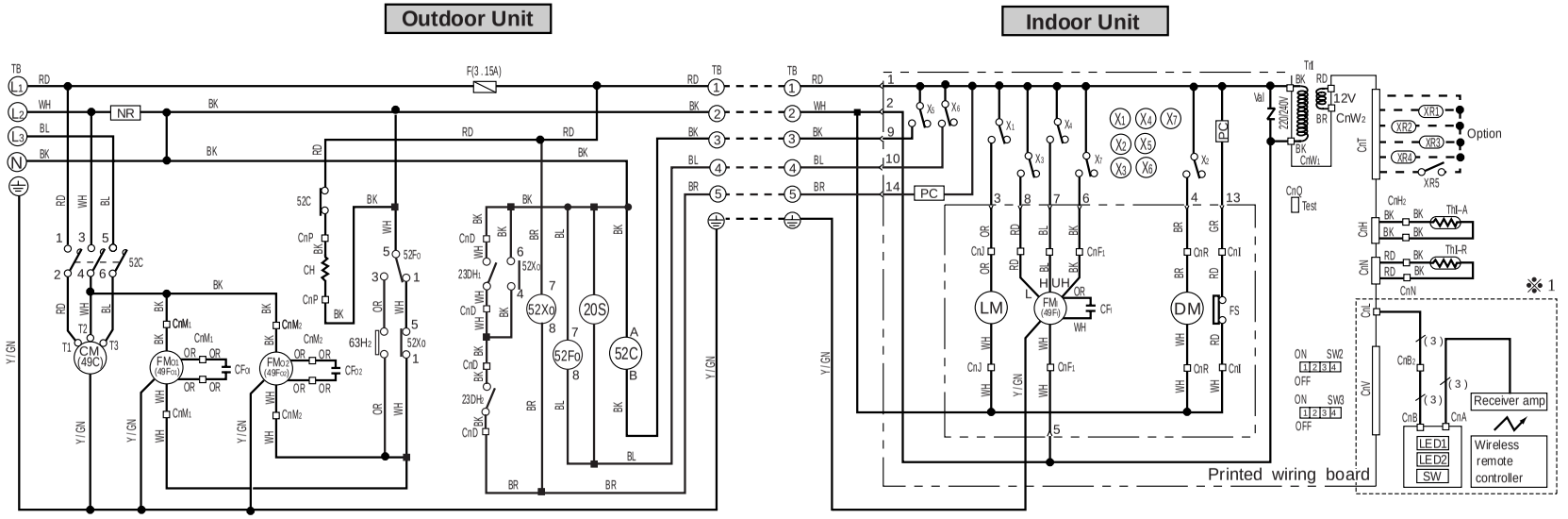
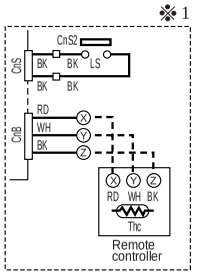
Power Source
3 Phase 380-415V 50Hz / 380V 60Hz

[This diagram indicates the FDTN series. Section from ※1 changes on the FDT series.]





Only case of FDT series.

Meaning of marks

Mark	Parts name	Mark	Parts name
CFI	Capacitor for FMI	**Thc**	Thermistor
CFO1,2	Capacitor for FMO	**THI-A**	Thermistor
CH	Crankcase heater	**THI-R**	Thermistor
CM	Compressor motor	**TrI**	Transformer
CnA ~ W	Connector (□ mark)	**Val**	Varistor
DM	Drain motor	**20S**	4-way valve solenoid
F	Fuse	**23DH**	Thermostat (deicer)
FMI	Fan motor (Indoor unit)	**49C**	Internal thermostat for CM
FMO1,2	Fan motor (Outdoor unit)	**49FI**	Internal thermostat for FMI
FS	Float switch	**49FO1,2**	Internal thermostat for FMO
LED1	Indication lamp (Green - Run)	**52C**	Magnetic contactor for CM
LED2	Indication lamp (Yellow - Timer/Check)	**52FO**	Relay for FMO
LM	Louver motor	**52XO**	Relay for fan control
LS	Limit switch	**X1~7**	Auxiliary relay
NR	Surge suppressor	**63H2**	High pressure switch (for control)
PC	Photo coupler	◁	Terminal (F)
SW	Switch (ON/OFF)	■	Connector
SW2, 3	Changeover switch		
TB	Terminal block (◯ mark)		

Color mark

Mark	Color
BK	Black
BL	Blue
BR	Brown
GR	Gray
OR	Orange
RD	Red
WH	White
Y/GN	Yellow/Green

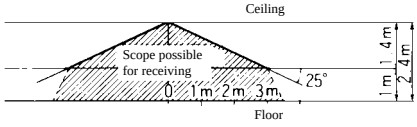
(6) Cautions for wireless remote conntroller operation

As wireless remote controller is operated by infrared rays as a signal, make sure to explain to customers the following matters regarding the operating distance and protection from jamming.

- Operate it by directing the remote controller switch correctly to the receiver amp section.
- Operating distance is shown below, but it may become shorter or longer depending on circumstances.
- When its receiving section is directly under the sun or strong illumination, or covered by dust or behind an obstacle, the operating distance may become shorter or it may not work.
- A hook for fixing the remote controller is provided for to keep the controller from missing.

(a) Operating distance of wireless remote controller

Operate it within the distance and angle shown in the sketch.

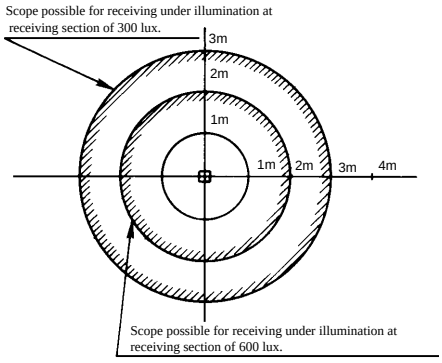


1) Standard receiving distance

CONDITION: 300 luxes at the receiving section (at an ordinary office where there is no ceiling light within one meter around the unit.

2) The receiving distance as viewd from the plane, and the relation between the illumination at the receiving section and receiving distance.

CONDITION: The relation between illumination and receiving distance when the remote controller is operated at the place one meter above the floor with the ceiling 2.4 m high. When the illumination is doubled, the receiving distance become 2.3.



By switching the dip switch (SW3-3) on the indoor unit printed circuit board ("Specify the following switch number."), the operation mode can be changed to the quiet mode (mild mode). Confirm at installation and change if necessary.

6.5.2 Installation of the wired remote controller (Optional parts)

(1) Selection of installation location

Following locations should be avoided:

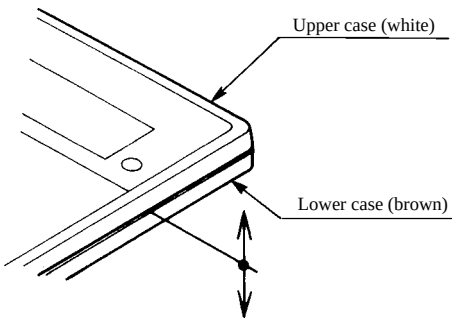
(a) Where exposed to direct sunlight
(b) Near the heat source
(c) Highly humid area or where splashed with water
(d) Uneven installation surface

(2) Selection of installation location

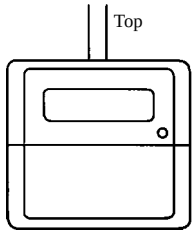
Exposed installation

(a) Remove the remote controller case.

- Insert finger nails between the upper (white) and lower (brown) cases and ply them to open.



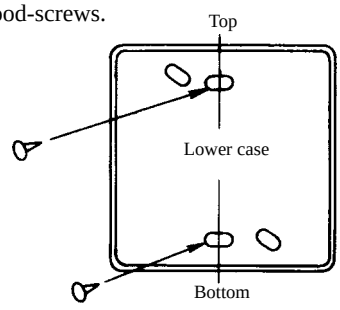
(b) Remote controller cords can be taken out upward only as shown below.



(Cord take-out direction)

- Cut the remote controller lower case off at the top and thin section with a nipper, knife or other and remove burrs from the cut with a file or other.

(c) Secure the remote controller lower case on the wall with 2 pieces of wood-screws.



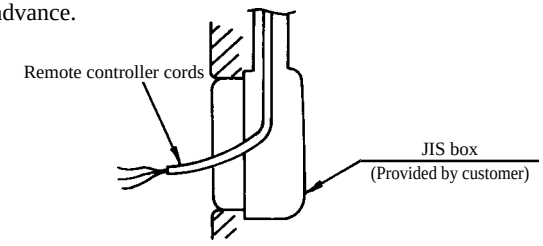
(d) Connect the remote controller cords with the terminal block. Make sure to align the terminal numbers on the indoor unit and the remote controller. Polarities are specified on the terminal block so that the unit will not be operated if the cords are connected improperly.

Terminals: (X) red wire, (Y) white wire, (Z) black wire

1) Set necessary functions in accordance with the model of indoor unit.
   Refer to (c) for the setting of functions.
2) Couple the upper case with the lower case as they were.
3) Secure the remote controller cords on the wall or other using cord clamps.

Embedded installation

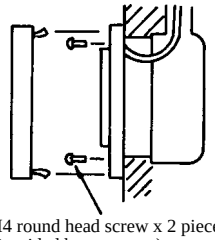
1) Have a JIS box and remote controller cords (use shielding wires or twisted pair wires for extension) embedded in the wall in advance.



Adequate JIS box

- JIS C 8336 Single switch box (without cover)
- JIS C 8336 Medium size square outlet box and two-switch cover with paint margin

2) Remove the upper case from the remote controller.
3) Secure the remote controller body on the JIS box with 2 pieces of M4 round head screw (provided by customer).
4) Connect remote controller cords with the remote controller.
   (Refer to the section regarding the exposed installation.)
5) Couple the upper case with the lower case as it was to finish up the installation.



Cautions for extension of remote controller cords

- **Make sure to use shielding wires only.**
  - **All models: 0.3 mm² x 3 core wires [MVVS3C, products of Keihan Cables]**

Note (1) When the extension distance exceeds 100 m, change the wire size as follows:
100 ~ 200 m ... 0.50 mm² × 3 core wires
~ 300 m ... 0.75 mm² × 3 core wires
~ 400 m ... 1.25 mm² × 3 core wires
~ 600 m ... 2.00 mm² × 3 core wires

- **Make sure to ground one side only of the shielding wire.**

6.5.3 Installation of outdoor unit

⚠WARNING

BE SURE TO READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD CAUSE SERIOUS INJURY OR DEATH, EQUIPMENT MALFUNCTION AND/OR PROPERTY DAMAGE.

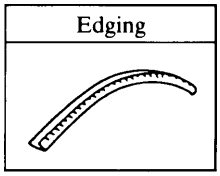
Models : FDC208~508 series

(1) Installation

(a) Accessories

Confirm accessories shown below are attached in the bag with this installation manual.

1) "Edging" for protection of electric wires from opening edge.



(b) Selection of installation location

Select the installation location after obtaining the approval of customer.

1) The place where the foundation can bear the weight of Outdoor unit.
2) The place where there is no concern about leakage of combustible gas.
3) The place where it is not stuffy.
4) The place where free from thermal radiation of other thermal source.
5) The place where flow of drain is allowed.
6) The place where noise and hot air blast do not trouble neighboring houses.
7) The place where there is no obstruction of wind at the intake air port and discharge air port.

(5) Electrical wiring

○ This air conditioning system should be notificated to supply authority before connection to power supply system.

(a) Selection of size of power supply and interconnecting wires.

⚠ IMPORTANT

- Electric wiring work should be conducted only by authorized personnel.
- Use copper conductor only.
- Power source wires and Interconnecting wires shall not be lighter than polychloroprene sheathed flexible cord (design HO5RN-F IEC 57).
- Do not connect more than three wires to the terminal block.
- Use round type crimped terminal lugs with insulated grip on the end of the wires.

- Select wire sizes and circuit protection from Table 2.

Table 2 (This table shows 20m length wires with less than 2% voltage drop.)

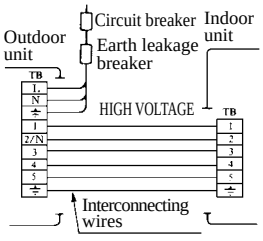
Item / Model	Phase	Circuit breaker		Power source wires (minimum)	Interconnecting and grounding wires (minimum)
		Switch breaker (A)	Over-current protector rated capacity (A)		
FDC208H(C) type	1	30	20	ø 2.0 mm	ø 1.6
FDC258H(C) type				5.5mm²	
FDC258CEP3			30		
FDC308HEN3					
FDC308HES3	3		15	ø 2.0 mm	
FDC408H type				5.5mm²	
FDC508H type			20		

(b) Wiring connection.

1) Connect the same terminal number between the Indoor unit and Outdoor unit as shown in the following diagram.
2) Make wiring to supply to the Outdoor unit, so that the power for the Indoor unit is supplied by ① and ② terminals.
3) Secure the wiring with wiring clamp so that no external force is transmitted to the connecting portion of terminal.
4) There is a ground (Earth) terminal in the control box.

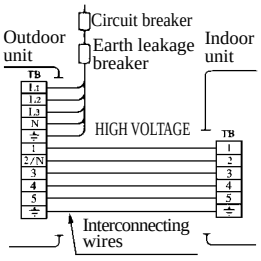
① 1 phase model

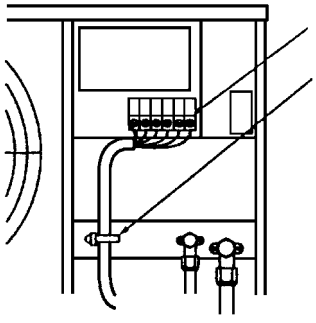
Note (1) The diagram below is for models equipped with heat pumps. Cooling only units do not have TB (4), (5).



② 3 phase model

Note (1) The diagram below is for models equipped with heat pumps. Cooling only units do not have TB (4), (5).





Power source and ground terminal block

Wiring clamp

○ Secure the wiring so that no external force is applied to the connecting portion of terminal.

Take out direction of wiring

○ Same as the refrigerant piping, 4 directions are allowed, which are right, front, rear and down.

Wiring diagram

○ Wiring diagram is fixed at the backside of service panel.

(6) Test run

⚠ CAUTION

THIS UNIT WILL BE STARTED INSTANTLY WITHOUT "ON" OPERATION WHEN ELECTRIC POWER IS SUPPLIED.
BE SURE TO EXECUTE "OFF" OPERATION BEFORE ELECTRIC POWER IS DISCONNECTED FOR SERVICING.

- This unit has a function of automatic restart system after recovering power stoppage.

DO NOT LEAVE OUTDOOR UNIT WITH THE SERVICE PANEL OPENED.

- When the service panel is removed, high voltage portion and high temperature areas are exposed.

⚠ IMPORTANT

- Check that the service valves are fully opened without fail before operation.
- Turn on the power for over 12 hours to energize the crankcase heater in advance of operation.
- Wait more than 3 minutes to restart the unit after stop.

- Run the unit continuously for about 30 minutes, and check the following.
  - ○ Suction pressure at check joint on the compressor suction pipe.
  - ○ Discharge pressure at check joint on the compressor discharge pipe (for Heat pump model), or at check joint of service valve for gas pipe (for cooling only model).
  - ○ Temperature difference between return air and supply air for Indoor unit.
- Refer to “Check Indicator Table” on wiring diagram of Outdoor unit or “User’s manual” of Indoor unit for diagnosis of operation failure.