TOYOTOMI

Service Manual

MODEL:

CCT70A-M
CCT140A-M

Four-way Cassette Type

1. Features

1.1 New panel (60k standard)

Ø New panel with 360° airflow supply

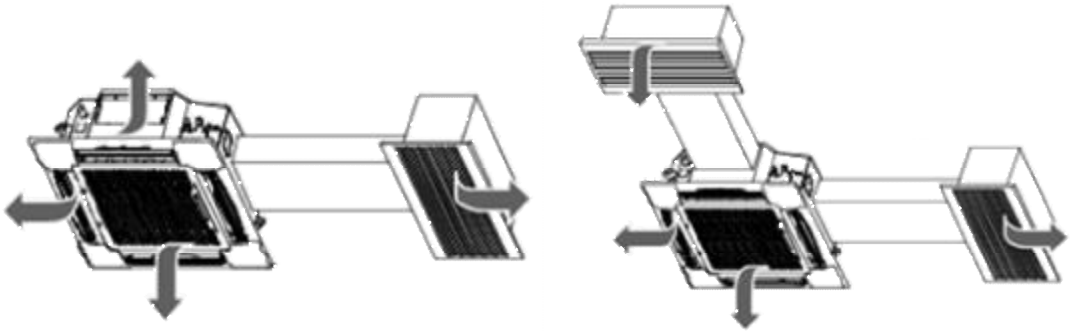
Ø Air intake grille lift function for supper thin cassette, convenient for maintenance.

1.2 3D screw fan technology

Ø 3D screw indoor fan technology reduces the air resistance, increases the air volume and improves the heat exchange efficiency. Operate quietly.

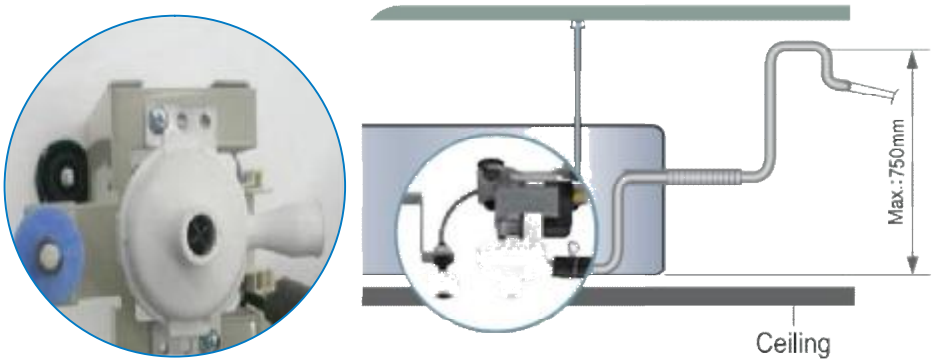
1.3 Air passage function

Ø Reserves the space for air outlet from the side of indoor unit; It's availed to connect air duct from side to nearby small rooms.
For duct connecting



1.4 Drainage pump

Ø Build-in water pump which pumping head is 750mm upmost. It's convenient to install drainage piping under most space condition.

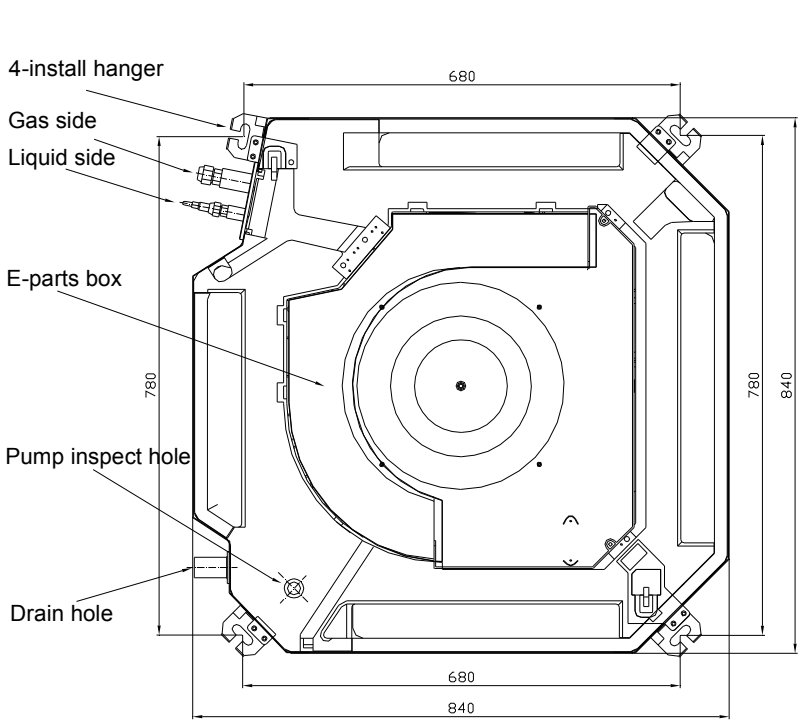


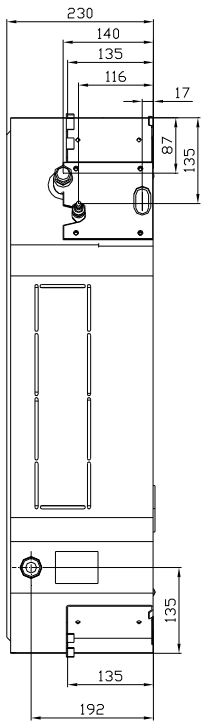
1.5 LED display

Ø Digital LED interface, makes the unit more elegant.
Ø Normally display the setting temperature
Ø LED can display the Error Code to make the malfunction checking easier.

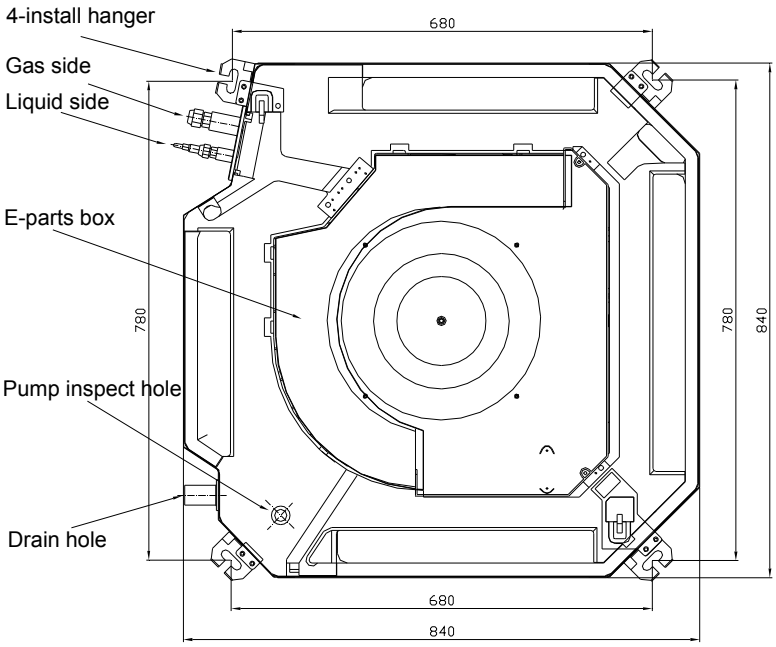
2. Dimensions

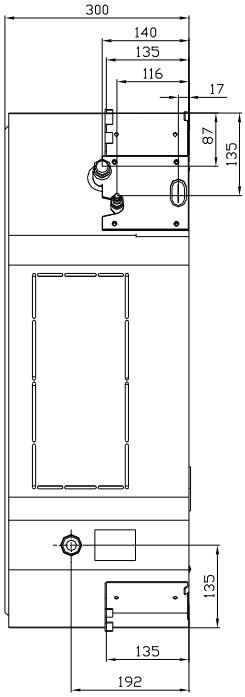
CCT70A-M





CCT140A-M

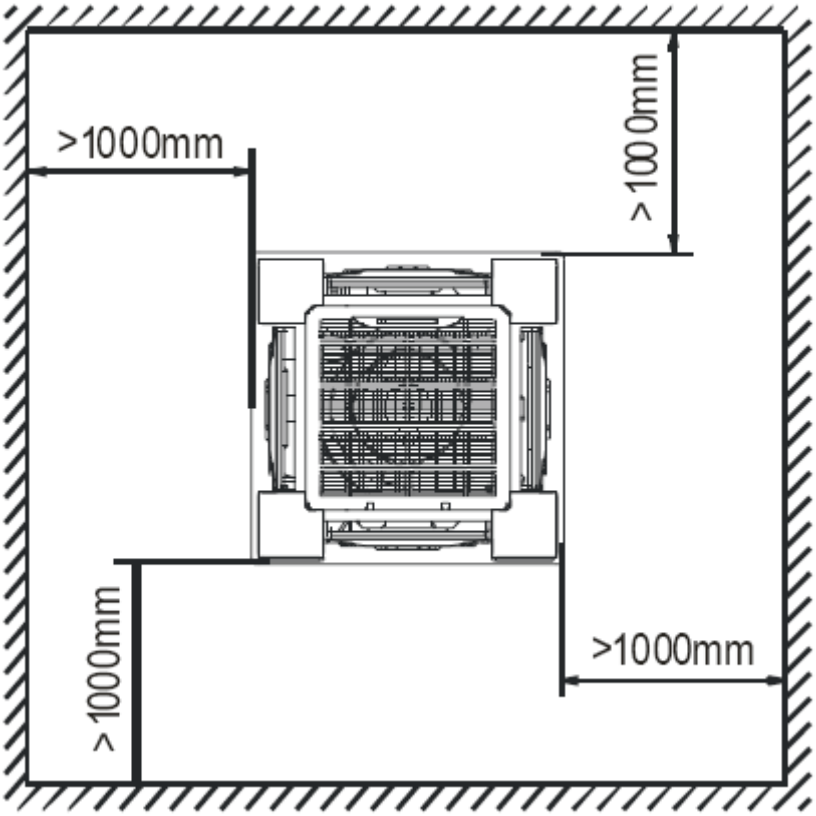




3. Service Space

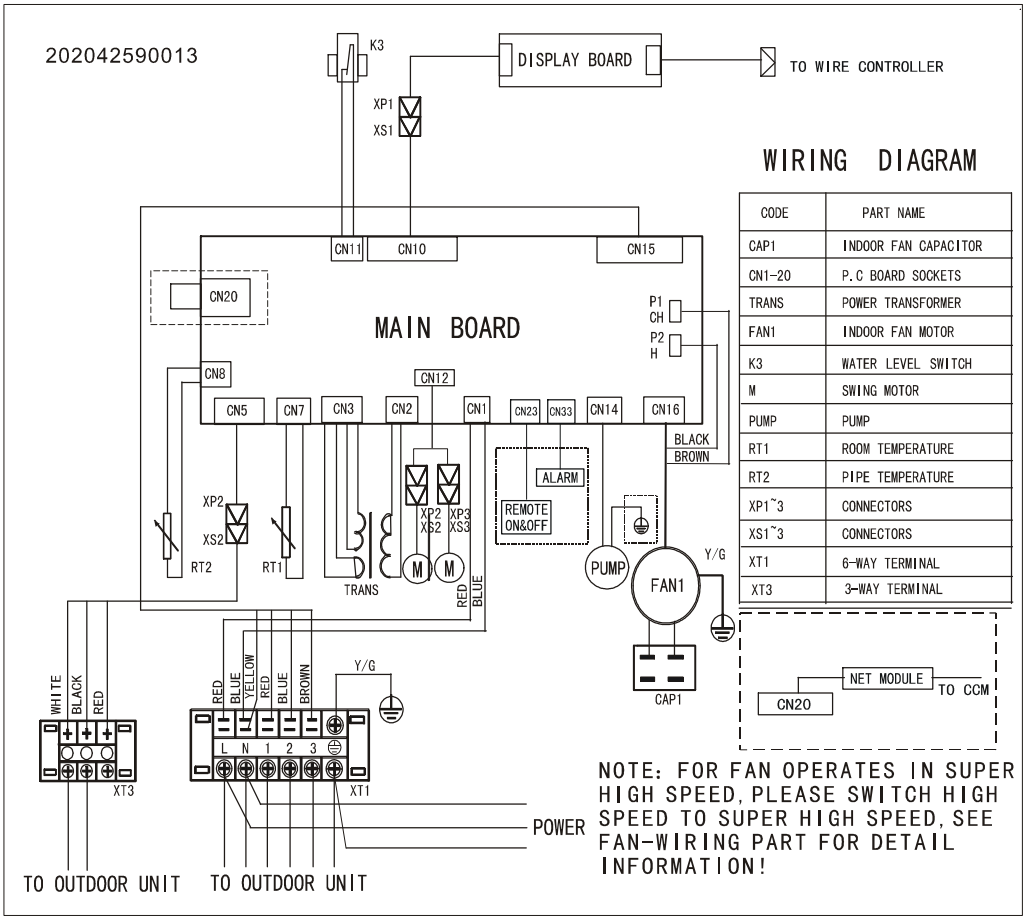
The indoor unit should be installed in a location that meets the following requirements:

- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.



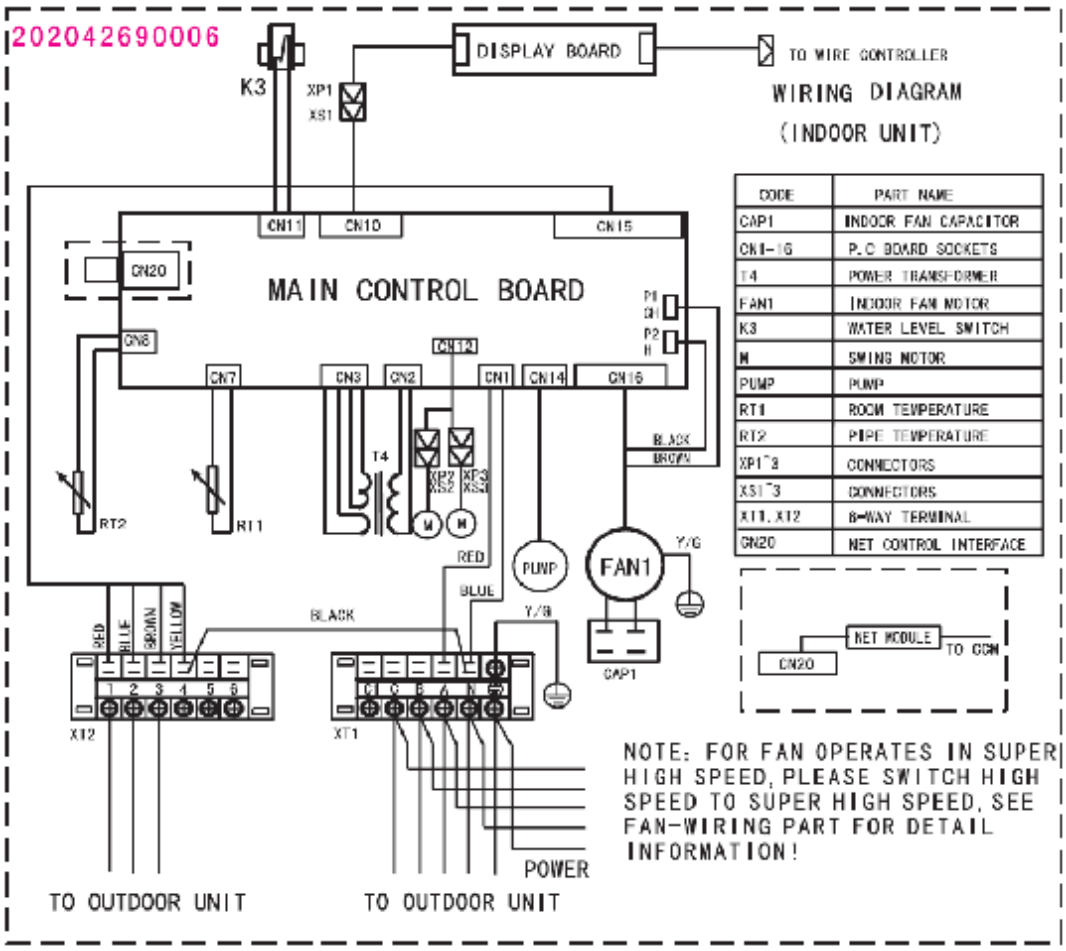
Wiring Diagrams

CCT70A-M



CODE	PART NAME
CAP1	INDOOR FAN CAPACITOR
CN1-20	P.C BOARD SOCKETS
TRANS	POWER TRANSFORMER
FAN1	INDOOR FAN MOTOR
K3	WATER LEVEL SWITCH
M	SWING MOTOR
PUMP	PUMP
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
XP1~3	CONNECTORS
XS1~3	CONNECTORS
XT1	6-WAY TERMINAL
XT3	3-WAY TERMINAL

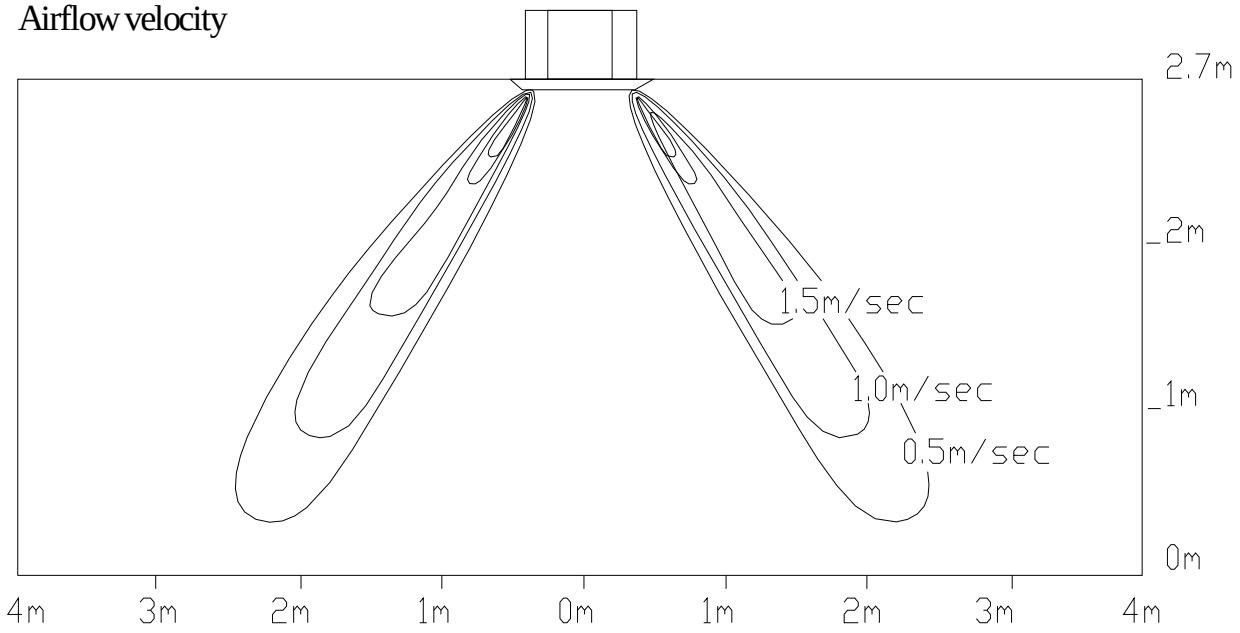
CCT140A-M



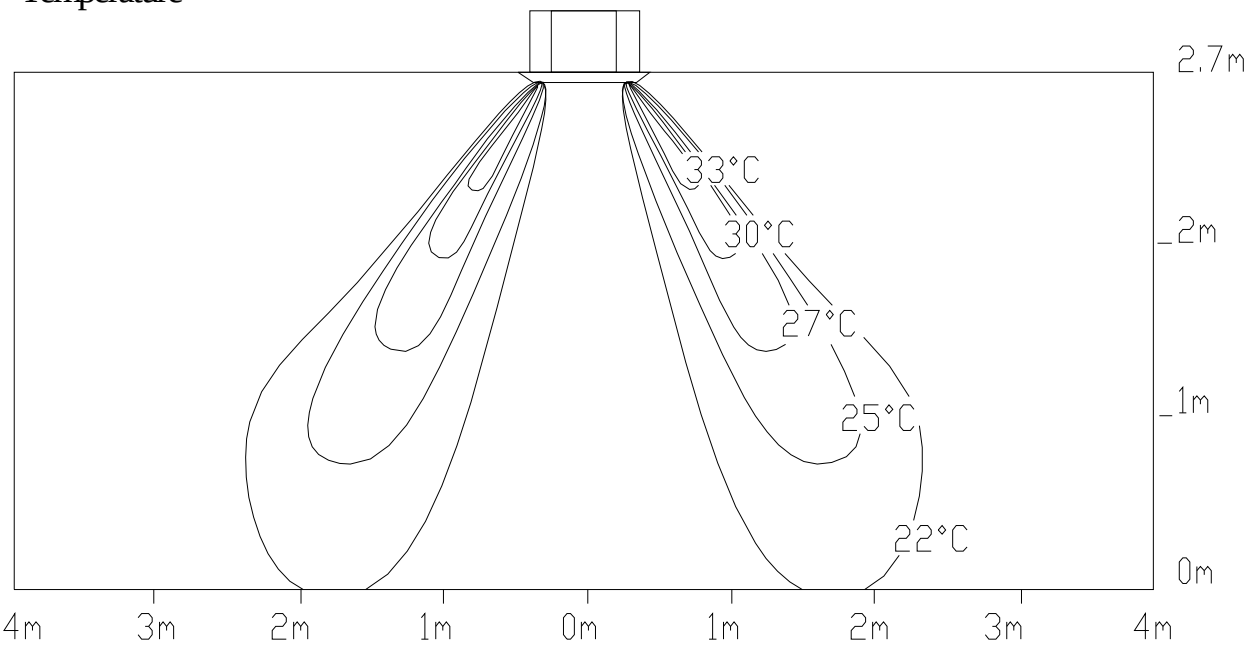
CODE	PART NAME
CAP1	INDOOR FAN CAPACITOR
CN1-16	P.C BOARD SOCKETS
T4	POWER TRANSFORMER
FAN1	INDOOR FAN MOTOR
K3	WATER LEVEL SWITCH
M	SWING MOTOR
PUMP	PUMP
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
XP1~3	CONNECTORS
XS1~3	CONNECTORS
X11, X12	6-WAY TERMINAL
CN20	NET CONTROL INTERFACE

5. Air Velocity and Temperature Distributions(Reference Data)

Airflow velocity



Temperature

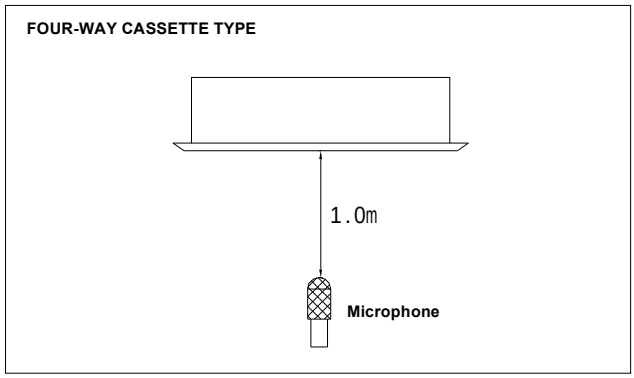


6. Electric Characteristics

Model	Indoor Units				Power Supply
	Hz	Voltage	Min.	Max.	MFA
CCT70A-M	50	220-240V	198V	254V	25
CCT140A-M		380-415V	342V	418V	15

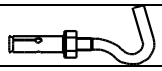
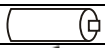
Remark:
MFA: Max. Fuse Amps. (A)

7. Sound Levels



Model	Noise level dB(A)		
	H	M	L
CCT70A-M	42	40	39
CCT140A-M	44	42	41

8. Accessories

	Name	Shape	Quantity
Installation Fittings	1. Expansible hook		4
	2. Installation hook		4
	3. Installation paper board		1
	4. Bolt M5		4
Tubing & Fittings	5. Connecting pipe group		1
	6. Binding tape		6
	7.Soundproof/insulation sheath		2
Drainpipe Fittings	8. Out-let pipe sheath		1
	9. Out-let pipe clasp		1
	10. Tightening band		20
	11. Drain joint		1
	12. Seal ring		1
Protect Pipe Fittings	13. Wall conduit		1
	14. Wall conduit cover		1
Remote controller & Its Frame	15. Remote controller		1
	16. Frame		1
	17. Mounting screw(ST2.9×10-C-H)		2
	18. Alkaline dry batteries (AM4)		2
Others	19. Owner's manual		1
	20. Installation manual		1

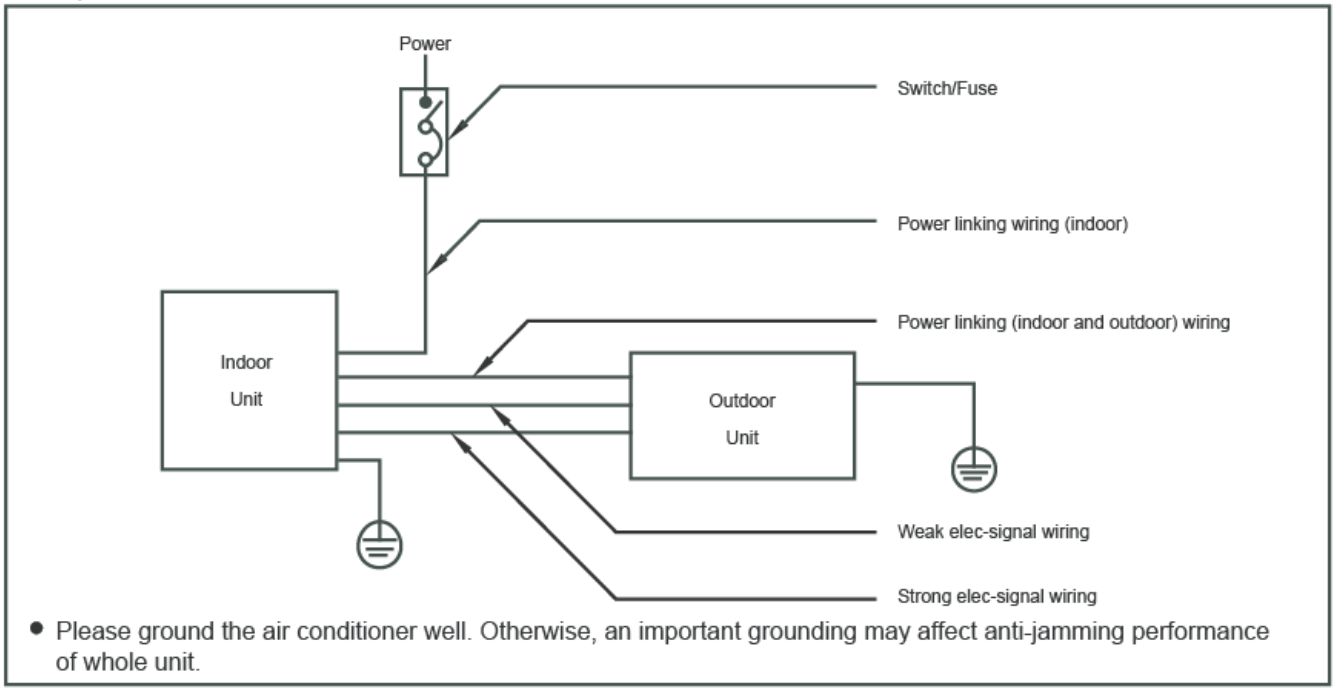
9. The Specification of Power

Cooling & heating

Type		24000 Btu/h		48000 Btu/h	
Power	Phase	1-phase		3-phase	
	Frequency and Voltage	220-240V, 50Hz		380-415V, 50Hz	
Circuit Breaker/ Fuse (A)		40/25		25/15	
Indoor Unit Power Wiring (mm^2)		3×2.5		5×2.5	
Indoor/Outdoor Connecting Wiring (mm^2)	Ground Wiring	4.0		2.5	
	Outdoor Unit Power Wiring	3×2.5		5×2.5	
	Strong Electric Signal	3×1.5		3×1.0	
	Weak Electric Signal	2-core shield wire 2×0.75		———	

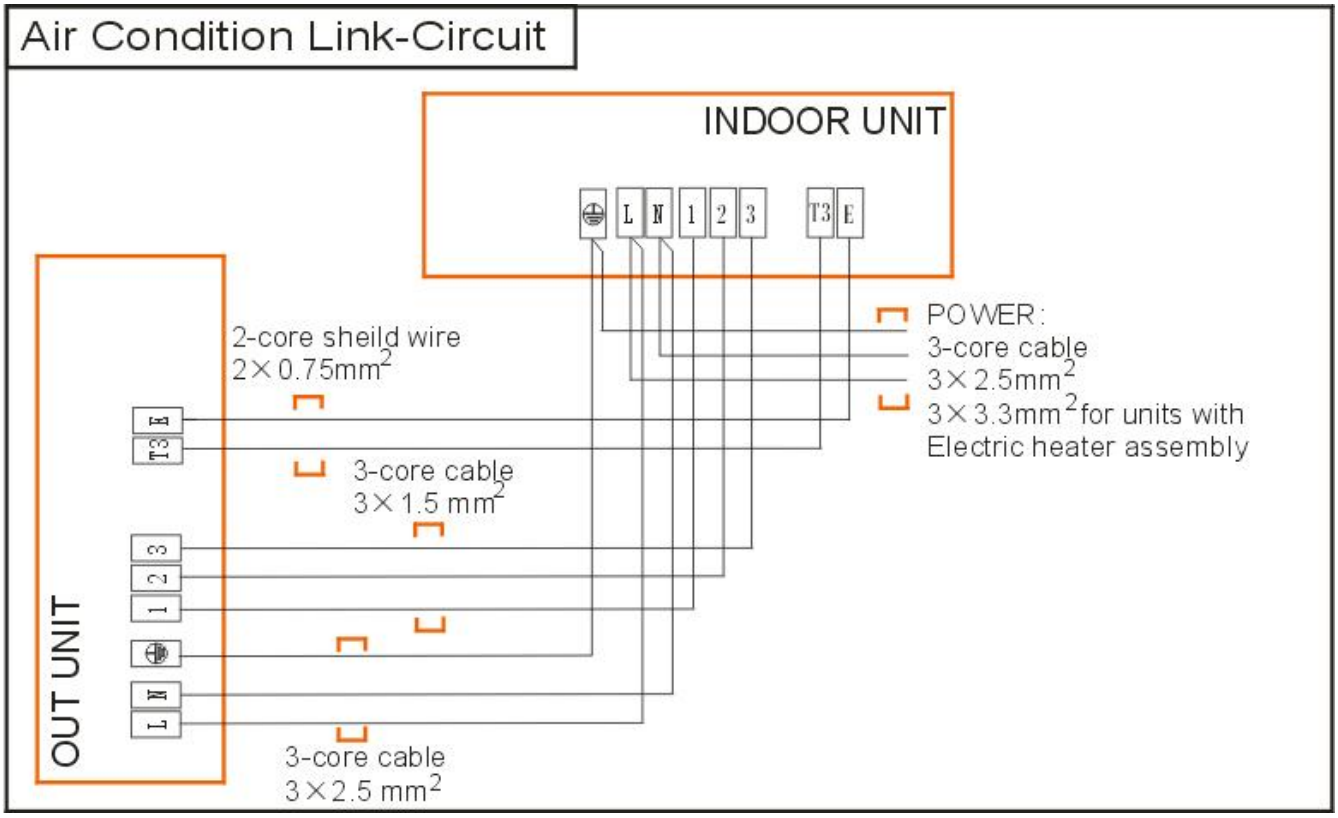
10. Field Wiring

Wiring chart

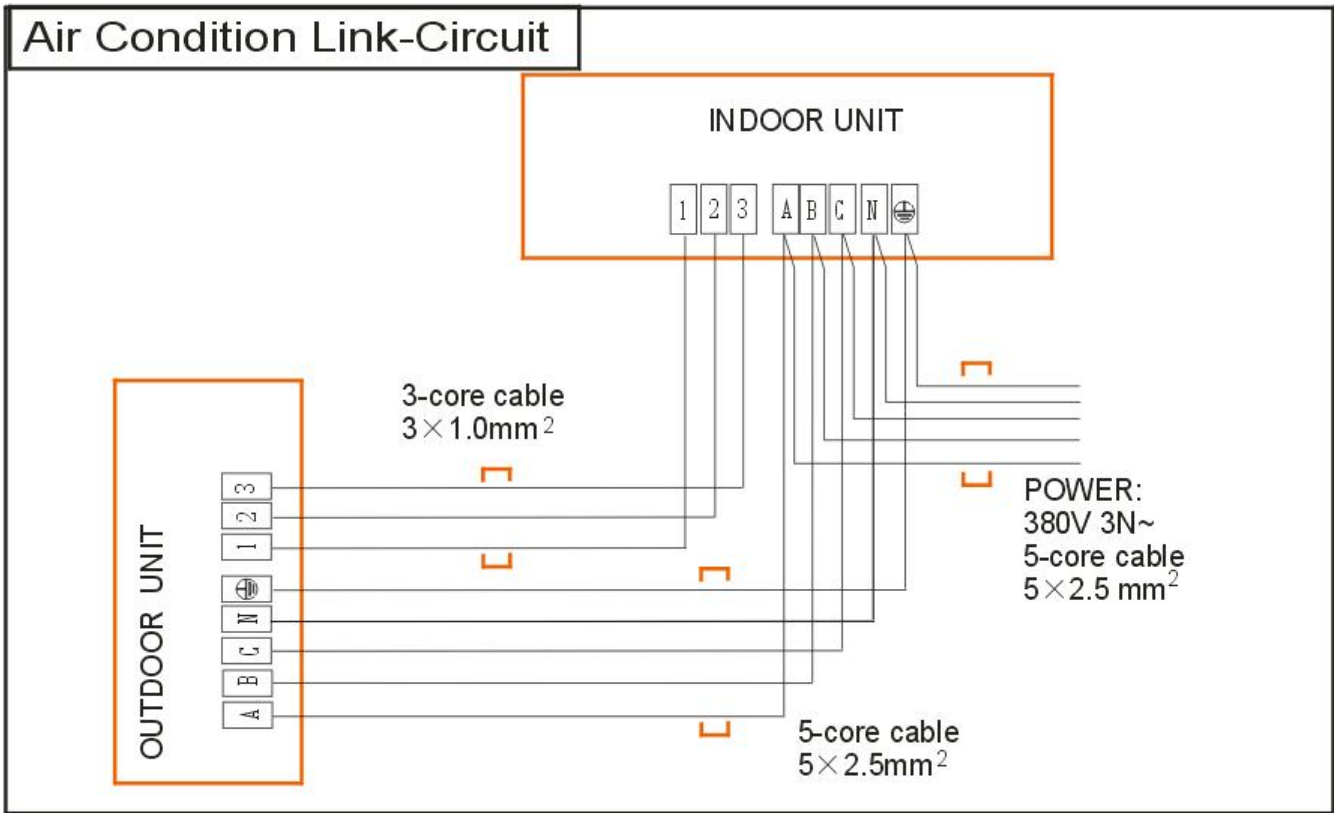


- Please ground the air conditioner well. Otherwise, an important grounding may affect anti-jamming performance of whole unit.

MCC-24HRN1

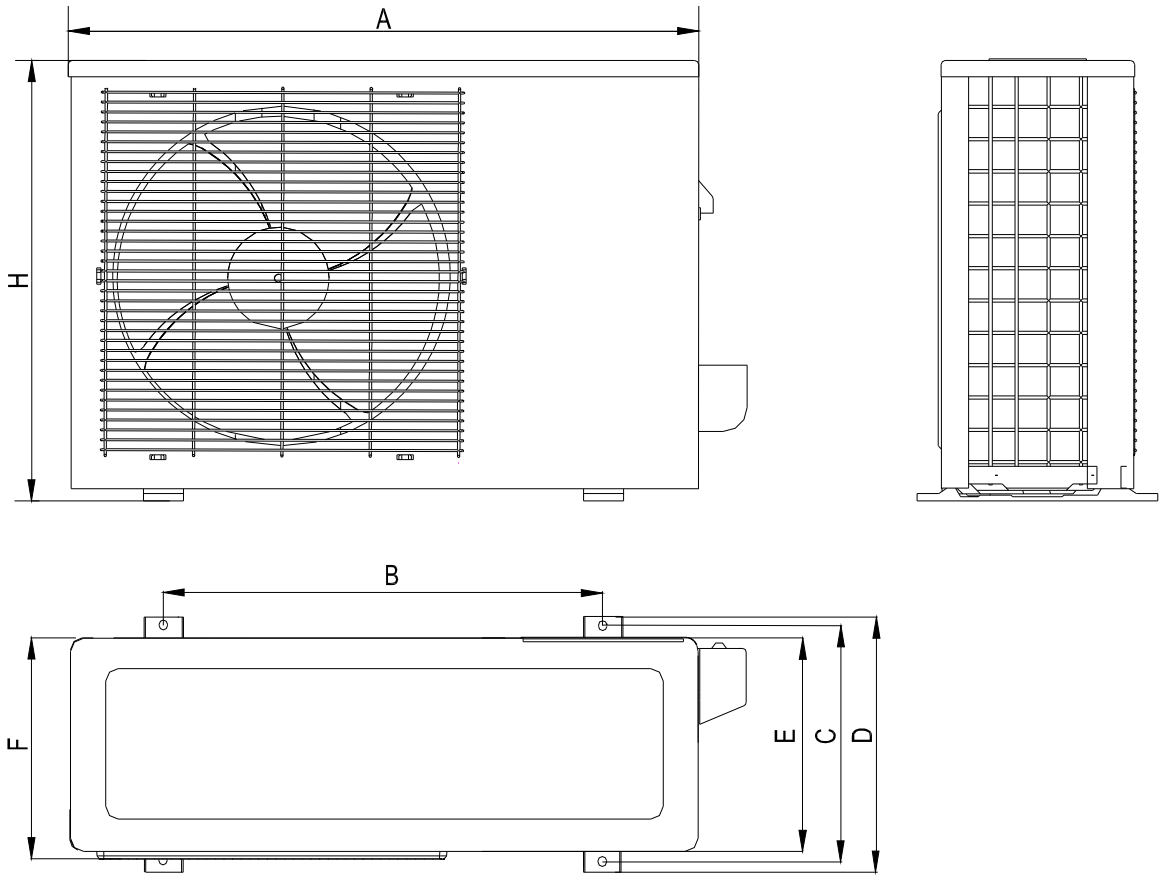


CCT140A-M


Air Condition Link-Circuit
INDOOR UNIT
1 2 3 A B C N
OUTDOOR UNIT
3 2 1 N C B A
3-core cable
3×1.0mm2
POWER:
380V 3N~
5-core cable
5×2.5 mm2
5-core cable
5×2.5mm2

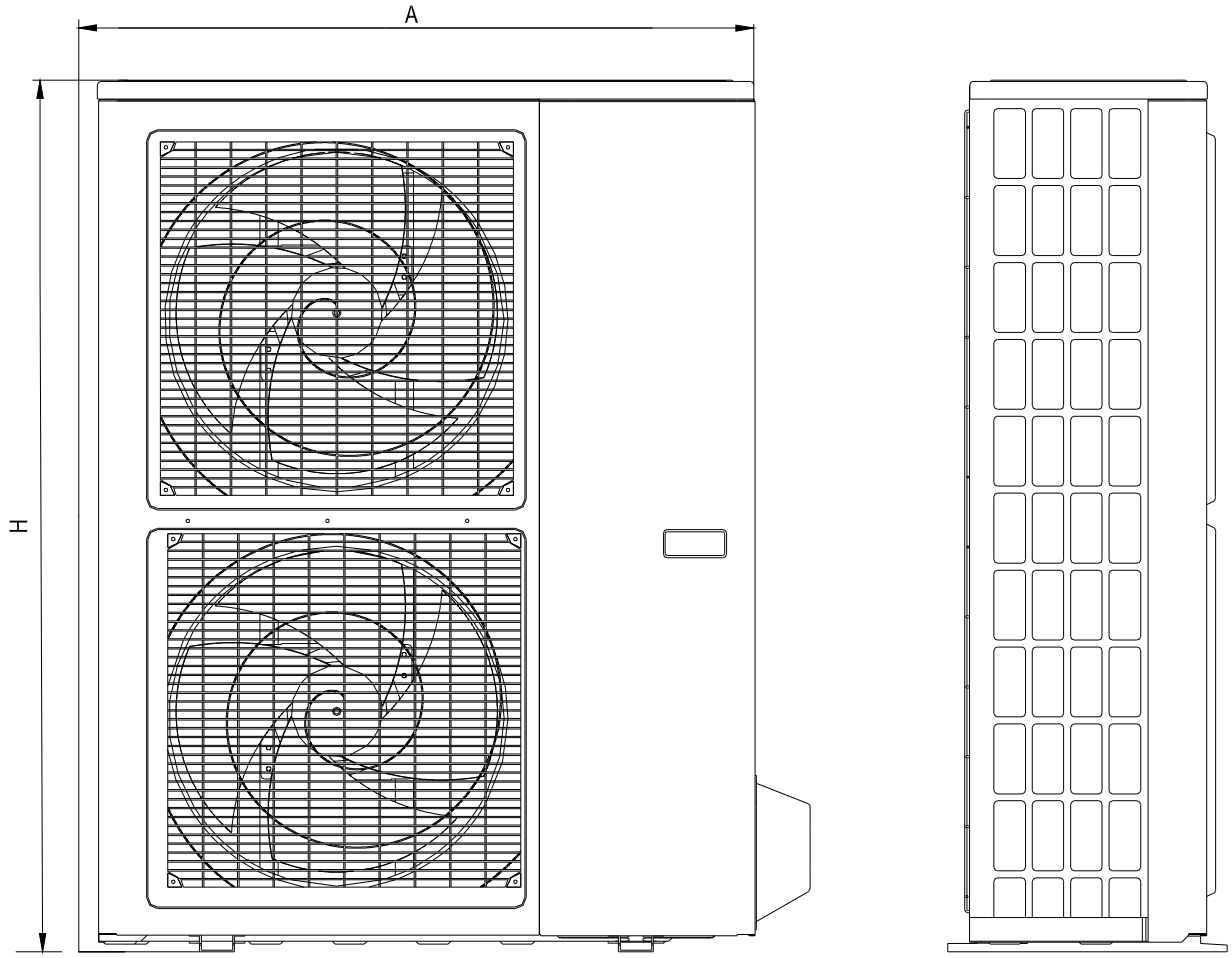
Part 3
Outdoor Units

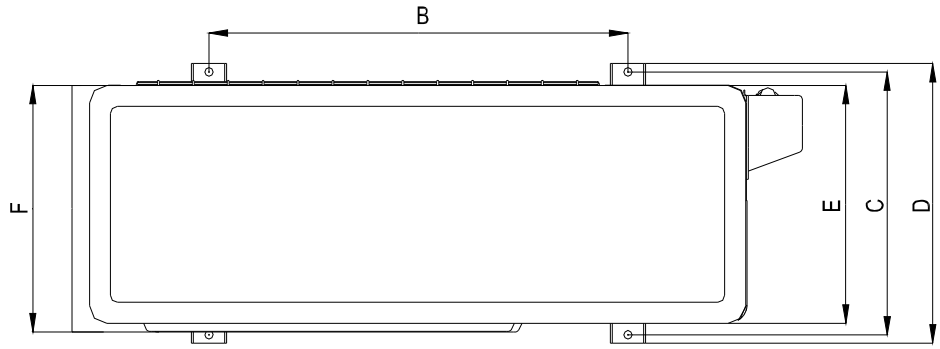
1. Dimensions



mm

Model	A	B	C	D	E	F	H
CCT70A-M	842	560	335	360	312	324	695

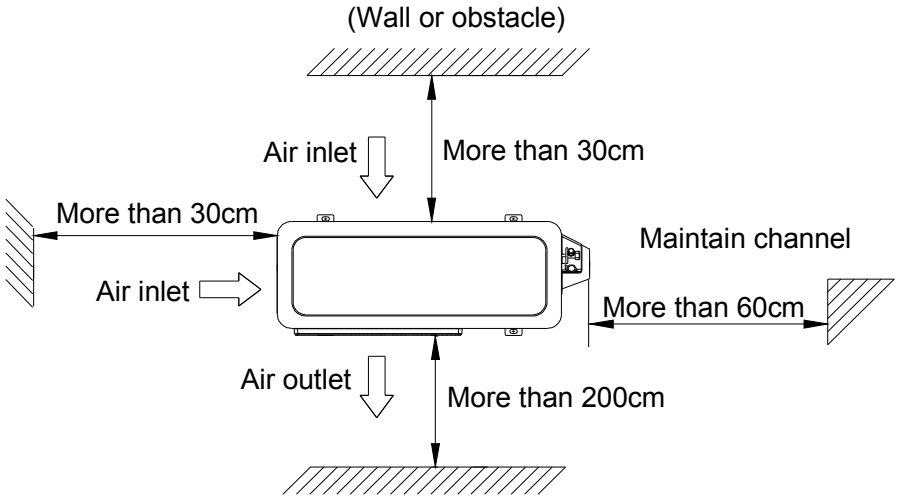


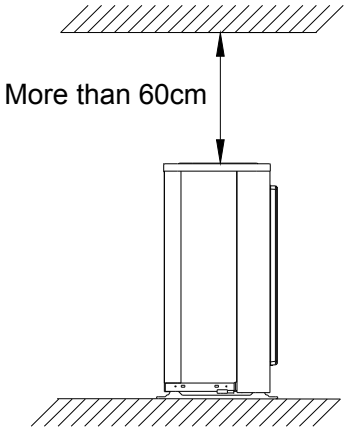


mm

Model	A	B	C	D	E	F	H
CCT140A-M	900	590	378	400	330	340	1167

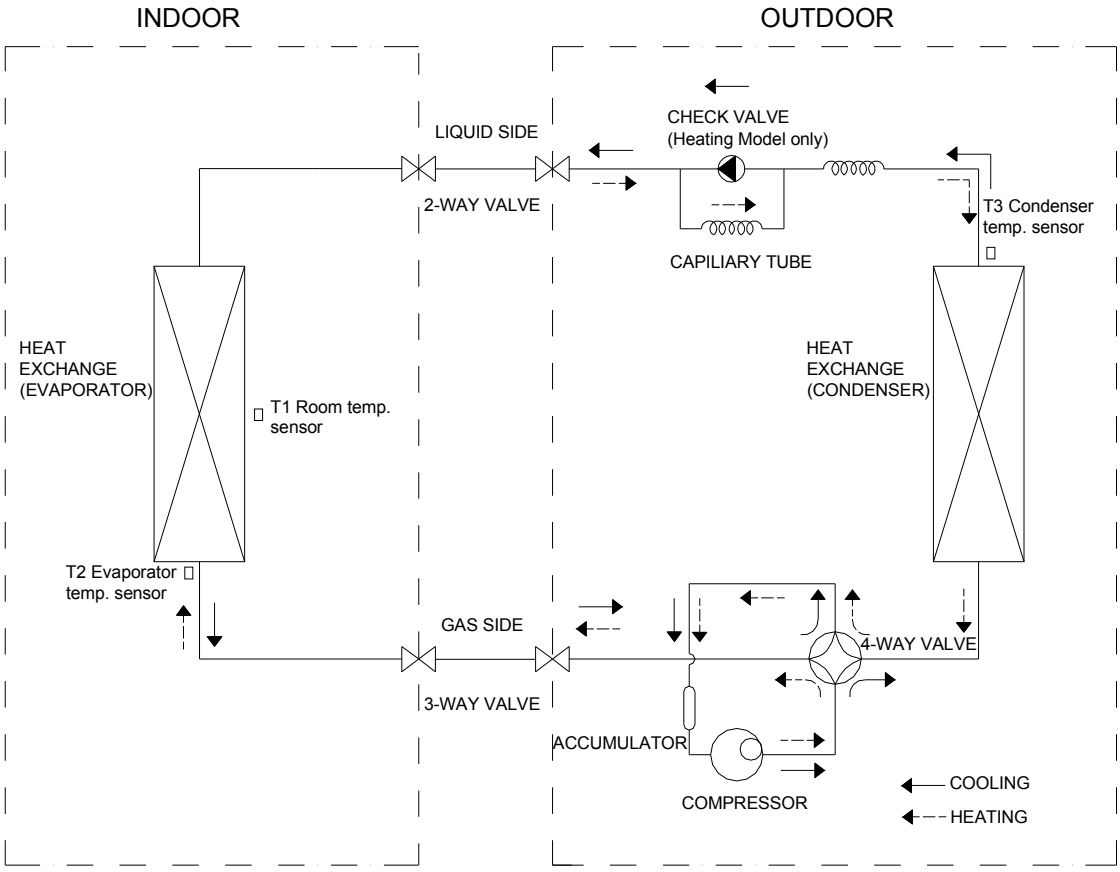
2. Service Space



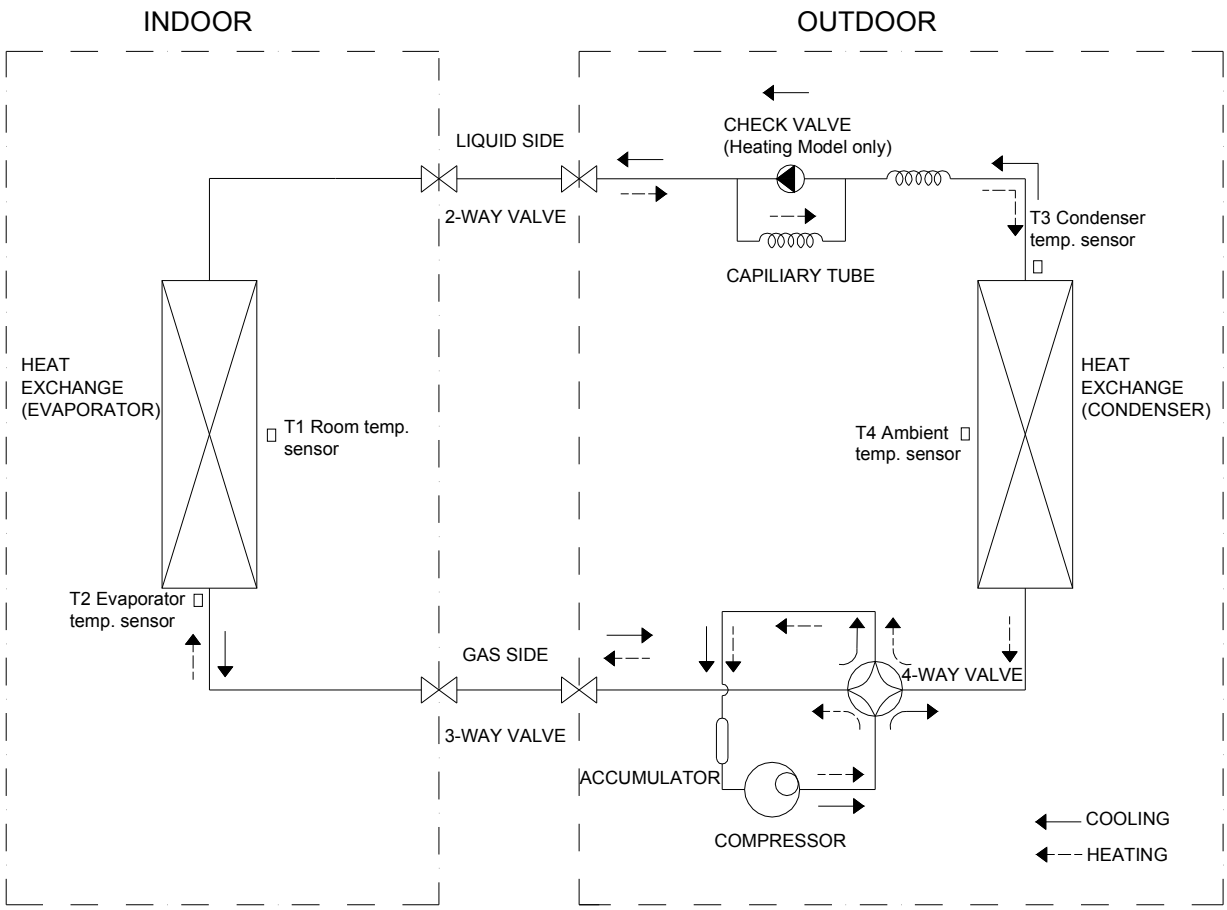


3. Piping Diagrams

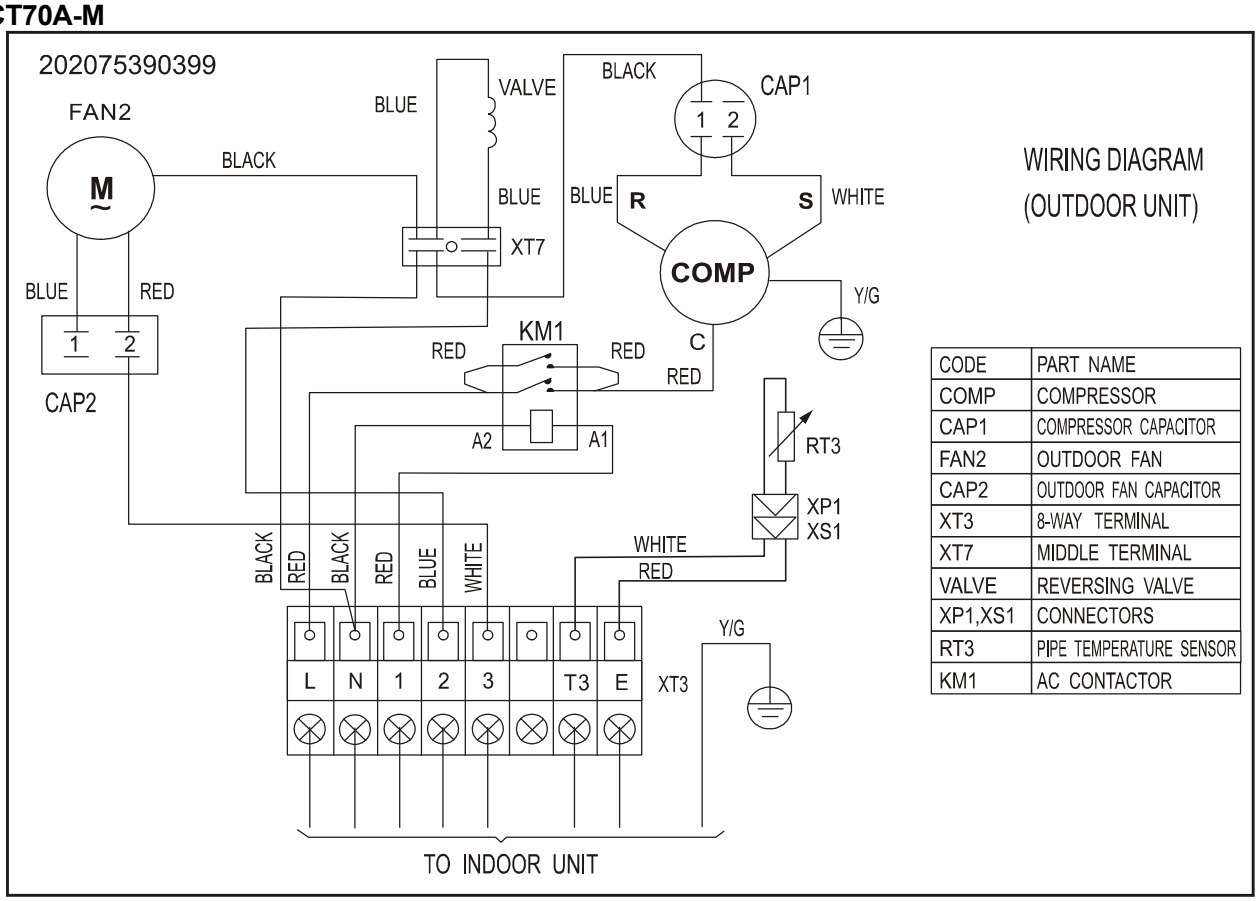
C C T 7 0 A - M



For CCT70A-M, the accumulator is not included.

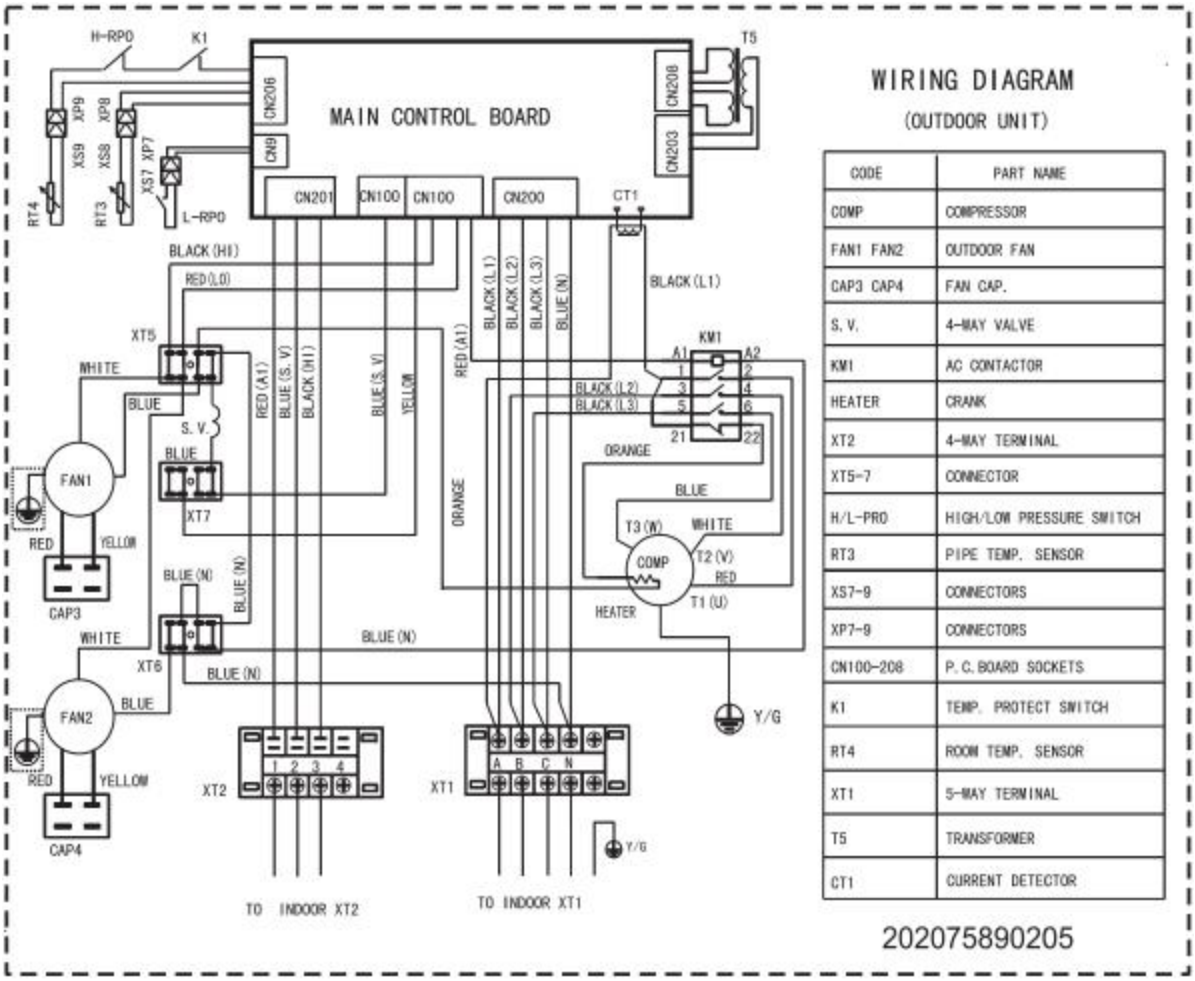

INDOOR
OUTDOOR
LIQUID SIDE
CHECK VALVE
(Heating Model only)
2-WAY VALVE
T3 Condenser
temp. sensor
CAPILIARY TUBE
HEAT
EXCHANGE
(EVAPORATOR)
T1 Room temp.
sensor
T4 Ambient
temp. sensor
HEAT
EXCHANGE
(CONDENSER)
T2 Evaporator
temp. sensor
GAS SIDE
4-WAY VALVE
3-WAY VALVE
ACCUMULATOR
COMPRESSOR
COOLING
HEATING

CCT70A-M



CODE	PART NAME
COMP	COMPRESSOR
CAP1	COMPRESSOR CAPACITOR
FAN2	OUTDOOR FAN
CAP2	OUTDOOR FAN CAPACITOR
XT3	8-WAY TERMINAL
XT7	MIDDLE TERMINAL
VALVE	REVERSING VALVE
XP1,XS1	CONNECTORS
RT3	PIPE TEMPERATURE SENSOR
KM1	AC CONTACTOR

CCT140A-M



WIRING DIAGRAM

(OUTDOOR UNIT)

CODE	PART NAME
COMP	COMPRESSOR
FAN1 FAN2	OUTDOOR FAN
CAP3 CAP4	FAN CAP.
S.V.	4-WAY VALVE
KM1	AC CONTACTOR
HEATER	CRANK
XT2	4-WAY TERMINAL
XT5-7	CONNECTOR
H/L-PRO	HIGH/LOW PRESSURE SWITCH
RT3	PIPE TEMP. SENSOR
XS7-9	CONNECTORS
XP7-9	CONNECTORS
CN100-208	P.C.BOARD SOCKETS
K1	TEMP. PROTECT SWITCH
RT4	ROOM TEMP. SENSOR
XT1	5-WAY TERMINAL
T5	TRANSFORMER
CT1	CURRENT DETECTOR

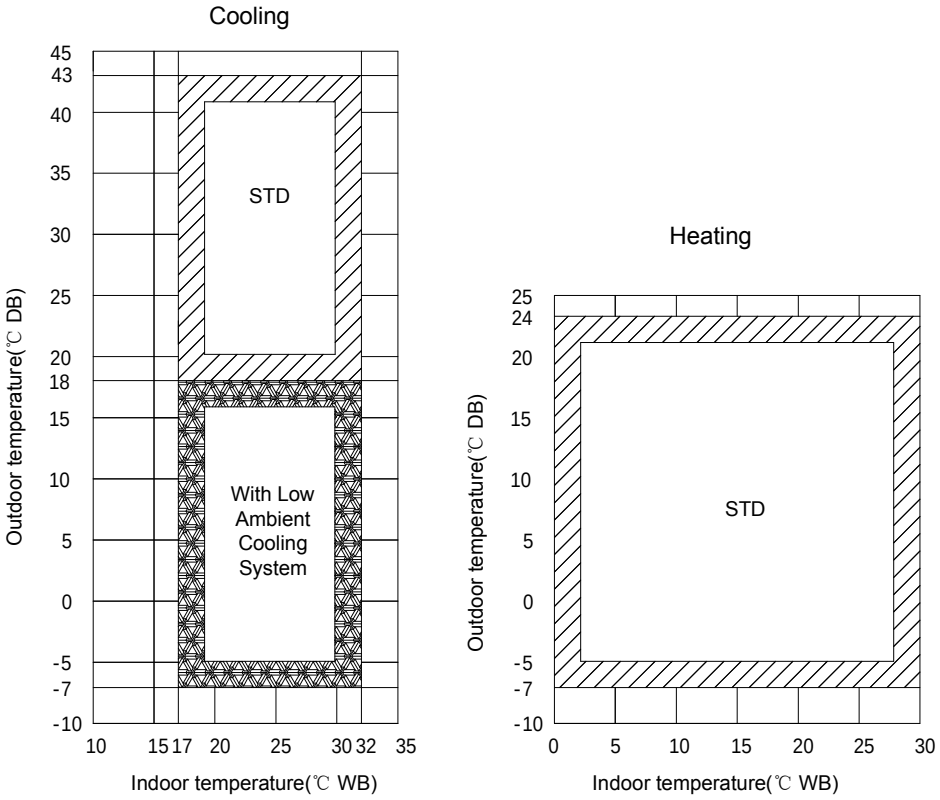
202075890205

5. Electric Characteristics

Model	Outdoor Unit			
	Hz	Voltage	Min.	Max.
CCT70A-M		220-240V	208V	253V
CCT140A-M	50	380~420V	342V	440V

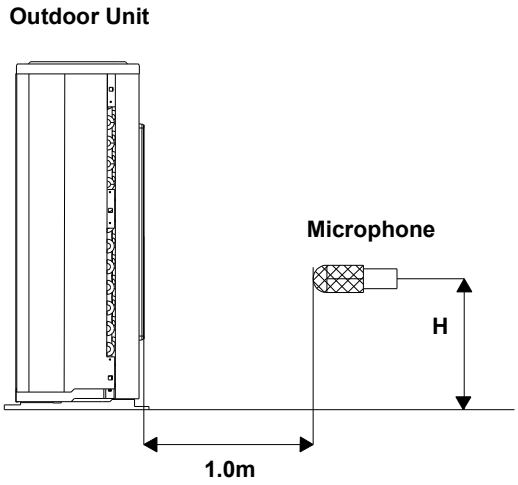
6. Operation Limits

Temperature / Mode	Cooling operation	Heating operation
Room temperature	17˚C～32˚C	0˚C～30˚C
Outdoor temperature	18˚C～43˚C （-7˚C～43˚C：For the models with low temperature cooling system）	-7˚C～24˚C



7. Sound Levels

24000Btu/h-48000Btu/h



Note: H= 0.5 × height of outdoor unit

Note: The point A is in the middle of the whole outdoor panel.

Model	Noise level dB(A)
CCT 70A-M	55
CCT140A-M	59

Part 5
Electrical Control System

1. Electrical Control Function

1.1 Definition

T1: Indoor room temperature

T2: Coil temperature of evaporator

T3: Coil temperature of condenser

T4: Outdoor ambient temperature

T5: Compressor discharge temperature

1.2 Main Protection

1.2.1 Time Delay at restart for compressor.

1.2.2 Sensor protection at open circuit and breaking disconnection.

1.2.3 Phase check function

If the phase sequence is detected wrong or lack of 1 or 2 phase, the unit won't start and there is error code displayed on outdoor PCB.

1.2.4 Low pressure check function

The low pressure switch should be always closed. If it is open, the system will stop until the fault is cleared.

During defrosting procedure and 4 minutes after defrosting ends, low pressure switch won't be checked.

Note: The system will not check if the protection could be cleared in 30 seconds after the protection occurs.

If this protection occurs 3 times, it won't recover automatically until the main power is cut off.

1.2.5 Over-current protection

When compressor is running, if the current is over twice of the rated for 3 seconds, the compressor will stop and an error code will be displayed on the outdoor PCB. If the current becomes normal, the compressor will restart after 3 minutes.
Note: The current won't be checked within 3 seconds after the compressor starts. The system will not check if the protection could be cleared in 30 seconds after the protection occurs.

1.3 Operation Modes and Functions

1.3.1 Fan mode

(1) Outdoor fan and compressor stop.

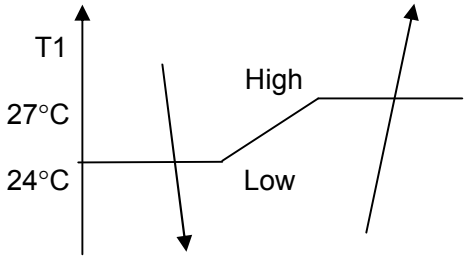
(2) Temperature setting function is disabled, and no setting temperature is displayed.

(3) Indoor fan can be set to high/(med)/low/auto.

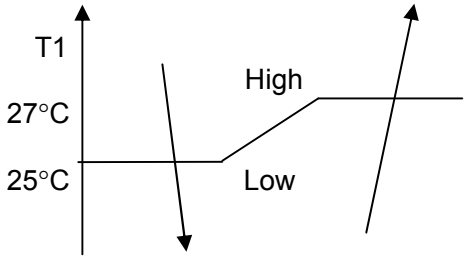
(4) The louver operates same as in cooling mode.

(5) Auto fan:

Big Cassette



Compact Cassette



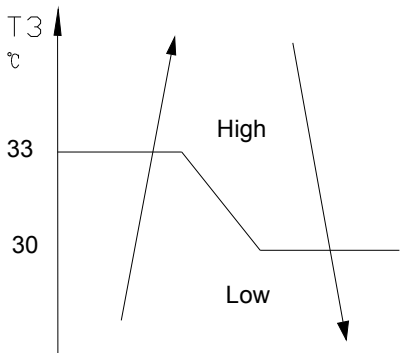
1.3.2 Cooling Mode

1.3.2.1 Outdoor fan running rules

For 1-phase outdoor units:

The On-off outdoor units have single fan speed. The outdoor fan will run following the compressor except when AC is in evaporator high temp. protection in heating mode ,condenser high temp. protection in cooling mode, defrosting mode and the current protection.

For 3-phase outdoor units:

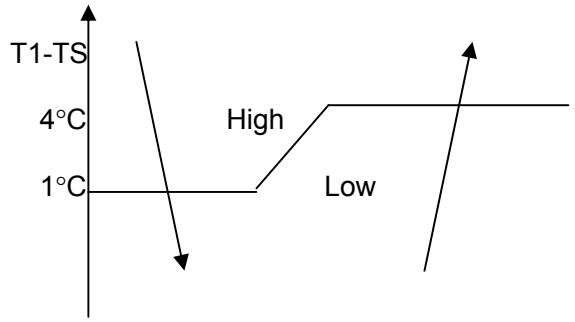


1.3.2.2 Indoor fan running rules

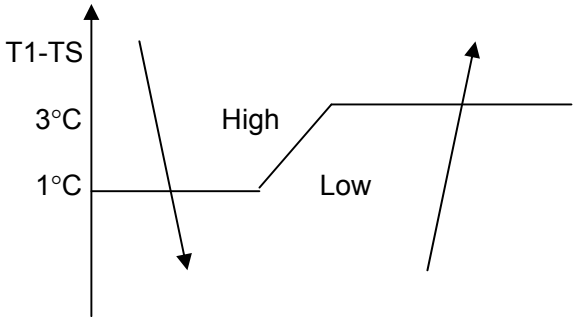
In cooling mode, indoor fan runs all the time and the speed can be selected as high, (medium), low and auto.

The auto fan:

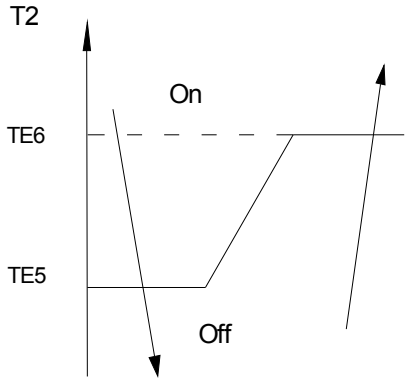
Big cassette:



Compact cassette:

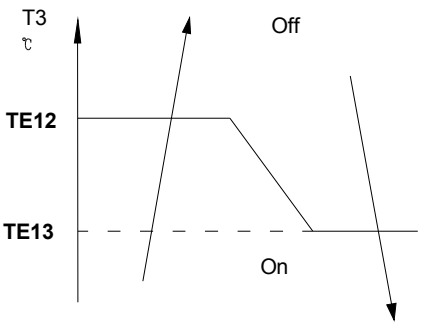


1.3.2.3 Low evaporator coil temperature T2 protection



When the evaporator coil temp.T2 keeps lower than TE5 for 3 minutes, the compressor and outdoor fan will shut off. When T2 is higher than TE6, the compressor and outdoor fan will restart up.

1.3.2.4 Condenser high temperature T3 protection



When T3≥TE12 for Time1, the compressor will shut off. When T3＜TE13,the compressor will restart.

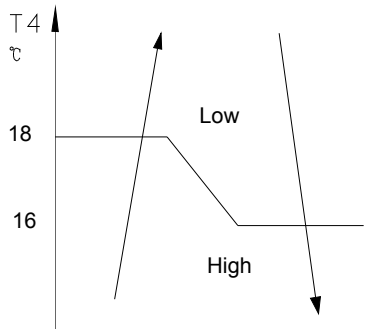
1.3.3 Heating Mode(For heat pump models)

1.3.3.1 Outdoor fan running rules:

For 1-phase outdoor units:

The On-off outdoor units have single fan speed. The outdoor fan will run following the compressor except when AC is in evaporator high temp. protection in heating mode ,condenser high temp. protection in cooling mode, defrosting mode and the current protection.

For 3-phase outdoor units:



1.3.3.2 Indoor fan running rules:

When the compressor is on, the indoor fan can be set to high/med/low/auto. And the anti-cold wind function has the priority.

Anti-cold wind function:

When evaporator coil temp.T2 is getting higher,

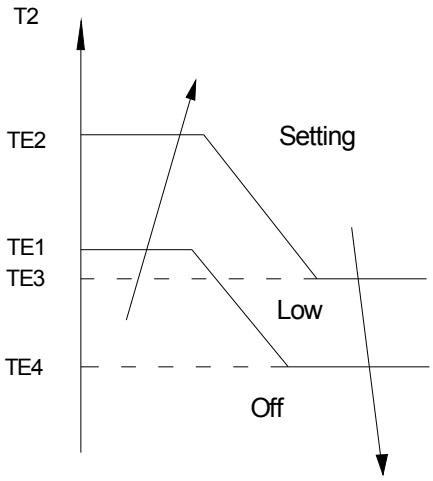
T2>TE2, the indoor fan will run at setting speed.

TE1<T2<TE2, the indoor fan will run at low speed.

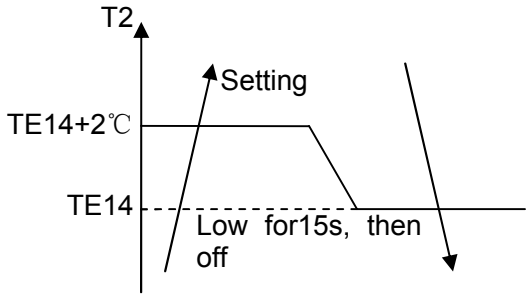
When T2 is getting lower,

TE4<T2<TE3,the indoor fan will run at low speed.

T2<TE4, the indoor fan will shut off.

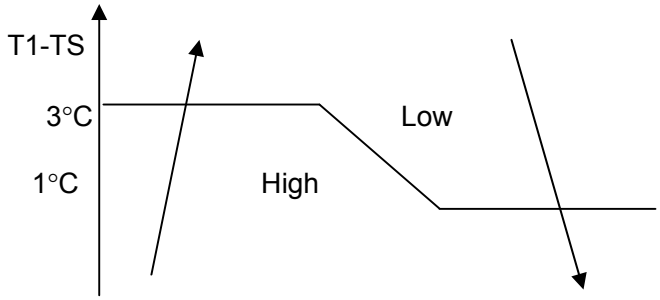


Only for DL: If the compressor stops caused by the room temperature rising, the indoor fan will follow the below rules. During this period, the anti-cold-wind is disabled.



Auto fan action:

For cassette:



1.3.3.3 Defrosting mode：

For 1-phase outdoor units:

l Condition of defrosting:

AC will enter defrosting mode if any of the following items is satisfied.

A: For DL, high static pressure duct & cassette :The compressor keeps running over 40 minutes and T3＜ -2℃

For A5 duct: T3<0℃ and the compressor keeps running over 45 minutes. Meanwhile T3＜-3℃ for 3minutes.

B: After the last defrosting, the time that the outdoor fan is off but the compressor is on in high T2 protection cumulates up to 90 minutes.

l Condition of ending defrosting:

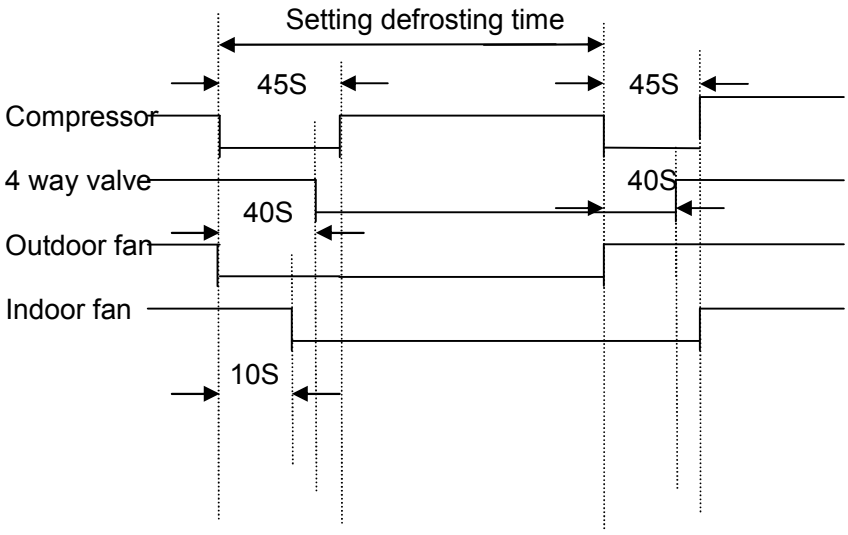
If any one of the following items is satisfied, the defrosting will terminate and the machine will turn to normal heating mode.

A: T3 rises to be higher than 20℃.

B: The machine has run for 10 minutes in defrosting.

l Defrosting action：

For A5 duct:



For the others type::
The compressor is running, and 4-way valve and outdoor fan stop. The indoor fan works as anti-cold wind procedure. When defrosting is over, the compressor keeps running and the 4-way valve and outdoor fan will start up.

For 3-phase outdoor units:

l Condition of defrosting:

T3<0℃ and the compressor keeps running over 45 minutes. Meanwhile T3＜-3℃ for 3minutes.

l Condition of ending defrosting:

If any one of the following items is satisfied, the defrosting will terminate and the machine will turn to normal heating mode.

A: T3 rises to be higher than 20℃.

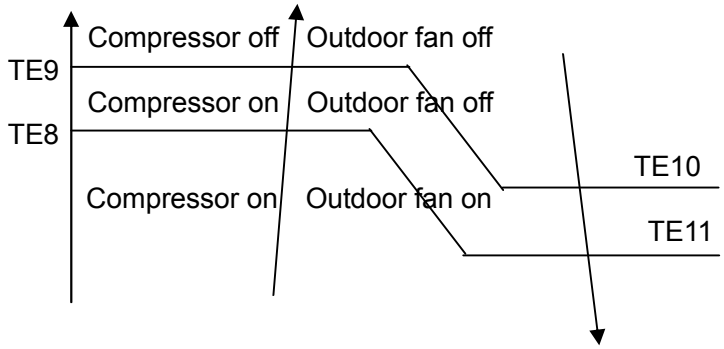
B: The machine has run for 10 minutes in defrosting.

l Defrosting action：

The compressor is running, and 4-way valve and outdoor fan stop. The indoor fan works as anti-cold wind procedure. When defrosting is over, the compressor keeps running and the 4-way valve and outdoor fan will start up.

1.3.3.4 High evaporator coil temp.T2 protection:

For cassette:



1.3.4 Auto-mode

This mode can be chosen with remote controller and the setting temperature can be changed between 17~30℃.

In auto mode, the machine will choose cooling, heating or fan-only mode according to ΔT (ΔT =T1-Ts).

ΔT=T1-Ts	Running mode
ΔT＞2℃	Cooling
-1<ΔT≤2℃	Fan-only
ΔT≤-1℃	Heating

Indoor fan will run at auto fan of the relevant mode.

The louver operates same as in relevant mode.

If the machine switches mode between heating and cooling, the compressor will keep stopping for 15 minutes and then choose mode according to T1-Ts.

If the setting temperature is modified, the machine will choose running function again.

1.3.5 Drying mode

1.3.5.1 The indoor fan will keep running at low speed.

1.3.5.2 All protections are active and the same as that in cooling mode.

1.3.5.3 The louver operates the same as in cooling mode.

1.3.6 Timer function

1.3.6.1 Timing range is 24 hours.

1.3.6.2 Timer on. The machine will turn on automatically when reaching the setting time.

1.3.6.3 Timer off. The machine will turn off automatically when reaching the setting time.

1.3.6.4 Timer on/off. The machine will turn on automatically when reaching the setting “on” time, and then turn off automatically when reaching the setting “off” time.

1.3.6.5 Timer off/on. The machine will turn off automatically when reaching the setting “off” time, and then turn on automatically when reaching the setting “on” time.

1.3.6.6 The timer function will not change the AC current operation mode. Suppose AC is off now, it will not start up firstly after setting the “timer off” function. And when reaching the setting time, the timer LED will be off and the AC running mode has not been changed.

For high static pressure duct & cassette: The timer function will change the AC current operation mode. Suppose users set the “timer off” function and AC is off now, the AC will turn on firstly and then turn off when reaching the setting time.

1.3.6.7 The setting time is relative time.

1.3.7 Economy function

1.3.7.1 It is valid in cooling, heating and auto mode.

1.3.7.2. Turning off, changing mode or setting fan speed will cancel economy function.

1.3.7.3 Operation process in sleep mode is as follow:

After pressing ECONOMIC or SLEEP button on the controller, the machine will go into economy mode.

When cooling, the setting temperature rises 1℃(be lower than 30℃) every hour, 2 hours later the setting temperature stops rising.

For heat pump models, when they are in heating, the setting temperature reduces 1℃(be higher than 17℃) every hour, 2 hours later the setting temperature stops reducing.

1.3.7.4 In this mode, the fan speed is forced into AUTO mode.

1.3.8 Auto-Restart function

The indoor unit is equipped with auto-restart function, which is carried out through an auto-restart module. In case of a sudden power failure, the module memorizes the setting conditions before the power failure. The unit will resume the previous operation setting (not including Swing function) automatically after 3 minutes when power returns.

1.3.9 Drain pump control(For Cassette)

1.3.9.1 Water level check

The water lever will be checked every 5 seconds, if the feedback signal is abnormal, it will be considered as drain water full by the control system.

1.3.9.2 Drain pump control

If there is no water full error, the drain pump will be on when the unit is in cooling mode (including auto-cooling and forced cooling) and dry mode. It will be off when the unit is in heating mode, fan only mode or off state (if the pump is on before the unit is off, it will delay 3 minutes to be off).

If there is a water full error, the drain pump will be on when the error occurs. Afterwards:

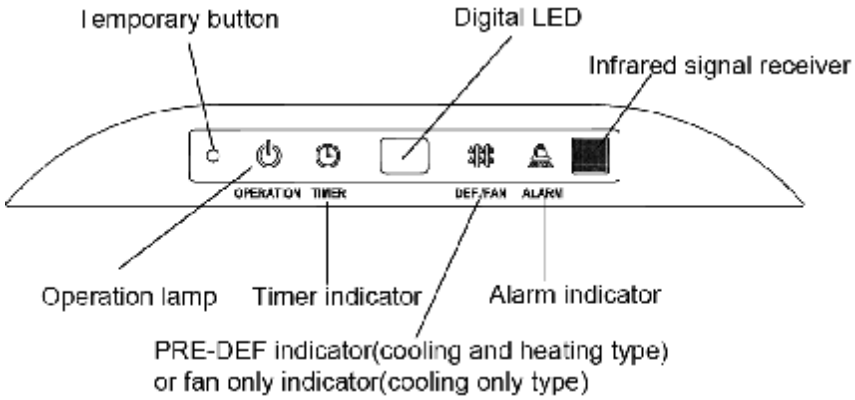
If the error disappears in 3 minutes, the drain pump will work as normal state. (if it is necessary to turn off the pump, it will be off in 1 minute delay.)

If the error is still there in 3 minutes, the drain pump will be off as well as the AC unit. The error can be cleared only when the power of the unit is cut off.

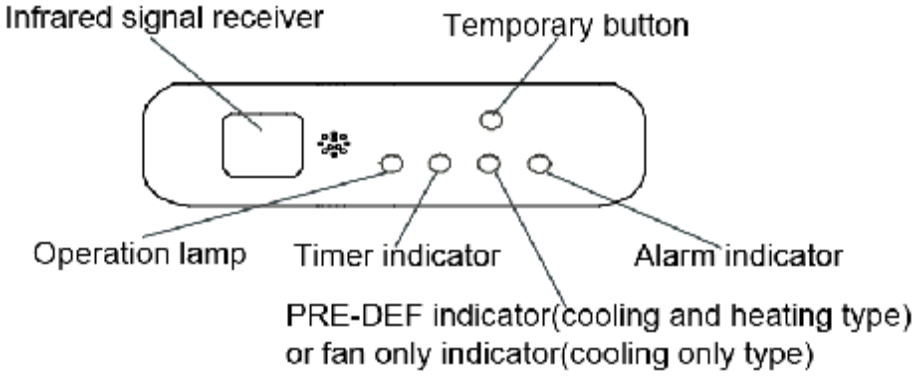
2. Troubleshooting

2.1 Display board

2.1.1 Icon explanation on indoor display board (Big cassette).



2.1.2 Icon explanation on indoor display board (Compact cassett).



2.2. Self-diagnosis

Indoor unit's LED indication

(1) For the Big Four-way cassette

During malfunction or protection, the indicators and digital LED displays as follow:

No	Operation	Timer	Def/Fan	Alarm	Digital LED Display	Malfunction or protection
1	X	☆	X	X	E2	Indoor temperature sensor is abnormal
2	☆	X	X	X	E3	Evaporator temperature sensor is abnormal
3	X	X	☆	X	E4	Condenser temperature sensor is abnormal
4	☆	☆	X	X	E7	EEPROM malfunction
5	X	X	X	☆	E8	Full-water malfunction

Note: "X" means off, "☆" means flashes at 5Hz

(2) For compact cassette indoor unit

No	Operation	Timer	Def/Fan	Alarm	Information	Remark
1	★	X	X	X	Normal standby	Nothing wrong with the unit when LED indicate these contents.
2	X	X	X	X	Normal off	
3	○	X	X	X	Normal running	
4	☆	X	○	X	Forced cooling	

5	X	☆	X	X	Indoor temperature sensor is abnormal	Recover automatically after errors are eliminated (For T3 malfunction of 5HP, can't recover automatically)
6	☆	X	X	X	Evaporator temperature sensor is abnormal	
7	X	X	☆	X	Condenser temperature sensor is abnormal	
8	☆	☆	X	X	EEPROM malfunction	
9	X	X	X	☆	Full-water malfunction	

Note: "○" means on , "X" means off, "☆" means flashes at 5Hz, "★" means flashes at 0.5Hz

LEDs' for the indication of outdoor trouble

Type	Contents	LED1	LED2	LED3
Trouble	Phase sequence	Flash	Off	Off
Trouble	Lack of phase(A,B)	Flash	Off	Off
Trouble	Lack of phase(C)	Off	Off	Off
Trouble	Protection of Low pressure	Flash	Flash	Off
Trouble	Overload of current	Off	Off	Flash
Trouble	Communication malfunction	Flash	Off	Flash
Trouble	Open-circuit and short-circuit trouble of T3	Off	Flash	Flash
Trouble	Open-circuit and short-circuit trouble of T4	Off	Flash	Off
Trouble	High temperature protection of condenser	Flash	Flash	Flash

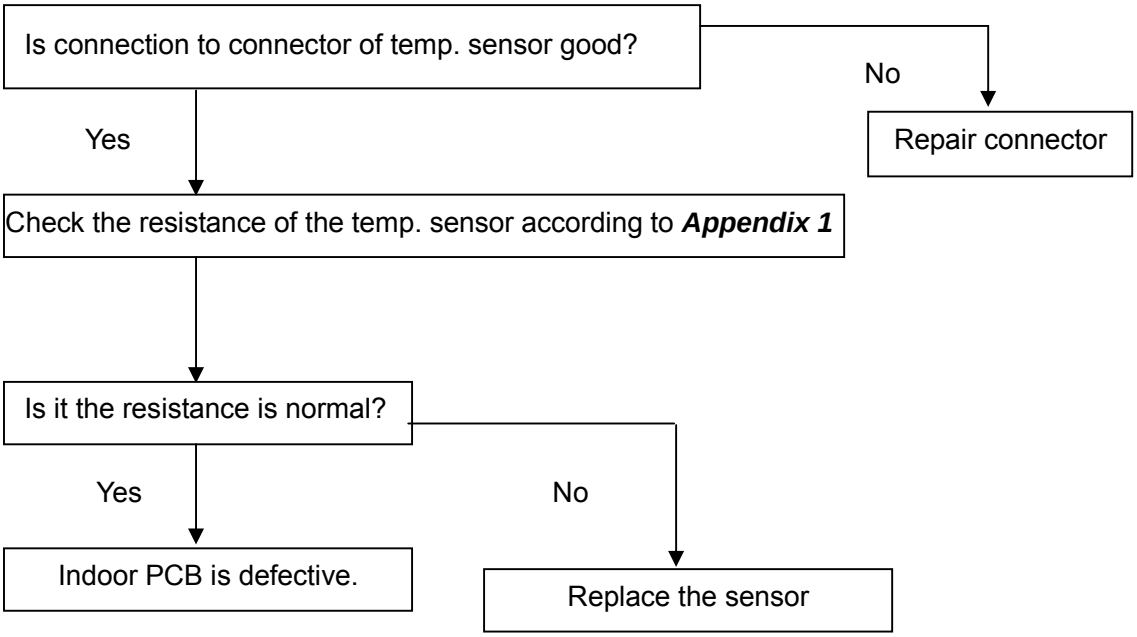
Note:

1. If the LED1-LED3 are flashing slowly, means the system is stand-by.
2. T3: Outdoor condenser temperature sensor
3. T4: Outdoor ambient temperature sensor

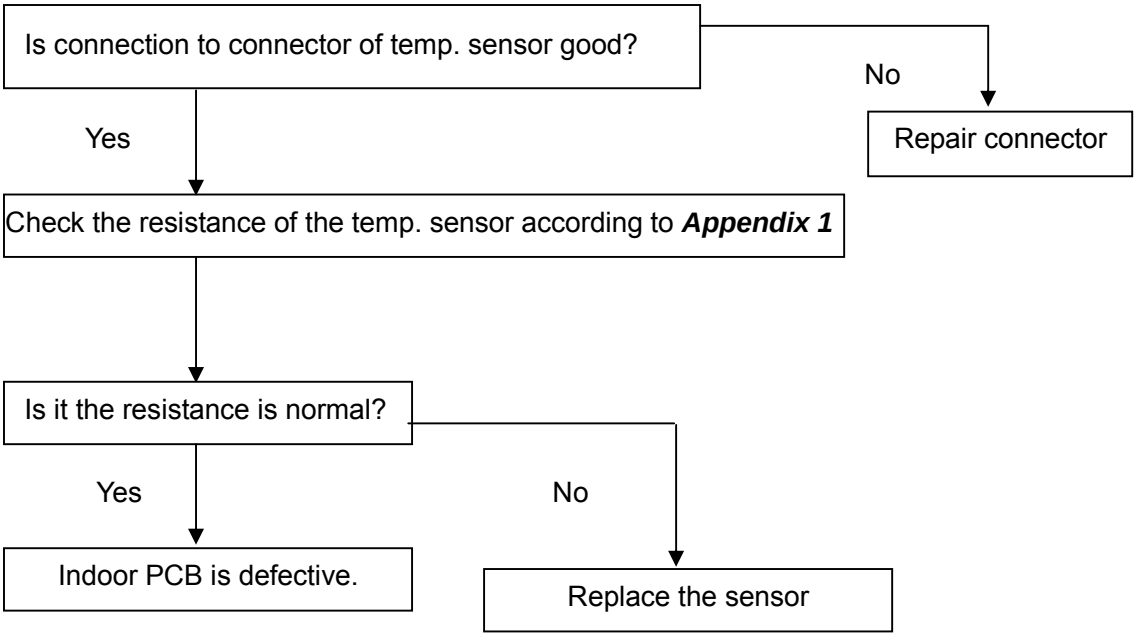
2.3. Solving steps for typical malfunction

(1) For indoor unit

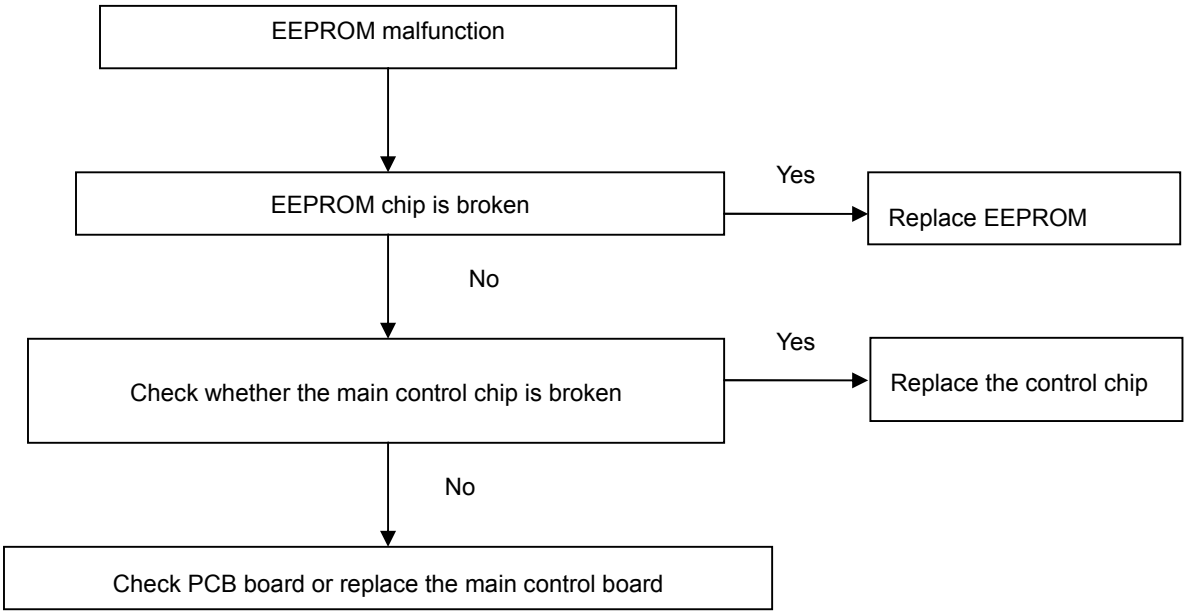
a. Indoor room temperature T1 and sensor evaporator temperature sensor T2 is abnormal



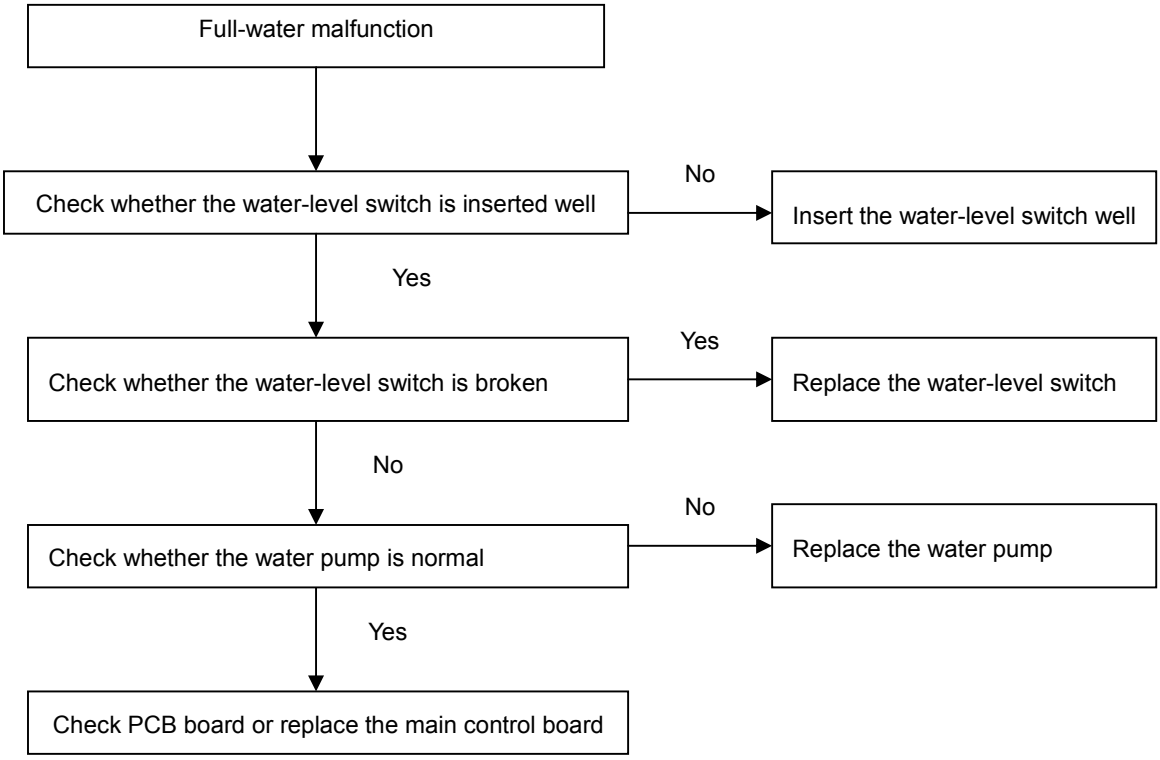
b. Condenser temperature sensor T3 is abnormal



c. EEPROM malfunction

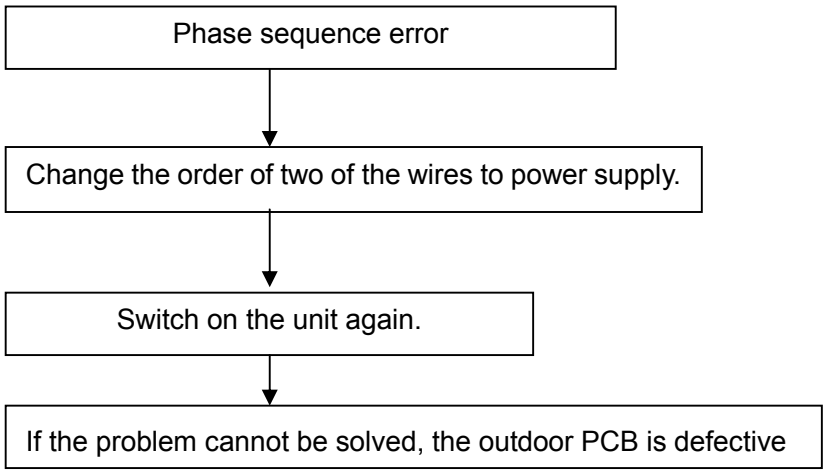


f. Full-water malfunction

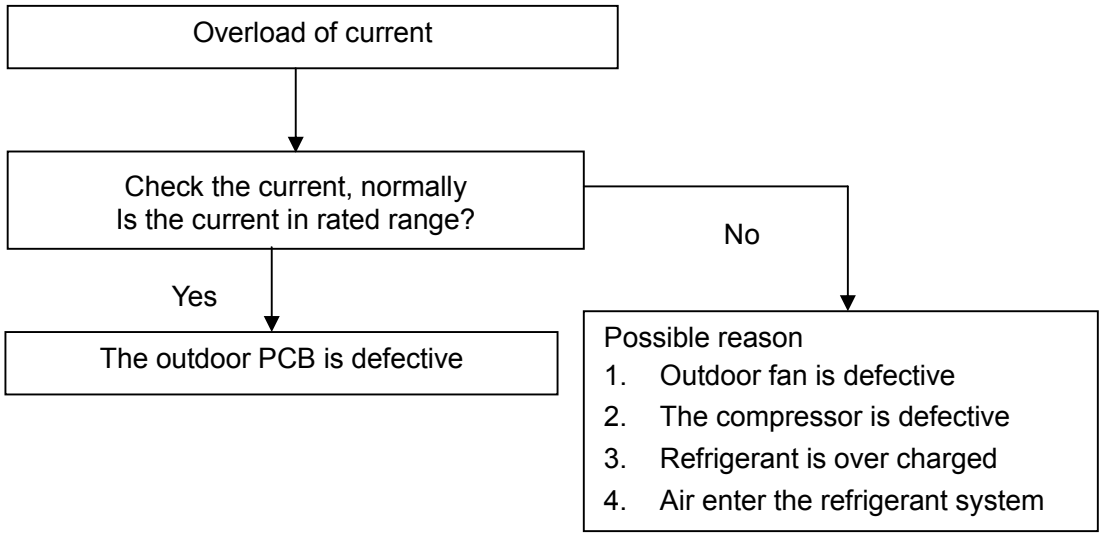


(2) For the outdoor unit

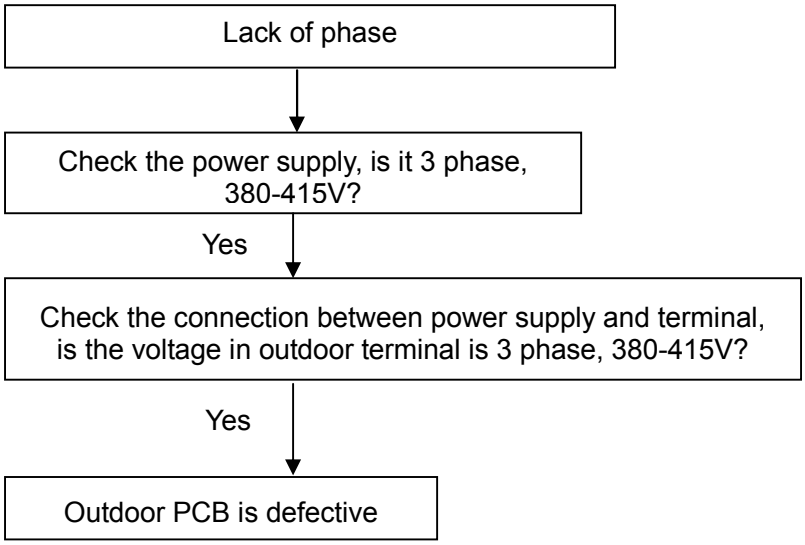
a. Phase sequence error:



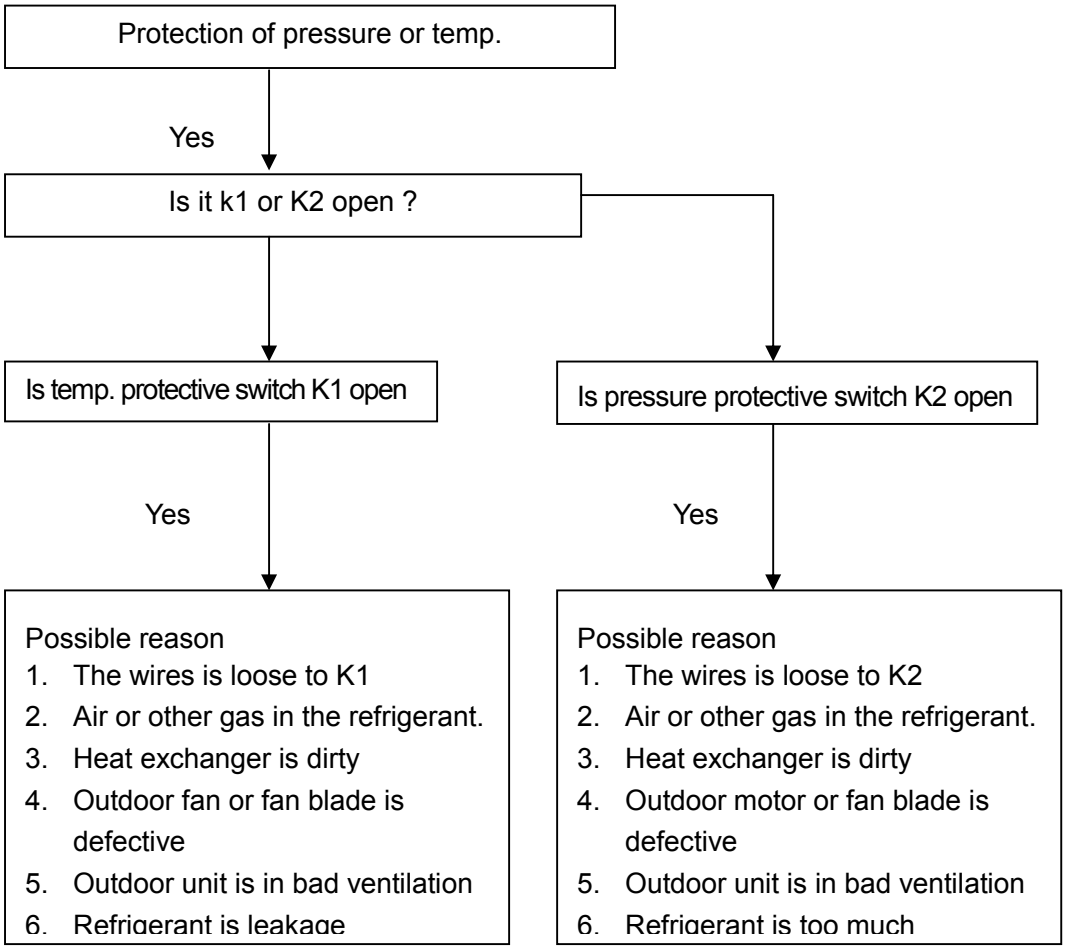
b. Overload of current



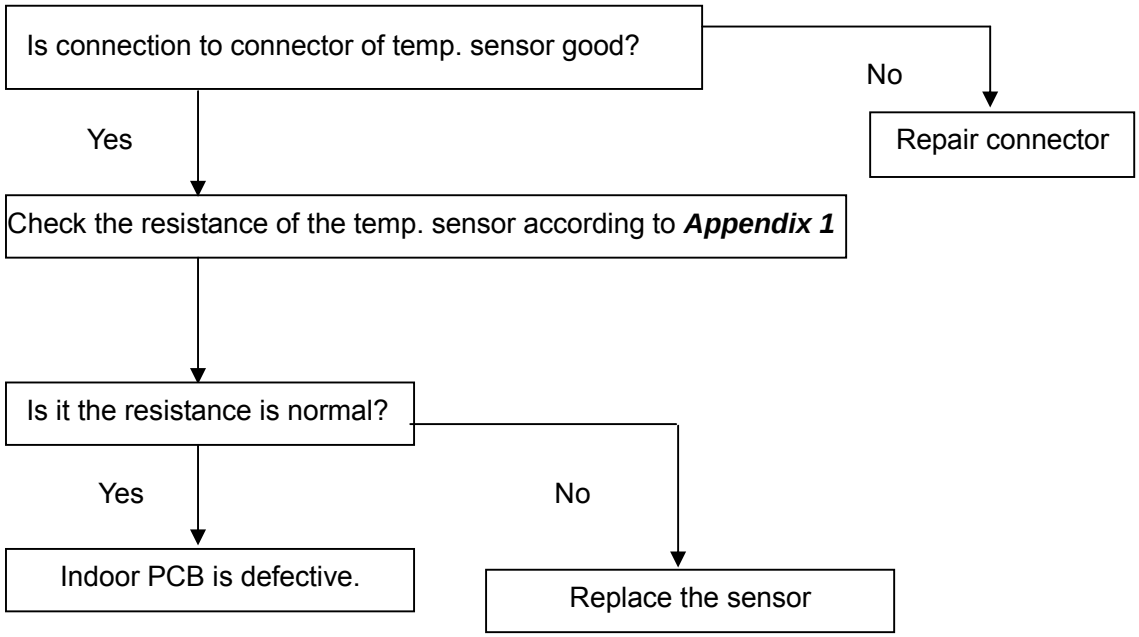
c. Lack of phase



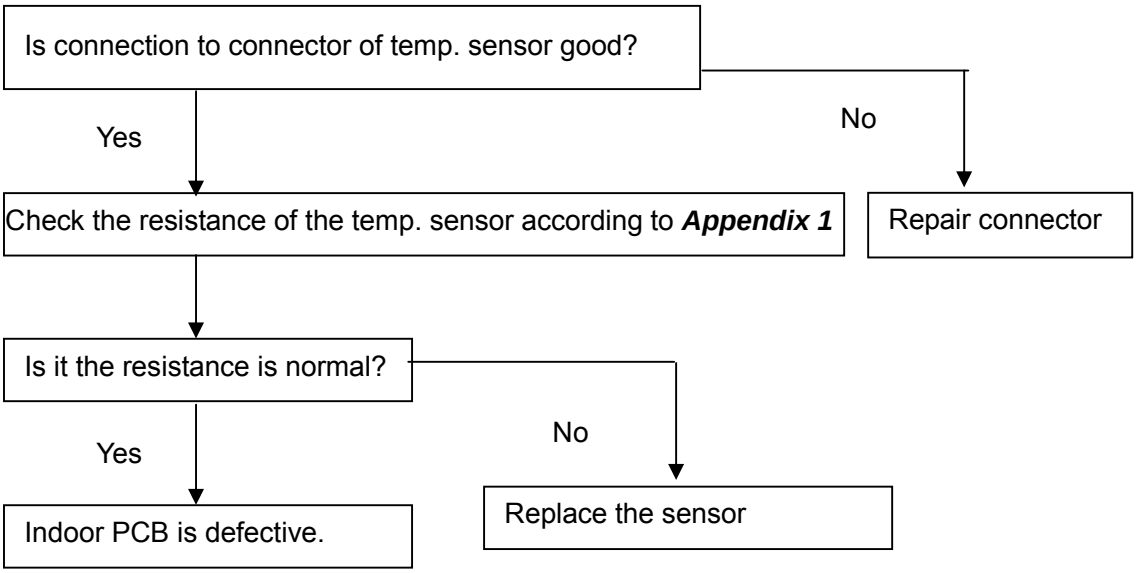
d. Protection of pressure or temp.



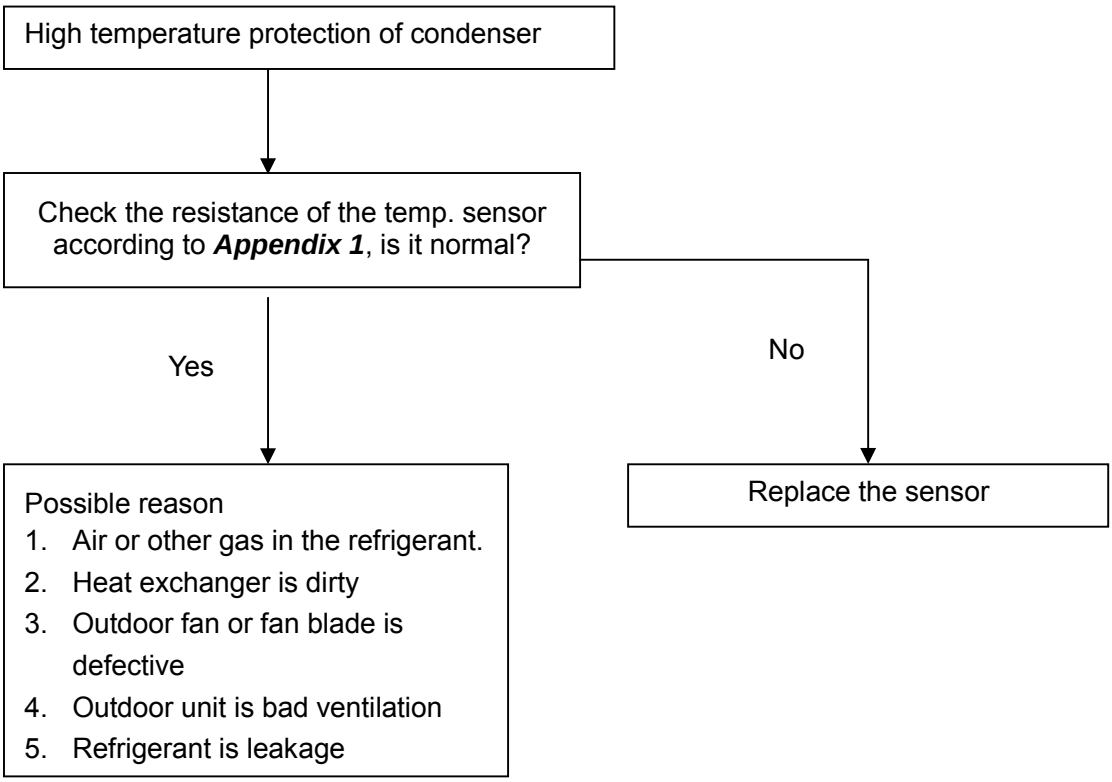
e. Open-circuit and short-circuit trouble of T3



f. Open-circuit and short-circuit trouble of T4



g. High temperature protection of condenser



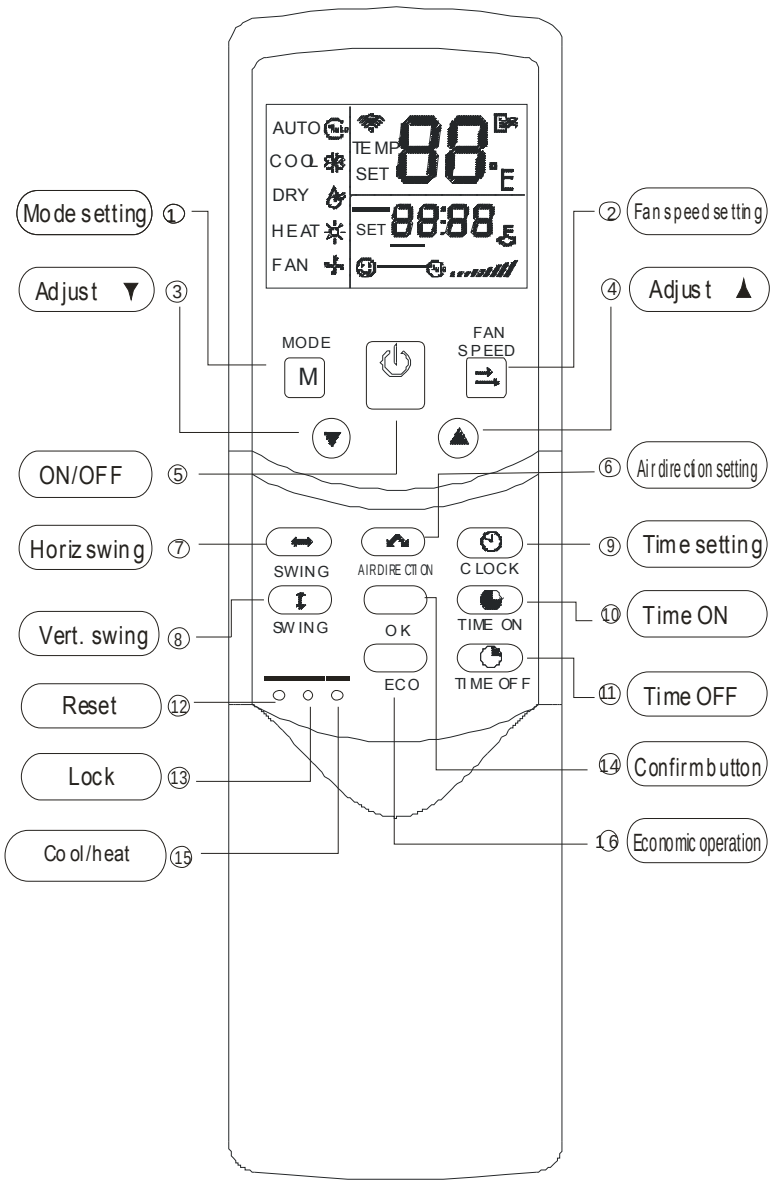
Appendix 1 Temperature Sensor Resistance Value Table (℃--K)

℃	K Ohm	℃	K Ohm	℃	K Ohm	℃	K Ohm
-20	115.266	20	12.6431	60	2.35774	100	0.62973
-19	108.146	21	12.0561	61	2.27249	101	0.61148
-18	101.517	22	11.5000	62	2.19073	102	0.59386
-17	96.3423	23	10.9731	63	2.11241	103	0.57683
-16	89.5865	24	10.4736	64	2.03732	104	0.56038
-15	84.2190	25	10.000	65	1.96532	105	0.54448
-14	79.3110	26	9.55074	66	1.89627	106	0.52912
-13	74.5360	27	9.12445	67	1.83003	107	0.51426
-12	70.1698	28	8.71983	68	1.76647	108	0.49989
-11	66.0898	29	8.33566	69	1.70547	109	0.48600
-10	62.2756	30	7.97078	70	1.64691	110	0.47256
-9	58.7079	31	7.62411	71	1.59068	111	0.45957
-8	56.3694	32	7.29464	72	1.53668	112	0.44699
-7	52.2438	33	6.98142	73	1.48481	113	0.43482
-6	49.3161	34	6.68355	74	1.43498	114	0.42304
-5	46.5725	35	6.40021	75	1.38703	115	0.41164
-4	44.0000	36	6.13059	76	1.34105	116	0.40060
-3	41.5878	37	5.87359	77	1.29078	117	0.38991
-2	39.8239	38	5.62961	78	1.25423	118	0.37956
-1	37.1988	39	5.39689	79	1.21330	119	0.36954
0	35.2024	40	5.17519	80	1.17393	120	0.35982
1	33.3269	41	4.96392	81	1.13604	121	0.35042
2	31.5635	42	4.76253	82	1.09958	122	0.3413
3	29.9058	43	4.57050	83	1.06448	123	0.33246
4	28.3459	44	4.38736	84	1.03069	124	0.32390
5	26.8778	45	4.21263	85	0.99815	125	0.31559
6	25.4954	46	4.04589	86	0.96681	126	0.30754
7	24.1932	47	3.88673	87	0.93662	127	0.29974
8	22.5662	48	3.73476	88	0.90753	128	0.29216
9	21.8094	49	3.58962	89	0.87950	129	0.28482
10	20.7184	50	3.45097	90	0.85248	130	0.27770
11	19.6891	51	3.31847	91	0.82643	131	0.27078
12	18.7177	52	3.19183	92	0.80132	132	0.26408
13	17.8005	53	3.07075	93	0.77709	133	0.25757
14	16.9341	54	2.95896	94	0.75373	134	0.25125
15	16.1156	55	2.84421	95	0.73119	135	0.24512
16	15.3418	56	2.73823	96	0.70944	136	0.23916
17	14.6181	57	2.63682	97	0.68844	137	0.23338
18	13.9180	58	2.53973	98	0.66818	138	0.22776
19	13.2631	59	2.44677	99	0.64862	139	0.22231

3. Controller

3.1 Wireless Remote Controller

3.1.1 R05/BGE



Visual photo

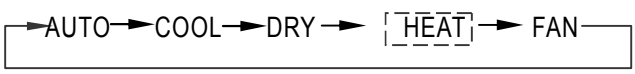
General Function for wireless remote controller:

Model and Specification

Model	R05/BGE
Rated voltage	3.0V(2pieces of LR03 7 # batteries)
Min voltage for sending signal of CPU	2.4V
Effective receiving distance	8m~11m
Operation condition	-5~60℃

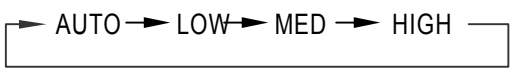
Buttons and functions

1. MODE: Once pressing, running mode will be selected in the following sequence:



NOTE: No heating mode for cool only type unit.

2. FAN SPEED: Fan speed will be selected in following sequence once pressing this button:



3. Adjust ▼ : Decrease the set temp. Keeping pressing will decrease the temp with 1℃ per 0.5s.

4. Adjust ▲ : Increase the set temp. Keeping pressing will increase the temp with 1℃ per 0.5s.

5. ON/OFF: For turning on or turning off the air conditioner.

6. AIR DIRECTION: Activate swing function of air deflector. Once pressing, air deflector will turn 6°. For normal operation and better cooling and heating effect, deflector will not turn to the degree which is the state of deflector when the unit is turned off.(Only available when remote controller is used with corresponding unit.)

7. HORIZ SWING: Activate or turn off horizontal swing function. (Only available when remote controller is used with corresponding unit, i.e. Ceiling & floor type)

8. VERT SWING: Activate or turn off vertical swing function.

(Only available when remote controller is used with corresponding unit.)

9. CLOCK: Display the current time. (12:00 is displayed when resetting or electrifying for the first time.)

Press CLOCK for 5s, icon indicating hour will flash with 0.5s. Press it again; icon indicating minute will flash with 0.5s. ▼and▲are used to adjust the figure. Setting or modification is effective only by pressing OK button to make confirmation.

10. TIME ON: For time ON setting. Once pressing this button, the time will increase by 0.5 hour. When the set time exceeds 10 hours, pressing the button will increase the time by 1 hour. Adjusting the figure to 0.00 will cancel time ON setting.

11. TIME OFF: For time OFF setting. Once pressing this button, the time will increase by 0.5 hour. When the set time exceeds 10 hours, pressing the button will increase the time by 1 hour.

Adjust the figure to 0.00 will cancel time ON setting.

12. RESET (inner located): Press this button with a needle of 1mm to cancel the current setting and reset remote controller.

13. LOCK (inner located): Press this button with a needle of 1mm to lock or unlock the current setting.

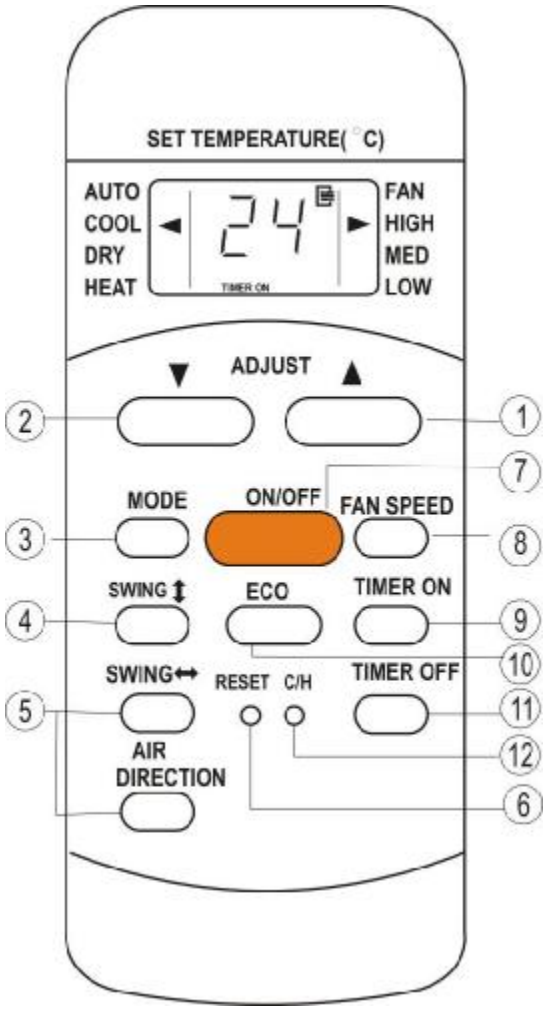
14. OK: Used to confirm the time setting and modification.

15. COOL/HEAT (inner located): Press this button with a needle of 1mm to shift mode between COOL only and COOL&HEAT. During setting, background light will be lightened. Factory default mode is COOL &HEAT.

16. ECO: Activate or turn off economic operation mode. It is suggested to turn on this function when sleeping. (Only available when remote controller is used with corresponding unit.)

3.1.2 RG51Q1/BGE

The R51Q1/BGE wireless remote controller is standard for Four-way cassette type and the Ceiling& floor type.



General Function for wireless remote controller:

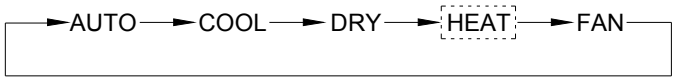
Model	RG51Q1/BGE
Rated voltage	3.0V(2pieces of LR03 7 # batteries)
Min voltage for sending signal of CPU	2.4V
Effective receiving distance	8m~11m
Operation condition	-5~60℃

Buttons and functions

1. Adjust ▼ : Decrease the set temp. Keeping pressing will decrease the temp with 1℃ per 0.5s.

2. Adjust ▲ : Increase the set temp. Keeping pressing will increase the temp with 1℃ per 0.5s.

3. MODE: Once pressing, running mode will be selected in the following sequence:



NOTE: No heating mode for cool only type unit.

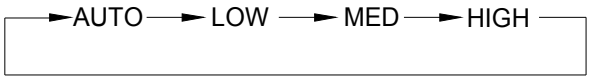
4. DIRECTION/VERT SWING: Used to stop or start horizontal louver movement or set the desired up/down air flow direction. The louver changes 6 degree in angle for each press. If keep pushing more than 2 seconds, the louver will swing up and down automatically.

5. HORIZ SWING: Used to stop or start vertical louver movement.

6. RESET (inner located): Press this button with a needle of 1mm to cancel the current setting and reset remote controller.

7. ON/OFF: For turning on or turning off the air conditioner.

8. FAN SPEED: Fan speed will be selected in following sequence once pressing this button:



9. TIME ON: For time ON setting. Once pressing this button, the time will increase by 0.5 hour. When the set time exceeds 10 hours, pressing the button will increase the time by 1 hour. Adjusting the figure to 0.00 will cancel time ON setting.

10. ECO: Activate or turn off economic operation mode. It is suggested to turn on this function when sleeping. (Only available when remote controller is used with corresponding unit.)

11. TIME OFF: For time OFF setting. Once pressing this button, the time will increase by 0.5 hour. When the set time exceeds 10 hours, pressing the button will increase the time by 1 hour.

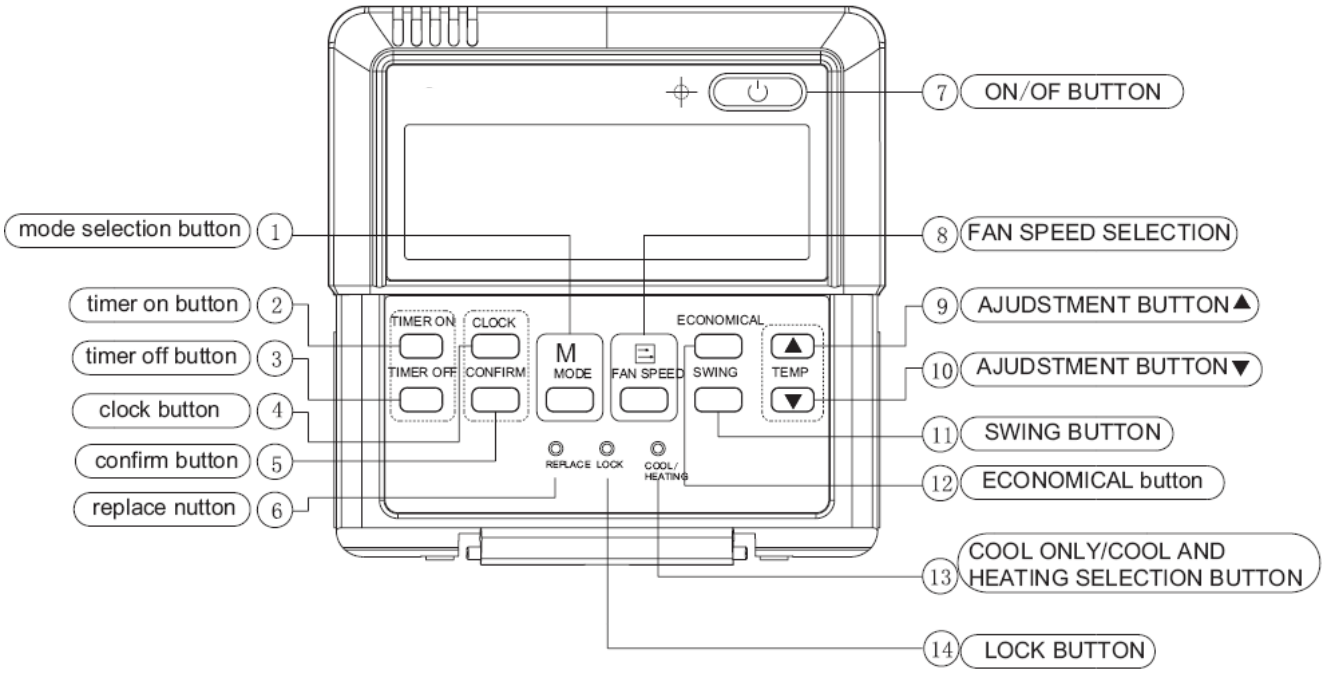
Adjust the figure to 0.00 will cancel time ON setting.

12. LOCK (inner located): Press this button with a needle of 1mm to lock or unlock the current setting.

3.2 Wired Remote Controller

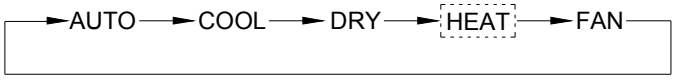
KJR-10B

Name and functions of buttons on the wire controller



1 mode selection button:

It is used to select mode, push the button one time, then the operation modes will change In turn as follows:



Remark: no heating mode if wire controller is set as the cool only.

2 Timer on button:

Push the button to set TIMER ON, each time you push the button the time moves forward by o.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER ON, then adjust the time of TIMER ON as 0.0

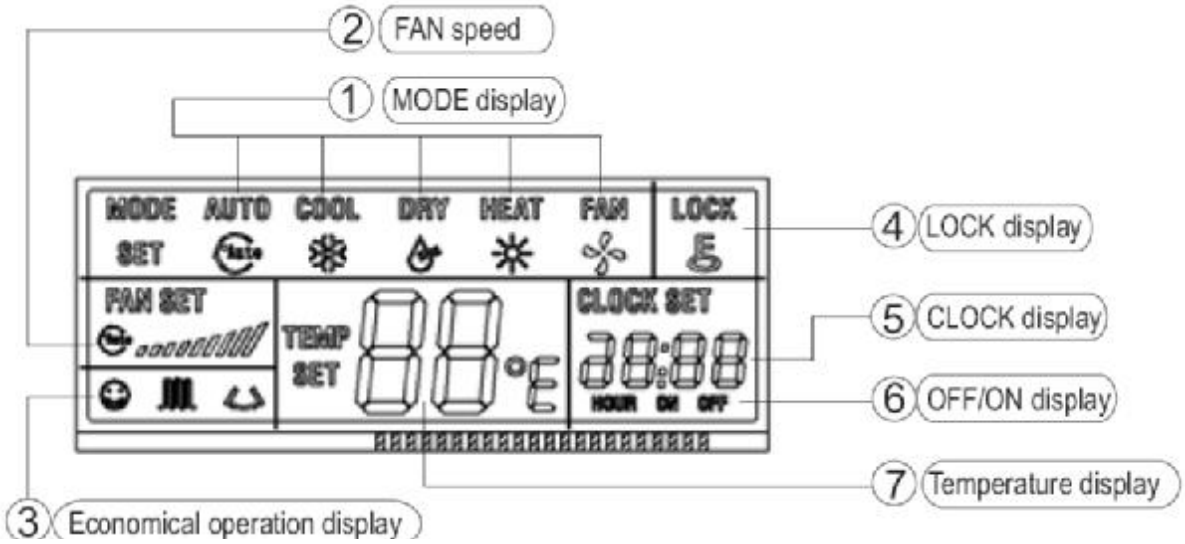
3 Timer off button:

Push the button to set TIMER OFF, each time you push the button the time moves forward by o.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER OFF, then adjust the time of TIMER OFF as 0.0

4 CLOCK button:

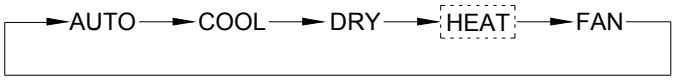
Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When push the button for 4 seconds, the hour part on the clock display flashes every 0.5 seconds, then push button and to adjust hour; push the button CLOCK again, the minute part flashes every 0.5 seconds, then push and button to adjust minute. When set clock or alter clock setting, must push the confirm button to complete the setting

Name and function of LCD on the wire controller



1 Mode select button (MODE):

Press MODE button to select “COOL”, “DRY” , "HEAT", or "FAN ONLY" mode.(HEAT is invalid for COOL ONLY wire controller.)



2 Fan speed button (FAN SPEED)

Press FAN SPEED to select fan speed from "AUTO", "LOW"," MED" , and "HIGH”. NOTE: some air conditioners have no MED fan speed, and then the MED is regarded as HIGH.

3 Economical operation displays:

Press ECONOMICAL to display economical operation, if press ECONOMICAL again then the display disappears

4 Lock display

Press LOCK to display the icon of LOCK. Press the button again then the icon of LOCK disappears. In the mode of LOCK, all the buttons are invalid except for LOCK button.

5 CLOCK display.

Usually display the clock set currently. Press the button CLOCK for 4 seconds, the HOUR part will flash, press button ▲ and ▼ to adjust HOUR. Press the button CLOCK again, the minute part flash, press button▲ or▼ to adjust MINUTE. After clock set or clock operation, it must press CONFIRM to complete the set.

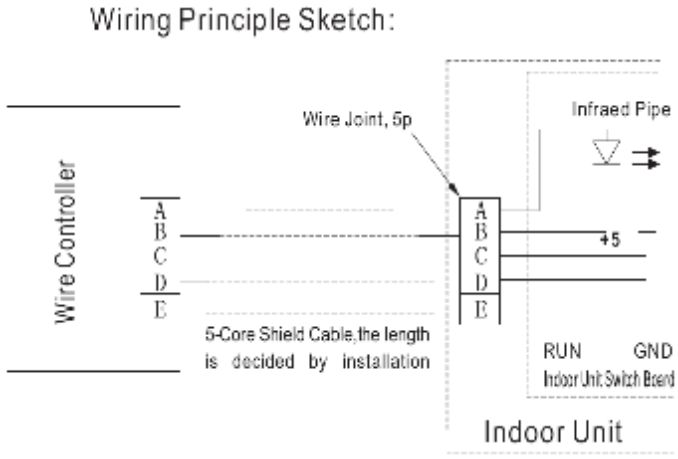
6 TIMER ON/OFF display:

Display ON at the state of TIMER ON adjustment or after only set the TIMER ON; Display OFF at the state of TIMER OFF adjustment or after only set the TIMER OFF; Display ON/OFF if simultaneously set the mode of TIMER ON and TIMER OFF.

7 Temperature display area:

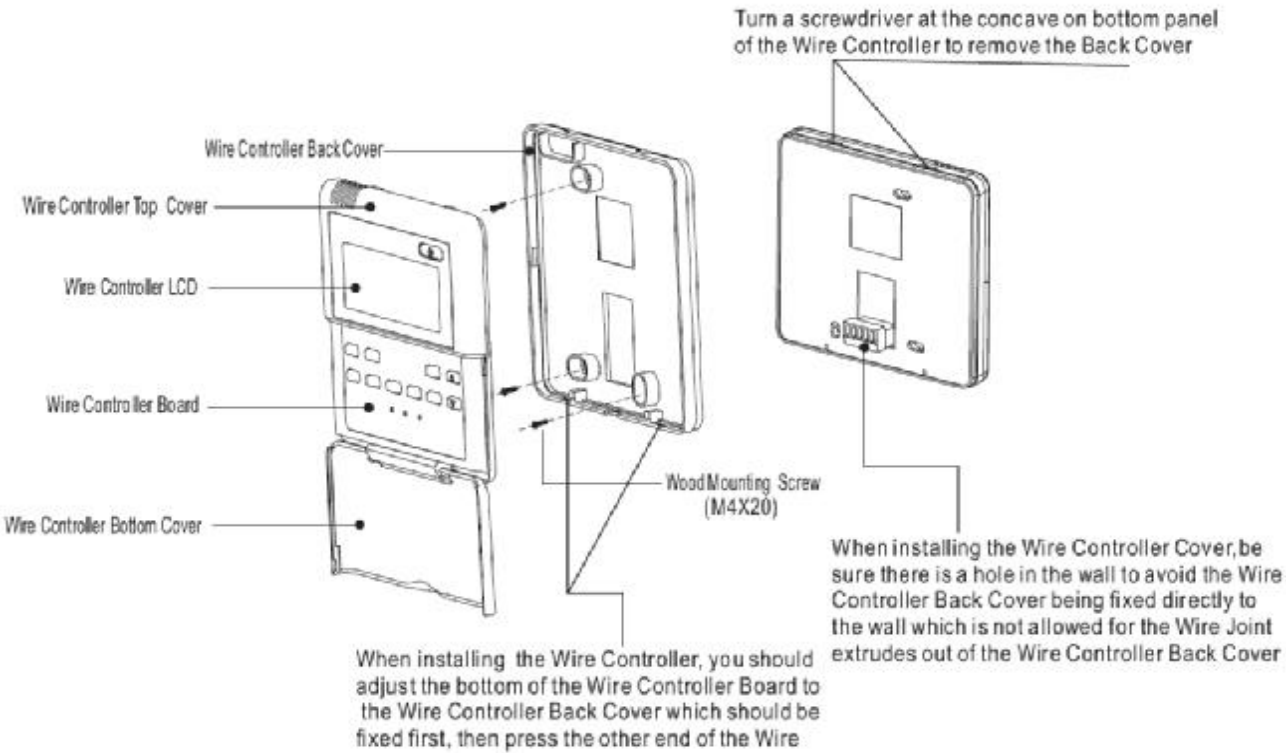
Usually display the set temperature. Press the buttons of and to set temperature, at the mode of FAN, there is no figure display in the area.

Installation



Installation Notice:

When the air conditioner needs the constant frequency wire Controller, be sure adding a Wire Joint with 5 terminal named A, B, C, D, E in indoor unit, and fixing a infrared emitter whose anode and cathode connecting with A and B near the receiver in the Indoor Unit Switch Board, then connecting the terminal +5v, GND, Run in the Switch Board to C,D,E respectively.



NOTE

Never turn screws too tightly, or else the cover would be dented or the Liquid Crystal breaks.

Please leave enough long cable for maintenance of the Wire Controller Board.