TOYOTOMI

Service Manual

MODEL:

CFT35A-R

CFT50A-R

CFT70A-R

CFT100A-R

CFT140A-R

CFT170A-R

1.1 Optional drainage pipe connection:

- Both right side and left side drainage holes are available to avoid the space limitation for drainage pipe installation. Make you more convenient during installation.

1.2 Panels:

STANDARD Panel

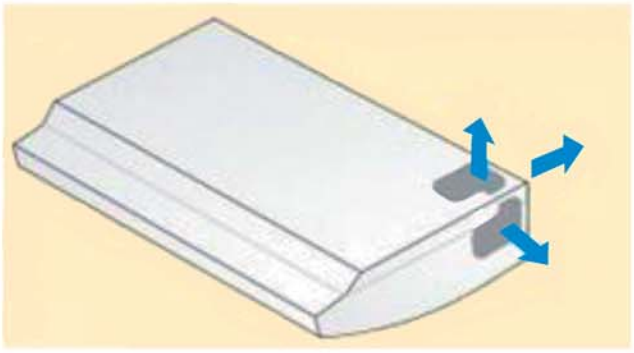
B Panel (LED display)

1.3 Convenience operating and easy maintenance

- Remote controller as standard, wired controller for optional.
- The filter without screw fixed, can be took out easily.

1.4 Easy installation, save working time

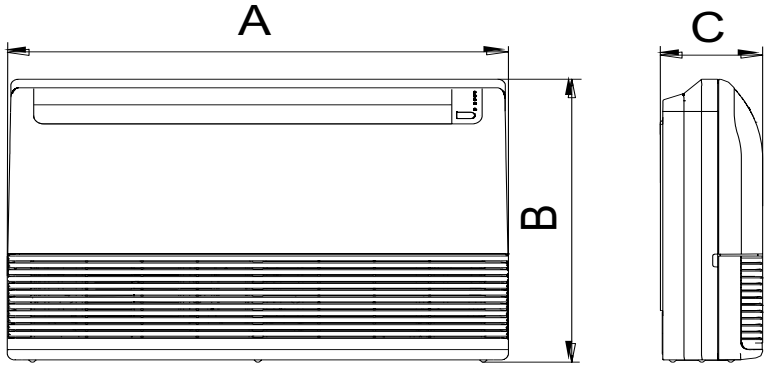
- The pipes can be connected from bottom, back and right side, makes the installation more easily.
- The wiring works can be finished before installation.

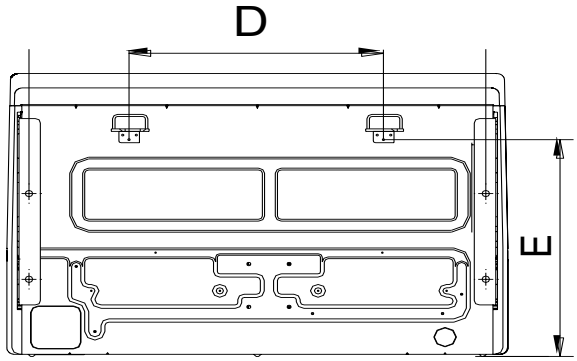


1.5 Outside water pump for optional when ceiling installation.

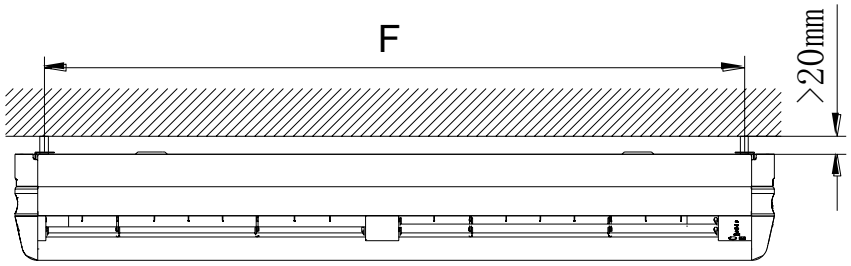
2. Dimensions

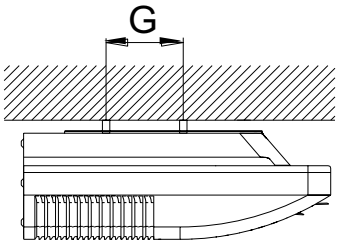
a. Wall mounting installation





b. Ceiling installation

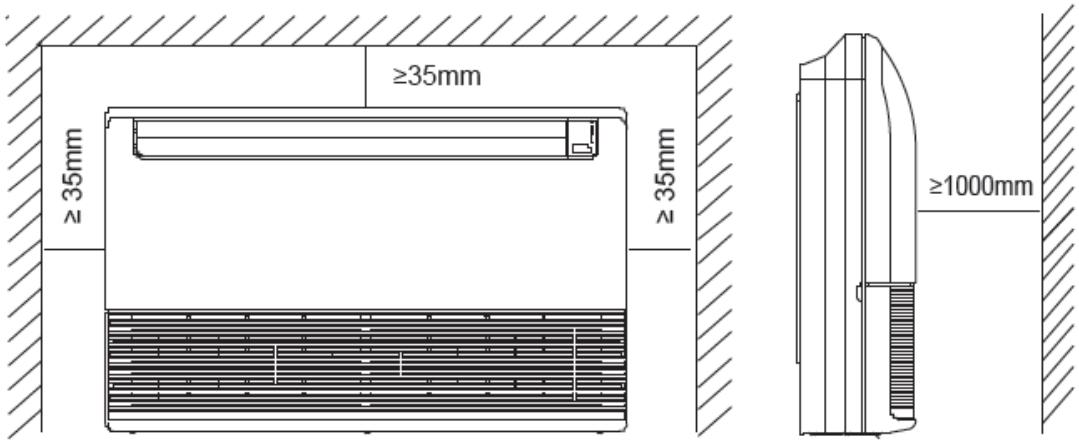




Capacity (Btu/h)	A	B	C	D	E	F	G
12000-24000	990	660	203	505	506	907	200
30000-36000	1280	660	203	795	506	1195	200
48000-60000	1670	680	240	1070	450	1542	200

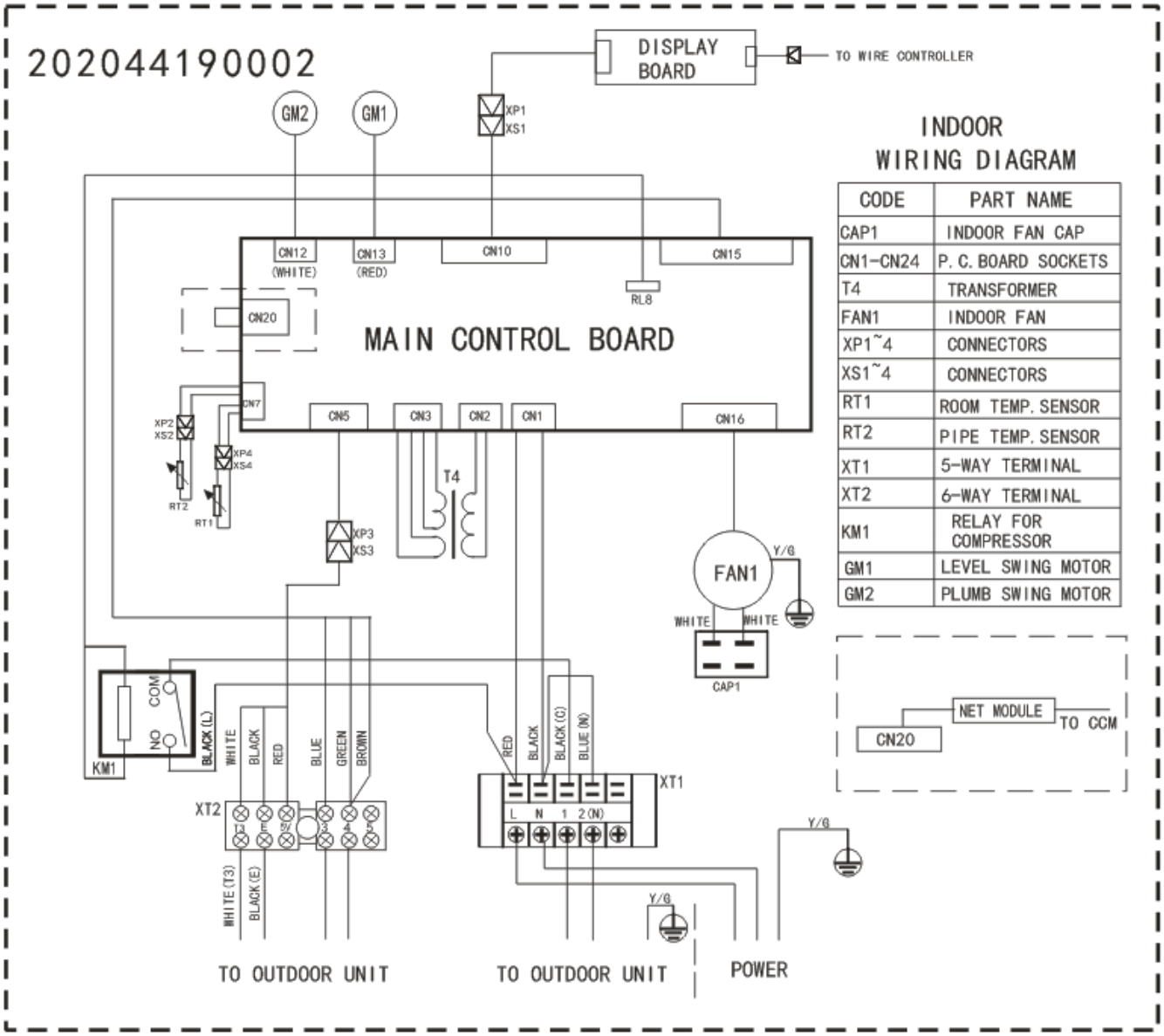
Note: The dimension of 12000Btu/h, 18000Btu/h and 24000Btu/h are the same.
The dimension of 30000Btu/h and 36000Btu/h are the same.
The dimension of 48000Btu/h and 60000Btu/h are the same.

3. Service Space



4. Wiring Diagrams

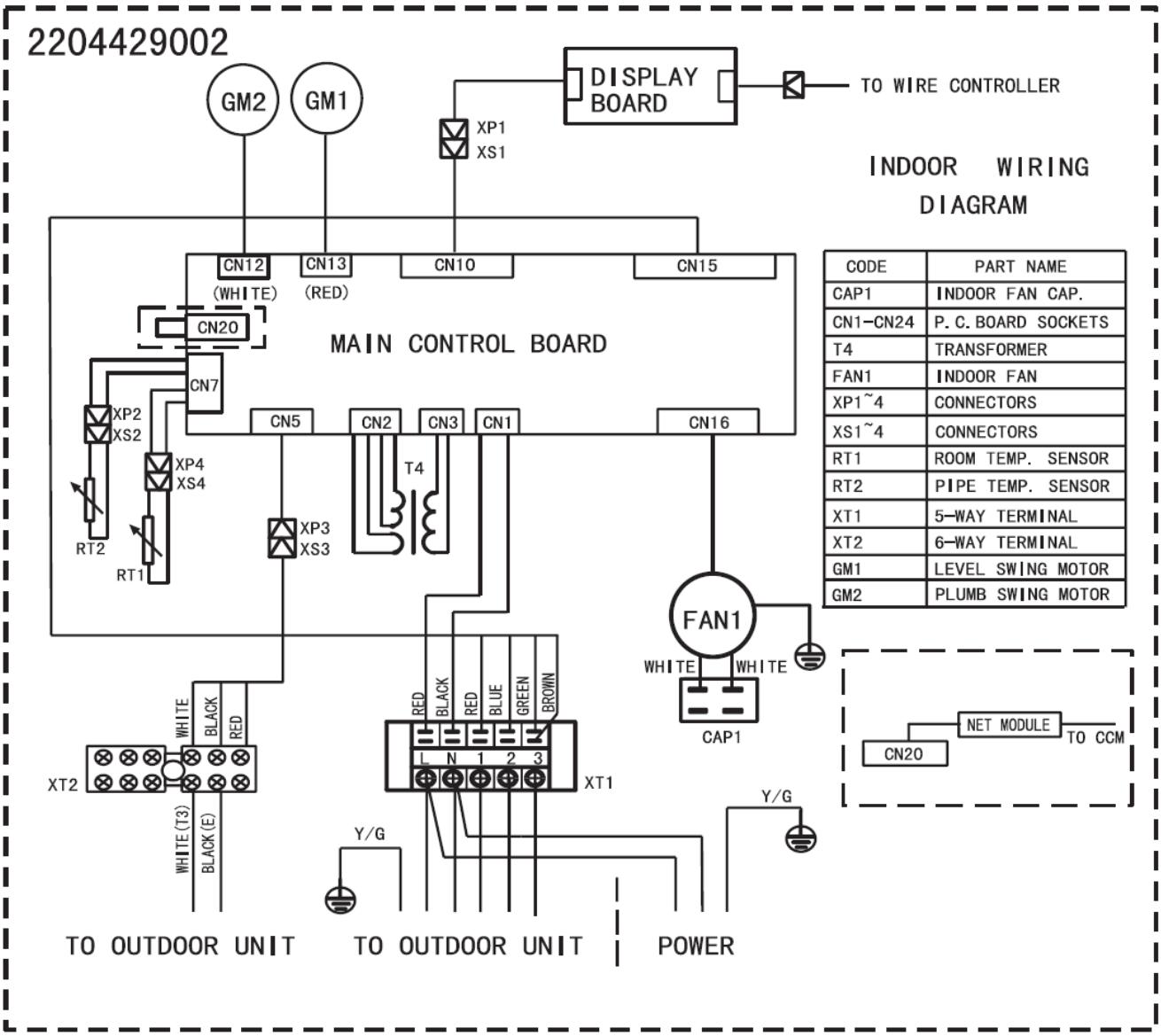
CFT 35A-Ri CFT 50A-Ri



INDOOR WIRING DIAGRAM

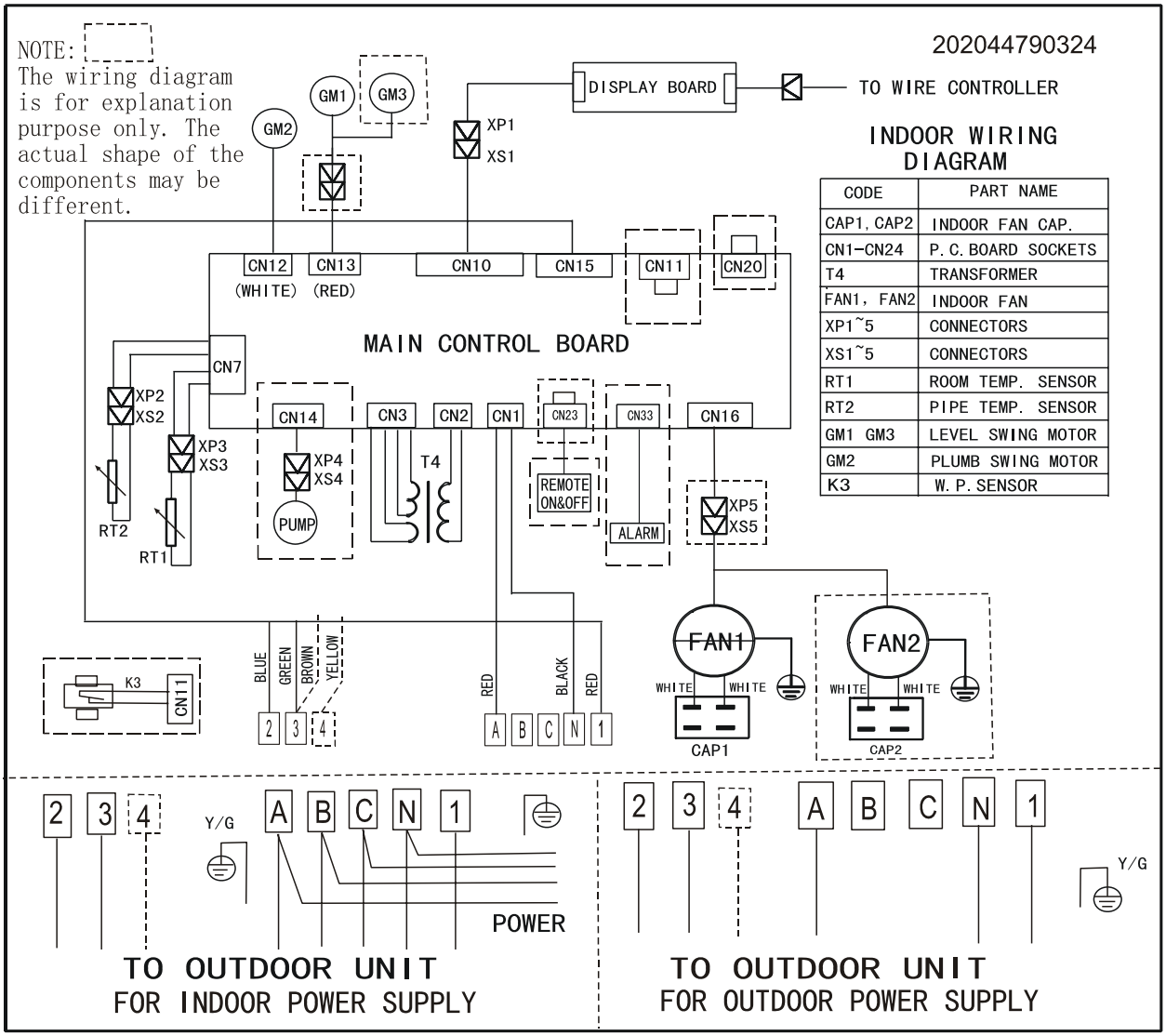
CODE	PART NAME
CAP1	INDOOR FAN CAP
CN1-CN24	P. C. BOARD SOCKETS
T4	TRANSFORMER
FAN1	INDOOR FAN
XP1~4	CONNECTORS
XS1~4	CONNECTORS
RT1	ROOM TEMP. SENSOR
RT2	PIPE TEMP. SENSOR
XT1	5-WAY TERMINAL
XT2	6-WAY TERMINAL
KM1	RELAY FOR COMPRESSOR
GM1	LEVEL SWING MOTOR
GM2	PLUMB SWING MOTOR

CFT 70A-Ri

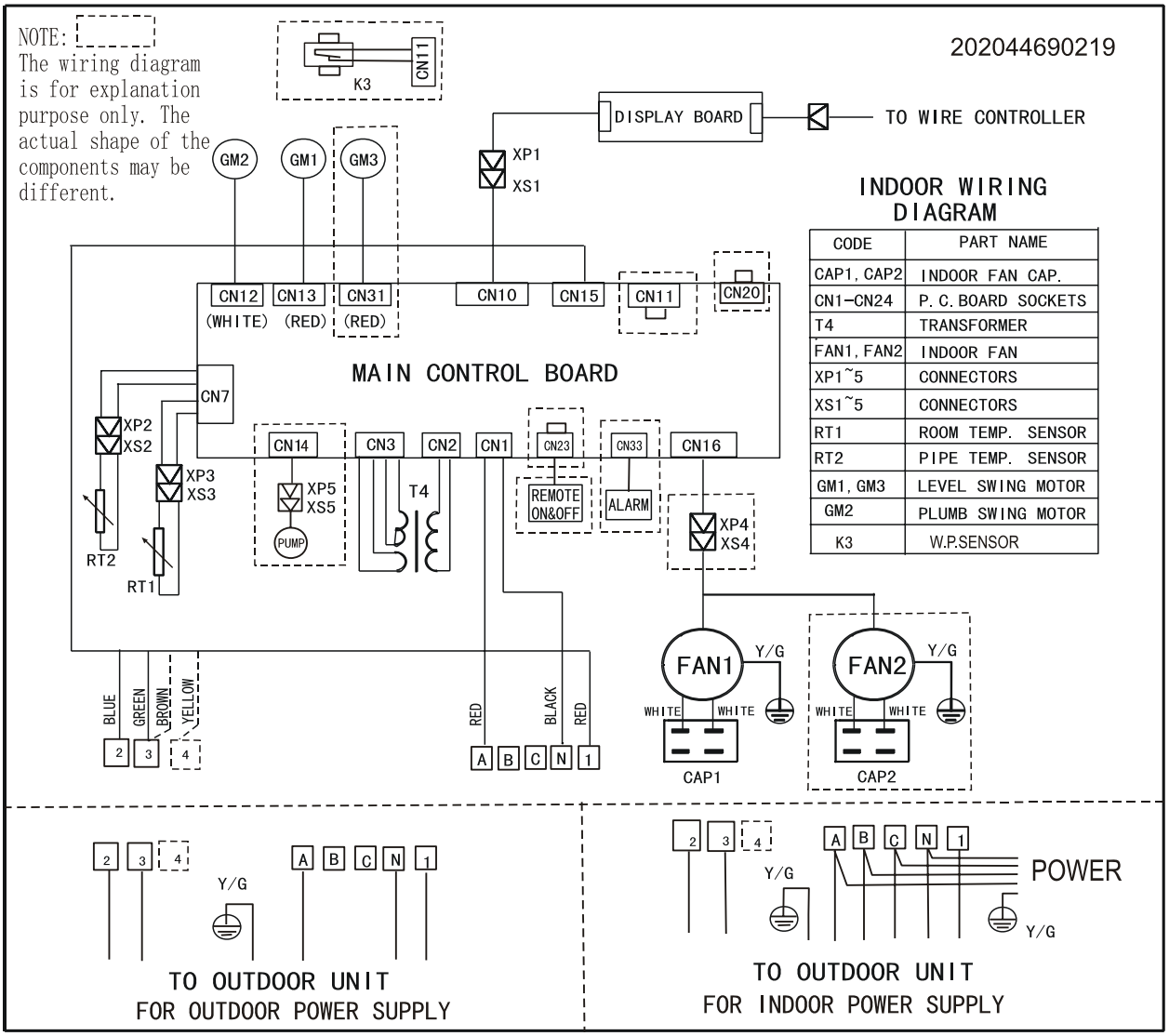


CODE	PART NAME
CAP1	INDOOR FAN CAP.
CN1–CN24	P. C. BOARD SOCKETS
T4	TRANSFORMER
FAN1	INDOOR FAN
XP1~4	CONNECTORS
XS1~4	CONNECTORS
RT1	ROOM TEMP. SENSOR
RT2	PIPE TEMP. SENSOR
XT1	5–WAY TERMINAL
XT2	6–WAY TERMINAL
GM1	LEVEL SWING MOTOR
GM2	PLUMB SWING MOTOR

CFT 100A-Ri


NOTE:
The wiring diagram is for explanation purpose only. The actual shape of the components may be different.
202044790324
DISPLAY BOARD
TO WIRE CONTROLLER
INDOOR WIRING DIAGRAM
CODE | PART NAME
CAP1, CAP2 | INDOOR FAN CAP.
CN1-CN24 | P.C.BOARD SOCKETS
T4 | TRANSFORMER
FAN1, FAN2 | INDOOR FAN
XP1~5 | CONNECTORS
XS1~5 | CONNECTORS
RT1 | ROOM TEMP. SENSOR
RT2 | PIPE TEMP. SENSOR
GM1 GM3 | LEVEL SWING MOTOR
GM2 | PLUMB SWING MOTOR
K3 | W.P.SENSOR
MAIN CONTROL BOARD
GM1
GM3
GM2
XP1
XS1
CN12
CN13
CN10
CN15
CN11
CN20
(WHITE)
(RED)
CN7
XP2
XS2
XP3
XS3
CN14
CN3
CN2
CN1
CN23
CN33
CN16
XP4
XS4
T4
REMOTE ON&OFF
ALARM
XP5
XS5
RT2
RT1
PUMP
FAN1
FAN2
WHITE
CAP1
CAP2
K3
CN11
BLUE
GREEN
BROWN
YELLOW
RED
BLACK
2
3
4
A
B
C
N
1
Y/G
POWER
TO OUTDOOR UNIT
FOR INDOOR POWER SUPPLY
TO OUTDOOR UNIT
FOR OUTDOOR POWER SUPPLY

CFT 140A-Ri CFT 170A-Ri

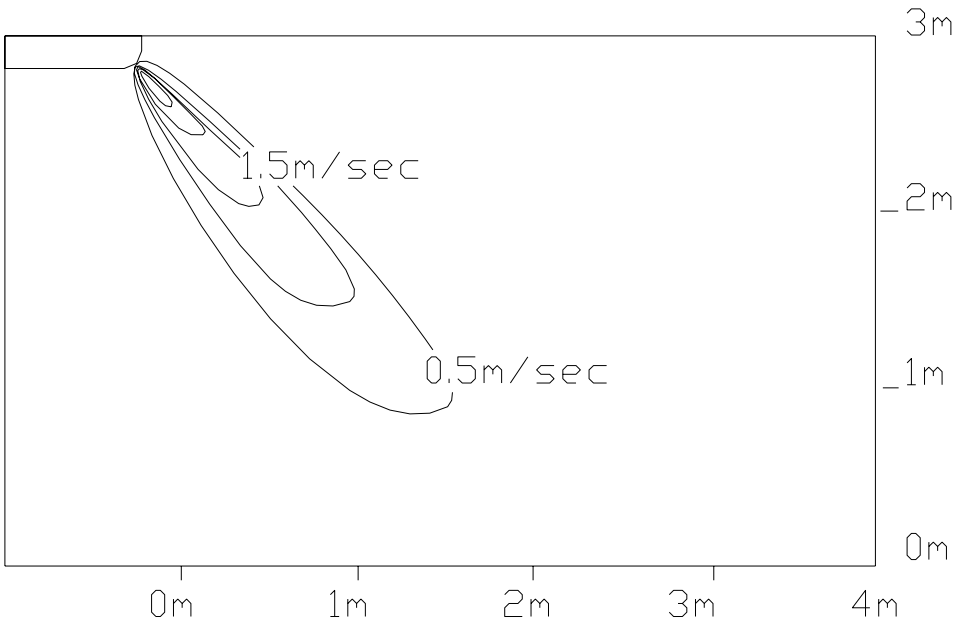


CODE	PART NAME
CAP1, CAP2	INDOOR FAN CAP.
CN1-CN24	P. C. BOARD SOCKETS
T4	TRANSFORMER
FAN1, FAN2	INDOOR FAN
XP1~5	CONNECTORS
XS1~5	CONNECTORS
RT1	ROOM TEMP. SENSOR
RT2	PIPE TEMP. SENSOR
GM1, GM3	LEVEL SWING MOTOR
GM2	PLUMB SWING MOTOR
K3	W.P.SENSOR

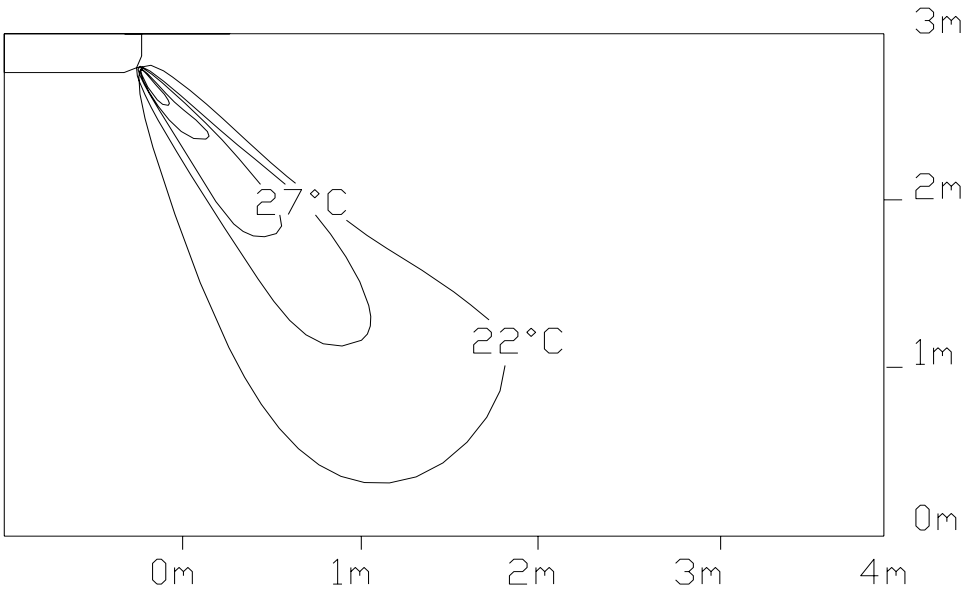
5. Air Velocity and Temperature Distributions(Reference Data)

Discharge angle 60° (CEILING)

Airflow velocity

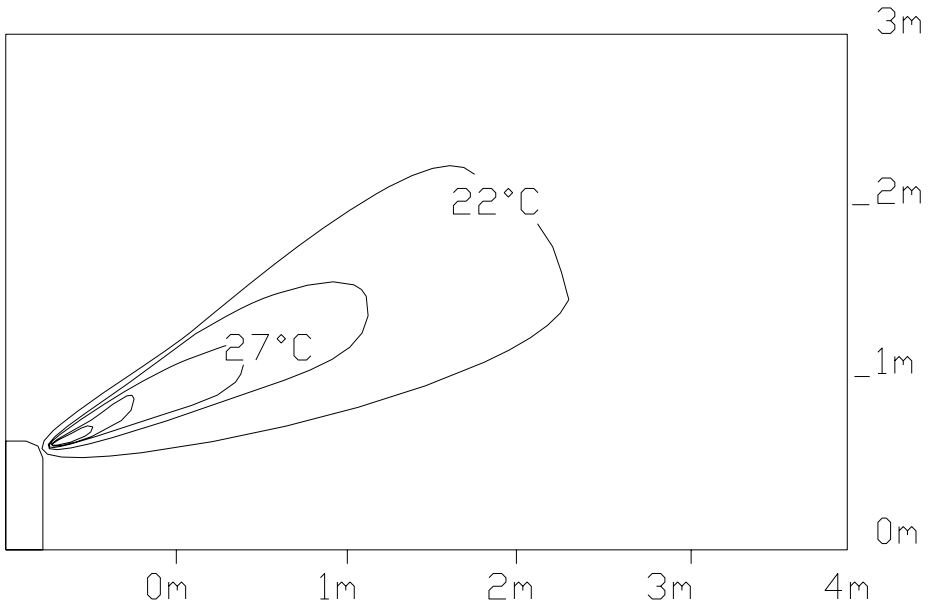


Temperature

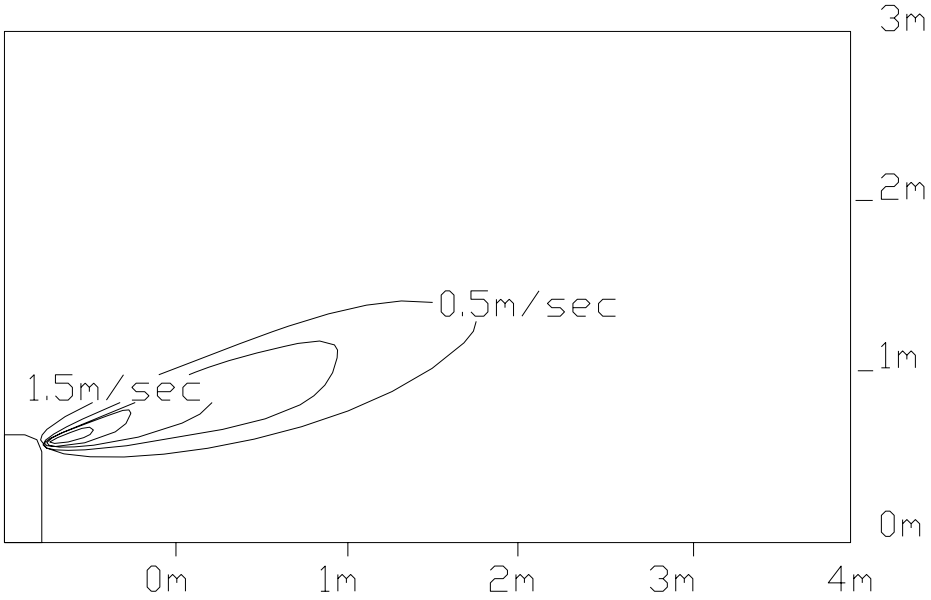


Discharge angle 60°(FLOOR)

Temperature



Airflow velocity

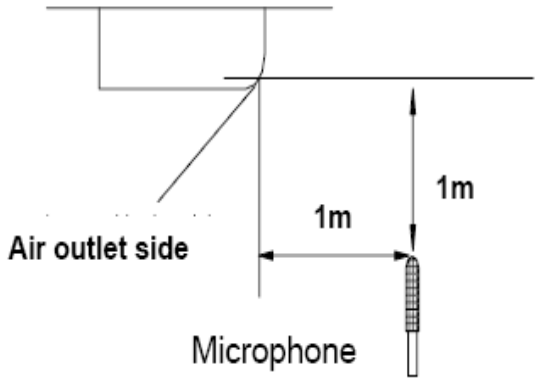


6. Electric Characteristics

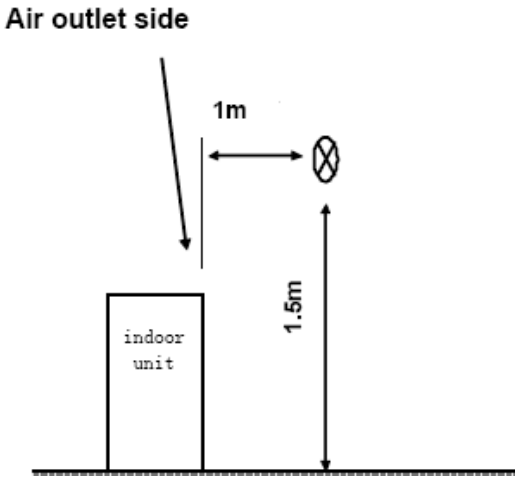
Model	Indoor Units				Power Supply
	Hz	Voltage	Min.	Max.	MFA
CFT 35A-Ri	50	220-240V	198V	254V	16
CFT 50A-Ri	50	220-240V	198V	254V	16
CFT 70A-Ri	50	220-240V	198V	254V	25
CFT 100A-Ri	50	380-415V	342V	418V	20
CFT 140A-Ri	50	380-420V	342V	440V	20
CFT 170A-Ri	50	380-420V	342V	440V	20

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

7. Sound Levels



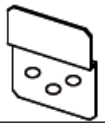
Ceiling



Floor

Model	Noise level dB(A)		
	H	M	L
CFT 35A-Ri	43	41	38
CFT 50A-Ri	43	41	38
CFT 70A-Ri	45	43	40
CFT 100A-Ri	45	43	40
CFT 140A-Ri	50	47	45
CFT 170A-Ri	50	49	47

8. Accessories

	Name	Shape	Quantity
Installation fittings	1.Hook		2
	2.Hanging arm		2
Remote controller & Its holder	3. Remote controller		1
	4. Remote controller holder		1
	5. Mounting screw (ST2.9×10-C-H)		2
	6. Alkaline dry batteries (AM4)		2
Others	7. Owner's manual		1
	8. Installation manual		1
	9. Remote controller manual		1

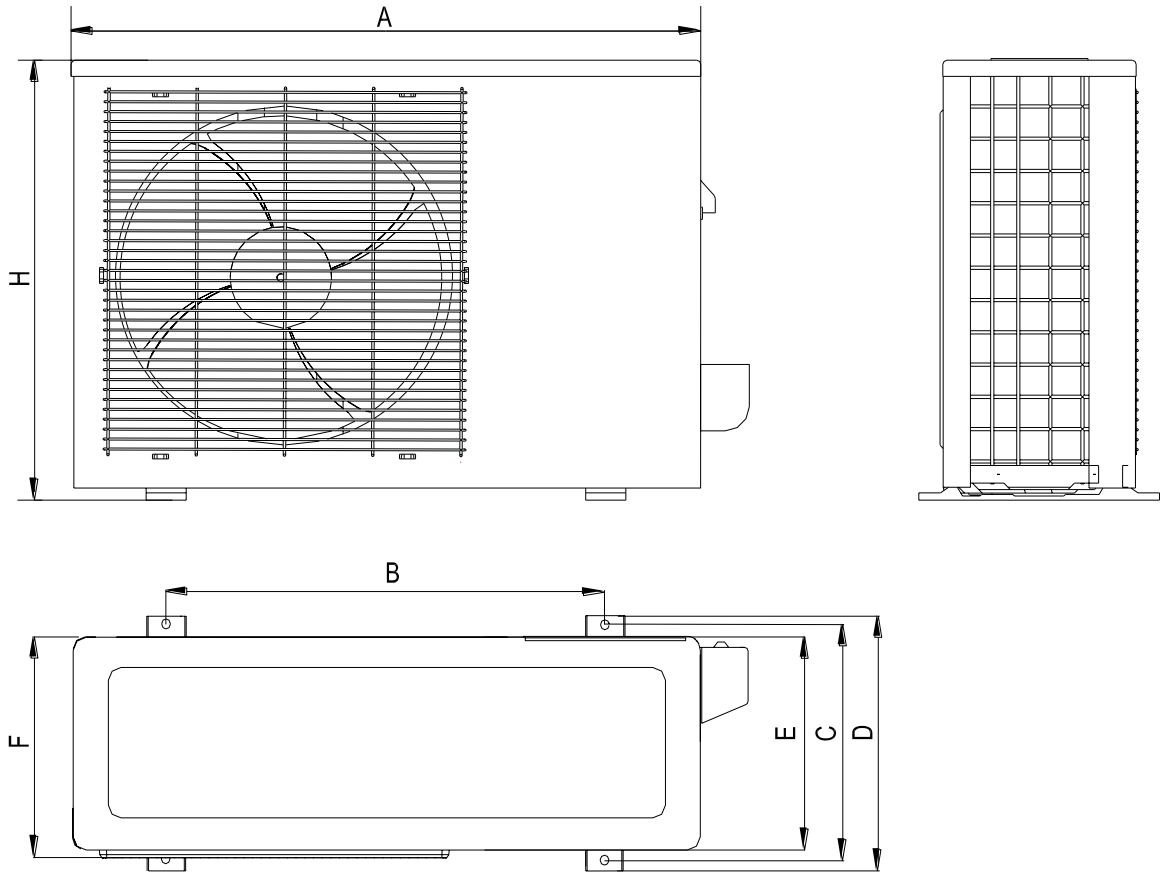
9. The Specification of Power

Cooling & Heating

Type		12000-18000 Btu/h	24000Btu/h	30000-36000 Btu/h	30000-60000 Btu/h
Power	Phase	1-phase	1-phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	380-415V, 50Hz
Circuit Breaker/ Fuse (A)		20/16	40/25	50/30	25/20
Indoor Unit Power Wiring (mm^2)		3×2.5	3×2.5	3×4.0	5×2.5
Indoor/Outdoor Connecting Wiring (mm^2)	Ground Wiring	2.5	2.5	4.0	2.5
	Outdoor Unit Power Wiring	3×2.5	3×2.5	3×4.0	5×2.5
	Strong Electric Signal	2×1.0	3×1.5	3×1.0	3×1.0
	Weak Electric Signal	2-core shield wire 2×0.75 mm^2/2×0.5 mm^2	2-core shield wire 2×0.75 mm^2	2-core shield wire 2×0.75 mm^2	——

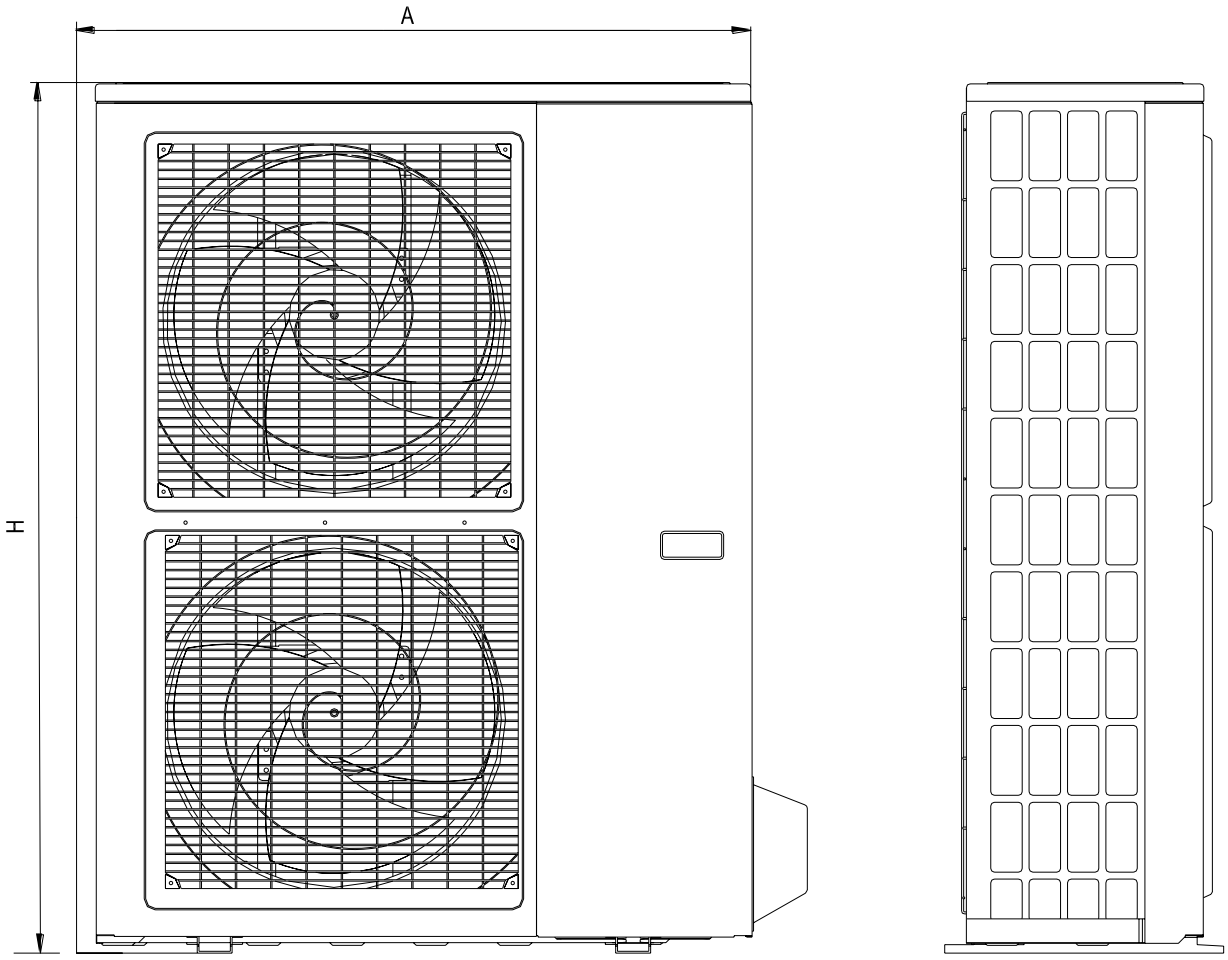
Outdoor Units

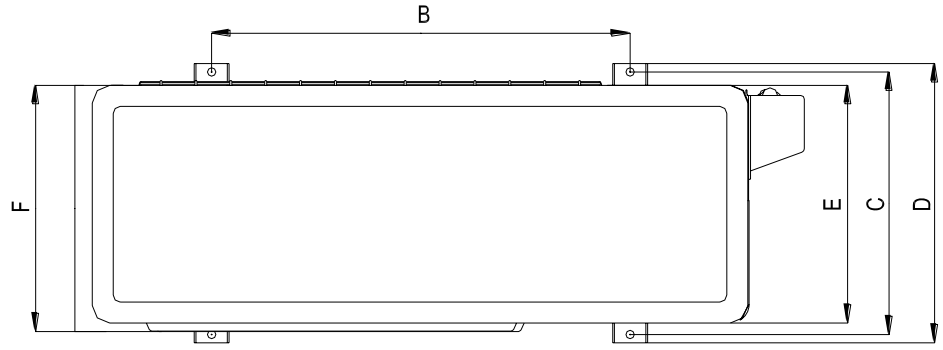
1. Dimensions



mm

Model	A	B	C	D	E	F	H
CFT 35A-Ro	780	548	266	300	241	250	547
CFT 50A-Ro	762	530	290	315	270	282	593
CFT 70A-Ro	842	560	335	360	312	324	695
CFT 100A-Ro	990	624	366	396	340	354	966

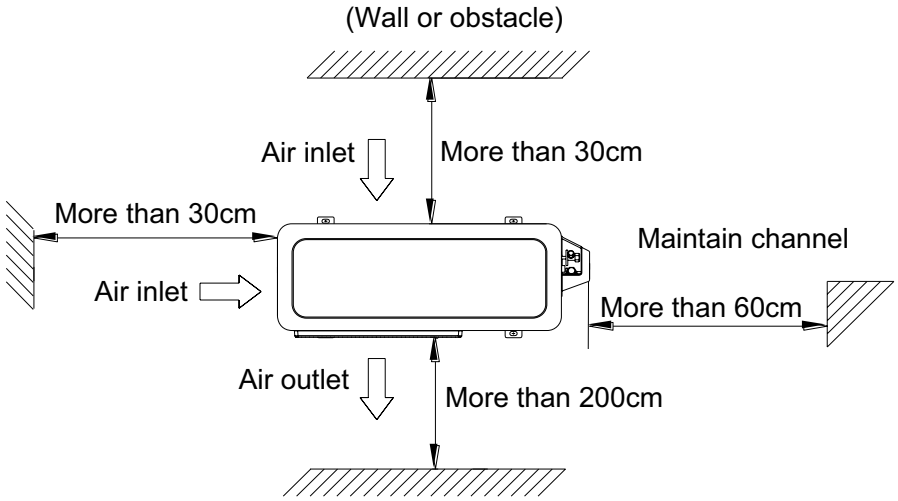


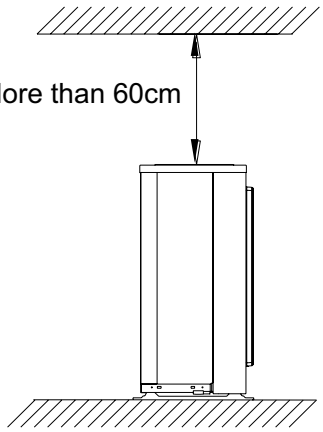


mm

Model	A	B	C	D	E	F	H
CFT 140A-Ro	900	590	378	400	330	340	1167
CFT 170A-Ro	900	590	378	400	330	340	1167

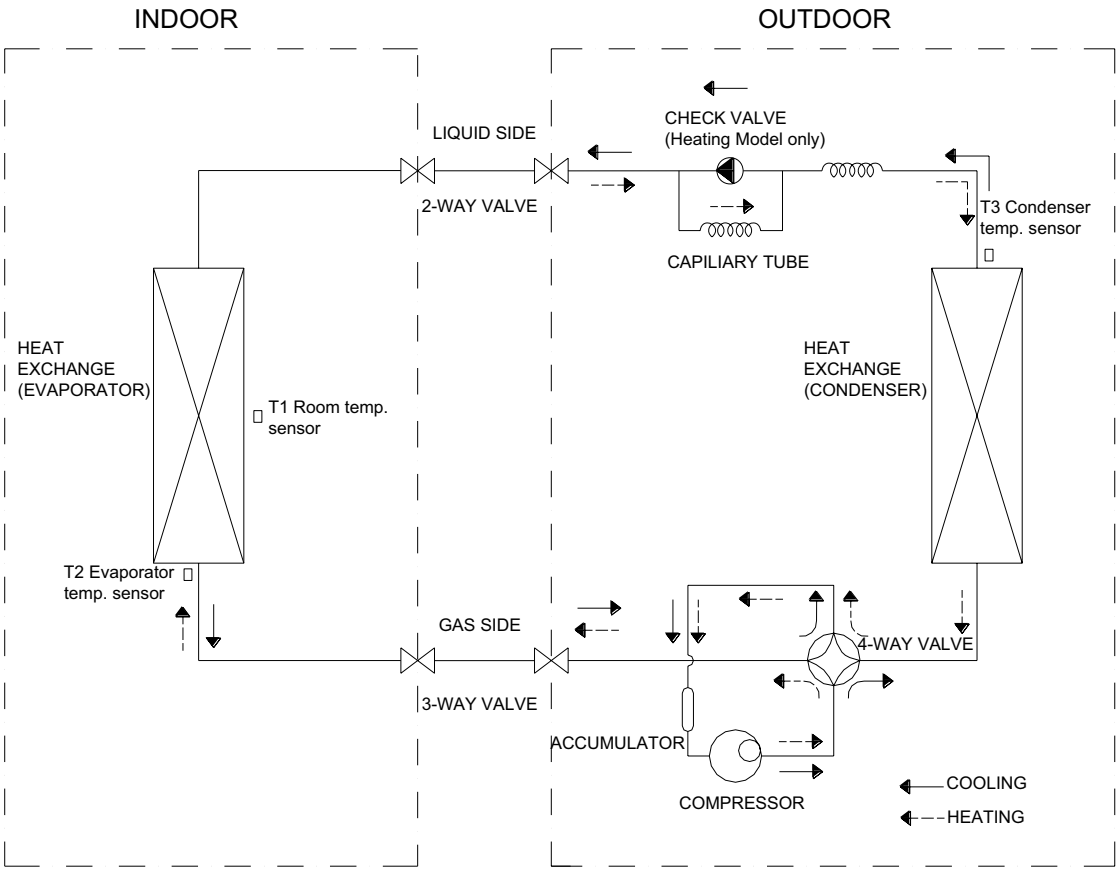
2. Service Space



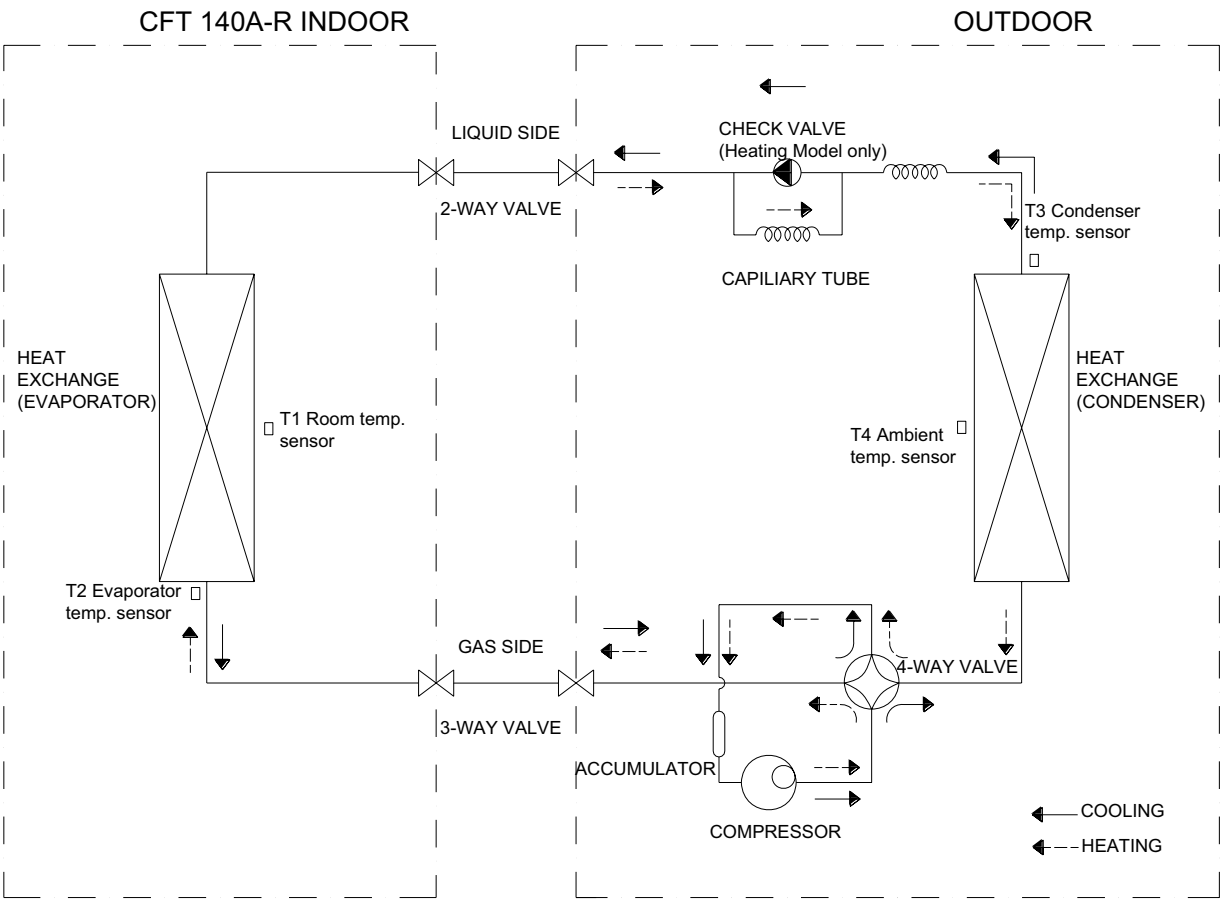


3. Piping Diagrams

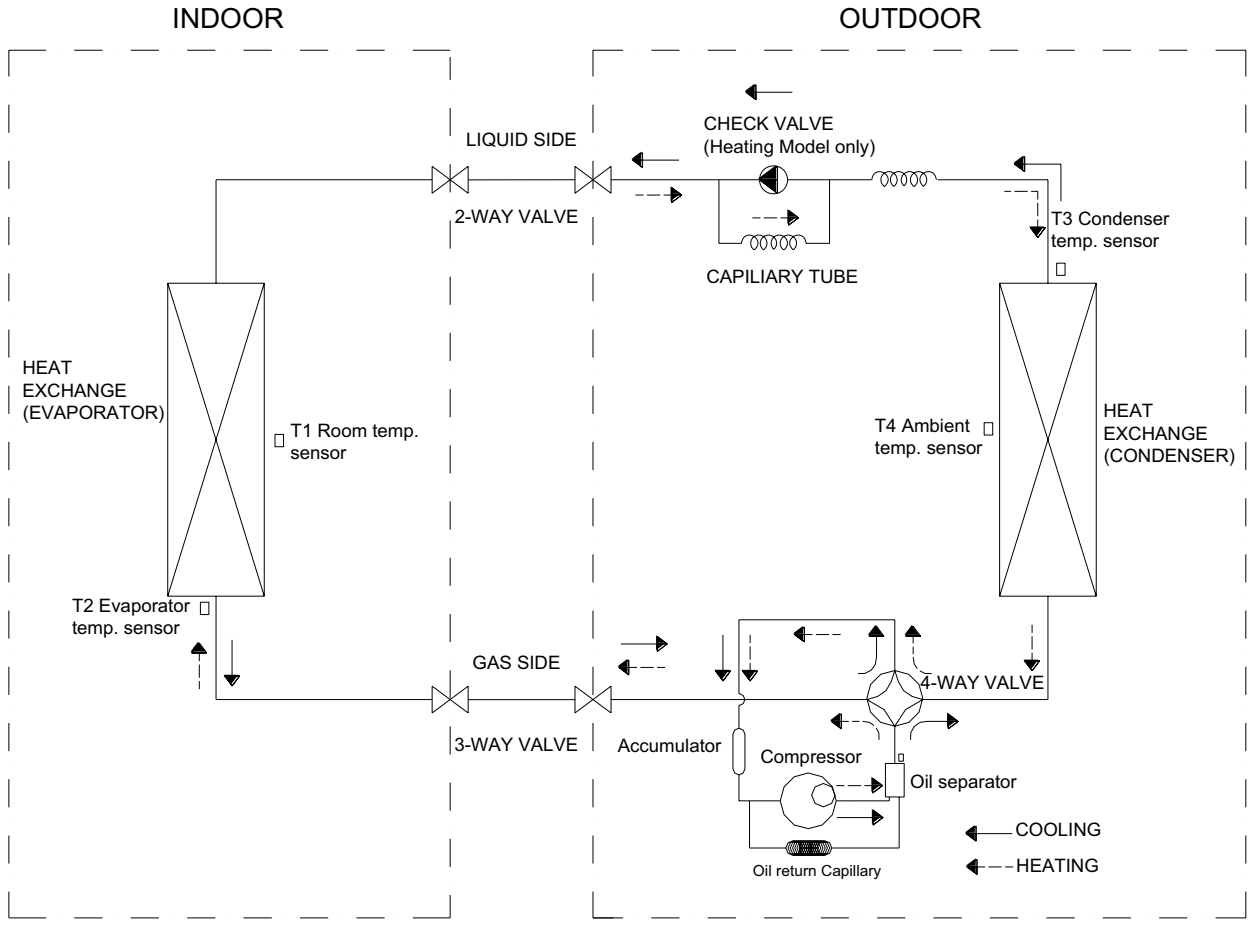
CFT 35A-Ro, CFT 50A-Ro, CFT 70A-Ro, CFT 100A-Ro



For CFT 35A-Ro, CFT 50A-Ro, CFT 70A-Ro the accumulator is not included.

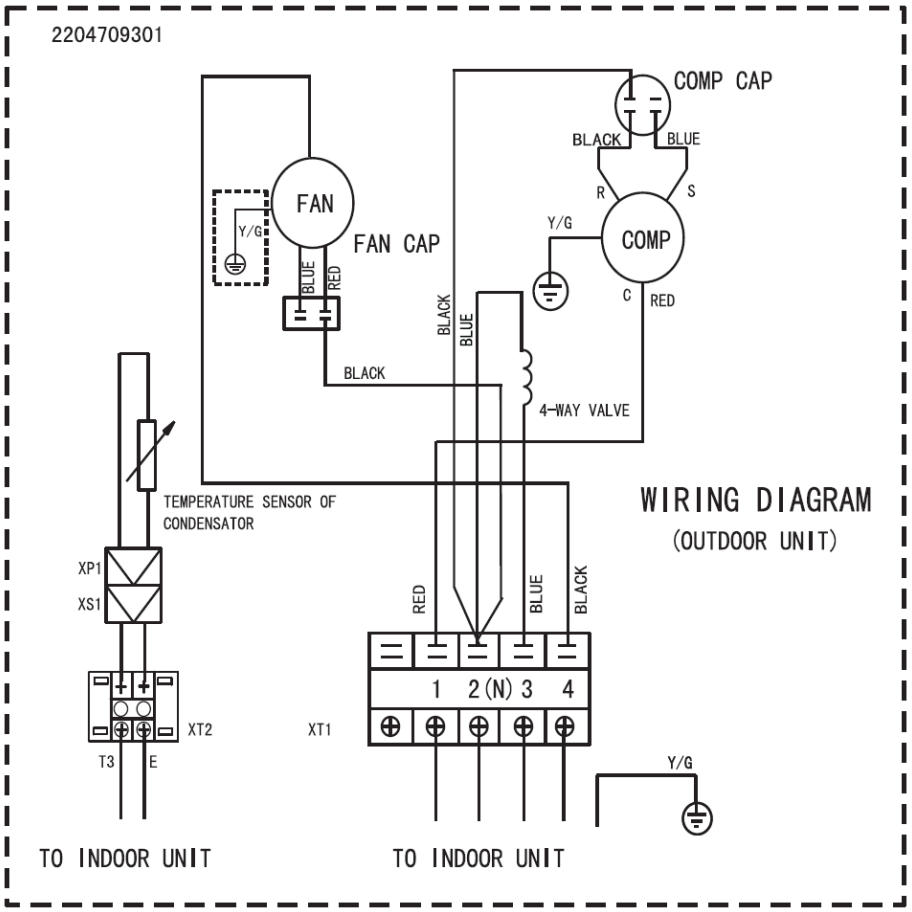

CFT 140A-R INDOOR
OUTDOOR
LIQUID SIDE
2-WAY VALVE
CHECK VALVE
(Heating Model only)
T3 Condenser
temp. sensor
CAPILIARY TUBE
HEAT
EXCHANGE
(EVAPORATOR)
T1 Room temp.
sensor
T4 Ambient
temp. sensor
HEAT
EXCHANGE
(CONDENSER)
T2 Evaporator
temp. sensor
GAS SIDE
4-WAY VALVE
3-WAY VALVE
ACCUMULATOR
COMPRESSOR
COOLING
HEATING

CFT 170A-R

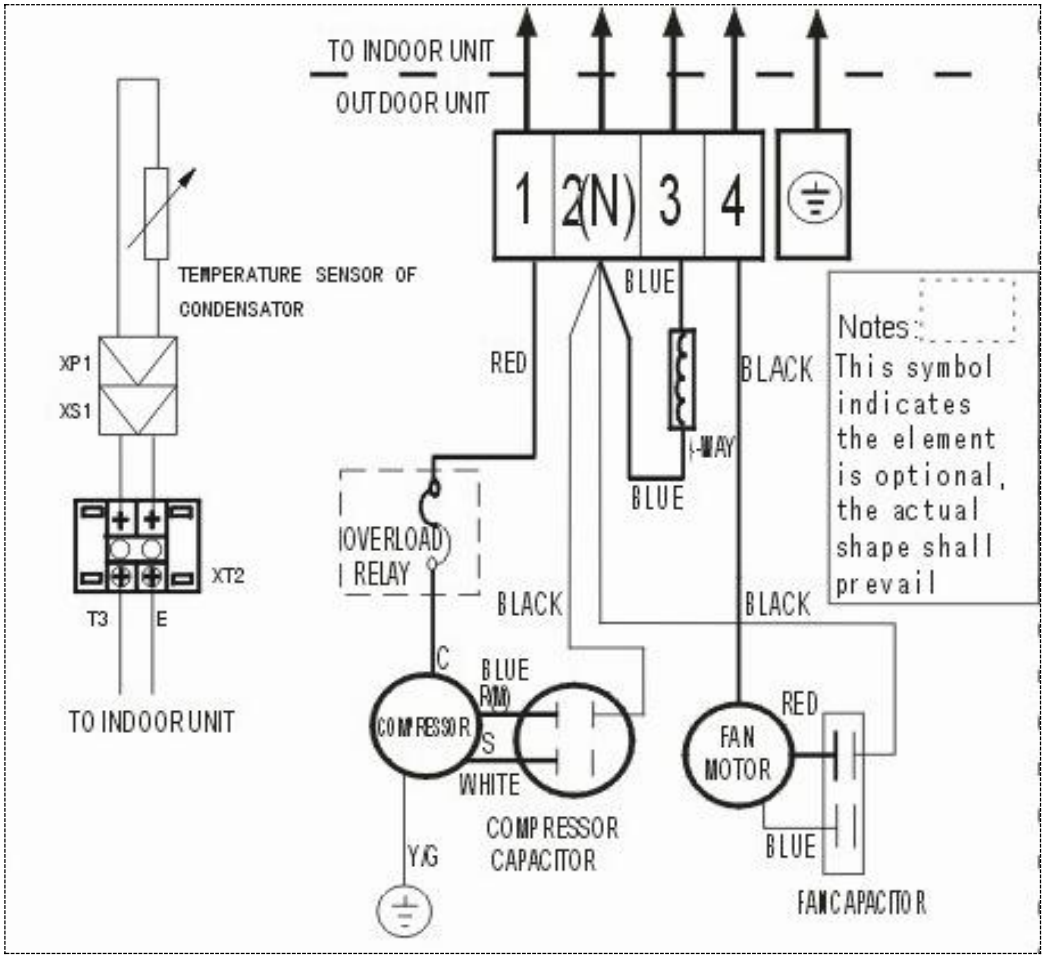

INDOOR
OUTDOOR
LIQUID SIDE
CHECK VALVE
(Heating Model only)
2-WAY VALVE
T3 Condenser
temp. sensor
CAPILIARY TUBE
HEAT
EXCHANGE
(EVAPORATOR)
T1 Room temp.
sensor
T4 Ambient
temp. sensor
HEAT
EXCHANGE
(CONDENSER)
T2 Evaporator
temp. sensor
GAS SIDE
4-WAY VALVE
3-WAY VALVE
Accumulator
Compressor
Oil separator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

4. Wiring Diagrams

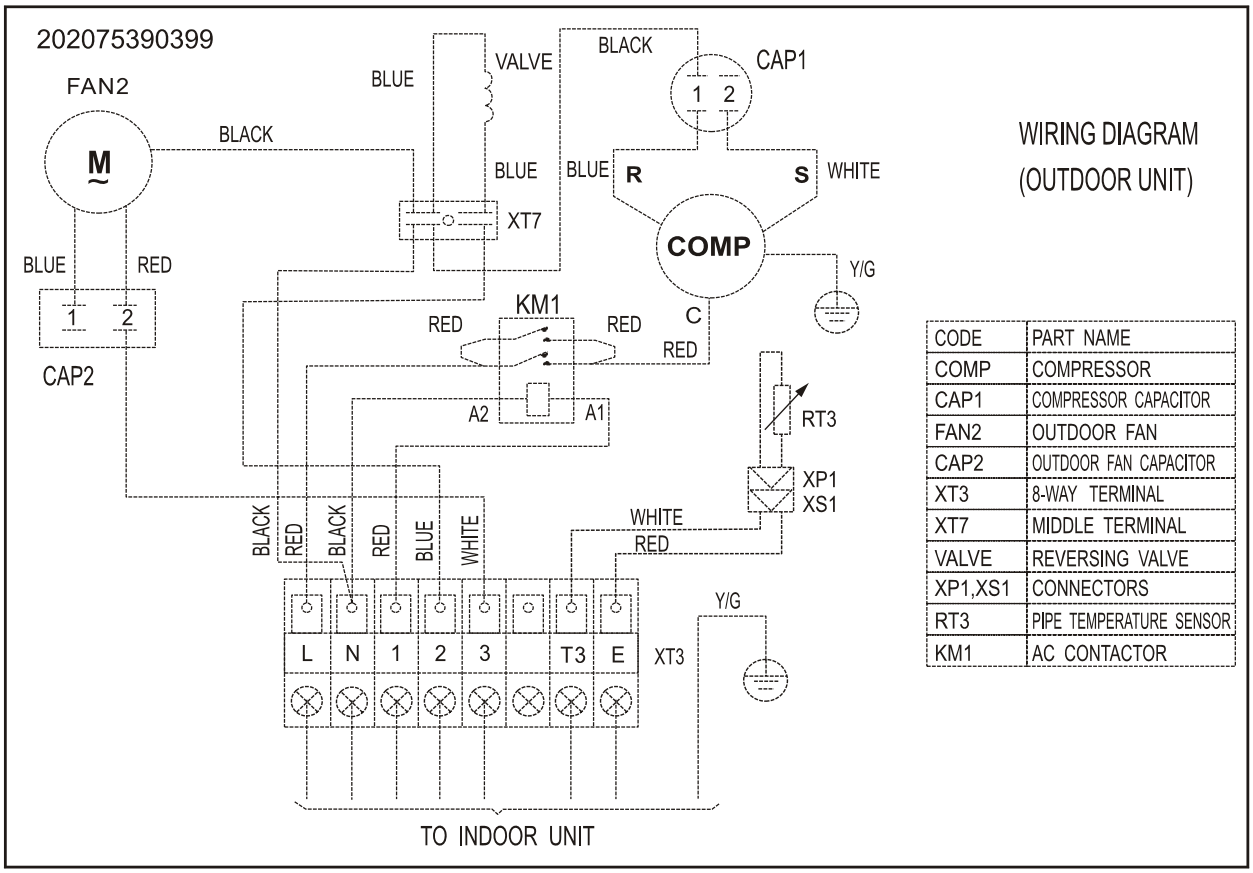
CFT 35A-Ro



CFT 50A-Ro

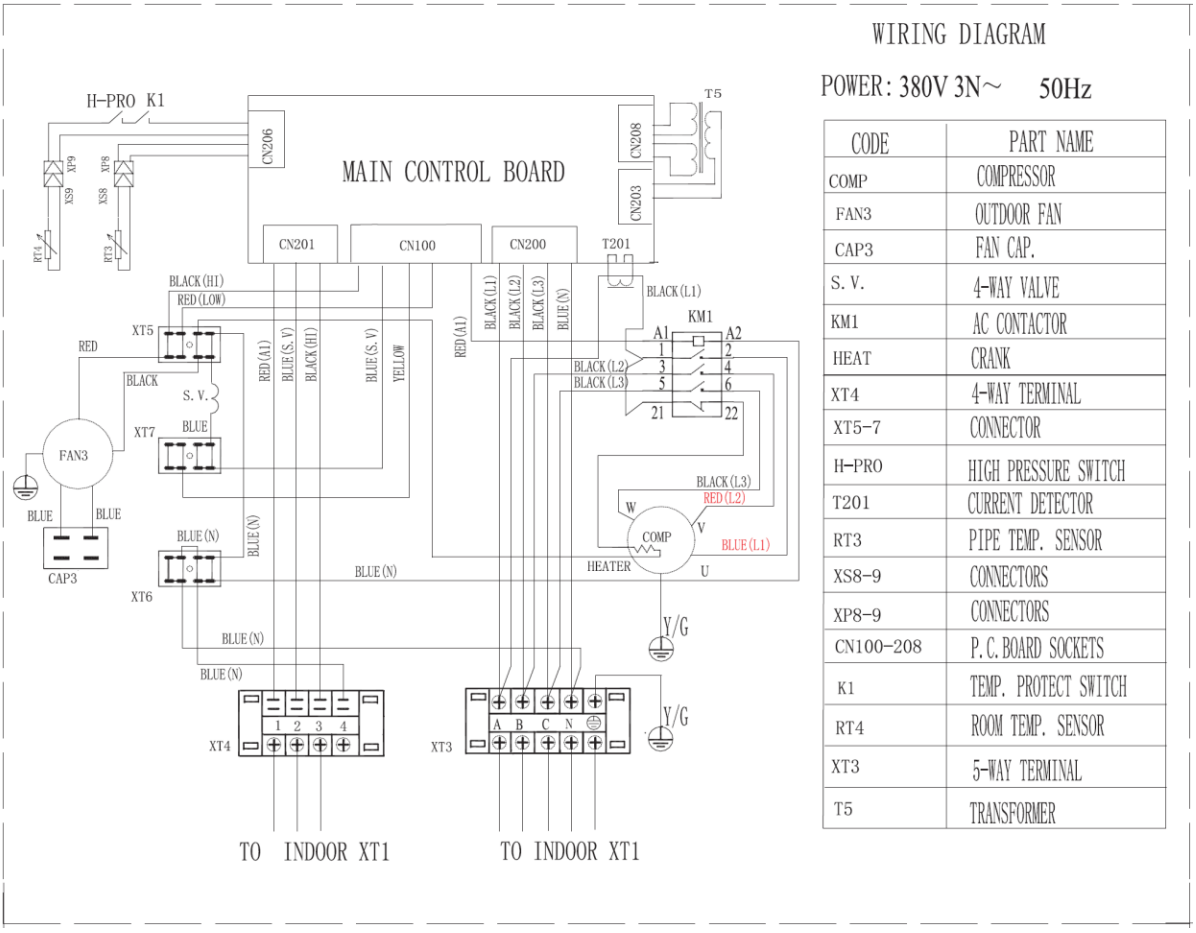


CFT 70A-Ro

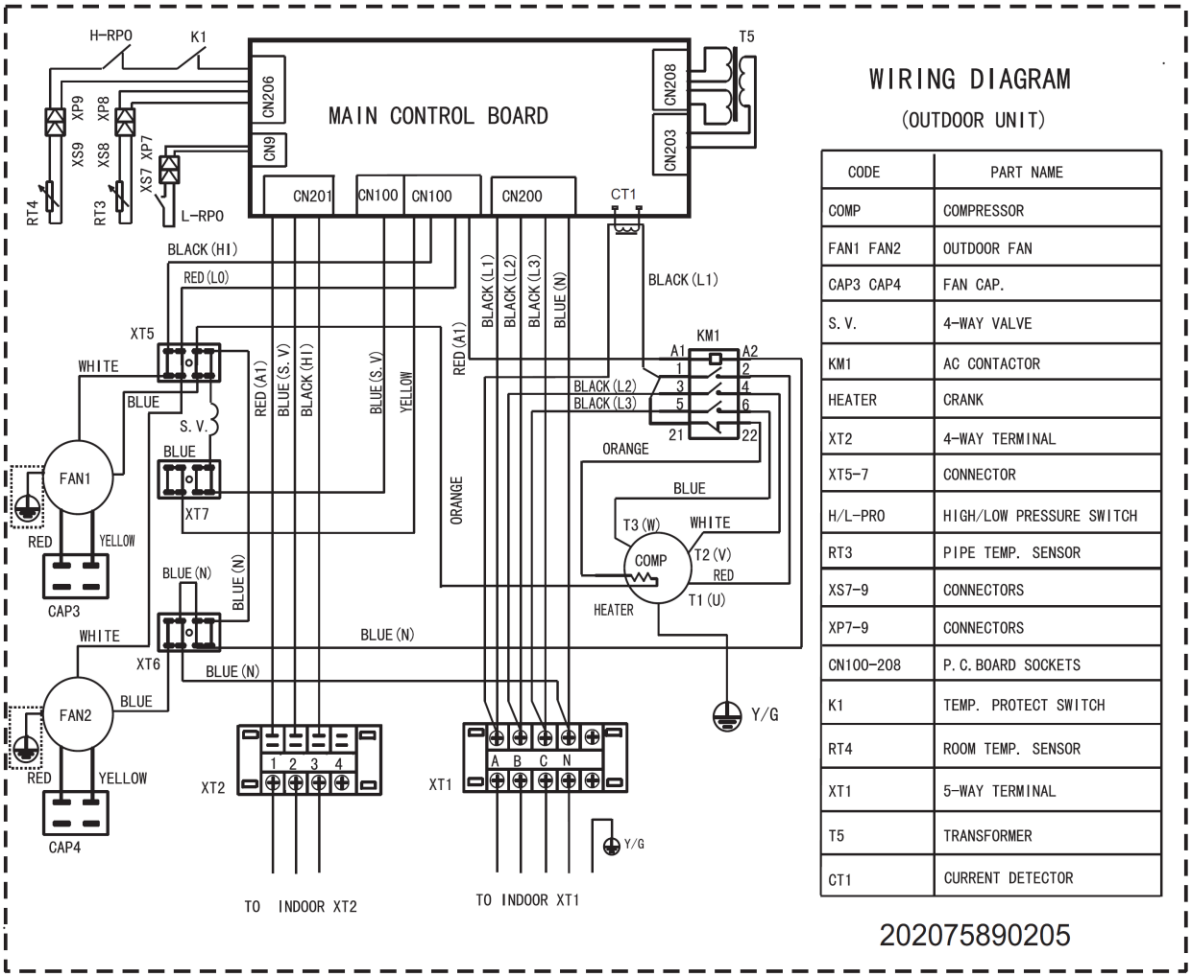


CODE	PART NAME
COMP	COMPRESSOR
CAP1	COMPRESSOR CAPACITOR
FAN2	OUTDOOR FAN
CAP2	OUTDOOR FAN CAPACITOR
XT3	8-WAY TERMINAL
XT7	MIDDLE TERMINAL
VALVE	REVERSING VALVE
XP1,XS1	CONNECTORS
RT3	PIPE TEMPERATURE SENSOR
KM1	AC CONTACTOR

CFT 100A-Ro



CODE	PART NAME
COMP	COMPRESSOR
FAN3	OUTDOOR FAN
CAP3	FAN CAP.
S. V.	4-WAY VALVE
KM1	AC CONTACTOR
HEAT	CRANK
XT4	4-WAY TERMINAL
XT5-7	CONNECTOR
H-PRO	HIGH PRESSURE SWITCH
T201	CURRENT DETECTOR
RT3	PIPE TEMP. SENSOR
XS8-9	CONNECTORS
XP8-9	CONNECTORS
CN100-208	P.C.BOARD SOCKETS
K1	TEMP. PROTECT SWITCH
RT4	ROOM TEMP. SENSOR
XT3	5-WAY TERMINAL
T5	TRANSFORMER



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

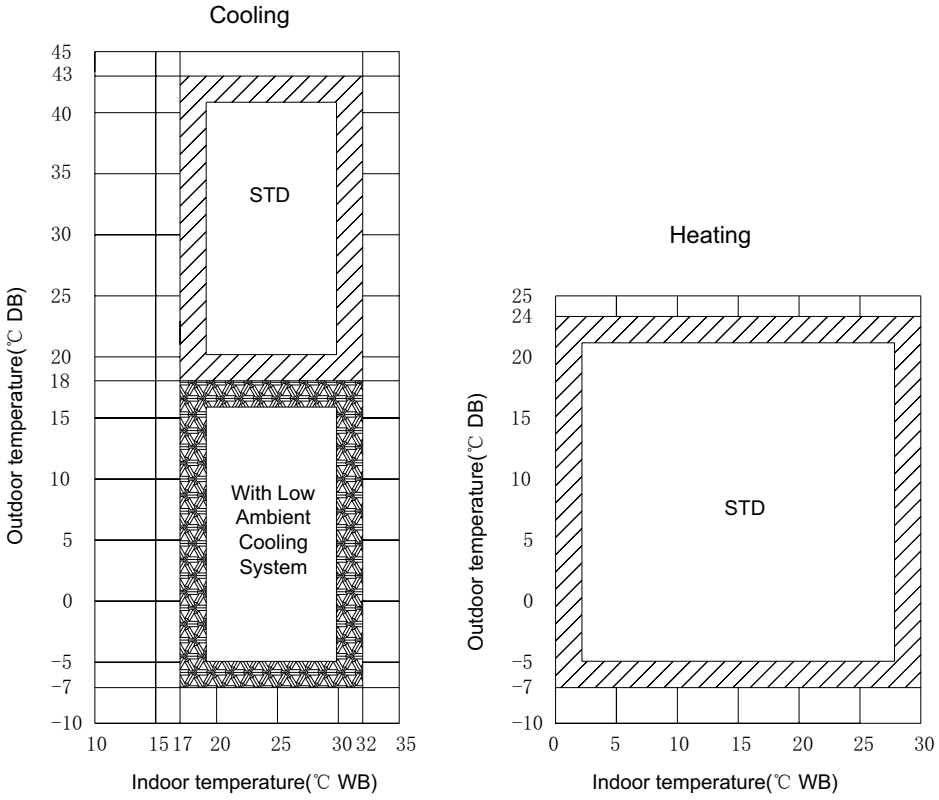
202075890205

5. Electric Characteristics

Model	Outdoor Unit			
	Hz	Voltage	Min.	Max.
CFT 35A-Ro	50	220~240V	198V	254V
CFT 50A-Ro	50	220~240V	198V	254V
CFT 70A-Ro	50	220~240V	198V	254V
CFT 100A-Ro	50	380~420V	342V	440V
CFT 140A-Ro	50	380~420V	342V	440V
CFT 170A-Ro	50	380~420V	342V	440V

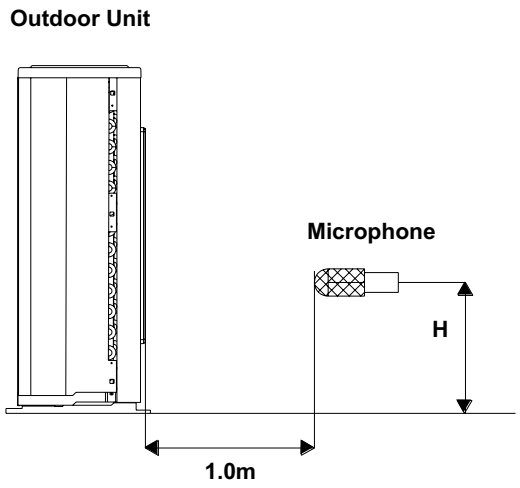
6. Operation Limits

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



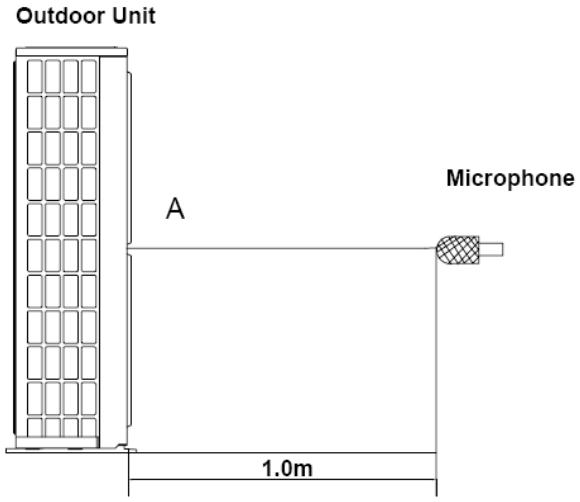
7. Sound Levels

12000Btu/h-48000Btu/h



Note: H= 0.5 × height of outdoor unit

60000Btu/h



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

Model	Noise level dB(A)
CFT 35A-Ro	43
CFT 50A-Ro	54
CFT 70A-Ro	55
CFT 100A-Ro	57
CFT 140A-Ro	59
CFT 170A-Ro	59

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.

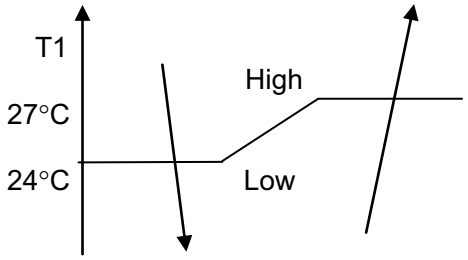
(2) Temperature setting function is disabled, and no setting temperature is displayed.

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

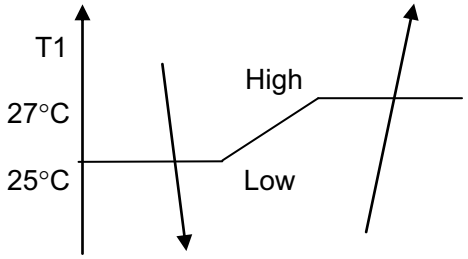
(4) The louver operates same as in cooling mode.

(5) Auto fan:

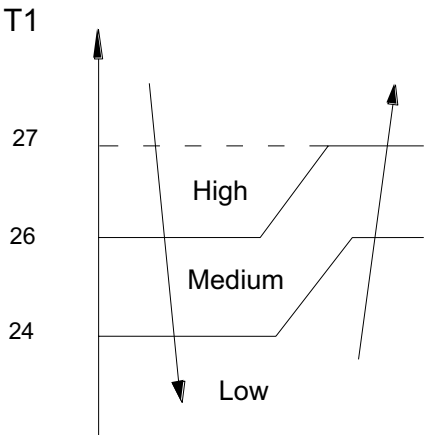
Big Cassette



Compact Cassette



Others type



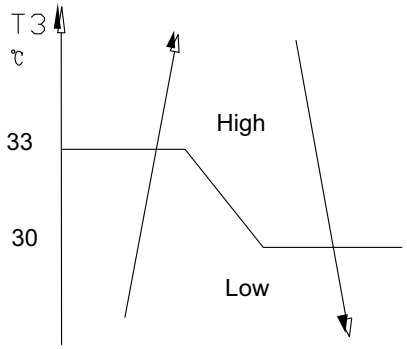
1.3.2 Cooling Mode

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:

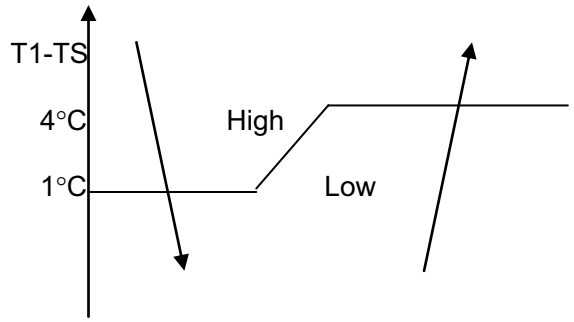


1.3.2.2 Indoor fan running rules

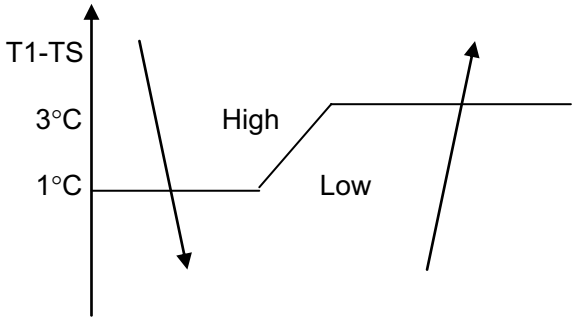
In cooling mode, indoor fan runs all the time and the speed can be selected as high, (medium), low and auto.

The auto fan:

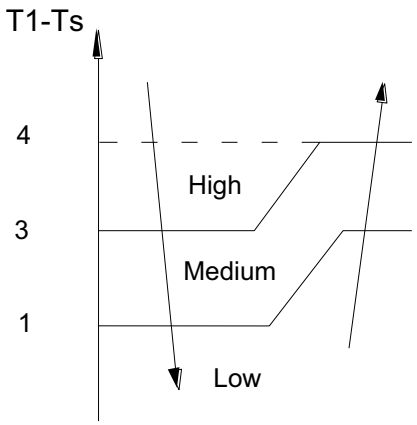
Big cassette:



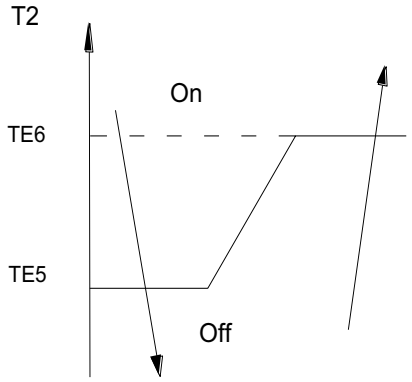
Compact cassette:



Others type

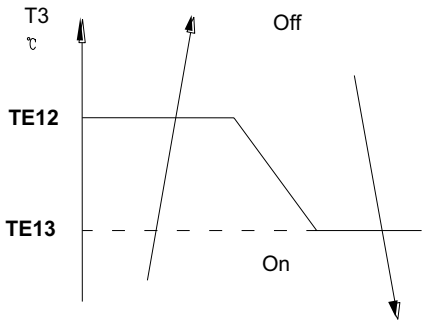


1.3.2.3 Low evaporator coil temperature T2 protection



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.

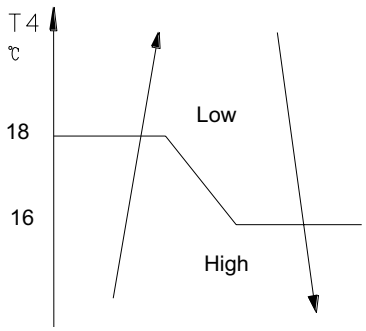
1.3.3 Heating Mode(For heat pump models)

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,

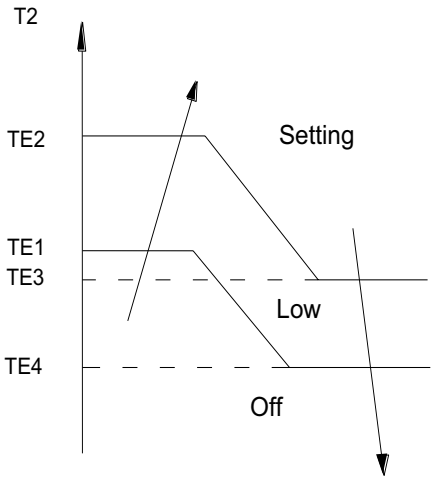
T2>TE2, the indoor fan will run at setting speed.

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

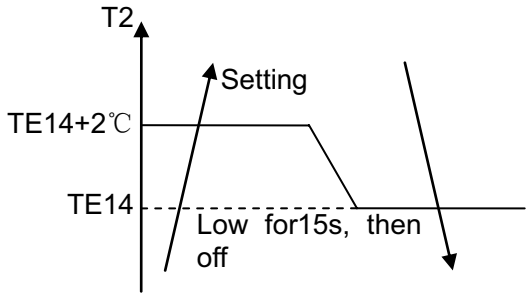
When T2 is getting lower,

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

T2<TE4, the indoor fan will shut off.

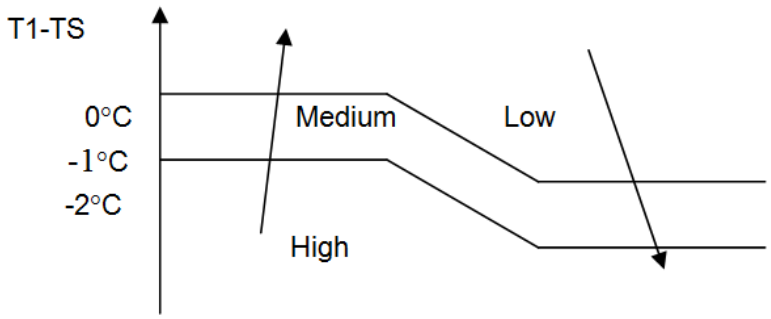


Only for DL: If the compressor stops caused by the room temperature rising, the indoor fan will follow the below rules. During this period, the anti-cold-wind is disabled.

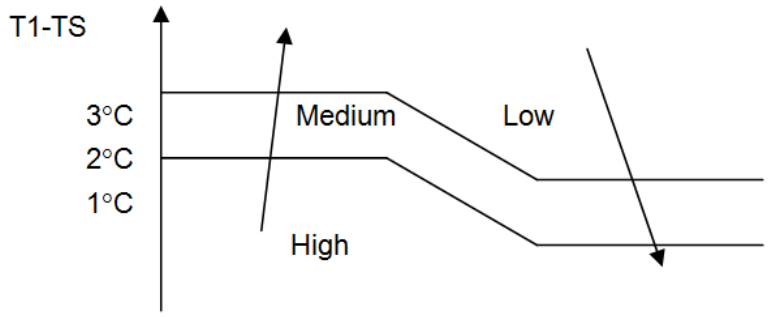


Auto fan action:

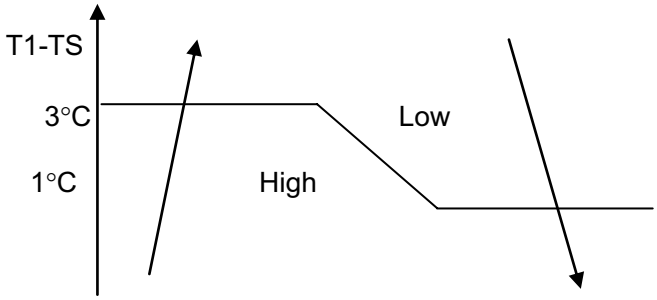
For DL: floor installation



For DL ceiling installation & duct::



For cassette:



1.3.3.3 Defrosting mode：

For 1-phase outdoor units:

- **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.

- **Condition of ending defrosting:**

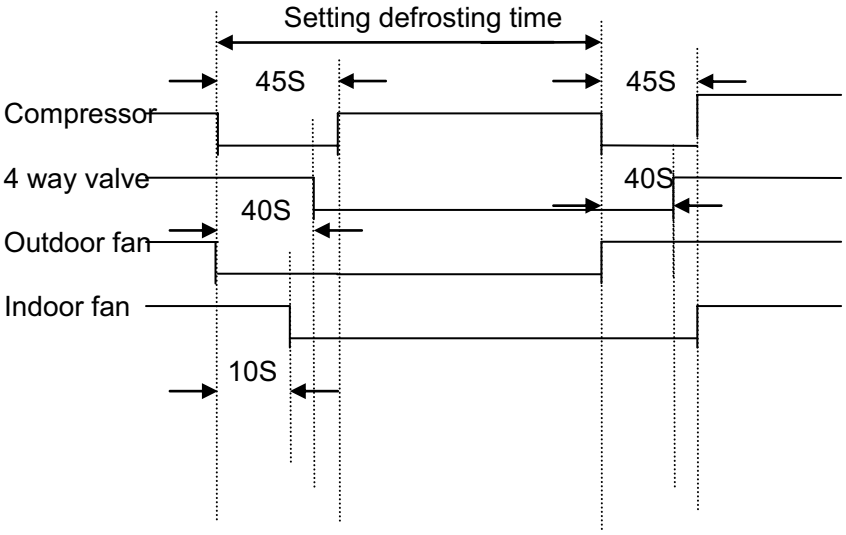
If any one of the following items is satisfied, the defrosting will terminate and the machine will turn to normal heating mode.

A: T3 rises to be higher than 20℃.

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

- **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:

- **Condition of defrosting:**

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

- **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℃.

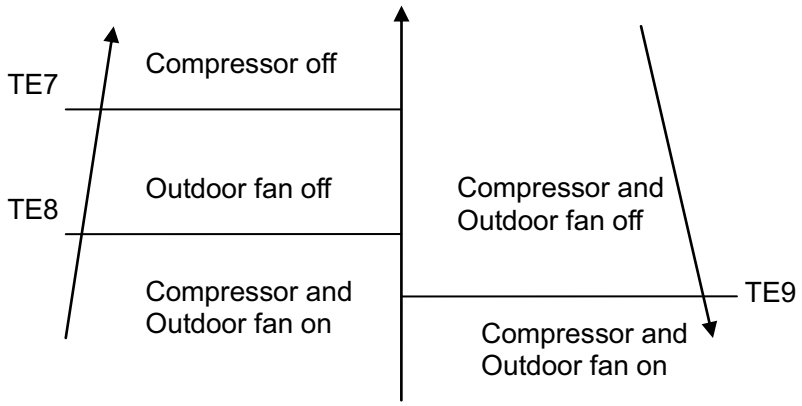
B: The machine has run for 10 minutes in defrosting.

- **Defrosting action：**

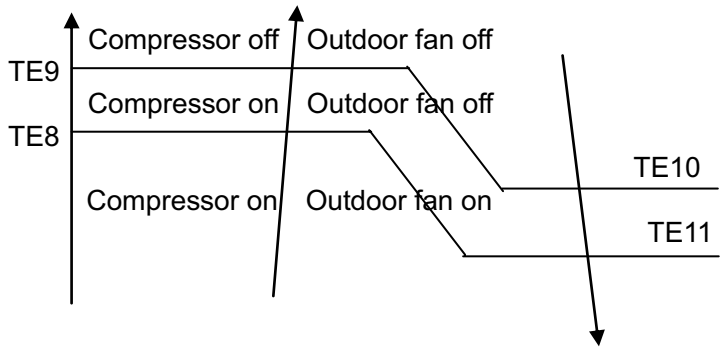
The compressor is running, and 4-way valve and outdoor fan stop. The indoor fan works as anti-cold wind procedure. When defrosting is over, the compressor keeps running and the 4-way valve and outdoor fan will start up.

1.3.3.4 High evaporator coil temp.T2 protection:

For DL:



For duct & 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 duct & 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:

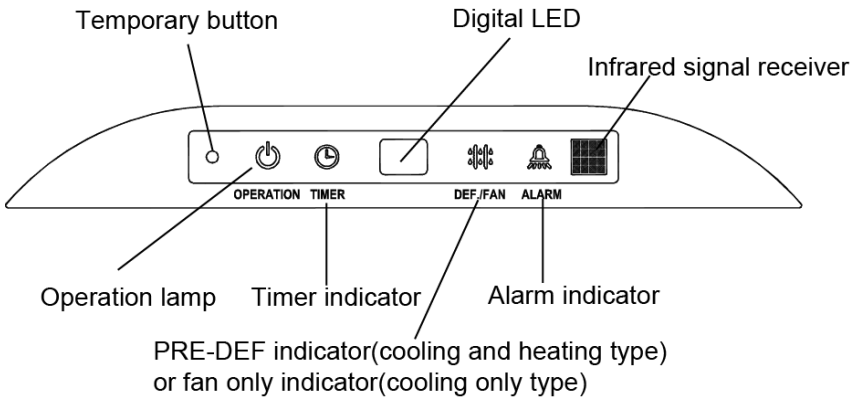
If the error disappears in 3 minutes, the drain pump will work as normal state. (if it is necessary to turn off the pump, it will be off in 1 minute delay.)

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.

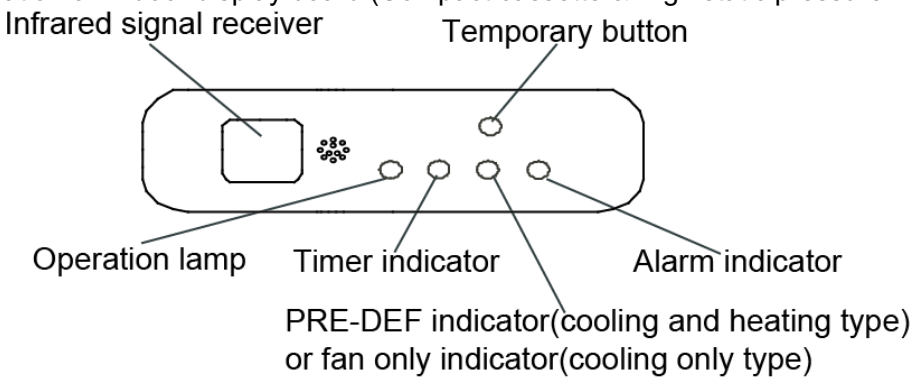
2. Troubleshooting

2.1 Display board

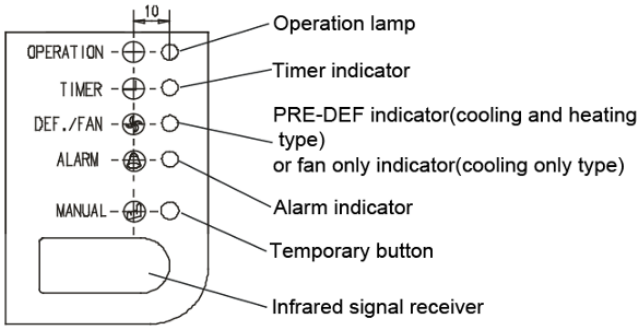
2.1.1 Icon explanation on indoor display board (Big cassette).



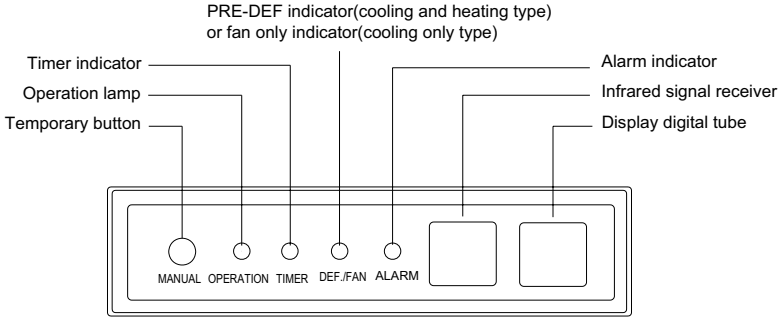
2.1.2 Icon explanation on indoor display board (Compact cassette & High static pressure Duct).



2.1.3 Icon explanation on indoor display board (Ceiling & Floor)



2.1.4 Icon explanation on indoor display board (A5 Duct)



2.2. Self-diagnosis

Indoor unit's LED indication

(1) For the Big Four-way cassette & the A5 Duct

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 the other types 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

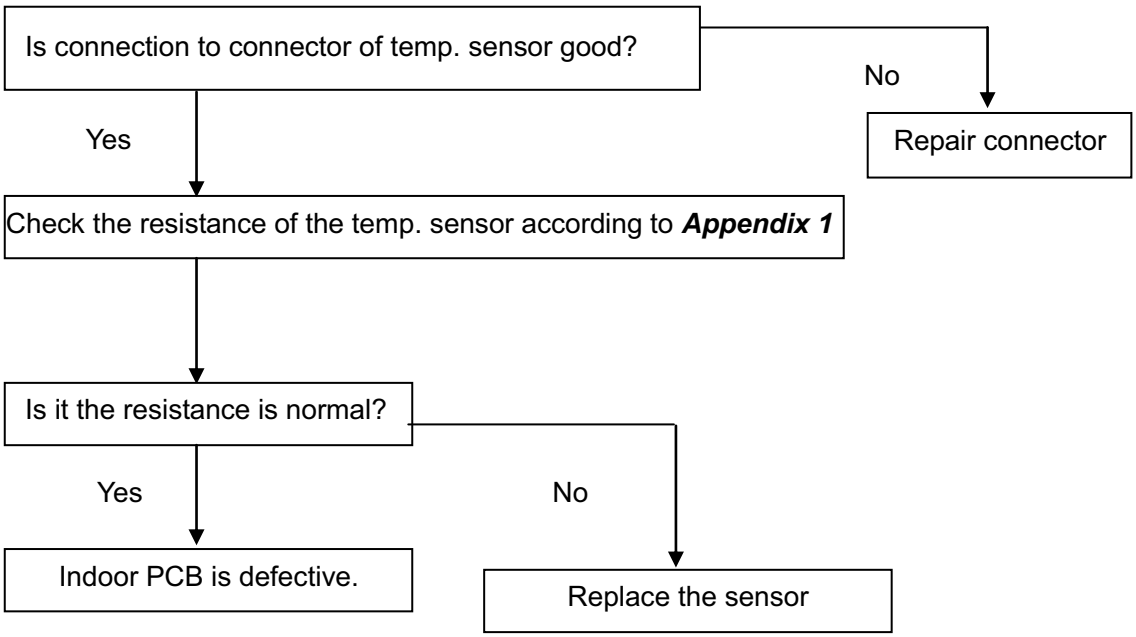
Note:

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

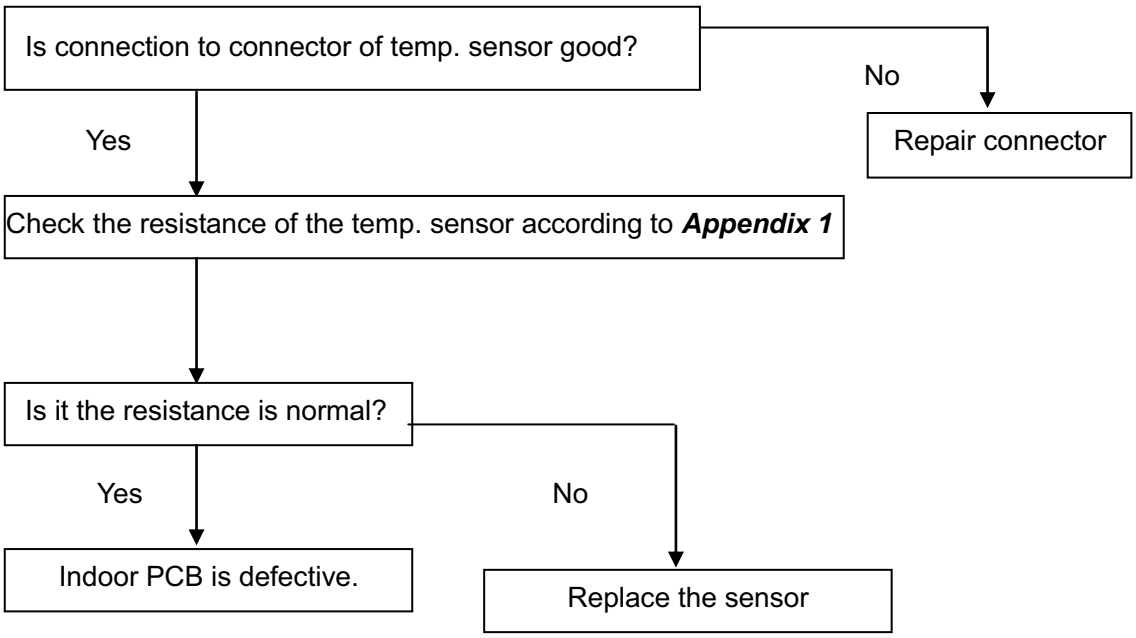
2.3. Solving steps for typical malfunction

(1) For indoor unit

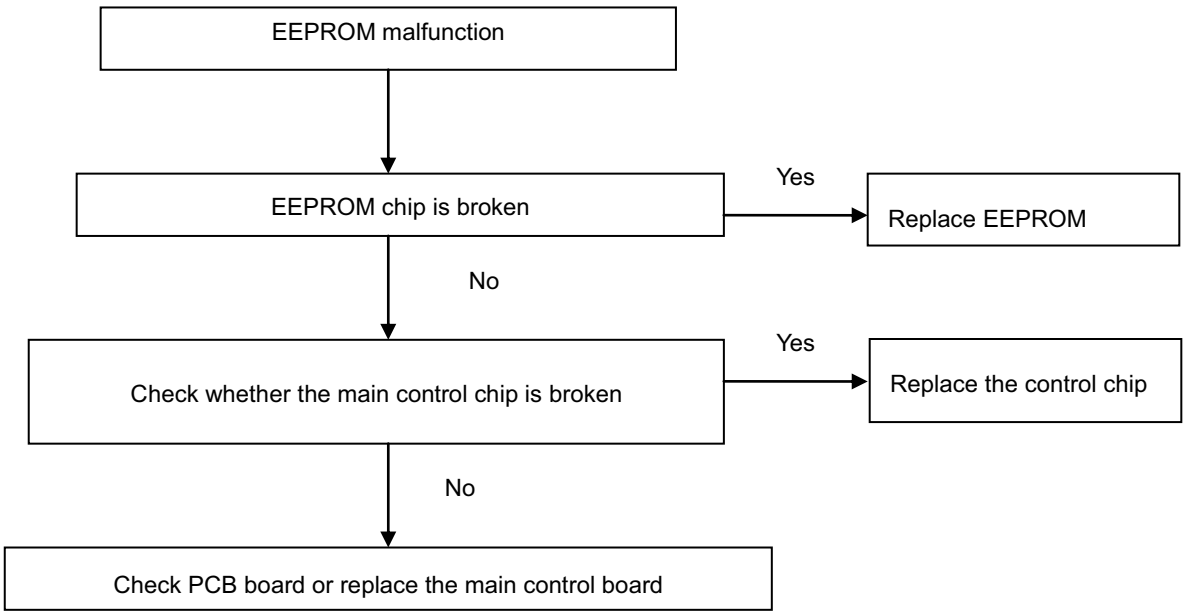
a. Indoor room temperature T1 and sensor evaporator temperature sensor T2 is abnormal



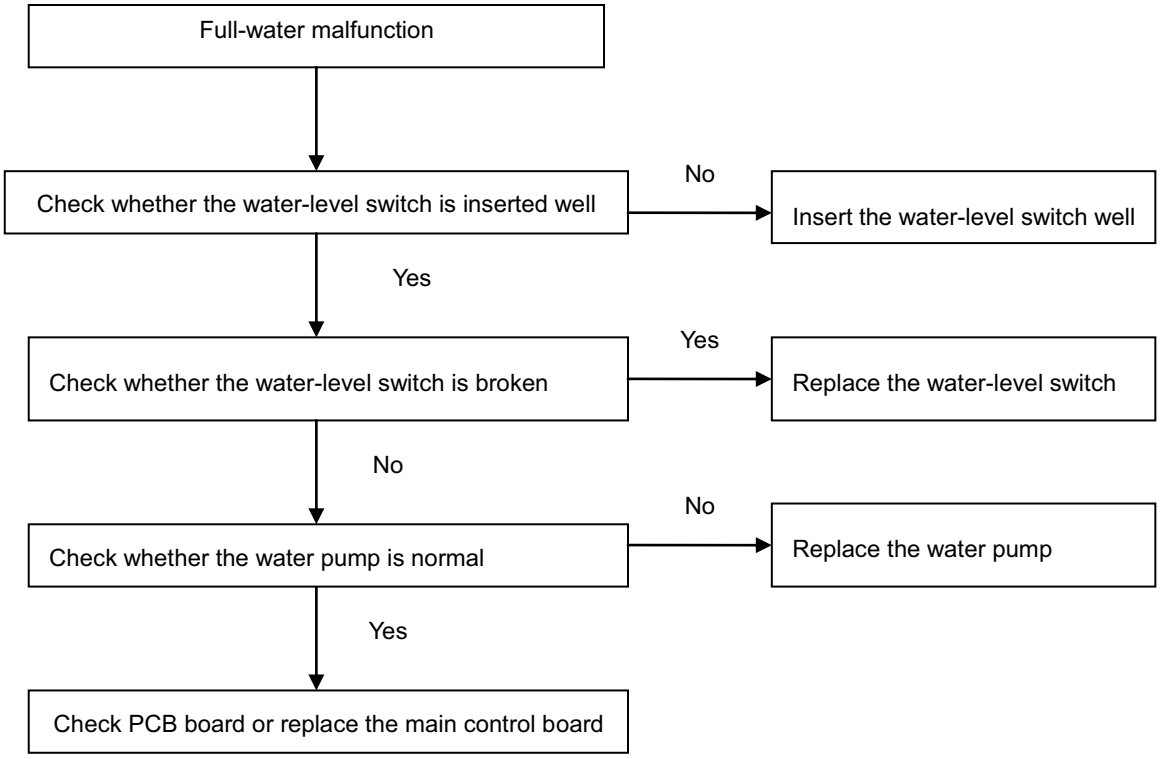
b. Condenser temperature sensor T3 is abnormal



c. EEPROM malfunction

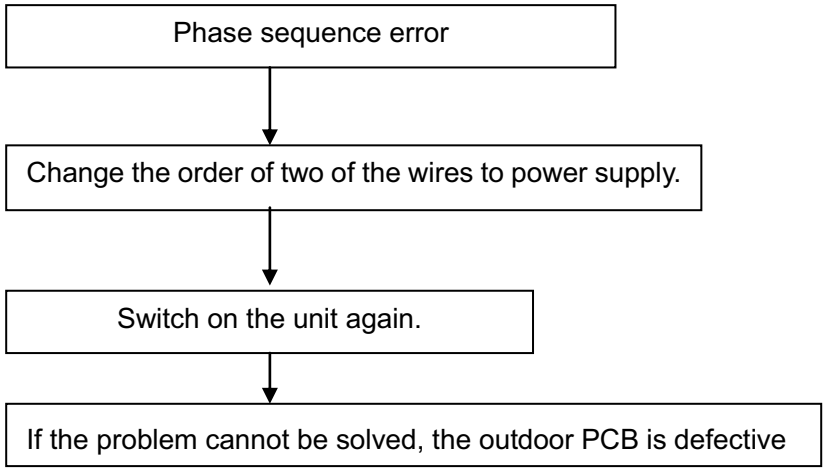


f. Full-water malfunction

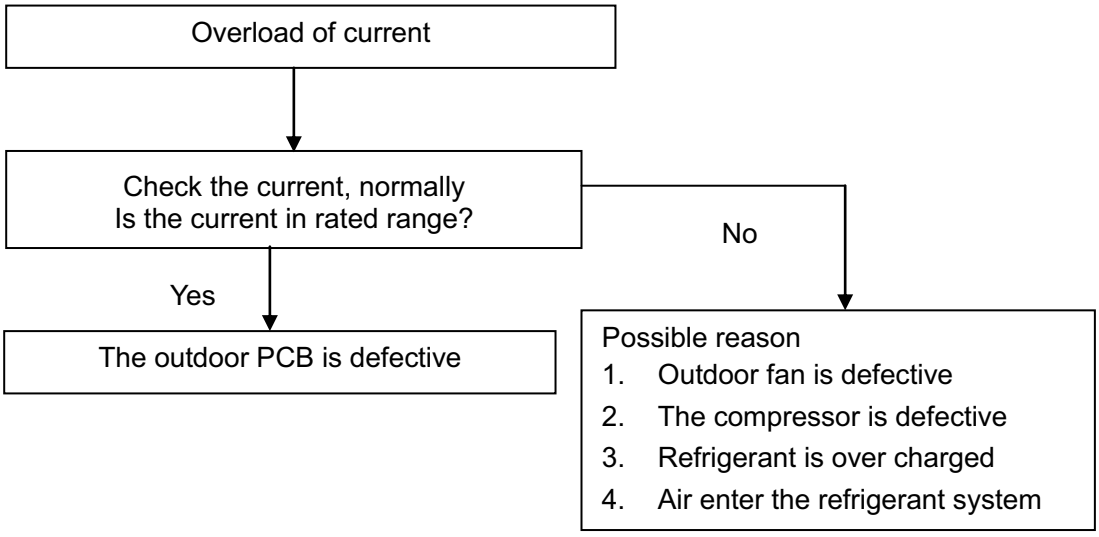


(2) For the outdoor unit

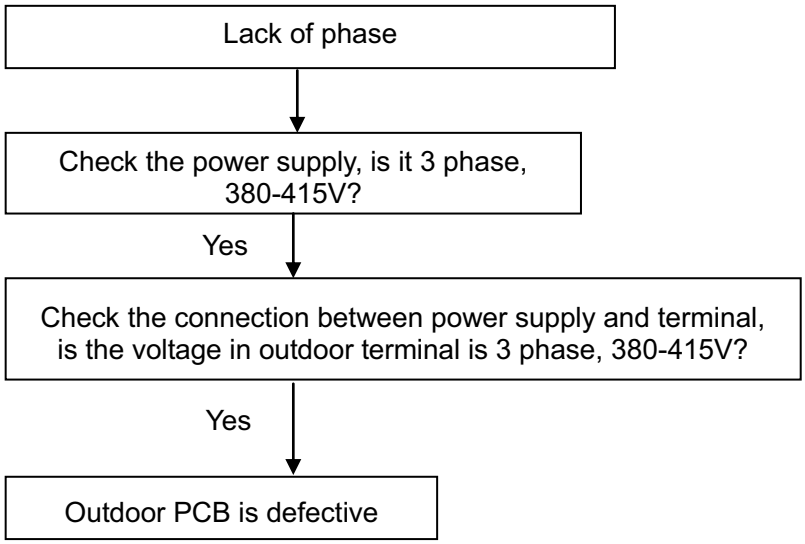
a. Phase sequence error:



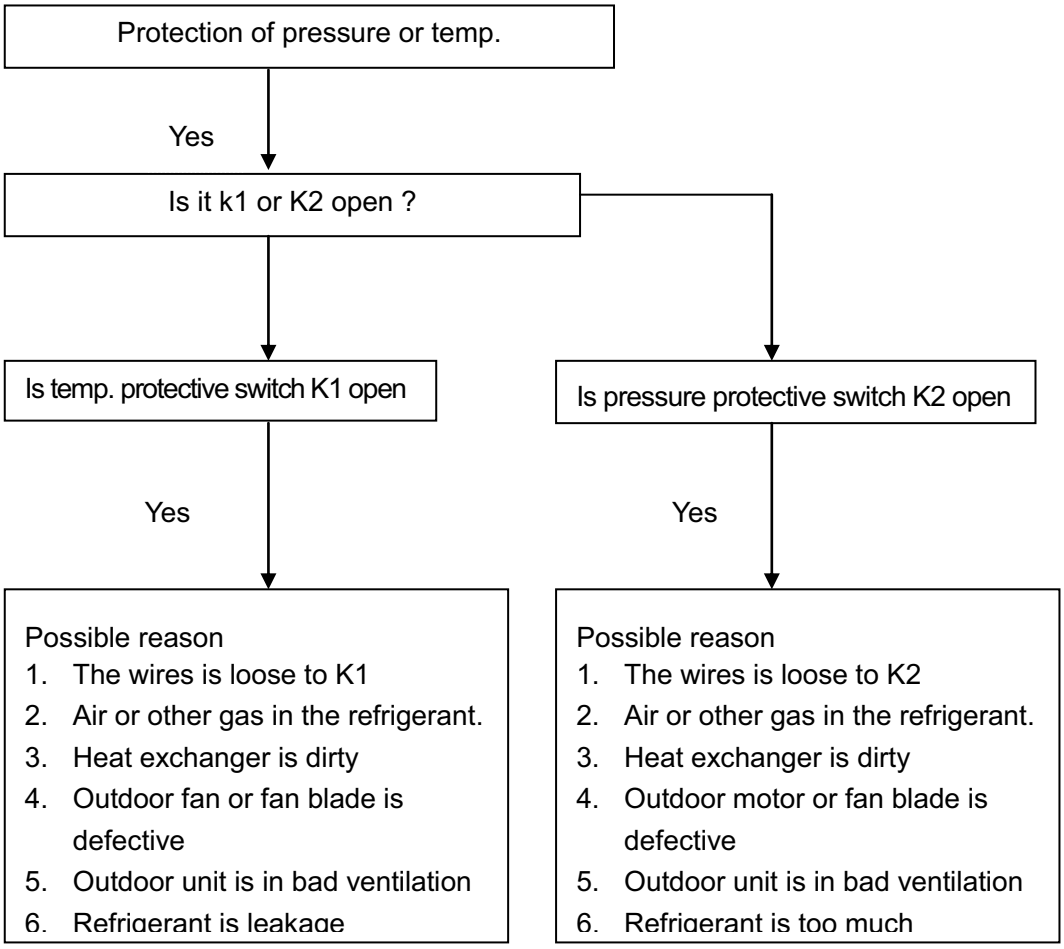
b. Overload of current



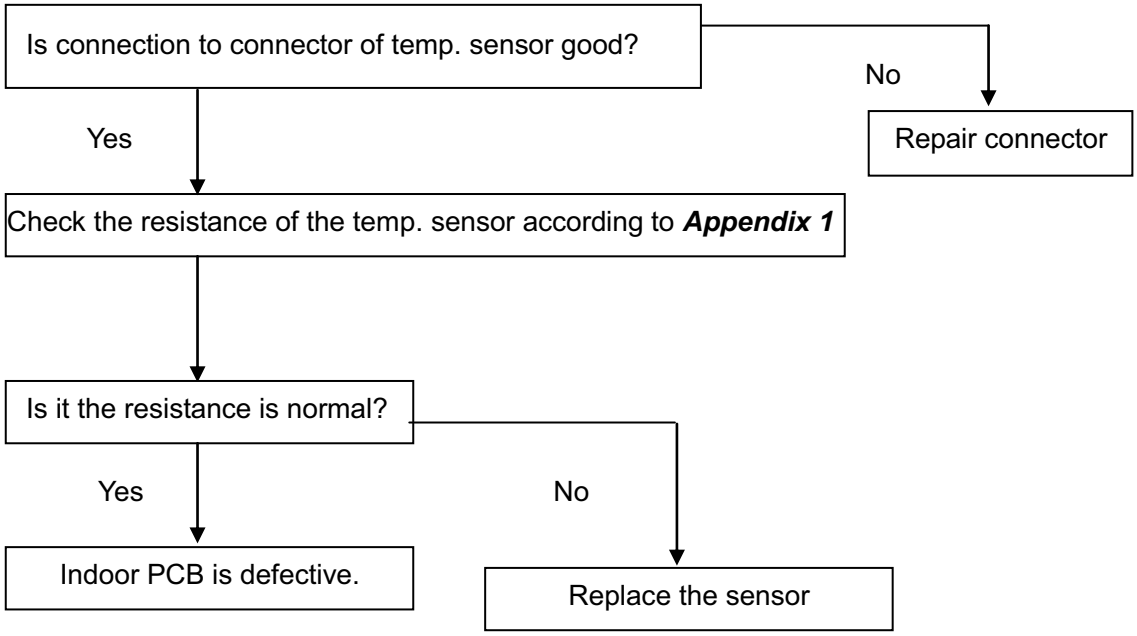
c. Lack of phase



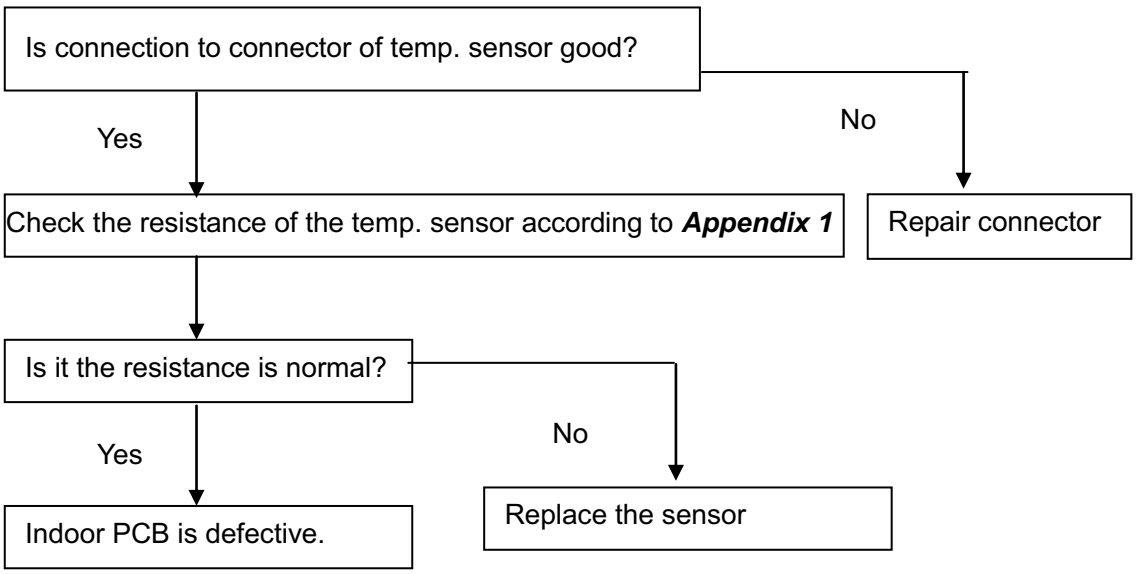
d. Protection of pressure or temp.



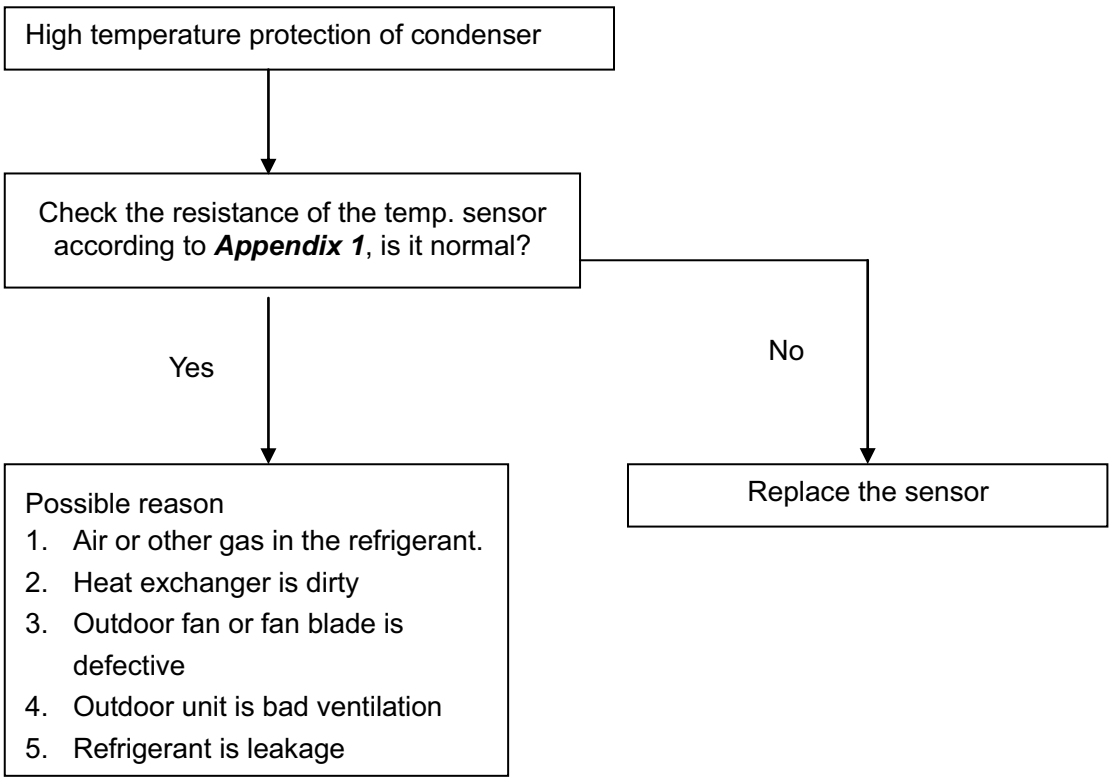
e. Open-circuit and short-circuit trouble of T3



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