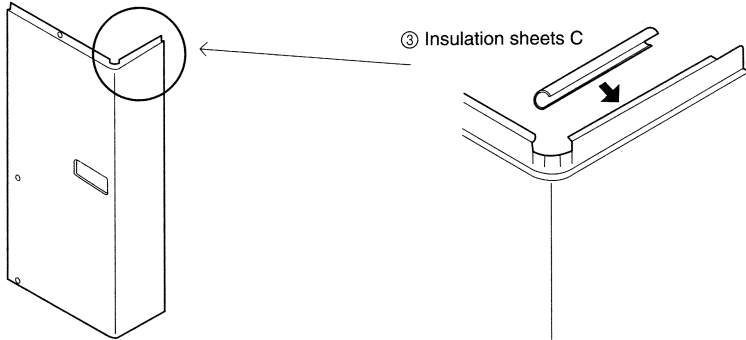


- ① Starting from the bottom, mount Insulation Sheet A ③ to the "L" bend section on the back of the noise filter mounting panel.
 - ② Position the chamfered section of Plate ② so that it faces the fan side (the left side of the drawing) and mount it using Screw ④.
 - ③ As shown in the illustration, position Sub I/F board ① (insulation sheet, with support) on the four corners of Plate ② so that the DIP switches (SW1, SW2) are on the terminal block side and then mount.
*Push it firmly until you hear it "click."
 - ④ Connect CN5 on the Sub I/F board and CNMNT on the Outdoor controller using Lead-wire A ⑤. Use care not to use the wrong Lead wire. The connectors for Lead wire A ⑤ are red. Wire Marking: INV type
 - ⑤ Connect CND on the Sub I/F board and CNVMNT on the Outdoor controller using Lead-wire C ⑦.
 - ⑥ Connect A-interface cable to terminal block TB11 on the Sub I/F board.
There is no polarity.
* Make sure that there is no looseness in the screws for the terminal block.
* Make sure that the core wire of the cable does not come in contact with the sheet metal.
 - ⑦ Bundle the leads connected in ④, ⑤, ⑥ together with the other leads. After making sure that there is no slack, secure the bundle with pull tight ③. At this time, make sure that the core attached to Lead wire C does not come in contact with the circuit board.
- (Note 1) When mounting the panels, use extreme care not to pinch any of the lead wires.

3. Installation procedure [Applicable models: Group B]

Before beginning the operation shown below, affix insulation to the edge of the panel sheet metal in order to protect the wiring connected to the Sub I/F board from the edge of the sheet metal part.

Affix insulation C ③ so that the edge of the sheet metal is covered by it.



- ① As shown in the illustration, mount Sub I/F board ① (insulation sheet, with support) so that the terminal bed TB11 is on side surface of the Electric box indicated by the four arrows.

*Push it firmly until you hear it "click."

- ② Connect CN5 on the Sub I/F board and CNMNT on the Outdoor controller using Lead-wire A ⑤. Use care not to use the wrong Lead wire. The connectors for Lead wire A ⑤ are red. Wire Marking: INV type

- ③ Connect CND on the Sub I/F board and CNVMNT on the Outdoor controller using Lead-wire C ⑦.

- ④ Connect A-interface cable to terminal block TB11 on the Sub I/F board.

There is no polarity.

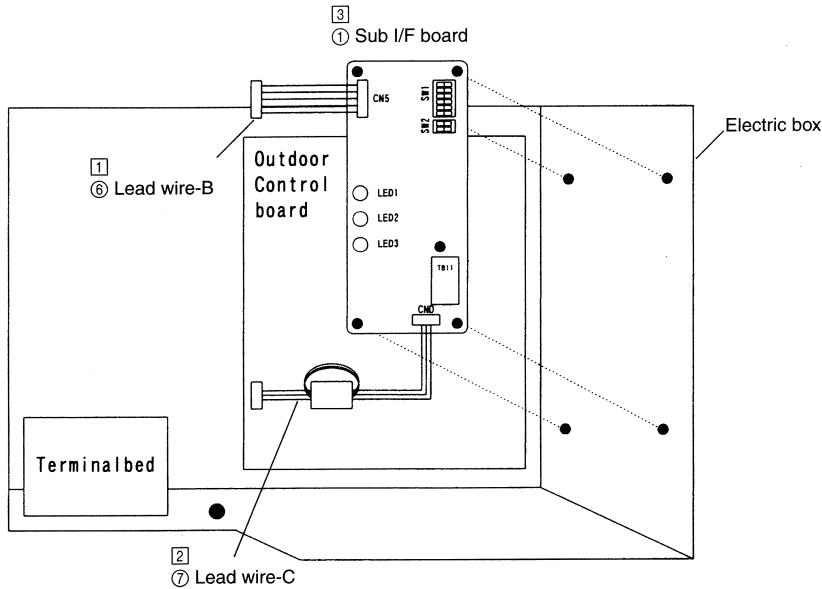
* Make sure that there is no looseness in the screws for the terminal block.

* Make sure that the core wire of the cable does not come in contact with the sheet metal.

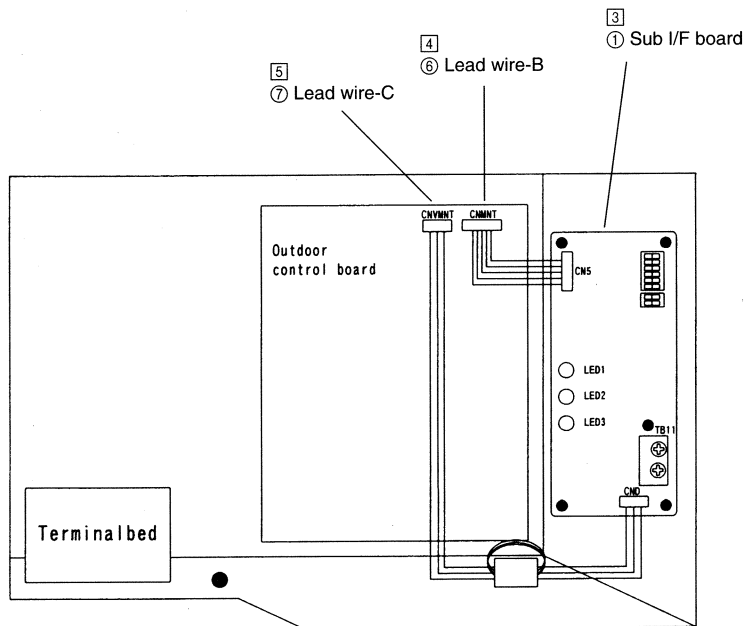
- ⑤ Bundle the leads connected in ②, ③, ④ together with the other leads. After making sure that there is no slack, secure the bundle with pull tight ⑨. At this time, make sure that the core attached to Lead wire C does not come in contact with the circuit board.

(Note 1) When mounting the panels, use extreme care not to pinch any of the lead wires.

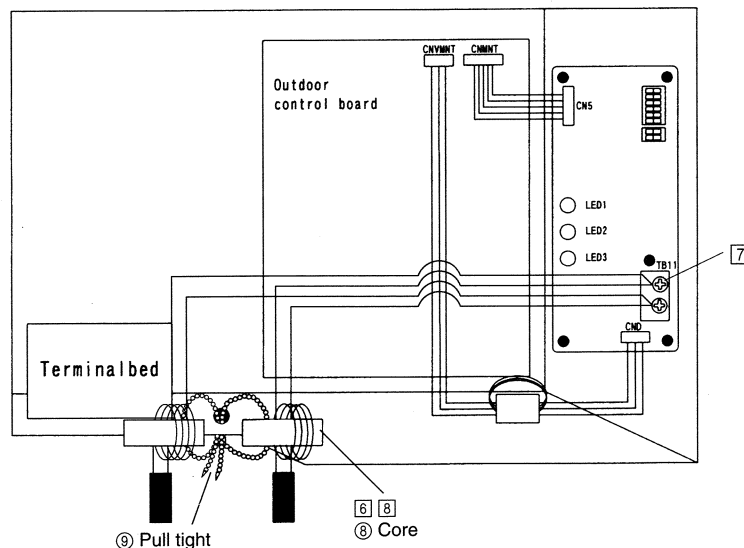
3. Installation procedure [Applicable models: Group C]



- 1 Connect the lead wire-B ⑥ to the connector CN5 on the Sub I/F board ①. Use care not to use the wrong lead wire. The connector for lead wire B ⑥ is white. Wire Marking: NON-INV
- 2 Connect the lead wire-C ⑦ to the connector CND on the Sub I/F board ①.
- 3 As shown in the illustration, mount the Sub I/F board ① (insulation sheet, with support) on the side of the Electric box with SW1 and SW2 on top. (Push it firmly until you hear it "click.")

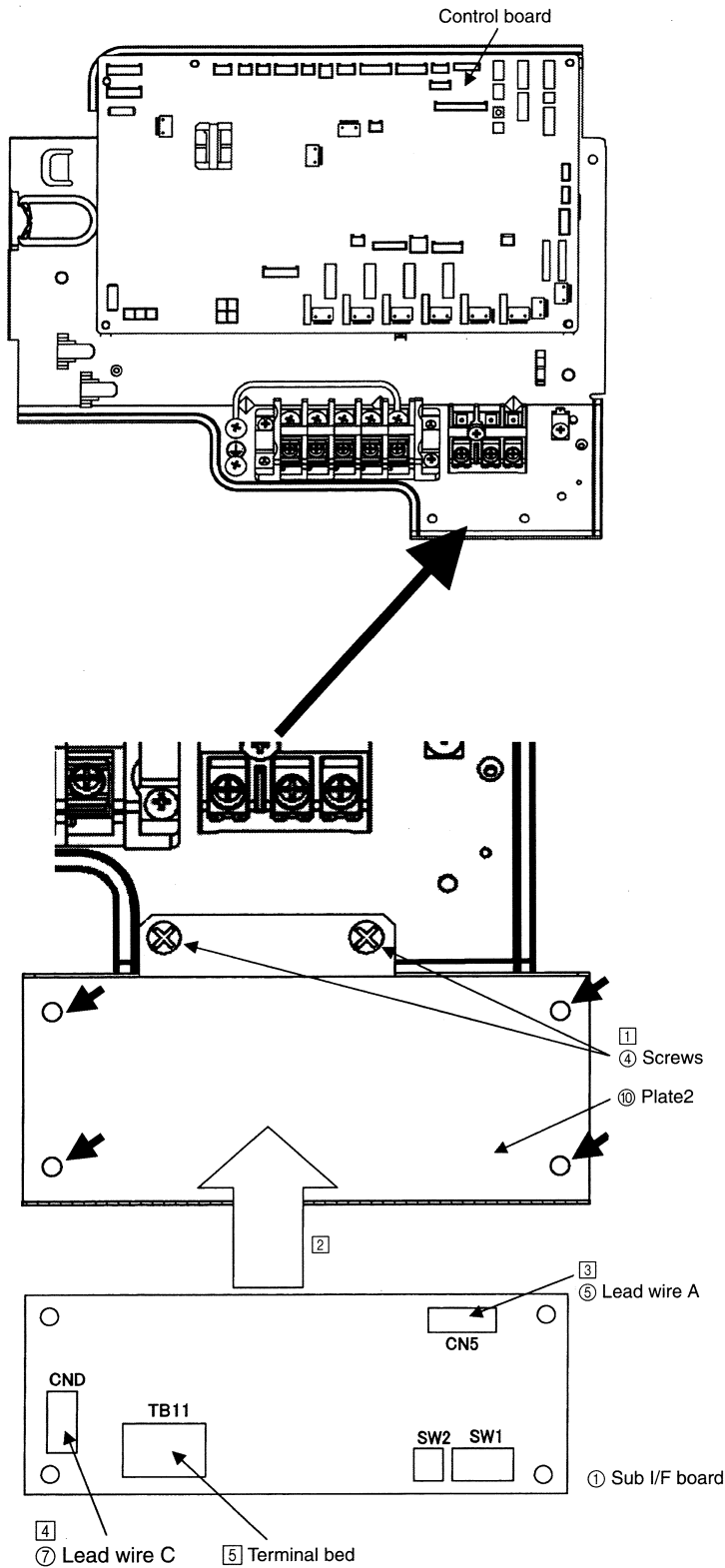


- 4 Connect the lead wire-B ⑥ to the connector CNMNT on the Outdoor control board.
- 5 Connect the lead wire-C ⑦ to the connector CNVMNT on the Outdoor control board.



- 6 Wrap the A-interface cable three times around core ⑧. (Pass through the center of the core three times.)
 - * When the A-interface cable is not wrapped around core ⑧ three times, insulate the cable with a sheath.
- 7 Connect the A-interface cable that was wrapped around core ⑧ in Step ⑥ to TB11 on the Sub I/F board. There is no polarity.
 - * Make sure that there is no looseness in the screws for the terminal block.
 - * Make sure that the core wire of the cable does not come in contact with the sheet metal.
- 8 Secure core ⑧ and the electric box so that no strong force is applied to the A-interface cable.
 - * Perform steps ⑥ through ⑧ in the same manner when installing a jumper wire.

3. Installation procedure [Applicable models: Group D]

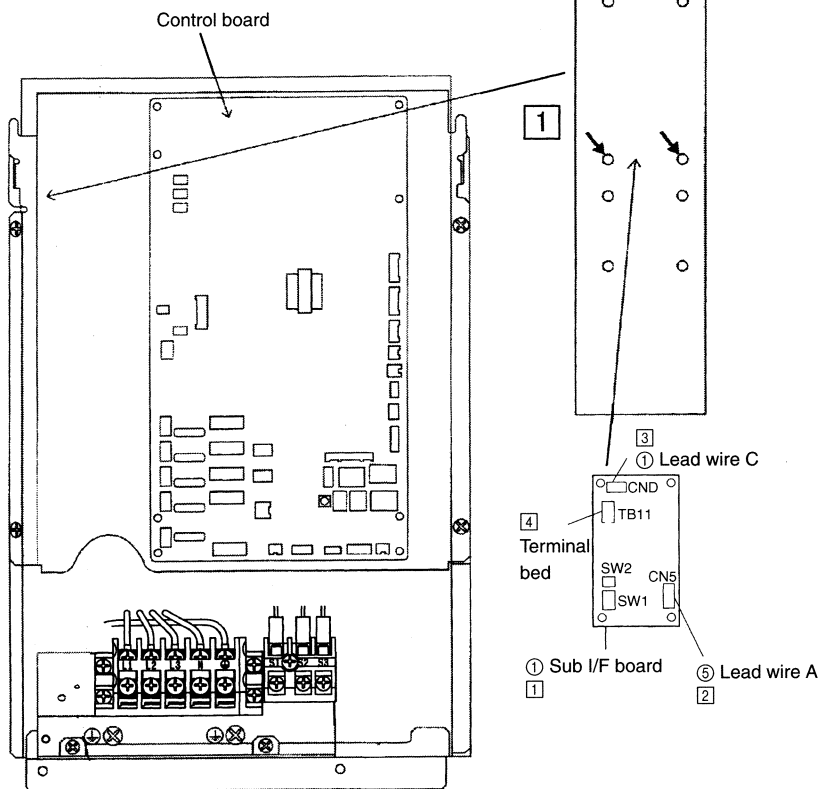


- ① Attach the Plate2 ⑩, using two screws ④.
 - ② Install sub I/F board ① (with insulation sheets and supports) on the Plate2 ⑩. At the four point indicated by arrows. *Push it firmly until you hear it "click."
 - ③ Connect CN5 on the Sub I/F board and CNMNT on the Outdoor controller using Lead-wire A ⑤. Use care not to use the wrong Lead wire. The connectors for Lead wire A ⑤ are red. Wire Marking: INV type
 - ④ Connect CND on the Sub I/F board and CNVMNT on the Outdoor controller using Lead-wire C ⑦.
 - ⑤ Connect A-interface cable to terminal block TB11 on the Sub I/F board. There is no polarity.
 - * Make sure that there is no looseness in the screws for the terminal block.
 - * Make sure that the core wire of the cable does not come in contact with the sheet metal.
 - ⑥ Bundle the leads connected in ③, ④, ⑤ together with the other leads. After making sure that there is no slack, secure the bundle with pull tight ⑨. At this time, make sure that the core attached to Lead wire C does not come in contact with the circuit board.
- (Note 1) When mounting the panels, use extreme care not to pinch any of the lead wires.

3. Installation procedure [Applicable models: Group E/Group F]

[Group E]

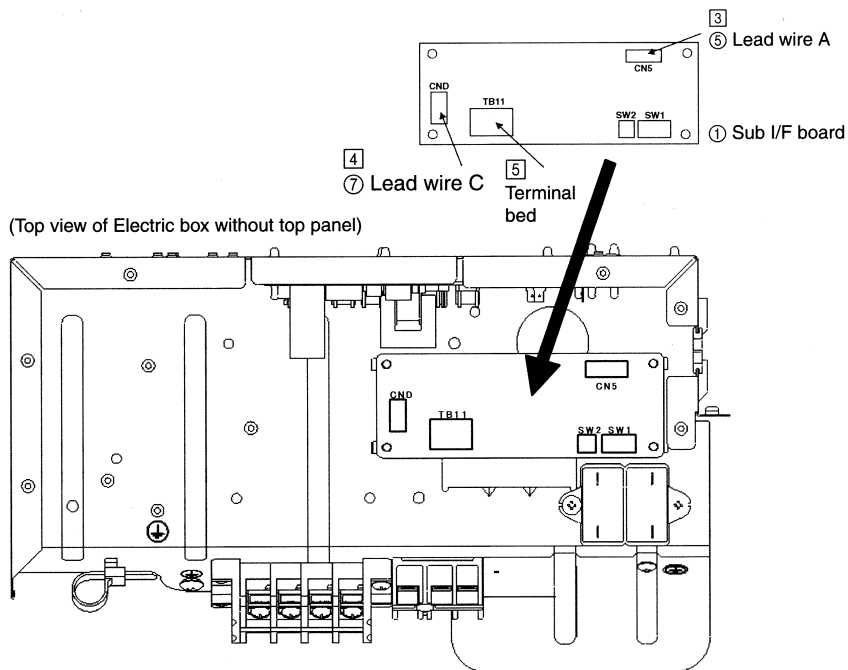
(When viewed from the side of electrical parts box)



- 1 Install sub I/F board ① (with insulation sheets and supports) on the inside of electrical parts box.
At the four point indicated by arrows.
*Push it firmly until you hear it "click."
 - 2 Connect CN5 on the Sub I/F board and CNMNT on the Outdoor controller using Lead-wire A ⑤. Use care not to use the wrong Lead wire. The connectors for Lead wire A ⑤ are red. Wire Marking: INV type
 - 3 Connect CND on the Sub I/F board and CNVMNT on the Outdoor controller using Lead-wire C ⑦.
 - 4 Connect A-interface cable to terminal block TB11 on the Sub I/F board.
There is no polarity.
* Make sure that there is no looseness in the screws for the terminal block.
* Make sure that the core wire of the cable does not come in contact with the sheet metal.
 - 5 Bundle the leads connected in 2, 3, 4 together with the other leads. After making sure that there is no slack, secure the bundle with pull tight ⑨. At this time, make sure that the core attached to Lead wire C does not come in contact with the circuit board.
- (Note 1) When mounting the panels, use extreme care not to pinch any of the lead wires.

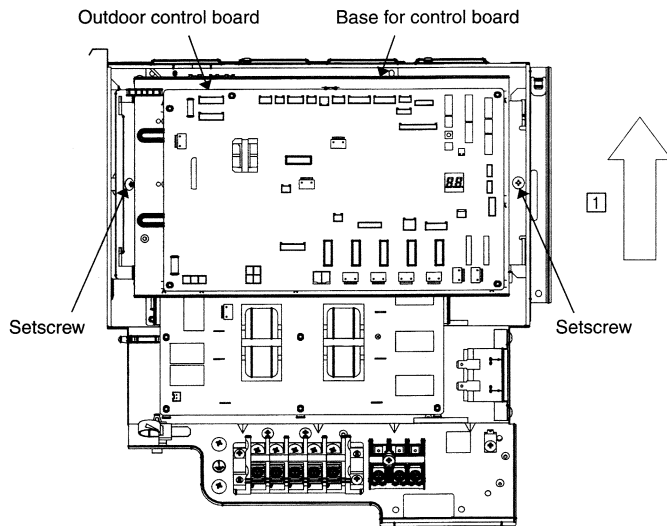
[Group F]

(Top view of Electric box without top panel)

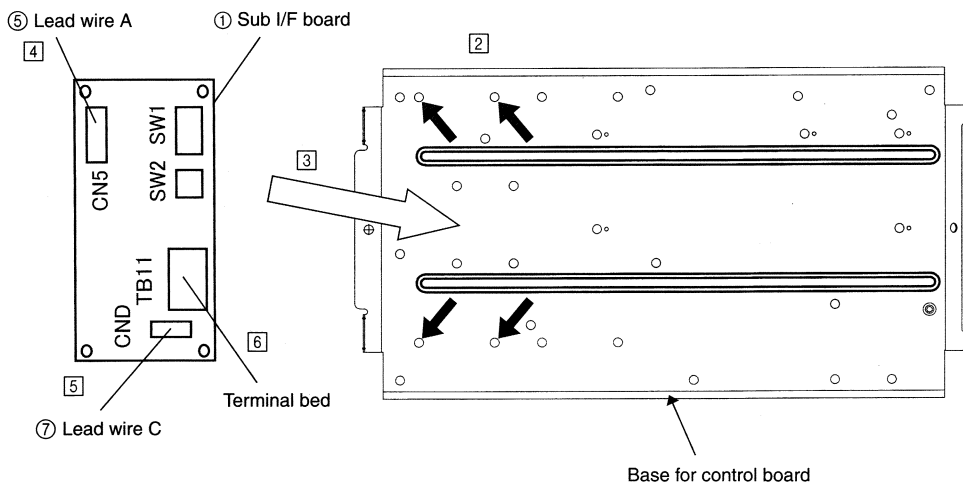


- 1 The sub I/F board ① is installed in the bottom of electric box so that the DIP switches (SW1, SW2) come front.
*Push it firmly until you hear it "click".
 - 2 Connect the lead wire-B ⑥ to the connector CN5 on the Sub I/F board ①. Use care not to use the wrong lead wire. The connector for lead wire B ⑥ is white. Wire Marking: NON-INV
 - 3 Connect the lead wire-C ⑦ to the connector CND on the Sub I/F board ①.
 - 4 Connect the lead wire-B ⑥ to the connector CNMNT on the Outdoor control board.
 - 5 Connect the lead wire-C ⑦ to the connector CNVMNT on the Outdoor control board.
 - 6 Connect A-interface cable to terminal block TB11 on the Sub I/F board.
There is no polarity.
* Make sure that there is no looseness in the screws for the terminal block.
* Make sure that the core wire of the cable does not come in contact with the sheet metal.
 - 7 Bundle the leads connected in 4, 5, 6 together with the other leads. After making sure that there is no slack, secure the bundle with pull tight ⑨. At this time, make sure that the core attached to Lead wire C does not come in contact with the circuit board.
- (Note 1) When mounting the panels, use extreme care not to pinch any of the lead wires.

3. Installation procedure [Applicable models: Group G]



(Back of base for control board)



① Remove the two screws that secure the control board base of electrical parts box, and then slide the base in the direction of the arrow to remove it from the electrical parts box.

② Check for the four ① board attachment holes (arrows) in the back of control board base (the control board is attached to the surface).

③ Attach the sub I/F board ① (with insulation sheets and support) so that the switch faces up.

④ Connect CN5 on the sub I/F board and CNMNT on the outdoor control board using lead wire-A ⑤. Use care not to use the wrong lead wire. The connectors for lead wire A ⑤ are red. Wire Making: INV type

⑤ Connect CND on the sub I/F board and CNMNT of outdoor control board using lead wire-C ⑦.

⑥ Connect A-interface cable to terminal block TB11 on the sub I/F board. There is no polarity.

* Make sure that there is no looseness in the screws for the terminal block.

* Make sure that the core wire of the cable does not come in contact with the sheet metal.

⑦ Bundle the leads connected in ④, ⑤, ⑥ together with the other leads. After making sure that there is no slack, secure the bundle with pull tight ⑨. At this time, make sure that the core attached to Lead wire C does not come in contact with the circuit board.

(Note 1) When mounting the panels, use extreme care not to pinch any of the lead wires.

