Midea R410A Tropical ClimaCreator Series Rooftop Package 220V 3Ph 60Hz Technical Manual

Content

Part. 1 General information

1. Product lineup

Nominal ton	Model	Function	Air outlet	Power supply
7.5	MRCT-075CWN1-D(C)	Cooling only	Side discharge	
10	MRCT-100CWN1-D(C)	Cooling only	Side discharge	
15	MRCT-150CWN1-D(C)	Cooling only	Side discharge	220V 3Ph 60Hz
20	MRCT-200CWN1-D(C)	Cooling only	Side discharge	
25	MRCT-250CWN1-D(C)	Cooling only	Side discharge	

Notes: Please refer to specification tables for accurate cooling capacity with kW or Btu/h.

2. External Appearances

7.5ton

10ton

15ton

20ton

25ton

3. Nomenclatures

M   R   C   T – 075   C   W   N1 – D   (C)

Product design code

Power supply: 220V, 3Ph, 60Hz

Refrigerant type: R410A

Wired controller

Cooling only type

Nominal cooling capacity

xxx: xxx×0.1ton (7.5ton)

Tropical application

Side discharge type

Rooftop package unit

Midea
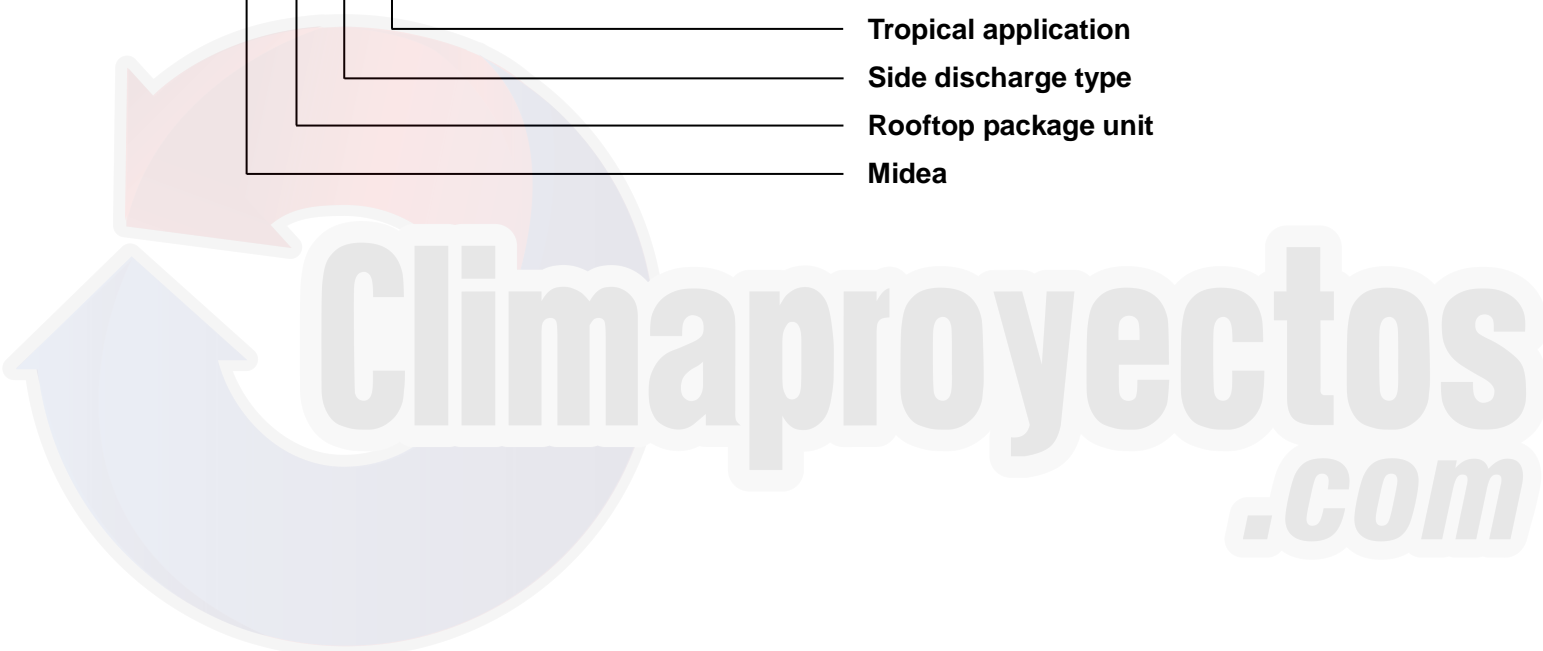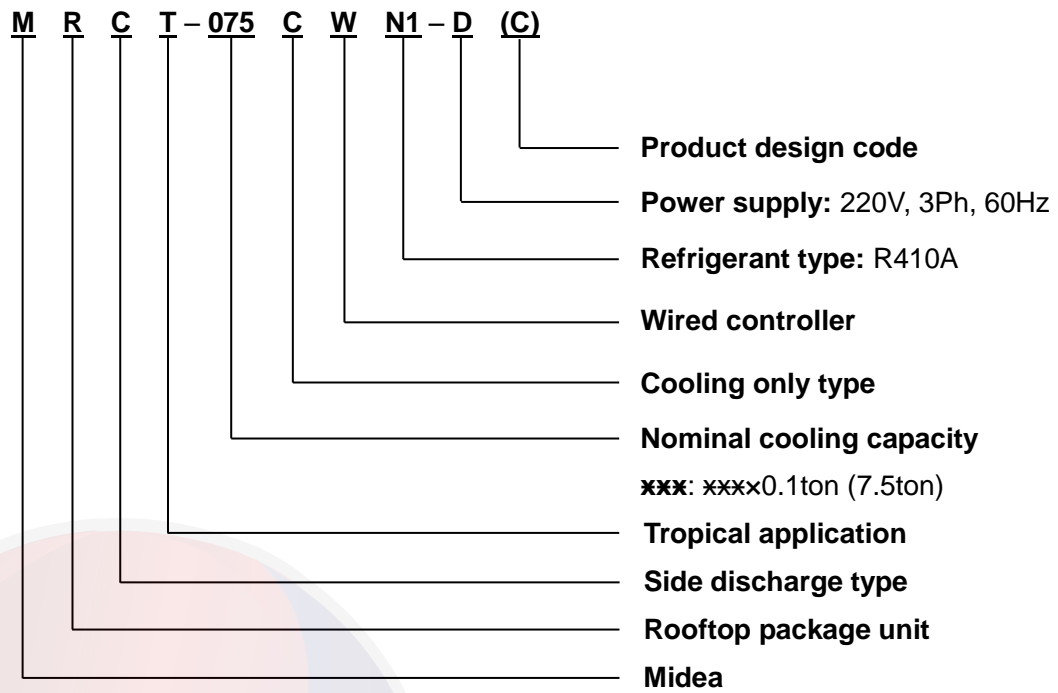
Part. 2 Performances

1. Features

✧ Design flexibility.

Compact design and flanges of air flow inlet and outlet as standard. It is suitable for installation in rooftop and ground.
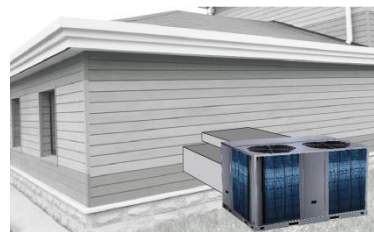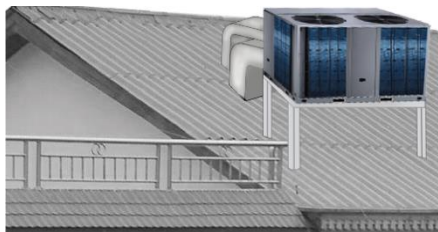
✧ Durable construction.

Pre-painted exterior cabinet panels pass 1000 hours salt spray test for durability. Weather-resistant construction with capped steams and sloped top panels design.

The rooftop package air conditioners with special anti-corrosion treatment are suitable for seaside areas or the areas exposed to acidic substances. (It should be customized.)

✧ Reliable scroll compressor.

Famous brand compressor, it is more reliable. No complex internal suction and discharge valves for quieter operation and higher reliability. Compact and light-weight design, fewer moving parts design.

✧ Adjustable pulley

Through changing the working pitch diameter of the pulley mounted on driver shaft, in turn the revolutions per minute of the driven shaft will increase or decrease to change air volume.

✧ Multi-protection design.

Multi-measurement can ensure units operate normally and reliably:

System current protection;

High/low-pressure switch protection;

Temperature sensor on/off protection, etc.

The three-phase protector can be customized.

✧ Easy to installation.

Removable access door on the electric box is standard. It is easy to move the cover of the electric box. Only connect the wires of power supply, and no need to connect any signal wires. Reserved external drainage port, quickly and accurately connect the rubber drainage pipe.

✧ The unit provides external pressure gauge ports for convenient and fast checking system pressure without removing the panel.

✧ System self-diagnostic function.

Press the Check button in Main PCB board, and the LED display of PCB board in unit will display the normal checking code. If the unit is in running with abnormal operation, the LED display will show the error code.

✧ EHK (Electrical heater kits) and air intake filter as optional.

✧ Wired controller as standard. Besides Midea controller, other brand thermostat can be matched as optional solution.

✧ Centralized control function can be achieved through the centralized controller as optional. MD-NIM01 should be connected between the rooftop package units and centralized controller.
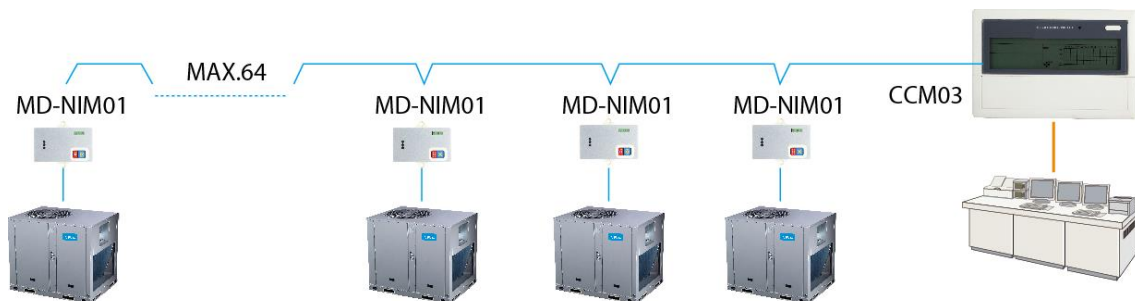
2. Specifications

Nominal ton		(Ton)	7.5	10
Model			MRCT-075CWN1-D(C)	MRCT-100CWN1-D(C)
Power supply		\	220V, 3Ph, 60Hz	220V, 3Ph, 60Hz
Cooling 1	Cooling capacity	Btu/h	89,000	120,000
		kW	26.1	35.2
	Power input	kW	7.8	10.7
Cooling 2	Cooling capacity	Btu/h	69.6	100.2
		kW	20.4	29.37
	Power input	kW	8.6	12.5
Max. input consumption		kW	11.3	17.5
Max. current		A	42.4	57.4
Performance	Indoor air flow	CFM	2,700	4,120
	ESP	Pa	Default: 80, 0~250	Default: 90, 0~275
	EER 1	Btu/h.W	11.4	11.2
	EER 2	Btu/h.W	8.1	8.0
Indoor coil	Number of rows	\	3	4
	Fin spacing	mm	1.3	1.5
	Fin type	\	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube diameter	mm	Φ7	Φ7
	Tube type	\	Inner grooved copper pipe	Inner grooved copper pipe
Indoor fan	Type / Quantity	\	Centrifugal / 1	Centrifugal / 1
	Drive type	\	Direct	Belt
	Motor quantity	\	1	1
	Motor model	\	YDK750-6E	YE2-100L1-4-2.2KW
	Motor capacitor	\	25μF/450V	\
	Motor speed	RPM	1,080/1,010/930	1,700
Compressor	Type / Quantity	\	Scroll / 1	Scroll / 1
	Model	\	ZP91KCE-TF5-522	ZP122KCE-TF5-522
	Brand	\	Copeland	Copeland
	Capacity	W	26,600	36,400
	Input	W	8,230	11,000
	RLA	A	30.7	37.9
	LRA	A	191	240
	Refrigerant oil	ml	1,774	2,513
Outdoor coil	Number of rows	\	3	2.5
	Fin spacing	mm	1.5	1.5
	Fin type	\	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube diameter	mm	Φ7	Φ7
	Tube type	\	Inner grooved copper pipe	Inner grooved copper pipe

Continued:

Nominal ton		(Ton)	7.5	10
Model			MRCT-075CWN1-D(C)	MRCT-100CWN1-D(C)
Outdoor fan	Type / Quantity	\	Axial / 1	Axial / 1
	Drive type	\	Direct	Direct
	Motor model	\	YS1100-6C	YS1100-6C
	Fan speed	RPM	1,100	1,100
Refrigerant	Type / Volume	\	R410A / 3.8kg	R410A / 4.1kg
	Control	\	Throttle valve	Throttle valve
Sound pressure level		dB(A)	75.6	75.7
Wired controller		\	KJR-25B	KJR-12B/dP(T)-E
Centralized controller (Optional)		\	No	Yes
Ambient temperature (Cooling)		°C	10~52	10~52
System stage		\	1	1
Dimensions	Net (W×H×D)	mm	1,475×840×1,130	1,483×1,231×1,138
	Packing (W×H×D)	mm	1,495×870×1,150	1,500×1,255×1,155
Weight	Net	kg	235	325
	Gross	kg	240	335

Notes:

1. Nominal ton only for reference. Cooling capacity as per specifications;

2. Cooling capacity test condition: (1)

   Outdoor ambient temperature: 35°C, indoor temperature: 26.7°CDB, 19.4°CWB;

   Cooling capacity test condition: (2)

   Outdoor ambient temperature: 46.1°C, indoor temperature: 26.7°CDB, 19.4°CWB;

3. Units are suitable for operation to ±20% of nominal indoor air flow.

4. ESP: external static pressure;

5. Specifications are subject to change without prior notice for product improvement.

Nominal ton		(Ton)	15	
Model			**MRCT-150CWN1-D(C)**	
Power Supply		\	220V, 3Ph, 60Hz	
Cooling 1	Cooling capacity	Btu/h	180,000	
		kW	52.8	
	Power input	kW	16.2	
Cooling 2	Cooling capacity	Btu/h	146,000	
		kW	42.79	
	Power input	kW	18.5	
Max. input consumption		kW	25.0	
Max. current		A	88.3	
Performance	Indoor air flow	CFM	6,450	
	ESP	Pa	Default: 110; 0~325	
	EER 1	Btu/h.W	11.1	
	EER 2	Btu/h.W	7.9	
Indoor coil	Number of rows	\	4+4	
	Fin spacing	mm	1.3+1.3	
	Fin type	\	Hydrophilic aluminum fin	
	Tube diameter	mm	Φ7	
	Tube type	\	Inner grooved copper pipe	
Indoor fan	Type / Quantity	\	Centrifugal / 1	
	Drive type	\	Belt	
	Motor quantity	\	1	
	Motor model	\	YE2-112M-4-4.0KW	
	Motor capacitor	\	\	
	Motor speed	RPM	1,728	
Compressor	Type / Quantity	\	Scroll / 2	
	Model	\	ZP57K3E-TF5-522	ZP122KCE-TF5-522
	Brand	\	Copeland	Copeland
	Capacity	W	17,000	36,400
	Input	W	5,500	11,000
	RLA	A	22.9	37.9
	LRA	A	155	240
	Refrigerant oil	ml	1,656	2,513
Outdoor coil	Number of rows	\	3.5	
	Fin spacing	mm	1.6	
	Fin type	\	Hydrophilic aluminum fin	
	Tube diameter	mm	Φ8	
	Tube type	\	Inner grooved copper pipe	

Continued:

Nominal ton		(Ton)	15
Model			MRCT-150CWN1-D(C)
Outdoor fan	Type	\	Axial
	Quantity	\	1
	Drive type	\	Direct
	Motor quantity	\	1
	Motor model	\	YS1100-6C
	Fan speed	RPM	1,100
Refrigerant	Type	\	R410A
	Volume	kg	4.6+2.2
	Control	\	Throttle valve
Sound pressure level		dB(A)	76.8
Wired controller		\	KJR-12B/dP(T)-E
Centralized controller (Optional)		\	Yes
Ambient temperature (Cooling)		°C	10~52
System stage		\	2
Dimensions	Net (W×H×D)	mm	1,965×1,230×1,130
	Packing (W×H×D)	mm	1,995×1,255×1,160
Weight	Net	kg	470
	Gross	kg	485

Notes:

1. Nominal ton only for reference. Cooling capacity as per specifications;

2. Cooling capacity test condition: (1)

   Outdoor ambient temperature: 35°C, indoor temperature: 26.7°CDB, 19.4°CWB;

   Cooling capacity test condition: (2)

   Outdoor ambient temperature: 46.1°C, indoor temperature: 26.7°CDB, 19.4°CWB;

3. Units are suitable for operation to ±20% of nominal indoor air flow.

4. ESP: external static pressure;

5. Specifications are subject to change without prior notice for product improvement.

Nominal ton		(Ton)	20	
Model			**MRCT-200CWN1-D(C)**	
Power supply		\	220V, 3Ph, 60Hz	
Cooling 1	Cooling capacity	Btu/h	240,000	
		kW	70.3	
	Power input	kW	21.9	
Cooling 2	Cooling capacity	Btu/h	200,500	
		kW	58.76	
	Power input	kW	25.2	
Max. input consumption		kW	36.0	
Max. current		A	124.6	
Performance	Indoor air flow	CFM	8,580	
	ESP	Pa	Default: 120; 0~400	
	EER 1	Btu/h.W	11.0	
	EER 2	Btu/h.W	8.0	
Indoor coil	Number of rows	\	4	
	Fin spacing	mm	1.3	
	Fin type	\	Hydrophilic aluminum fin	
	Tube diameter	mm	Φ7	
	Tube type	\	Inner grooved copper pipe	
Indoor fan	Type / Quantity	\	Centrifugal / 2	
	Drive type	\	Belt	
	Motor quantity	\	1	
	Motor model	\	YE2-132S-4-5.5KW	
	Motor speed	RPM	1,730	
Compressor	Type / Quantity	\	Scroll / 2	
	Model	\	ZP122KCE-TF5-522	ZP122KCE-TF5-522
	Brand	\	Copeland	Copeland
	Capacity	W	36,400	36,400
	Input	W	11,000	11,000
	RLA	A	37.9	37.9
	LRA	A	240	240
	Refrigerant oil	ml	2,513	2,513
Outdoor coil	Number of rows	\	3+3	
	Fin spacing	mm	1.5+1.5	
	Fin type	\	Hydrophilic aluminum fin	
	Tube diameter	mm	Φ7	
	Tube type	\	Inner grooved copper pipe	

Continued:

Nominal ton		(Ton)	20
Model			MRCT-200CWN1-D(C)
Outdoor fan	Type	\	Axial
	Quantity	\	2
	Drive type	\	Direct
	Motor quantity	\	2
	Motor model	\	YS2200-6C
	Fan speed	RPM	1,150
Refrigerant	Type	\	R410A
	Volume	kg	5.4+5.4
	Control	\	Throttle valve
Sound pressure level		dB(A)	78.3
Wired controller		\	KJR-12B/dP(T)-E
Centralized controller (Optional)		\	Yes
Ambient temperature (Cooling)		°C	10~52
System stage		\	2
Dimensions	Net (W×H×D)	mm	1,670×1,247×2,192
	Packing (W×H×D)	mm	1,695×1,284×2,212
Weight	Net	kg	670
	Gross	kg	700

Notes:

1. Nominal ton only for reference. Cooling capacity as per specifications;

2. Cooling capacity test condition: (1)

   Outdoor ambient temperature: 35°C, indoor temperature: 26.7°CDB, 19.4°CWB;

   Cooling capacity test condition: (2)

   Outdoor ambient temperature: 46.1°C, indoor temperature: 26.7°CDB, 19.4°CWB;

3. Units are suitable for operation to ±20% of nominal indoor air flow.

4. ESP: external static pressure;

5. Specifications are subject to change without prior notice for product improvement.

Nominal ton		(Ton)	25	
Model			**MRCT-250CWN1-D(C)**	
Power supply		\	220V, 3Ph, 60Hz	
Cooling 1	Cooling capacity	Btu/h	300,000	
		kW	87.9	
	Power input	kW	27.8	
Cooling 2	Cooling capacity	Btu/h	251,700	
		kW	73.77	
	Power input	kW	37.9	
Max. input consumption		kW	45.0	
Max. current		A	150.0	
Performance	Indoor air flow	CFM	11,138	
	ESP	Pa	Default: 250; 125~450	
	EER 1	Btu/h.W	10.8	
	EER 2	Btu/h.W	6.6	
Indoor coil	Number of rows	\	4	
	Fin spacing	mm	1.6	
	Fin type	\	Hydrophilic aluminum fin	
	Tube diameter	mm	Φ8	
	Tube type	\	Inner grooved copper pipe	
Indoor fan	Type / Quantity	\	Centrifugal / 2	
	Drive type	\	Belt	
	Motor quantity	\	1	
	Motor model	\	YE2-132M-4-7.5KW	
	Motor speed	RPM	1,730	
Compressor	Type / Quantity	\	Scroll / 2	
	Model	\	ZP137KCE-TF5-522	ZP137KCE-TF5-522
	Brand	\	Copeland	Copeland
	Capacity	W	40,200	40,200
	Input	W	12,400	12,400
	RLA	A	53.6	53.6
	LRA	A	245	245
	Refrigerant oil	ml	3,253	3,253
Outdoor coil	Number of rows	\	3+2+3+2	
	Fin spacing	mm	1.5+1.5+1.5+1.5	
	Fin type	\	Hydrophilic aluminum fin	
	Tube diameter	mm	Φ7	
	Tube type	\	Inner grooved copper pipe	

Continued:

Nominal ton		(Ton)	25
Model			**MRCT-250CWN1-D(C)**
Outdoor fan	Type	\	Axial
	Quantity	\	2
	Drive type	\	Direct
	Motor quantity	\	2
	Motor model	\	YS2200-6
	Fan speed	RPM	1,130
Refrigerant	Type	\	R410A
	Volume	kg	6.7+6.7
	Control	\	Capillary
Sound pressure level		dB(A)	79.2
Wired controller		\	KJR-12B/dP(T)-E
Centralized controller (Optional)		\	Yes
Ambient temperature (Cooling)		°C	10~52
System stage		\	2
Dimensions	Net (W×H×D)	mm	2,320×1,245×2,220
	Packing (W×H×D)	mm	2,330×1,275×2,230
Weight	Net	kg	895
	Gross	kg	925

Notes:

1. Nominal ton only for reference. Cooling capacity as per specifications;

2. Cooling capacity test condition: (1)

   Outdoor ambient temperature: 35°C, indoor temperature: 26.7°CDB, 19.4°CWB;

   Cooling capacity test condition: (2)

   Outdoor ambient temperature: 46.1°C, indoor temperature: 26.7°CDB, 19.4°CWB;

3. Units are suitable for operation to ±20% of nominal indoor air flow.

4. ESP: external static pressure;

5. Specifications are subject to change without prior notice for product improvement.

3. Dimensions drawings

MRCT-075CWN1-D(C): (Unit: mm)

Hole for bottom installation

8-15×20

668

404

1,085

1,130

668

231

1,430

1,475

370

327

280

560

400

250

285

310

39

72

96

450

450

254

294

328

71

159

119

129

300

300

300

966

1,016

MRCT-100CWN1-D(C): (Unit: mm)

Hole for bottom installation   10-15×20

265   700   265   123

180

559

1,130

1,090

180

105

1435

1475

423

392

263

290

248

315

460

11.6

339

369

75

45

105

159

300   300   300

180

900

64

655

581

952

180

982

180

10

165

177

105

555

MRCT-150CWN1-D(C): (Unit: mm)

Maintain orifice
for air supply motor

Hole for bottom installation　　　　　　12-15×20

MRCT-200CWN1-D(C): (Unit: mm)

Maintain orifice for air supply motor

2,171

1,654

1,247

125

125

800

434

125

125

695

800

2,192

1,670

Compressor panel

Control panel

Horizontal supply opening

Horizontal return opening

Hole for bottom installation   14-15×20

MRCT-250CWN1-D(C): (Unit: mm)

Hole for bottom installation   16-15×20

4. Wiring diagrams

MRCT-075CWN1-D(C):
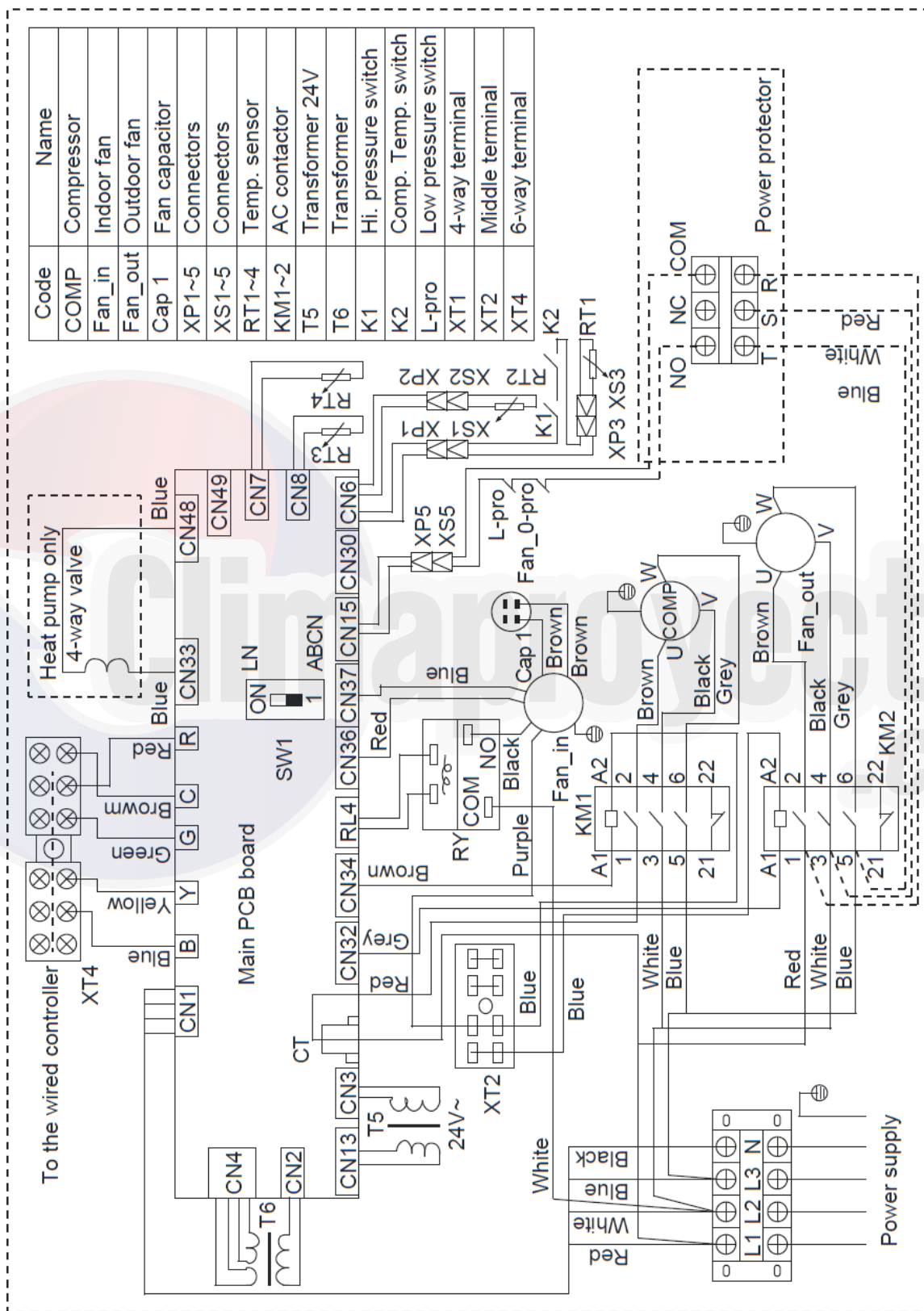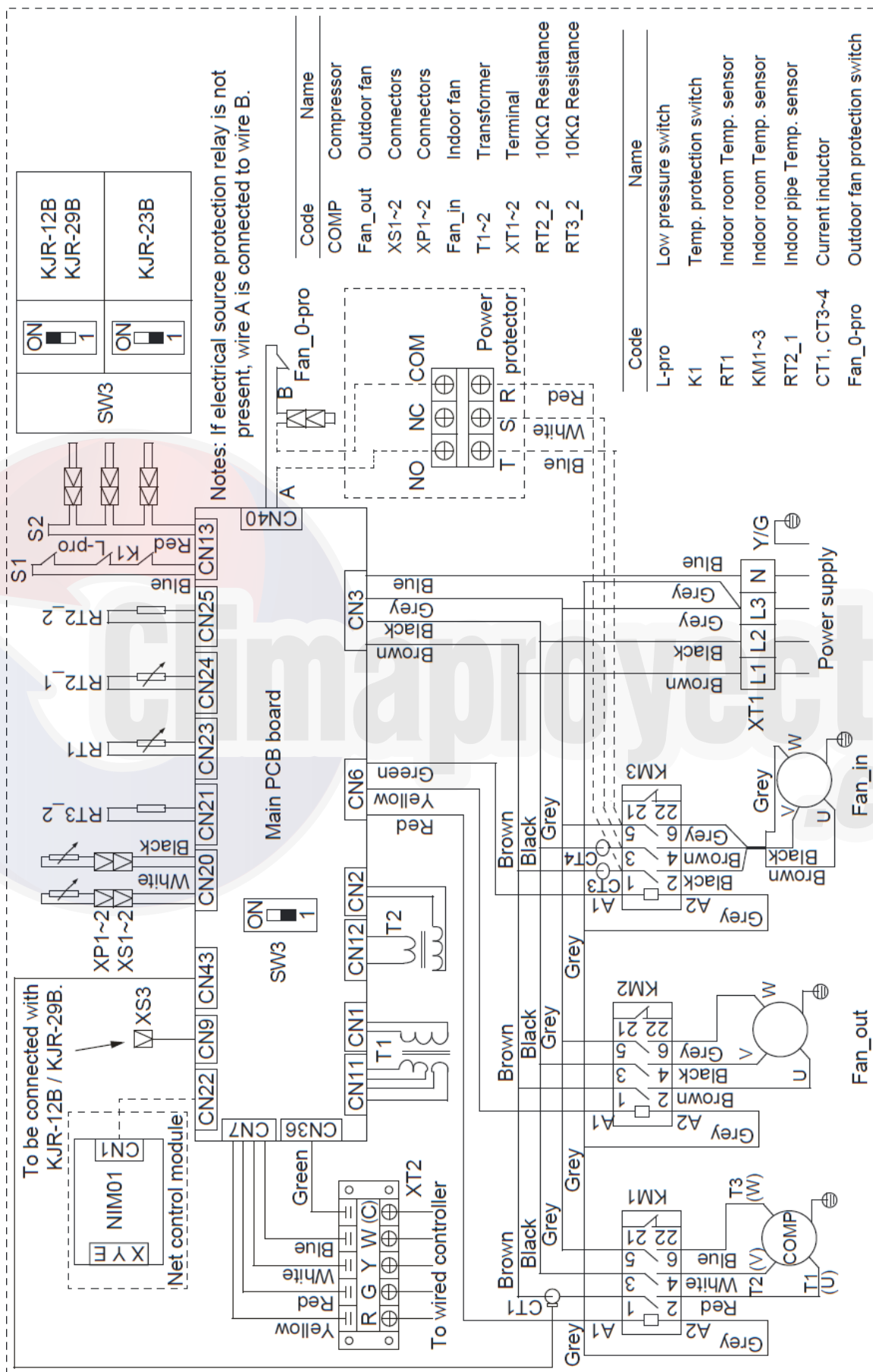
Code	Name
COMP	Compressor
Fan_in	Indoor fan
Fan_out	Outdoor fan
Cap 1	Fan capacitor
XP1~5	Connectors
XS1~5	Connectors
RT1~4	Temp. sensor
KM1~2	AC contactor
T5	Transformer 24V
T6	Transformer
K1	Hi. pressure switch
K2	Comp. Temp. switch
L-pro	Low pressure switch
XT1	4-way terminal
XT2	Middle terminal
XT4	6-way terminal

MRCT-100CWN1-D(C):

Code	Name
COMP	Compressor
Fan_out	Outdoor fan
XS1~2	Connectors
XP1~2	Connectors
Fan_in	Indoor fan
T1~2	Transformer
XT1~2	Terminal
RT2_2	10KΩ Resistance
RT3_2	10KΩ Resistance

Code	Name
L-pro	Low pressure switch
K1	Temp. protection switch
RT1	Indoor room Temp. sensor
KM1~3	Indoor room Temp. sensor
RT2_1	Indoor pipe Temp. sensor
CT1, CT3~4	Current inductor
Fan_0-pro	Outdoor fan protection switch

Notes: If electrical source protection relay is not present, wire A is connected to wire B.

MRCT-150CWN1-D(C):

The wiring diagram includes the following reference tables:

Code	Name
COMP A,B	Compressor
Fan_out	Outdoor fan
XS1~2	Connectors
XP1~2	Connectors
K1	Temp. protection switch
RT4	Outdoor Temp. sensor

Code	Name
Fan_in	Indoor fan
T1~2	Transformer
XT1~2	Terminal
RT3_1~2	Pipe Temp. sensor

Code	Name
L-pro	Low pressure switch
RT1	Indoor room Temp. sensor
KM1~4	Indoor room Temp. sensor
RT2_1~2	Indoor pipe Temp. sensor
CT1~4	Current inductor
H-pro	High pressure switch

Notes: If electrical source protection relay is not present, wire A is connected to wire B.

MRCT-200CWN1-D(C):

Code	Name
COMP A,B	Compressor
Fan_out1~2	Outdoor fan
XS1~2	Connectors
XP1~2	Connectors
K1	Temp. protection switch
RT4	Outdoor Temp. sensor

Code	Name
Fan_in	Indoor fan
T1~2	Transformer
XT1~2	Terminal
RT3_1~2	Pipe Temp. sensor

Code	Name
L-pro	Low pressure switch
RT1	Indoor room Temp. sensor
KM1~4	Indoor room Temp. sensor
RT2_1~2	Indoor pipe Temp. sensor
CT1~4	Current inductor
H-pro	High pressure switch
Fan_0-pro1	O.D. fan protection switch
Fan_0-pro2	O.D. fan protection switch

Notes: If electrical source protection relay is not present, wire A is connected to wire B.

Fan_0-pro2   Fan_0-pro1

Power protector

	NO	NC	COM
B			
A			

Red — R
White — S
Blue — T

Main PCB board

CN40, CN13, CN25, CN24, CN23, CN21, CN20, CN9, CN22, CN5, CN7, CN36, CN11, CN12, CN1, CN2, CN3, CN6

RT12_2, RT12_1, RT11, RT3_2, RT3_1, RT4, RT2_1

S1, S2 — L-pro H-pro — K1

Red / Blue / Black / White

To be connected with KJR-12B.
XP1~2, XS1~2, XS3, JP1

SW3 — ON 1

T1, T2

KJR-12B
KJR-29B
KJR-23B
SW3 — ON 1

To wired controller — XT2
R G Y W (C)
Yellow / Red / White / Blue / Green

Power supply — XT1
L1 L2 L3 N
Brown / Black / Grey / Blue
Y/G

KM5 — Fan_out2 (W V U)
KM4 — Fan_out1 (W V U)
KM3 — Fan_in (W V U)
KM2 — COMP B (T3(W) T2(V) T1(U))
KM1 — COMP A (T3(W) T2(V) T1(U))

CT1, CT2, CT3, CT4

Brown / Black / Grey
A1 A2
21 22
1 2 3 4 5 6

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MRCT-250CWN1-D(C):
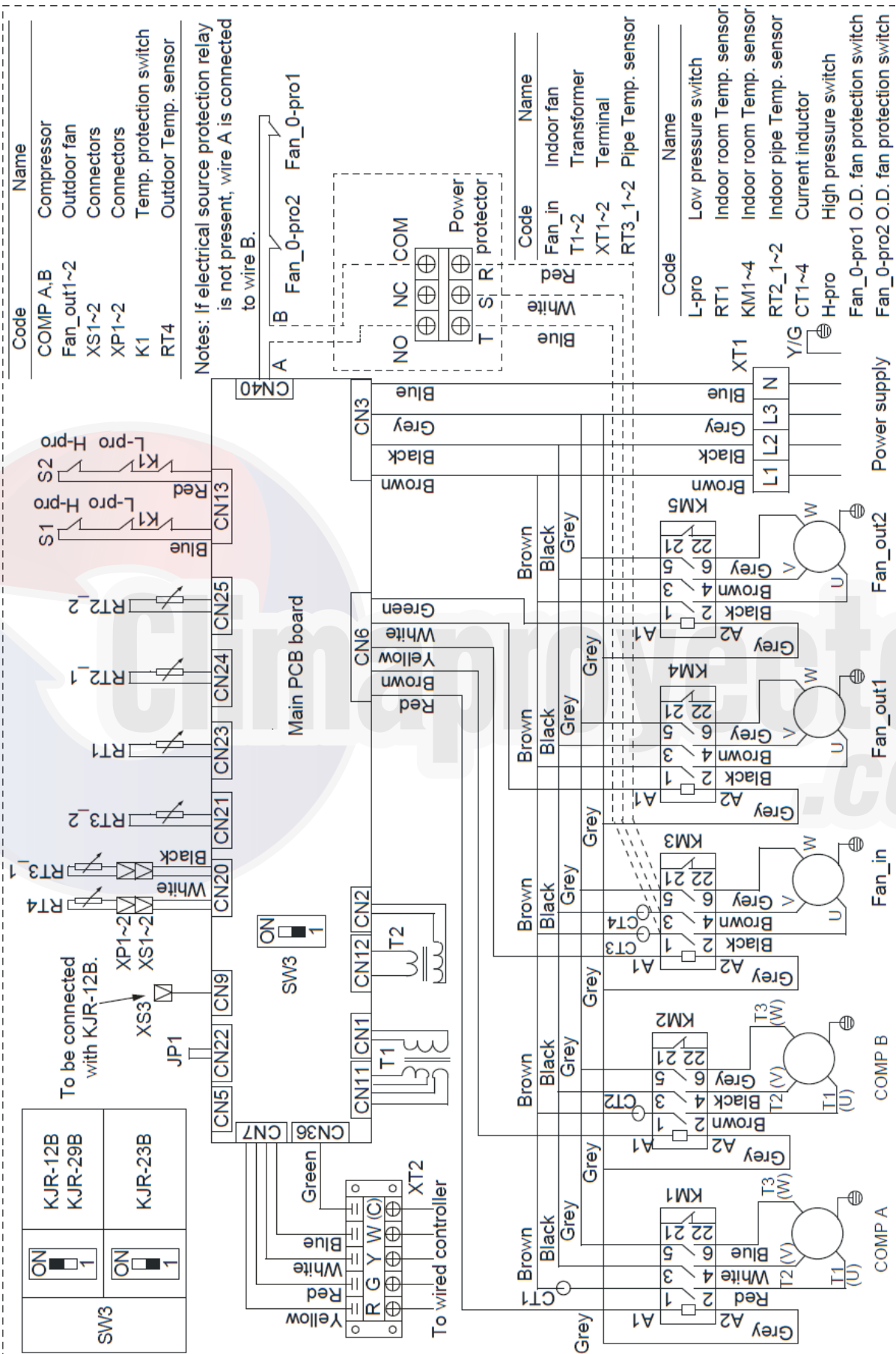
Code	Name
COMP A,B	Compressor
Fan_out1~2	Outdoor fan
XS1~2	Connectors
XP1~2	Connectors
K1	Temp. protection switch
RT4	Outdoor Temp. sensor

Code	Name
Fan_in	Indoor fan
T1~2	Transformer
XT1~2	Terminal
RT3_1~2	Pipe Temp. sensor

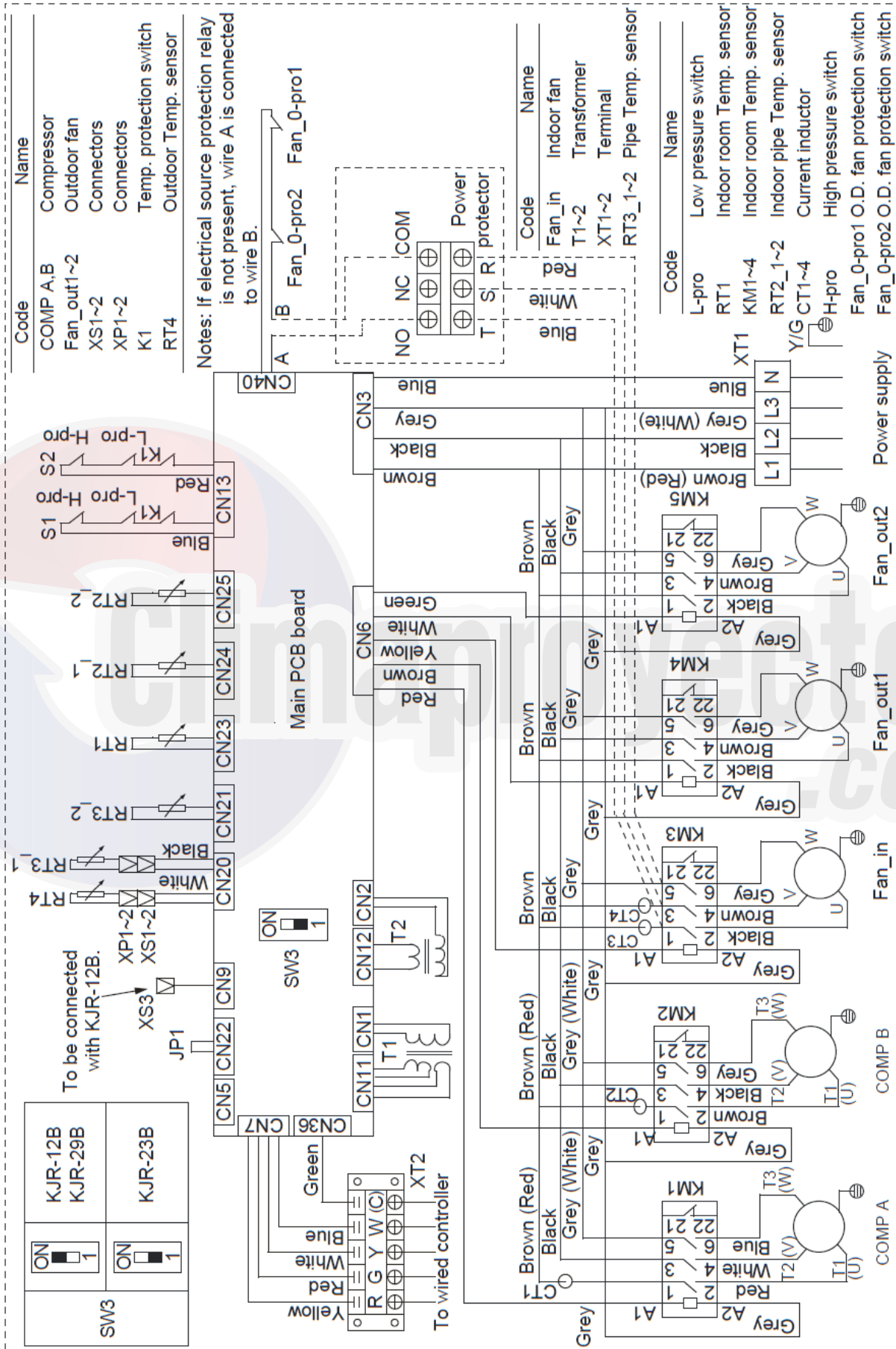| Code	Name
L-pro	Low pressure switch
RT1	Indoor room Temp. sensor
KM1~4	Indoor room Temp. sensor
RT2_1~2	Indoor pipe Temp. sensor
CT1~4	Current inductor
H-pro	High pressure switch
Fan_0-pro1	O.D. fan protection switch
Fan_0-pro2	O.D. fan protection switch

Notes: If electrical source protection relay is not present, wire A is connected to wire B.

Power protector

Power supply

Main PCB board

To be connected with KJR-12B.

To wired controller

KJR-12B
KJR-29B
KJR-23B

Fan_0-pro2 Fan_0-pro1

COMP A COMP B Fan_in Fan_out1 Fan_out2

5. Performance data

MRCT-075CWN1-D(C)

Cooling capacity:

Gross Cooling Capacity																		
Ambient DB(°C)		29.4								35								
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2,100	23.9	62.4	48.7	5604.4	65.2	43.4	5337.4	81.0	42.5	7092.8	58.5	50.9	6182.8	61.2	38.2	5888.3	79.5	24.7	7824.9
	26.7	63.8	51.5	5764.3	66.4	48.9	5085.2	82.7	48.9	7316.2	59.9	55.6	6359.2	62.3	48.4	5610.0	77.6	36.3	8071.2
	29.4	65.1	52.9	5990.2	67.2	54.5	5394.7	84.5	54.2	7769.7	61.1	57.4	6608.4	63.0	59.0	5951.5	79.2	45.6	8571.6
	32.2	66.5	54.4	6247.4	68.9	56.9	5723.5	86.2	59.5	8127.0	62.3	59.6	6892.2	64.7	62.6	6314.2	80.9	54.9	8965.8
2,950	23.9	81.1	63.9	7138.9	87.7	58.3	6695.8	99.7	52.6	8702.2	76.1	67.4	7875.7	82.2	51.3	7386.9	93.5	31.1	9600.3
	26.7	82.8	67.7	7333.6	94.9	68.6	7070.5	101.8	61.0	8974.1	77.7	73.7	8090.4	89.0	66.6	7800.2	95.5	46.2	9900.3
	29.4	84.7	69.7	7621.8	97.8	77.2	7552.3	103.9	68.2	9526.4	79.4	76.3	8408.4	91.8	81.7	8331.7	97.5	59.2	10509.6
	32.2	86.5	72.4	7948.1	99.3	80.2	7913.3	106.1	75.7	9961.5	81.1	80.5	8768.4	93.2	86.5	8730.0	99.5	72.4	10989.6
3,200	23.9	87.0	68.5	7651.4	94.0	62.4	7176.5	106.8	56.4	9326.9	81.6	72.2	8441.0	88.1	55.0	7917.1	100.2	33.4	10289.5
	26.7	88.8	72.5	7860.0	101.7	73.5	7578.0	109.1	65.3	9618.3	83.3	79.0	8671.2	95.4	71.4	8360.1	102.3	49.5	10611.0
	29.4	90.7	74.7	8169.0	104.9	82.8	8094.4	111.4	73.1	10210.3	85.1	81.8	9012.0	98.4	87.5	8929.8	104.5	63.4	11264.0
	32.2	92.7	77.6	8518.7	106.5	85.9	8481.3	113.7	81.1	10676.6	87.0	86.2	9397.9	99.9	92.7	9356.7	106.6	77.6	11778.4

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-075CWN1-D(C)

Cooling capacity: (Continued)

		Gross Cooling Capacity																
Ambient DB(°C)		40.6								46.1								
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2,100	23.9	52.0	47.2	6292.0	57.1	33.8	6279.4	72.6	21.8	8099.7	45.5	43.6	6401.2	53.0	29.3	6670.6	69.3	18.9	8374.6
	26.7	52.5	50.1	6492.1	58.2	44.0	6290.4	74.2	32.5	8360.5	45.1	44.6	6625.0	54.1	39.5	6970.8	70.8	28.6	8649.8
	29.4	53.5	51.2	6716.7	59.2	54.8	6607.5	75.8	42.8	8892.2	46.0	45.0	6824.9	55.4	50.7	7263.6	72.4	40.1	9212.8
	32.2	55.0	53.1	6993.4	60.7	58.9	6946.7	77.4	53.6	9275.5	47.7	46.6	7094.5	56.7	55.2	7579.2	74.0	52.4	9585.2
2,950	23.9	66.7	59.2	7963.0	75.1	46.1	7875.8	84.4	27.7	9575.7	57.2	51.0	8050.2	68.0	40.8	8364.8	75.2	24.2	9551.2
	26.7	68.1	63.8	8206.6	79.3	61.1	8200.2	86.2	42.5	9886.5	58.4	53.9	8322.7	69.6	55.5	8600.1	76.9	38.8	9872.8
	29.4	69.6	66.7	8494.0	81.4	74.5	8716.0	88.0	56.2	10527.2	59.8	57.1	8579.6	71.1	67.2	9100.4	78.6	53.2	10544.8
	32.2	71.1	69.5	8838.2	82.9	78.7	9107.3	89.9	69.7	10987.2	61.1	58.5	8908.0	72.6	70.9	9484.6	80.3	67.1	10984.8
3,200	23.9	71.4	63.4	8534.6	80.5	49.4	8441.2	90.4	29.6	10263.1	61.3	54.6	8628.1	72.9	43.7	8965.3	80.6	25.9	10236.8
	26.7	73.0	68.4	8795.7	85.0	65.5	8788.8	92.4	45.6	10596.3	62.6	57.8	8920.2	74.6	59.5	9217.5	82.4	41.6	10581.5
	29.4	74.6	71.5	9103.8	87.3	79.8	9341.7	94.4	60.2	11282.9	64.1	61.2	9195.5	76.2	72.1	9753.7	84.2	57.0	11301.8
	32.2	76.2	74.5	9472.6	88.9	84.3	9761.1	96.4	74.7	11775.9	65.5	62.7	9547.4	77.9	75.9	10165.5	86.1	71.9	11773.4

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-075CWN1-D(C)

Cooling capacity: (Continued)

Gross Cooling Capacity																			
Ambient DB(°C)					48									51.7					
Indoor	WB(°C)		16.1			19.4			22.8			16.1			19.4			22.8	
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2,100	23.9	45.1	42.9	6655.0	52.7	28.8	6730.7	68.9	18.4	8731.8	41.3	39.4	7167.2	48.2	26.5	7052.2	63.1	16.8	9427.9
	26.7	44.8	43.9	6885.8	53.8	38.9	7007.5	70.4	28.1	9049.4	41.0	40.4	7413.9	49.3	35.8	7316.3	64.5	25.8	9800.4
	29.4	45.6	44.3	7138.6	55.0	50.0	7348.0	72.0	39.4	9614.7	41.7	40.8	7729.4	50.4	46.1	7717.7	66.0	36.2	10389.9
	32.2	47.3	45.9	7403.1	56.3	54.4	7660.2	73.6	51.6	9980.0	43.2	42.4	7999.1	51.5	50.2	8038.8	67.4	47.6	10762.3
2,950	23.9	56.8	50.1	8347.8	67.6	40.1	8420.2	74.7	23.6	10024.8	51.9	46.1	8969.5	61.8	36.8	8802.6	68.4	21.6	10887.6
	26.7	58.0	53.1	8628.8	69.1	54.7	8700.0	76.4	38.1	10398.3	53.1	48.9	9269.9	63.2	50.4	9137.7	70.0	35.0	11327.6
	29.4	59.3	56.2	8943.2	70.6	66.2	9185.1	78.1	52.3	11073.4	54.2	51.7	9654.1	64.6	61.1	9626.4	71.5	48.2	12032.0
	32.2	60.7	57.6	9265.3	72.1	69.8	9565.3	79.8	66.1	11505.1	55.5	53.1	9982.5	66.0	64.4	10017.3	73.0	61.0	12472.1
3,200	23.9	60.8	53.7	8947.1	72.4	43.0	9024.7	80.1	25.3	10744.4	55.7	49.5	9613.4	66.2	39.5	9434.5	73.3	23.2	11669.2
	26.7	62.2	56.9	9248.2	74.1	58.6	9324.5	81.9	40.9	11144.8	56.9	52.4	9935.4	67.8	54.0	9793.6	75.0	37.5	12140.8
	29.4	63..6	60.2	9585.2	75.7	71.0	9844.4	83.7	56.1	11868.3	58.1	55.5	10347.2	69.2	65.4	10317.4	76.6	51.7	12895.8
	32.2	65.0	61.7	9930.4	77.3	74.8	10251.9	85.5	70.8	12331.0	59.5	56.9	10699.1	70.8	69.0	10736.4	78.3	65.3	13367.4

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-100CWN1-D(C)

Cooling capacity:

Gross Cooling Capacity																	
Ambient DB(°C)				29.4							35						
Indoor	WB(°C)		16.1			19.4			22.8			16.1			19.4			22.8
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2,900	23.9	106.6	92.5	9374.6	119.1	68.9	10455.4	123.6	43.4	10837.3	98.5	88.4	8753.4	114.4	66.5	10107.4	122.5	42.0	10828.7
	26.7	109.0	94.6	9686.2	121.8	87.9	10790.6	126.4	60.8	11187.5	100.8	90.5	9073.6	117.0	85.7	10261.4	125.2	61.3	11178.9
	29.4	111.4	96.7	10043.3	124.4	104	11165.0	129.1	75.6	11570.6	103.0	92.4	9499.7	119.5	105	10713.4	127.9	77.5	11648.2
	32.2	113.7	98.7	10557.7	127.0	121	11698.0	131.7	91.3	12111.9	105.1	94.4	10014.1	122.0	119	11324.1	130.6	93.8	12198.2
4,200	23.9	109.6	95.5	9633.5	122.1	71.9	10714.3	126.6	46.4	11096.2	101.5	91.4	9012.2	117.4	69.5	10366.2	125.5	45.0	11087.6
	26.7	112.0	97.6	9945.0	124.8	90.9	11049.5	129.4	63.8	11446.4	103.8	93.5	9332.4	120.0	88.7	10700.2	128.2	64.3	11437.8
	29.4	114.4	99.7	10302.2	127.4	107	11423.9	132.1	78.6	11829.4	106.0	95.4	9758.6	122.5	108	10972.3	130.9	80.5	11907.1
	32.2	116.7	102	10816.6	130.0	124	11956.9	134.7	94.3	12370.8	108.1	97.4	10273.0	125.0	122	11582.9	133.6	96.8	12457.1
4,800	23.9	112.5	102	9883.7	123.3	74.3	10817.8	127.0	47.0	11130.7	104.6	97.9	9279.7	121.2	73.0	10694.1	125.8	45.9	11113.4
	26.7	115.0	104	10203.9	126.0	93.2	11153.0	129.8	64.7	11480.9	106.9	100	9599.9	125.9	93.7	11029.3	128.5	65.6	11463.6
	29.4	117.4	106	10561.0	128.6	112	11527.4	132.5	80.2	11863.9	109.2	102	10034.7	127.5	113	11403.7	131.2	83.3	11933.0
	32.2	119.8	109	11084.0	131.2	128	12060.4	135.2	95.7	12413.9	111.4	104	10557.7	129.1	123	11936.7	133.9	101	12483.0

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-100CWN1-D(C)

Cooling capacity: (Continued)

		Gross Cooling Capacity												
Ambient DB(°C)		\multicolumn{9}{c|}{40.6}									\multicolumn{9}{c|}{46.1}								
Indoor	WB(°C)	\multicolumn{3}{c|}{16.1}			\multicolumn{3}{c|}{19.4}			\multicolumn{3}{c|}{22.8}			\multicolumn{3}{c|}{16.1}			\multicolumn{3}{c|}{19.4}			\multicolumn{3}{c|}{22.8}		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2,900	23.9	90.2	84.3	10064.9	106.0	63.3	11439.1	119.5	40.0	12606.2	80.0	78.3	10694.2	95.0	57.2	12061.3	112.9	35.9	13554.7
	26.7	92.3	86.3	10376.5	108.4	82.3	11765.6	122.2	59.1	12956.4	81.9	80.2	11005.7	97.2	77.1	12241.2	115.5	55.2	13904.9
	29.4	94.3	88.2	10716.4	110.8	102	12140.0	124.8	77.0	13348.0	83.8	82.0	11500.9	99.4	96.1	12762.3	118.0	74.1	14451.9
	32.2	96.3	90.0	11239.4	113.1	112	12673.0	127.4	94.3	13898.0	85.6	83.8	12015.3	101.5	98.1	13295.3	120.5	92.7	15001.9
4,200	23.9	93.2	87.3	10323.7	109.0	66.3	11697.9	122.5	43.0	12865.0	83.0	81.3	10953.0	98.0	60.2	12320.1	115.9	38.9	13813.5
	26.7	95.3	89.3	10635.3	111.4	85.3	12024.5	125.2	62.1	13215.2	84.9	83.2	11264.6	100.2	80.1	12500.0	118.5	58.2	14163.7
	29.4	97.3	91.2	10975.2	113.8	105	12398.9	127.8	80.0	13606.9	86.8	85.0	11759.8	102.4	99.1	13021.1	121.0	77.1	14710.7
	32.2	99.3	93.0	11498.2	116.1	115	12931.9	130.4	97.3	14156.9	88.6	86.8	12274.2	104.5	101	13554.1	123.5	95.7	15260.7
4,800	23.9	96.5	93.9	10608.5	111.6	70.0	11922.3	123.3	43.9	12934.0	85.9	82.9	11203.2	99.9	64.0	12484.1	116.8	39.6	13891.2
	26.7	98.7	96.0	10928.7	114.1	91.0	12257.5	126.0	64.5	13284.2	87.9	84.8	11523.4	103.9	85.1	12819.3	119.4	61.0	14241.4
	29.4	100.8	98.0	11277.2	116.5	113	12631.9	128.6	84.3	13675.9	89.8	86.7	12018.6	104.4	102	13193.7	122.0	81.3	14797.0
	32.2	102.8	100	11800.2	118.8	117	13164.9	131.2	103	14225.9	91.7	88.5	12541.6	106.5	104	13726.7	124.5	101	15347.0

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-100CWN1-D(C)

Cooling capacity: (Continued)

Gross Cooling Capacity																				
Ambient DB(°C)		48									51.7									
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2,900	23.9	77.8	76.1	10815.0	93.2	55.4	12301.3	110.7	33.7	13675.5	72.2	70.6	11720.9	85.8	51.4	13095.1	102.1	32.1	14322.6
	26.7	79.7	78.0	11126.5	95.4	75.3	12481.2	113.3	53.0	14025.7	73.9	72.3	12032.5	87.8	69.5	13231.9	104.4	49.6	14664.2
	29.4	81.6	79.8	11622.5	97.6	94.3	13003.1	115.8	71.9	14573.4	75.6	74.0	12519.1	89.8	86.8	13744.3	106.7	66.8	15202.5
	32.2	83.4	81.6	12136.9	99.7	96.3	13535.3	118.3	90.5	15123.4	77.3	75.6	13042.1	91.7	88.7	14320.5	109.0	83.7	15752.5
4,200	23.9	80.8	79.1	11073.8	96.2	58.4	12560.2	113.7	36.7	13934.3	75.2	73.6	11979.8	88.8	54.4	13354.0	105.1	35.1	14581.5
	26.7	82.7	81.0	11385.4	98.0	78.3	12700.0	116.3	56.0	14284.5	76.9	75.3	12291.4	90.8	72.5	13490.7	107.4	52.6	14923.0
	29.4	84.6	82.8	11881.4	100.6	97.3	13261.9	118.8	74.9	14832.3	78.6	77.0	12778.0	92.8	89.8	14003.2	109.7	69.8	15461.4
	32.2	86.4	84.6	12395.7	102.7	99.3	13794.1	121.3	93.5	15382.3	80.3	78.6	13301.0	94.7	91.7	14579.3	112.0	86.7	16011.4
4,800	23.9	83.7	80.7	11324.0	98.1	62.2	12724.1	114.6	37.4	14012.0	77.8	75.1	12204.1	90.5	57.9	13500.7	105.9	35.7	14650.5
	26.7	85.7	82.6	11644.2	102.1	83.3	13059.3	117.2	58.8	14362.2	79.6	76.8	12524.3	94.8	77.1	13835.9	108.3	55.2	15000.7
	29.4	87.6	84.5	12140.2	102.6	97.7	13433.7	119.8	79.1	14918.6	81.4	78.5	13019.5	95.2	92.7	14210.3	110.6	73.6	15539.1
	32.2	89.5	86.3	12663.2	104.7	103	13966.7	122.3	98.9	15468.6	83.1	80.2	13542.5	96.6	94.6	14743.3	112.9	91.6	16089.1

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-150CWN1-D(C)

Cooling capacity:

Gross Cooling Capacity																			
Ambient DB(°C)						29.4							35						
Indoor	WB(°C)		16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
4,800	23.9	163.5	131	15341.6	183.2	105	15688.1	193.5	72.1	16188.1	153.3	125	15698.0	171.6	99.8	15770.9	188.7	68.9	16570.9
	26.7	165.6	156	15621.7	185.5	128	15968.2	197.3	96.8	16468.2	157.1	150	15948.1	174.2	123	16051.0	191.1	93.1	16851.0
	29.4	173.0	166	16302.1	187.7	150	16598.6	199.9	117	17098.6	164.6	160	16478.5	176.7	146	16343.8	193.6	115	17143.8
	32.2	182.9	176	16525.2	190.4	173	16821.7	202.4	137	17321.7	175.6	170	17001.6	180.4	169	16866.9	196.3	135	17666.9
7,100	23.9	167.9	139	15491.6	188.6	109	15838.1	195.7	73.5	16338.1	155.2	133	15848.0	178.9	104	15920.9	190.1	70.4	16720.9
	26.7	171.6	166	15771.7	190.0	133	16118.2	198.5	99.0	16618.2	162.0	157	16098.1	180.0	129	16201.0	192.2	96.3	17001.0
	29.4	179.1	174	16452.1	191.2	157	16748.6	202.3	120	17248.6	171.8	167	16628.5	182.8	154	16493.8	195.3	118	17293.8
	32.2	188.9	183	16675.2	192.6	180	16971.7	204.7	139	17471.7	181.6	176	17151.6	184.1	179	17016.9	198.7	140	17816.9
7,900	23.9	169.8	146	15791.6	190.9	111	16138.1	198.2	74.8	16638.1	160.7	140	16148.0	185.0	128	16220.9	191.8	71.7	17020.9
	26.7	174.2	167	16071.7	192.5	166	16418.2	201.0	99.9	16918.2	164.5	160	16398.1	187.3	164	16501.0	194.3	97.9	17301.0
	29.4	185.2	178	16752.1	193.7	172	17048.6	203.4	122	17548.6	176.7	171	16928.5	187.8	171	16793.8	196.9	121	17593.8
	32.2	193.8	186	16975.2	195.3	188	17271.7	206.0	144	17771.7	186.5	181	17451.6	188.9	187	17316.9	198.2	144	18116.9

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-150CWN1-D(C)

Cooling capacity: (Continued)

Gross Cooling Capacity																			
Ambient DB(°C)						40.6										46.1			
Indoor	WB(°C)		16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
4,800	23.9	142.6	120	16910.8	163.5	94.5	17314.1	185.6	65.5	17814.1	117.6	102	17211.6	141.0	85.6	18221.2	160.6	49.3	18901.2
	26.7	146.4	141	17140.9	166.1	118	17444.2	187.0	89.2	17944.2	122.6	119	17696.7	143.5	101	18351.3	163.2	72.9	19031.3
	29.4	153.9	148	17371.3	169.8	141	17937.0	188.3	112	18437.0	135.0	131	18182.1	144.8	124	19044.1	165.8	96.3	19724.1
	32.2	166.3	160	18094.4	171.2	166	18660.1	189.6	133	19160.1	147.4	143	19160.2	148.4	147	19794.2	167.1	119	20474.2
7,100	23.9	147.5	128	17060.8	164.7	109	17464.1	188.1	66.9	17964.1	121.3	109	17361.6	142.2	90.5	18371.2	165.6	50.7	19051.2
	26.7	151.3	145	17290.9	168.5	124	17594.2	189.4	92.3	18094.2	128.8	123	17846.7	146.0	107	18501.3	168.1	77.1	19181.3
	29.4	163.7	157	17521.3	173.5	150	18087.0	190.8	116	18587.0	141.2	135	18332.1	148.5	133	19194.1	169.4	101	19874.1
	32.2	171.2	164	18244.4	176.1	171	18810.1	193.3	139	19310.1	153.6	147	19310.2	151.1	151	19944.2	170.8	124	20624.2
7,900	23.9	150.0	135	17360.8	173.3	103	17764.1	190.6	68.2	18264.1	125.0	115	17661.6	150.8	104	18671.2	169.2	53.6	19351.2
	26.7	156.2	152	17590.9	175.9	130	17894.2	191.9	95.3	18394.2	127.7	124	18146.7	153.4	121	18801.3	170.6	79.6	19481.3
	29.4	169.8	165	17821.3	178.5	157	18387.0	193.2	119	18887.0	138.3	134	18632.1	157.1	147	19494.1	171.9	106	20174.1
	32.2	178.8	173	18544.4	181.0	176	19110.1	194.5	143	19610.1	159.7	155	19610.2	161.5	165	20244.2	173.2	131	20924.2

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-150CWN1-D(C)

Cooling capacity: (Continued)

Gross Cooling Capacity																		
Ambient DB(°C)		48								51.7								
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
4,800	23.9	111.2	95.3	17028.4	137.1	81.7	18410.9	154.2	42.9	18910.9	109.2	93.9	16856.3	131.6	78.4	18755.8	150.6	43.5	19255.8
	26.7	116.2	112	177685	139.5	96.7	18541.0	156.8	66.5	19041.0	114.0	110	17851.4	134.1	92.9	18885.9	153.0	66.2	19385.9
	29.4	128.6	124	18509.0	140.7	120	19408.8	159.4	89.9	19908.8	125.9	122	18846.8	135.4	115	19853.4	155.5	88.7	20353.4
	32.2	141.0	136	19742.1	144.2	143	20188.9	160.7	112	20688.9	136.2	132	20334.9	137.9	138	20653.5	156.8	111	21153.5
7,100	23.9	114.9	102	17178.4	138.3	86.6	18560.9	159.2	44.3	19060.9	112.7	101	17006.3	132.8	83.1	18905.8	155.3	44.8	19405.8
	26.7	122.4	117	17918.5	142.0	103	18700.0	161.7	70.7	19191.0	119.9	116	18001.4	136.5	99.2	19035.9	157.8	70.2	19535.9
	29.4	134.8	129	18659.0	144.4	128	19558.8	163.0	94.2	20058.8	131.8	127	18996.8	138.9	124	20003.4	159.0	92.8	20503.4
	32.2	147.2	141	19992.1	146.9	147	20338.9	164.4	118	20838.9	143.8	139	20484.9	141.4	137	20803.5	160.3	115	21303.5
7,900	23.9	118.6	109	17478.4	146.9	100	18860.9	162.8	47.2	19360.9	116.3	107	17306.3	141.1	87.9	19205.8	158.8	47.7	19705.8
	26.7	121.3	117	18218.5	149.4	117	18991.0	164.2	73.2	19491.0	124.6	120	18301.4	143.6	105	19335.9	160.1	72.6	19835.9
	29.4	131.9	127	18959.0	153.0	139	19858.8	165.5	99.1	20358.8	137.8	133	19296.8	147.2	130	20303.4	161.4	97.5	20803.4
	32.2	153.3	148	20192.1	157.3	161	20638.9	166.8	125	21138.9	149.7	145	20784.9	151.2	146	21103.5	162.7	123	21603.5

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-200CWN1-D(C)

Cooling capacity:

Gross Cooling Capacity																			
Ambient DB(°C)				29.4							35								
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
6,200	23.9	204.9	152	19161.6	214.2	135	18248.8	265.8	133	24250.6	192.2	159	21139.2	201.0	119	20132.1	249.4	77.2	26753.4
	26.7	209.6	161	19708.2	218.1	153	17386.4	271.6	153	25014.2	196.6	173	21742.2	204.6	151	19180.7	254.8	113	27595.8
	29.4	213.9	165	20480.8	220.5	170	18444.6	277.4	169	26564.9	200.6	179	22594.5	206.9	184	20348.2	260.2	142	29306.5
	32.2	218.2	170	21360.2	226.3	178	19568.8	283.2	186	27786.5	204.7	186	23564.7	212.3	195	21588.4	265.6	171	30654.2
8,800	23.9	218.8	164	20045.2	236.4	149	18801.0	268.7	135	24434.7	205.2	173	22113.9	221.8	132	20741.4	252.1	79.8	26956.5
	26.7	223.4	173	20591.8	255.8	176	19853.0	274.5	156	25198.3	209.6	189	22717.0	240.0	171	21901.9	257.5	118	27798.8
	29.4	228.3	178	21401.1	263.8	198	21205.8	280.3	175	26748.9	214.2	196	23609.8	247.5	209	23394.3	262.9	152	29509.6
	32.2	233.2	185	22317.4	267.9	205	22219.5	286.0	194	27970.6	218.8	206	24620.7	251.3	222	24512.7	268.3	186	30857.3
11,200	23.9	234.5	175	21484.1	253.4	160	20150.7	288.0	145	26188.8	220.0	185	23701.4	237.7	141	22230.3	270.2	85.5	28891.6
	26.7	239.4	186	22070.0	274.2	188	21278.2	294.2	167	27007.1	224.6	202	24347.7	257.2	183	23474.2	276.0	127	29794.4
	29.4	244.7	191	22937.4	282.8	212	22728.1	300.4	187	28669.1	229.6	210	25304.7	265.2	224	25073.7	218.8	162	31627.9
	32.2	250.0	198	23919.5	287.1	220	23814.6	306.6	208	29978.5	234.5	221	26388.1	269.3	237	26727.4	287.6	199	33072.4

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-200CWN1-D(C)

Cooling capacity: (Continued)

		Gross Cooling Capacity									
\multicolumn{2}{c	}{Ambient DB(°C)}	\multicolumn{9}{c	}{40.6}	\multicolumn{9}{c	}{46.1}
Indoor	WB(°C)	\multicolumn{3}{c	}{16.1}	\multicolumn{3}{c	}{19.4}	\multicolumn{3}{c	}{22.8}	\multicolumn{3}{c	}{16.1}	\multicolumn{3}{c	}{19.4}	\multicolumn{3}{c	}{22.8}
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
6,200	23.9	175.8	151	21990.9	193.5	108	21968.1	246.3	69.6	28319.1	159.4	143	22842.6	186.1	96.0	23804.0	243.3	62.0	29884.8
	26.7	177.5	160	22691.7	197.3	140	22027.9	251.6	104	29231.3	158.4	146	23641.2	189.9	130	24875.1	248.5	93.7	30866.8
	29.4	180.9	163	23474.5	200.6	175	23134.2	257.1	137	31091.1	161.2	147	24354.6	194.3	166	25920.3	254.0	131	32875.7
	32.2	185.9	169	24440.7	205.5	188	24317.3	262.6	171	32429.5	167.2	153	25316.8	198.8	181	27046.2	259.6	172	34204.7
8,800	23.9	185.0	155	22853.1	208.9	121	22627.8	234.4	72.4	27473.7	164.8	137	23592.3	196.0	110	24514.2	216.7	65.0	27991.0
	26.7	189.0	167	23553.9	220.2	160	23552.9	239.5	111	28366.2	168.4	145	24390.8	200.4	149	25203.8	221.4	104	28933.5
	29.4	193.2	175	24376.8	226.2	195	25032.1	244.7	147	30206.2	172.2	154	25143.7	204.8	181	26670.0	226.4	143	30902.9
	32.2	197.4	182	25363.3	230.3	206	26154.3	249.9	183	31524.9	176.1	157	26105.9	209.3	191	27795.9	231.4	180	32129.5
11,200	23.9	198.3	166	24493.6	223.9	129	24252.1	251.2	77.6	29446.0	176.6	147	25285.8	210.1	118	26273.9	232.3	69.7	30000.3
	26.7	202.5	179	25244.7	236.0	172	25243.7	256.7	119	30402.4	180.5	156	26141.7	214.8	160	27013.1	237.3	112	31010.5
	29.4	207.1	187	26126.7	424.4	209	26829.1	262.2	158	32374.6	184.6	165	26948.6	219.6	194	28584.5	242.6	153	33121.3
	32.2	211.6	195	27184.0	246.8	221	28031.8	267.8	196	33787.9	188.8	169	27979.9	224.3	204	29791.2	248.0	193	34503.5

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-200CWN1-D(C)

Cooling capacity: (Continued)

Gross Cooling Capacity																	
Ambient DB(°C)		48								51.7							
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
6,200	23.9	158.4	141	23751.6	185.1	95.0	24021.9	242.0	60.9	31163.6	144.7	129	25576.2	169.2	86.8	25165.9	221.4	55.1	33643.6
	26.7	157.3	145	24575.2	188.9	128	25009.7	247.4	92.6	32297.2	143.7	132	26456.6	172.8	117	26108.4	226.4	84.5	34972.6
	29.4	160.2	146	25477.5	193.3	165	26225.0	252.8	130	34314.7	146.3	134	27582.5	176.7	151	27540.7	231.4	119	37076.4
	32.2	166.0	152	26421.5	197.7	180	27339.3	258.3	170	35618.6	151.5	139	28544.7	180.8	165	28686.3	236.3	156	38405.4
8,800	23.9	163.7	136	24467.7	194.8	109	24680.0	215.6	64.0	29382.9	149.6	124	26286.4	178.0	99.1	25797.2	197.1	58.1	31907.6
	26.7	167.3	144	25291.3	199.3	148	25500.0	220.3	103	30477.9	152.9	132	27166.8	182.2	136	26779.1	201.5	94.2	33197.1
	29.4	171.1	152	26212.9	203.6	179	26921.8	225.2	142	32456.6	156.2	139	28292.7	186.1	164	28211.4	206.0	130	35261.4
	32.2	175.0	156	27157.0	208.1	189	28036.1	230.1	179	33721.8	159.8	143	29254.9	190.2	173	29357.1	210.4	164	36551.0
11,200	23.9	175.5	146	26224.2	208.8	116	26451.7	231.0	68.6	31492.2	160.3	133	28173.4	190.8	106	27649.0	211.3	62.3	34198.1
	26.7	179.4	154	27106.9	213.6	159	27330.5	236.1	111	32665.7	163.9	141	29117.0	195.3	145	28701.5	216.0	101	35580.2
	29.4	183.4	163	28094.7	218.2	192	28854.4	241.4	152	34786.5	167.4	149	30323.7	199.4	176	30236.6	220.7	139	37792.7
	32.2	187.5	167	29106.5	223.0	203	30048.7	246.6	192	36142.5	171.3	153	31355.0	203.9	186	31464.5	225.5	176	39174.8

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-250CWN1-D(C)

Cooling capacity:

Gross Cooling Capacity																			
Ambient DB(°C)		29.4								35									
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
8,500	23.9	266.7	231	25132.7	297.9	172	25632.7	309.2	109	26209.0	246.4	221	24900.5	273.7	166	27110.1	306.4	105	28999.0
	26.7	272.2	236	25332.6	304.1	219	25832.6	315.5	162	26413.3	251.5	226	25082.6	279.3	214	27310.0	312.7	153	29208.0
	29.4	277.9	241	25404.8	310.4	265	25904.8	322.1	198	26486.8	256.8	231	25149.6	285.1	258	27382.2	319.2	193	28282.9
	32.2	283.6	246	25532.5	316.8	301	26032.5	328.7	238	26617.1	262.1	235	25266.6	291.0	298	27509.9	325.8	234	29416.2
9,300	23.9	273.9	247	25422.7	300.9	178	25922.7	310.2	110	26519.0	254.2	237	25150.5	278.2	175	27400.1	307.2	107	29309.0
	26.7	279.6	253	25622.6	307.1	230	26122.6	316.6	164	26723.3	259.4	242	25332.6	289.4	226	27600.0	313.5	156	29518.0
	29.4	285.4	258	25694.8	313.5	284	26194.8	323.1	205	26796.8	264.8	247	25399.6	295.4	274	27672.2	320.0	200	29592.9
	32.2	291.3	263	25822.5	320.0	311	26322.5	329.8	256	26927.1	270.4	253	25516.6	301.5	300	27799.9	326.6	252	29726.2
10,000	23.9	280.7	262	25712.7	303.7	187	26212.7	310.9	112	26829.0	261.7	253	25400.5	293.9	183	27700.1	308.9	108	29619.0
	26.7	286.5	268	25912.6	309.9	263	26412.6	317.3	170	27033.3	267.1	259	25582.6	300.0	258	27900.0	315.3	158	29828.0
	29.4	292.4	273	25984.8	316.3	281	26484.8	323.9	220	27106.8	272.6	264	25649.6	306.2	270	27972.2	321.8	209	29902.9
	32.2	298.5	279	26112.5	322.9	315	26612.5	330.6	260	27237.1	278.3	269	25766.6	312.5	310	28099.9	328.5	251	30036.2
11,000	23.9	285.9	276	26002.7	305.2	213	26502.7	313.9	114	27139.0	267.2	261	25650.5	297.2	190	28166.5	309.7	110	29929.0
	26.7	291.8	282	26202.6	311.5	259	26702.6	320.4	178	27343.3	272.7	266	25832.6	303.3	250	28255.4	316.1	171	30138.0
	29.4	297.9	288	26274.8	317.9	288	26774.8	327.0	225	27416.8	278.4	272	25899.6	309.6	279	28327.6	322.6	209	30212.9
	32.2	304.0	294	26402.5	324.5	317	26902.5	333.8	268	27547.1	284.2	277	26016.6	316.0	284	28399.7	329.3	256	30346.2

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-250CWN1-D(C)

Cooling capacity: (Continued)

		Gross Cooling Capacity																	
Ambient DB(°C)		40.6								46.1									
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
8,500	23.9	225.7	211	29437.9	265.2	158	31897.5	298.9	100	35277.1	198.2	194	33975.3	235.7	141	36684.9	280.4	87.9	41555.2
	26.7	230.4	215	29620.0	270.7	205	32097.4	305.1	147	35493.6	202.5	198	34157.4	240.7	190	36884.8	286.4	136	41779.1
	29.4	235.2	220	29687.0	276.3	254	32169.6	311.4	187	35569.3	206.9	202	34224.4	245.9	238	36957.0	292.4	175	41855.6
	32.2	240.1	225	29804.0	282.0	278	32297.3	317.8	223	35706.2	211.4	207	34341.4	251.2	243	37084.7	298.6	204	41996.3
9,300	23.9	233.9	227	29687.9	271.7	168	32187.5	300.9	102	35587.1	205.4	198	34225.3	240.4	151	36974.9	282.7	89.7	41865.2
	26.7	238.8	232	29870.0	277.3	220	32387.4	307.1	153	35803.6	209.9	202	34407.4	245.6	203	37174.8	288.7	143	42089.1
	29.4	243.8	237	29937.0	283.1	269	32459.6	313.5	193	35879.3	214.4	207	34474.4	250.8	246	37247.0	294.8	178	42165.6
	32.2	248.9	242	30054.0	288.9	284	32587.3	320.0	249	36016.2	219.0	211	34591.4	256.2	251	37374.7	301.0	235	42306.3
10,000	23.9	238.9	223	29937.9	275.9	175	32487.5	302.4	104	35897.1	213.2	208	34475.3	246.4	159	37274.9	284.4	91.7	42175.2
	26.7	243.9	228	30120.0	281.6	235	32900.4	308.7	153	36113.6	217.8	212	34657.4	251.7	218	37900.8	290.4	142	42399.1
	29.4	249.0	232	30187.0	287.5	265	32986.6	315.0	199	36189.3	222.5	217	34724.4	257.1	251	38001.0	296.6	185	42475.6
	32.2	254.2	237	30304.0	293.4	281	33087.3	321.6	246	36326.2	227.3	222	34841.4	262.6	259	38074.7	302.9	231	42616.3
11,000	23.9	248.2	242	30187.9	280.2	184	33153.9	303.9	105	36207.1	221.9	218	34725.3	252.9	168	38141.3	285.2	93.2	42485.2
	26.7	253.3	248	30370.0	286.0	246	33242.8	310.2	164	36423.6	226.7	223	34907.4	258.3	231	38230.2	291.2	150	42709.1
	29.4	258.6	253	30437.0	291.9	269	33314.9	316.6	200	36499.3	231.6	228	34974.4	263.8	258	38302.3	297.4	185	42785.6
	32.2	264.0	258	30554.0	297.9	280	33387.1	323.1	245	36636.2	236.6	233	35091.4	269.5	264	38374.5	303.7	232	42926.3

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

MRCT-250CWN1-D(C)

Cooling capacity: (Continued)

		Gross Cooling Capacity																	
Ambient DB(°C)		48								51.7									
Indoor	WB(°C)	16.1			19.4			22.8			16.1			19.4			22.8		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
8,500	23.9	195.5	191	34571.5	233.0	139	37281.1	277.7	85.2	42298.7	175.5	172	35962.7	209.6	124	38672.3	250.3	75.3	43958.3
	26.7	199.8	195	34753.6	238.0	188	37481.0	283.7	133	42518.0	179.5	176	36144.8	214.2	169	38872.2	255.7	119	44179.8
	29.4	204.2	200	34820.6	243.2	235	37553.2	289.7	172	42596.8	183.5	179	36211.8	218.9	211	38944.4	261.3	154	44253.7
	32.2	208.7	204	34937.6	248.5	240	37680.9	295.9	202	42736.4	187.5	183	36328.8	223.7	216	39072.1	266.9	181	44392.1
9,300	23.9	202.7	195	34821.5	237.7	148	37571.1	280.0	87.0	42608.7	182.1	175	36212.7	213.9	132	38962.3	252.4	76.9	44268.3
	26.7	207.2	200	35003.6	242.9	200	37771.0	286.0	140	42828.0	186.2	179	36394.8	218.6	180	39162.2	257.8	125	44489.8
	29.4	211.7	204	35070.6	248.1	243	37843.2	292.1	175	42906.8	190.3	183	36461.8	223.4	219	39234.4	263.4	157	44563.7
	32.2	216.3	208	35187.6	253.5	248	37970.9	298.3	233	43046.4	194.5	187	36578.8	228.3	224	39362.1	269.1	209	44702.1
10,000	23.9	210.5	205	35071.5	243.7	157	37871.1	281.7	89.0	42918.7	189.2	184	36462.7	219.4	140	39262.3	253.9	78.7	44578.3
	26.7	215.1	210	35253.6	249.0	215	38071.0	287.7	139	43138.0	193.4	189	36644.8	224.2	193	39462.2	259.4	124	44799.8
	29.4	219.8	214	35320.6	254.4	248	38143.2	293.9	183	43216.8	197.6	193	36711.8	229.1	223	39534.4	265.0	164	44873.7
	32.2	224.6	219	35437.6	259.9	256	38270.9	300.2	228	43356.4	202.0	197	36828.8	234.1	231	39662.1	270.7	205	45012.1
11,000	23.9	219.2	216	35321.5	250.2	165	38337.5	282.5	90.5	43228.7	197.1	194	36712.7	225.3	148	39728.7	254.6	80.1	44888.3
	26.7	224.0	220	35503.6	255.6	229	38426.4	288.5	148	43448.0	201.5	198	36894.8	230.2	206	39817.5	260.1	132	45109.8
	29.4	228.9	225	35570.6	261.1	256	38498.6	294.7	183	43526.8	205.9	202	36961.8	235.2	230	39889.7	265.7	164	45183.7
	32.2	233.9	230	35687.6	266.8	261	38570.7	301.0	229	43666.4	210.5	207	37078.8	240.4	235	39961.9	271.5	206	45322.1

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain net cooling capacity subtract indoor fan heat;

2. TC = Total Capacity (Unit: 1,000Btu/h); SC = Sensible Capacity (Unit: 1,000Btu/h).

6. Electrical data

Model	Power Supply			Compressor				Eva.Fan Motor			Con. Fan Motor		
	MCA	TOCA	MFA	STC	RNC	IPT	Qty	RNC	IPT	Qty	RNC (Each)	IPT (Each)	Qty.
MRCT-075CWN1-D(C)	42.2	54.2	67.0	191	24.8	8.23	1	5.04	1.09	1	5.45	1.65	1
MRCT-100CWN1-D(C)	52.3	66.7	83.2	240	30.9	11.0	1	7.30	2.07	1	5.16	1.58	1
MRCT-150CWN1-D(C)	138.3	190.3	232.7	240+155	30.9+16.3	5.5+11.0	2	11.40	3.37	1	5.28	1.64	1
MRCT-200CWN1-D(C)	111.3	145.0	173.1	240×2	30.9×2	11.0×2	2	15.10	4.11	1	6.99×2	1.87×2	2
MRCT-250CWN1-D(C)	139.3	200.6	215.3	245×2	38.0×2	12.4×2	2	19.68	5.93	1	8.80×2	2.60×2	2

Notes:

MCA: Min. Current Amps. (A)   TOCA: Total Over-current Amps. (A)   MFA: Max. Fuse Amps (A)

STC: Starting Current (A);   RNC: Running Current (A);   IPT: Input Power (kW);   Qty: Quantity

Voltage imbalance between each phases should be <2%.

7. Fan performance data

MRCT-075CWN1-D(C)

Static Pressure	Item	High speed	Medium speed	Low speed
0Pa	**Fan speed (rpm)**	1,035	936	844
	Power input (W)	1,359	1,242	1,032
	Air flow (CFM)	3,161	2,685	2,104
50Pa	**Fan speed (rpm)**	1,081	991	909
	Power input (W)	1,258	1,139	954
	Air flow (CFM)	2,935	2,601	2,076
80Pa	**Fan speed (rpm)**	1,110	1,026	954
	Power input (W)	1,202	1,082	919
	Air flow (CFM)	2,706	2,520	2,065
100Pa	**Fan speed (rpm)**	1,127	1,051	984
	Power input (W)	1,159	1,042	896
	Air flow (CFM)	2,608	2,452	2,046
150Pa	**Fan speed (rpm)**	1,173	1,110	1,053
	Power input (W)	1,050	944	818
	Air flow (CFM)	2,422	2,249	1,938
200Pa	**Fan speed (rpm)**	1,217	1,165	/
	Power input (W)	910	819	/
	Air flow (CFM)	2,284	1,930	/
250Pa	**Fan speed (rpm)**	1,263	1,220	/
	Power input (W)	769	691	/
	Air flow (CFM)	2,121	1,815	/

Notes: The unit only has one speed of indoor side fan, and high speed is the factory default. If the unit operating with other fan speed, the wiring between fan motor and main PCB board should be adjusted.

Blower drive options						
Model	**Motor**			**Blower**		
	HP	**rpm**	**Pulleys pitch Dia. (inch)**	**Fan speed range (rpm)**		**Pulleys pitch Dia. (inch)**
				Min.	**Max.**	
MRCT-100CWN1-D(C)	2.9	1,700	4.53~5.25	931	1,016	8.82
MRCT-150CWN1-D(C)	5.3	1,730	4.53~5.25	941	1,112	8.82
MRCT-200CWN1-D(C)	7.3	1,730	4.53~5.25	1,081	1,284	7.09
MRCT-250CWN1-D(C)	10	1,730	4.53~5.25	925	1,088	7.87

Example for selection process:

The following data are the rated design points for MRCT-100CWN1-D(C) rooftop packages:

Air flow =4183CFM; External static pressure = 0.3in.w.g (≈75Pa); Fan speed = 980rpm;

Power input = 1915W; The No. of turns = 1.0N.

To increase the ESP (External Static Pressure) to 0.4in.w.g (≈100Pa), but maintain the airflow rate at

4183CFM, please follow the steps below:

Step 1: Selection of new desired point.

     From the table data, select the point that can meet both of the requirements.

     ESP = 0.4in.w.g (≈100Pa);

     Air flow rate (Near or equal to) ≈ 4183CFM.

Step 2: Read fan speed, power input:

     Air flow = 4129CFM;

     Fan speed = 986rpm;

     Power input = 2000W.

Step 3: Read number of turns for variable pitch pulley.

     Similarly, use this RPM value to read the No. of turns (N) by referring to the table of 'Motor

     Variable Pitch Pulley Data'. The variable pitch pulley for motor shall be adjusted to this 'N' in

     order to achieve the desired point (ESP=0.4in.w.g.≈100Pa, and airflow rate=4183CFM. For

     instance, from the table, No. of turns (N) = 0.5 in order to get 4129CFM. First, adjust the

motor pulley to 0 turns. Then, make 0.5 turns on the pulley. Cross check the dimension 'X',

and it stands for regulation space of motor pulley. In this case, X = 1.5mm.

Video for Variable Speed Pulley Operating Guidelines

Click for video:

http://video.midea.com/public/2016/01/29/20160129_1528c9ec886_r1.mp4

Scan for video: (Only for iPhone, iPad, etc.)

MRCT-100CWN1-D(C)

ESP (Pa)	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2
	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5
0	Fan speed (rpm)	/	/	/	/	972	967	962	946	931
	Power input (W)	/	/	/	/	2,759	2,390	2,020	1,945	1,870
	Air flow (CFM)	/	/	/	/	4,836	4,704	4,571	4,500	4,428
25	Fan speed (rpm)	/	/	/	/	974	969	964	969	933
	Power input (W)	/	/	/	/	2,090	2,010	1,930	1,855	1,780
	Air flow (CFM)	/	/	/	/	4,487	4,442	4,398	4,323	4,248
50	Fan speed (rpm)	/	/	980	978	977	972	967	972	935
	Power input (W)	/	/	2,718	2,354	1,990	1,915	1,840	1,765	1,690
	Air flow (CFM)	/	/	4,631	4,476	4,320	4,272	4,224	4,146	4,067
75	Fan speed (rpm)	/	/	983	981	980	975	970	975	937
	Power input (W)	/	/	2,359	1,998	1,915	1,843	1,770	1,695	1,620
	Air flow (CFM)	/	/	4,380	4,214	4,183	4,127	4,072	3,997	3,922
100	Fan speed (rpm)	989	987	986	984	982	977	972	977	938
	Power input (W)	2,774	2,387	2,000	1,900	1,800	1,730	1,660	1,590	1,520
	Air flow (CFM)	4,480	4,305	4,129	4,052	3,974	3,905	3,835	3,771	3,707
125	Fan speed (rpm)	999	989	989	987	985	980	975	980	940
	Power input (W)	2,412	1,980	1,960	1,833	1,705	1,635	1,565	1,495	1,425
	Air flow (CFM)	4,155	4,065	3,953	3,927	3,789	3,719	3,648	3,579	3,509
150	Fan speed (rpm)	1,009	991	991	990	988	983	978	983	942
	Power input (W)	2,050	1,880	1,865	1,738	1,610	1,540	1,470	1,400	1,330
	Air flow (CFM)	3,891	3,830	3,778	3,748	3,605	3,532	3,460	3,386	3,312
175	Fan speed (rpm)	1,011	993	994	992	990	/	/	/	/
	Power input (W)	1,945	1,775	1,770	1,638	1,505	/	/	/	/
	Air flow (CFM)	3,718	3,656	3,586	3,549	3,381	/	/	/	/
200	Fan speed (rpm)	1,012	995	997	995	993	/	/	/	/
	Power input (W)	1,840	1,670	1,660	1,530	1,400	/	/	/	/
	Air flow (CFM)	3,517	3,481	3,394	3,337	3,157	/	/	/	/
225	Fan speed (rpm)	1,014	996	1,000	/	/	/	/	/	/
	Power input (W)	1,725	1,545	1,550	/	/	/	/	/	/
	Air flow (CFM)	3,316	3,292	3,148	/	/	/	/	/	/
250	Fan speed (rpm)	1,016	998	1,002	/	/	/	/	/	/
	Power input (W)	1,610	1,420	1,425	/	/	/	/	/	/
	Air flow (CFM)	3,104	3,048	2,902	/	/	/	/	/	/

Notes:

1. Legend: X – Regulation space of motor pulley (mm);

2. N: Number of turns;

3. ESP: External static pressure (Pa).

MRCT-150CWN1-D(C)

ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5
0	Fan speed (rpm)	/	/	1,008	999	989	979	969	959	949
	Power input (W)	/	/	5,146	4,968	4,790	4,575	4,360	4,155	3,950
	Air flow (CFM)	/	/	7,928	7,867	7,805	7,686	7,566	7,452	7,338
25	Fan speed (rpm)	/	/	1,014	1,003	991	983	974	964	953
	Power input (W)	/	/	5,043	4,824	4,605	4,418	4,230	4,025	3,820
	Air flow (CFM)	/	/	7,791	7,691	7,592	7,473	7,353	7,239	7,124
50	Fan speed (rpm)	/	1,022	1,020	1,006	993	986	979	968	957
	Power input (W)	/	4,954	4,940	4,680	4,420	4,260	4,100	3,895	3,690
	Air flow (CFM)	/	7,700	7,653	7,516	7,379	7,259	7,139	7,025	6,910
75	Fan speed (rpm)	1,031	1,026	1,022	1,009	995	989	982	971	960
	Power input (W)	4,870	4,810	4,750	4,495	4,240	4,088	3,935	3,745	3,555
	Air flow (CFM)	7,622	7,529	7,436	7,313	7,191	7,048	6,904	6,790	6,675
100	Fan speed (rpm)	1,035	1,028	1,021	1,008	995	988	982	971	959
	Power input (W)	4,770	4,665	4,560	4,310	4,060	3,915	3,770	3,595	3,420
	Air flow (CFM)	7,475	7,347	7,219	7,111	7,002	6,836	6,669	6,554	6,439
125	Fan speed (rpm)	1,050	1,044	1,039	1,026	1,013	1,006	998	990	981
	Power input (W)	4,510	4,440	4,370	4,123	3,875	3,760	3,645	3,465	3,285
	Air flow (CFM)	7,113	7,046	6,979	6,844	6,708	6,571	6,434	6,297	6,159
150	Fan speed (rpm)	1,060	1,056	1,052	1,039	1,026	1,021	1,015	1,005	995
	Power input (W)	4,350	4,290	4,230	4,005	3,780	3,695	3,610	3,410	3,210
	Air flow (CFM)	6,899	6,863	6,828	6,679	6,531	6,411	6,291	6,134	5,976
175	Fan speed (rpm)	1,070	1,065	1,060	1,049	1,039	1,032	1,025	1,017	1,008
	Power input (W)	4,170	4,078	3,985	3,808	3,630	3,518	3,405	3,248	3,090
	Air flow (CFM)	6,658	6,609	6,559	6,419	6,279	6,161	6,043	5,859	5,675

Continued: MRCT-150CWN1-D(C)

ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5
200	Fan speed (rpm)	1,082	1,074	1,067	1,059	1,051	1,044	1,036	1,028	1,020
	Power input (W)	3,990	3,865	3,740	3,610	3,480	3,340	3,200	3,085	2,970
	Air flow (CFM)	6,418	6,354	6,291	6,159	6,027	5,911	5,794	5,584	5,375
225	Fan speed (rpm)	1,089	1,082	1,074	1,065	1,056	1,048	1,040	1,033	1,027
	Power input (W)	3,855	3,728	3,600	3,455	3,310	3,180	3,050	2,928	2,805
	Air flow (CFM)	6,194	6,108	6,022	5,879	5,736	5,600	5,464	5,269	5,075
250	Fan speed (rpm)	1,097	1,089	1,082	1,072	1,061	1,053	1,044	1,038	1,033
	Power input (W)	3,720	3,590	3,460	3,300	3,140	3,020	2,900	2,770	2,640
	Air flow (CFM)	5,971	5,862	5,754	5,600	5,446	5,289	5,133	4,954	4,776
275	Fan speed (rpm)	1,104	1,095	1,086	1,076	1,065	/	/	/	/
	Power input (W)	3,595	3,438	3,280	3,115	2,950	/	/	/	/
	Air flow (CFM)	5,705	5,585	5,464	5,308	5,151	/	/	/	/
300	Fan speed (rpm)	1,112	/	/	/	/	/	/	/	/
	Power input (W)	3,470	/	/	/	/	/	/	/	/
	Air flow (CFM)	5,439	/	/	/	/	/	/	/	/
325	Fan speed (rpm)	1,112	/	/	/	/	/	/	/	/
	Power input (W)	3,470	/	/	/	/	/	/	/	/
	Air flow (CFM)	5,439	/	/	/	/	/	/	/	/

Notes:

1. Legend: X – Regulation space of motor pulley (mm);

2. N: Number of turns;

3. ESP: External static pressure (Pa).

MRCT-200CWN1-D(C)

ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
0	Fan speed (rpm)	/	/	/	/	1,194	1,181	1,168	1,154	1,140	1,127	1,113	1,098	1,081
	Power input (W)	/	/	/	/	6,951	6,710	6,468	6,266	6,063	5,831	5,599	5,422	5,188
	Air flow (CFM)	/	/	/	/	11,210	11,104	10,997	10,872	10,746	10,623	10,499	10,306	10,078
25	Fan speed (rpm)	/	/	/	/	1,195	1,182	1,169	1,155	1,141	1,128	1,114	1,100	1,083
	Power input (W)	/	/	/	/	6,756	6,531	6,306	6,103	5,901	5,671	5,442	5,255	5,057
	Air flow (CFM)	/	/	/	/	10,982	10,890	10,798	10,668	10,539	10,398	10,258	10,068	9,892
50	Fan speed (rpm)	/	/	/	1,214	1,196	1,183	1,170	1,156	1,142	1,129	1,115	1,101	1,084
	Power input (W)	/	/	/	6,944	6,561	6,352	6,143	5,941	5,738	5,512	5,285	5,088	4,926
	Air flow (CFM)	/	/	/	10,877	10,754	10,676	10,599	10,465	10,332	10,174	10,016	9,829	9,705
75	Fan speed (rpm)	/	/	/	1,214	1,197	1,184	1,171	1,157	1,143	1,130	1,116	1,102	1,085
	Power input (W)	/	/	/	6,738	6,390	6,180	5,970	5,754	5,539	5,328	5,118	5,069	4,748
	Air flow (CFM)	/	/	/	10,628	10,540	10,453	10,367	10,207	10,047	9,898	9,749	9,807	9,403
100	Fan speed (rpm)	/	1,240	1,228	1,215	1,198	1,185	1,172	1,158	1,145	1,131	1,117	1,103	1,087
	Power input (W)	/	6,941	6,765	6,532	6,218	6,008	5,797	5,568	5,339	5,145	4,950	5,049	4,570
	Air flow (CFM)	/	10,582	10,491	10,378	10,326	10,230	10,135	9,948	9,761	9,622	9,483	9,785	9,102
125	Fan speed (rpm)	/	1,241	1,230	1,215	1,199	1,186	1,173	1,159	1,146	1,131	1,117	1,105	1,091
	Power input (W)	/	6,753	6,659	6,367	6,068	5,866	5,663	5,441	5,218	5,013	4,808	4,570	4,351
	Air flow (CFM)	/	10,357	10,349	10,170	10,113	10,017	9,922	9,753	9,584	9,435	9,285	9,024	8,815
150	Fan speed (rpm)	1,258	1,242	1,230	1,216	1,202	1,189	1,175	1,162	1,149	1,134	1,120	1,105	1,091
	Power input (W)	6,736	6,565	6,360	6,158	5,820	5,611	5,401	5,180	4,958	4,769	4,579	4,327	4,141
	Air flow (CFM)	10,287	10,132	10,049	9,952	9,818	9,692	9,566	9,395	9,224	9,069	8,915	8,599	8,418

Continued: MRCT-200CWN1-D(C)

ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
175	Fan speed (rpm)	1,261	1,244	1,232	1,218	1,204	1,190	1,177	1,163	1,149	1,135	1,121	1,106	1,093
	Power input (W)	6,511	6,332	6,169	5,929	5,607	5,391	5,175	4,953	4,731	4,545	4,358	4,107	3,925
	Air flow (CFM)	10,042	9,864	9,794	9,650	9,524	9,377	9,231	9,046	8,861	8,699	8,537	8,243	8,045
200	Fan speed (rpm)	1,263	1,245	1,233	1,221	1,205	1,192	1,179	1,164	1,150	1,136	1,123	1,106	1,094
	Power input (W)	6,285	6,099	5,977	5,700	5,394	5,172	4,949	4,727	4,504	4,321	4,137	3,887	3,709
	Air flow (CFM)	9,798	9,597	9,540	9,347	9,230	9,063	8,896	8,697	8,497	8,328	8,158	7,887	7,672
225	Fan speed (rpm)	1,264	1,248	1,235	1,222	1,207	1,194	1,181	1,166	1,152	1,138	1,124	1,110	1,096
	Power input (W)	6,046	5,871	5,696	5,451	5,160	4,923	4,686	4,461	4,237	4,049	3,861	3,624	3,433
	Air flow (CFM)	9,505	9,301	9,183	9,019	8,877	8,693	8,508	8,291	8,074	7,871	7,669	7,387	7,138
250	Fan speed (rpm)	1,265	1,251	1,237	1,224	1,209	1,196	1,183	1,169	1,154	1,140	1,126	1,113	1,099
	Power input (W)	5,807	5,643	5,415	5,201	4,925	4,674	4,422	4,196	3,969	3,777	3,585	3,361	3,157
	Air flow (CFM)	9,212	9,004	8,826	8,691	8,524	8,322	8,120	7,885	7,650	7,415	7,180	6,887	6,605
275	Fan speed (rpm)	1,267	1,253	1,239	1,226	1,211	1,198	1,185	1,171	1,157	1,144	1,130	1,117	1,094
	Power input (W)	5,523	5,350	5,120	4,872	4,585	4,322	4,059	3,812	3,564	3,331	3,098	2,800	2,662
	Air flow (CFM)	8,831	8,594	8,380	8,204	8,010	7,740	7,470	7,173	6,876	6,487	6,099	5,562	5,395
300	Fan speed (rpm)	1,269	1,254	1,242	1,228	1,213	1,201	1,188	1,174	1,160	1,147	/	/	/
	Power input (W)	5,238	5,056	4,825	4,542	4,245	3,971	3,696	3,428	3,159	2,885	/	/	/
	Air flow (CFM)	8,450	8,184	7,933	7,717	7,495	7,157	6,819	8,460	6,102	5,560	/	/	/
325	Fan speed (rpm)	1,272	1,258	1,245	1,233	1,218	1,206	/	/	/	/	/	/	/
	Power input (W)	4,892	4,650	4,334	3,987	3,707	3,334	/	/	/	/	/	/	/
	Air flow (CFM)	7,955	7,559	7,136	6,775	6,406	5,820	/	/	/	/	/	/	/

Continued: MRCT-200CWN1-D(C)

ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
350	Fan speed (rpm)	1,276	1,262	1,248	1,235	/	/	/	/	/	/	/	/	/
	Power input (W)	4,546	4,243	3,842	3,731	/	/	/	/	/	/	/	/	/
	Air flow (CFM)	7,459	6,935	6,339	6,285	/	/	/	/	/	/	/	/	/
375	Fan speed (rpm)	1,280	1,267	/	/	/	/	/	/	/	/	/	/	/
	Power input (W)	3,982	3,457	/	/	/	/	/	/	/	/	/	/	/
	Air flow (CFM)	6,465	5,433	/	/	/	/	/	/	/	/	/	/	/
400	Fan speed (rpm)	1,284	/	/	/	/	/	/	/	/	/	/	/	/
	Power input (W)	3,417	/	/	/	/	/	/	/	/	/	/	/	/
	Air flow (CFM)	5,471	/	/	/	/	/	/	/	/	/	/	/	/

Notes:

1. Legend: X – Regulation space of motor pulley (mm);

2. N: Number of turns;

3. ESP: External static pressure (Pa).

MRCT-250CWN1-D(C)

| ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
125	Fan speed (rpm)	/	/	/	/	/	/	/	/	/	1,215	1,185	1,181	1,176
	Power input (W)	/	/	/	/	/	/	/	/	/	7,350	7,164	7,155	7,146
	Air flow (CFM)	/	/	/	/	/	/	/	/	/	12,552	12,275	12,208	12,141
150	Fan speed (rpm)	/	/	/	/	/	/	/	/	1,225	1,216	1,186	1,181	1,177
	Power input (W)	/	/	/	/	/	/	/	/	8,405	7,032	6,874	6,860	6,845
	Air flow (CFM)	/	/	/	/	/	/	/	/	12,706	12,210	11,958	11,867	11,777
175	Fan speed (rpm)	/	/	/	/	/	/	/	1,230	1,220	1,216	1,187	1,183	1,178
	Power input (W)	/	/	/	/	/	/	/	6,950	6,846	6,742	6,607	6,589	6,571
	Air flow (CFM)	/	/	/	/	/	/	/	12,704	12,377	11,835	11,597	11,500	11,402
200	Fan speed (rpm)	/	/	/	/	/	/	1,230	1,225	1,220	1,217	1,188	1,184	1,180
	Power input (W)	/	/	/	/	/	/	8,379	8,203	7,854	6,452	6,339	6,318	6,297
	Air flow (CFM)	/	/	/	/	/	/	12,654	12,423	12,048	11,460	11,237	11,132	11,028
225	Fan speed (rpm)	/	/	/	/	/	1,215	1,210	1,200	1,200	1,189	1,185	1,183	1,181
	Power input (W)	/	/	/	/	/	8,155	8,124	7,923	7,573	6,195	6,090	6,062	6,033
	Air flow (CFM)	/	/	/	/	/	12,362	12,352	12,092	11,671	11,140	10,926	10,773	10,620
250	Fan speed (rpm)	/	/	/	1,220	1,215	1,214	1,209	1,200	1,200	1,189	1,185	1,182	1,182
	Power input (W)	/	/	/	8,696	8,497	7,868	7,868	7,643	7,292	5,938	5,841	5,805	5,769
	Air flow (CFM)	/	/	/	12,321	12,063	12,045	12,050	11,762	11,294	10,821	10,615	10,413	10,212
275	Fan speed (rpm)	/	/	1,220	1,218	1,213	1,210	1,207	1,199	1,199	1,188	1,182	1,181	/
	Power input (W)	/	/	8,383	8,404	8,195	6,473	6,463	6,317	5,952	5,779	5,693	5,768	/
	Air flow (CFM)	/	/	11,957	11,970	11,681	11,533	11,509	11,280	10,792	10,452	10,300	10,200	/

Continued: MRCT-250CWN1-D(C)

| ESP	N	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3
(Pa)	X	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
300	Fan speed (rpm)	/	1,220	1,218	1,215	1,210	1,208	1,205	1,197	1,197	1,188	1,181	/	/
	Power input (W)	/	8,566	8,077	8,111	7,892	6,495	6,475	6,409	6,029	5,843	5,768	/	/
	Air flow (CFM)	/	12,174	11,596	11,619	11,299	11,308	11,215	11,045	10,536	10,098	9,999	/	/
325	Fan speed (rpm)	/	1,218	1,215	1,212	1,208	1,206	1,203	1,195	1,191	1,186	/	/	/
	Power input (W)	/	8,576	8,216	8,117	7,892	6,186	6,316	5,915	5,870	5,939	/	/	/
	Air flow (CFM)	/	12,402	11,891	11,681	11,299	10,418	10,847	9,838	10,168	9,105	/	/	/
350	Fan speed (rpm)	1,220	1,215	1,213	1,210	1,206	1,201	1,200	1,188	1,178	/	/	/	/
	Power input (W)	8,629	7,946	7,715	7,484	7,253	6,250	6,380	5,979	5,934	/	/	/	/
	Air flow (CFM)	11,462	11,818	11,374	10,931	10,487	10,034	9,605	9,356	9,025	/	/	/	/
375	Fan speed (rpm)	1,215	1,211	1,210	1,209	1,205	1,201	1,200	1,189	/	/	/	/	/
	Power input (W)	8,342	8,575	8,809	7,967	7,126	6,123	6,253	5,852	/	/	/	/	/
	Air flow (CFM)	11,076	11,514	11,952	11,069	10,187	9,733	9,304	9,055	/	/	/	/	/
400	Fan speed (rpm)	1,206	1,204	1,201	1,201	1,200	1,196	1,189	/	/	/	/	/	/
	Power input (W)	8,055	8,011	7,967	7,791	6,999	5,996	6,126	/	/	/	/	/	/
	Air flow (CFM)	10,689	10,656	10,622	10,489	9,886	9,433	9,004	/	/	/	/	/	/
425	Fan speed (rpm)	1,200	1,200	1,196	1,196	1,189	1,186	/	/	/	/	/	/	/
	Power input (W)	5,571	5,615	5,659	5,835	6,627	5,624	/	/	/	/	/	/	/
	Air flow (CFM)	8,441	8,474	8,508	8,642	9,244	8,791	/	/	/	/	/	/	/
450	Fan speed (rpm)	1,186	1,184	1,184	1,184	1,180	1,180	/	/	/	/	/	/	/
	Power input (W)	7,310	7,266	7,222	7,046	6,254	5,251	/	/	/	/	/	/	/
	Air flow (CFM)	9,406	9,373	9,339	9,205	8,603	8,150	/	/	/	/	/	/	/

Notes:

Legend: X – Regulation space of motor pulley (mm); N: Number of turns; ESP: External static pressure (Pa).
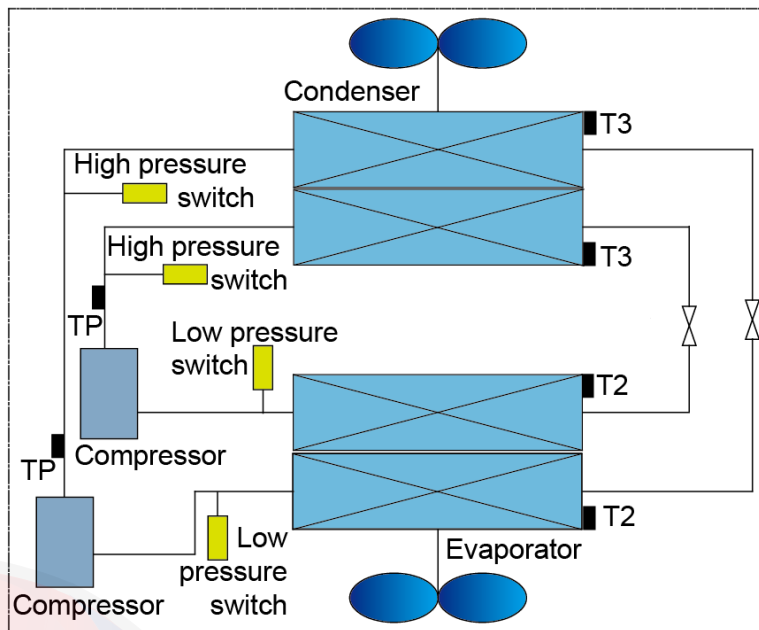
8. Refrigerant cycle diagram

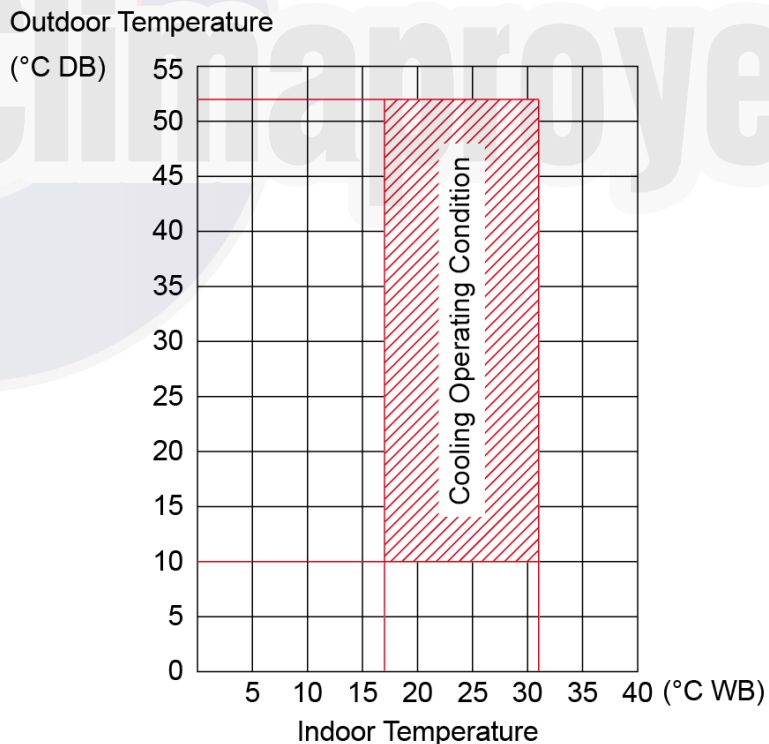**MRCT-075CWN1-D(C), MRCT-100CWN1-D(C):**
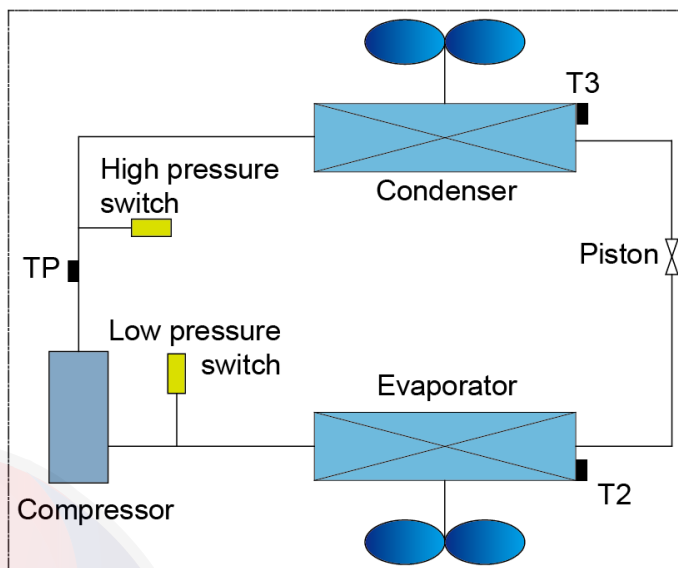
MRCT-150CWN1-D(C), MRCT-200CWN1-D(C):
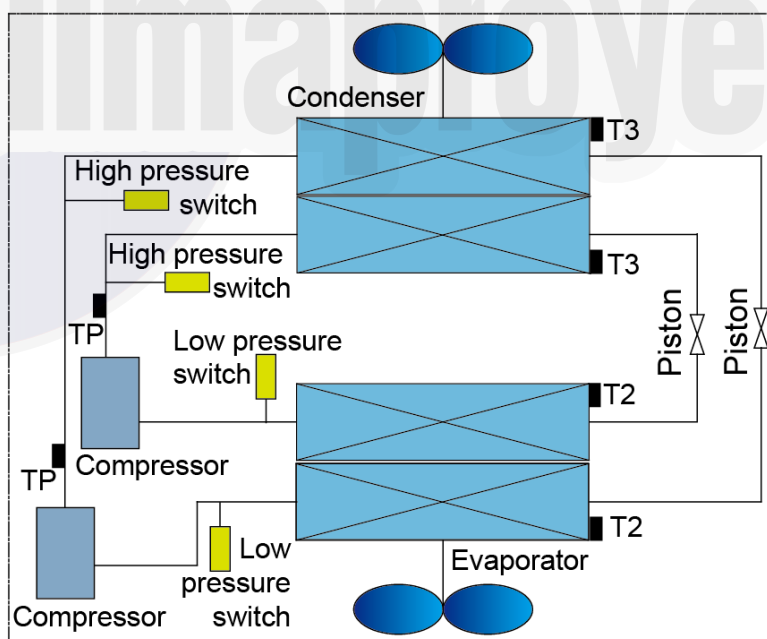
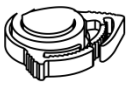**MRCT-250CWN1-D(C):**

9. Operation limits

	Outdoor temperature	Indoor temperature
Cooling only mode	10°C~52°C	17°C~31°C

Room relative humidity should be less than 80%. If the unit operates in excess, the surface of the unit may attract condensation.

10. Accessories

Item	Quantity	Shape
User manual	1	--------------
Drain outlet	1	
Snap ring	1	
Drain pipe	1	
Wired controller & wires	1	

11. Sound Performance Table

Hz Model	31.5	63	125	250	500	1,000	2,000	4,000	8,000	A-weighted
MRCT-075	72.8dB	84.1dB	75.1dB	70.6dB	71.1dB	70.2dB	70.6dB	62.1dB	54.3dB	75.6dB
MRCT-100	68.1dB	77.0dB	75.8dB	71.9dB	70.7dB	72.6dB	67.2dB	61.5dB	53.9dB	75.7dB
MRCT-150	75.3dB	80.4dB	76.2dB	75.3dB	73.9dB	72.7dB	68.7dB	64.7dB	59.5dB	76.8dB
MRCT-200	71.7dB	76.1dB	75.9dB	79.3dB	73.8dB	72.4dB	70.1dB	66.1dB	60.3dB	78.3dB
MRCT-250	72.6dB	77.0dB	76.8dB	80.5dB	74.9dB	73.8dB	71.2dB	67.3dB	64.1dB	79.2dB

Part. 3 Installations

1. General information

Warning and cautions appear at appropriate locations throughout this manual. Read these carefully, please.

Caution:

✧   Read this entire manual before beginning installation procedures.

✧   Body injury can result from high voltage electrical components, fast moving fans. For protection from these inherent hazards during installation and servicing, the electrical supply must be disconnected.

✧   If operating checks must be performed with the unit operating, it is the technicians responsibility to recognize these hazards and proceed safely.

Warning:

✧   Never replace a fuse with that of wrong rated current or other wires when a fuse blows out. Use of wire or copper wire may cause the unit to break down or cause a fire.

✧   Do not insert fingers, rods or other objects into the air inlet or outlet. When the fan is rotating at high speed, it will cause injury.

✧   Never use a flammable spray such as hair spray, lacquer or paint near the unit. It may cause a fire.

✧   Keep far away from high-frequency equipment. Also, keep away from the following places:
A place where it is full of oil, gas; Places where salty air surrounding (near the coast); A place where is caustic gas (the sulfide in hot spring); Location in above places may cause malfunction or shorten the life span of the machine.

✧   In the case of extremely strong wind, please prevent the air from flowing backwards into the outside.

✧   Snow canopy is necessary in snowfall places on the outside.

✧   In the frequent thunderstruck place, lighting proof action should be taken.

✧   The refrigerant in the air conditioner is safe and normally does not leak.

✧   The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

✧   The appliance should not be used by children without supervision.

2. Recommendations

2.1 Horizontal airflow application

$\diamond$ These units are designed and certified for outdoor installation. These units may be installed directly on wood flooring or on Class A, Class B and Class C roof covering material.

$\diamond$ Location of the unit must allow service clearance around it. Clearance of the unit must be given careful consideration.

$\diamond$ Check the handling facilities to ensure the safety of personnel and the units.

$\diamond$ Caution must be taken at all times to avoid personal injuries and damage to equipment.

$\diamond$ Unit must be mounted level for proper drainage of water through the holes in the base pan.

$\diamond$ Unit must not be exposed to direct roof water run-off.

$\diamond$ Flexible duct connectors must be of a flame retardant material. All duct work outside of the structure must be insulated and weatherproofed in accordance with local codes.

$\diamond$ Holes through exterior walls must be sealed in accordance with local codes.

$\diamond$ All fabricated outdoor ducts should be as short as possible.

2.2 Clearances

$\diamond$ The recommended clearances for single-unit installations reference to the following figure. These requirements are not only an important consideration when determining unit placement, but they are also essential to ensure adequate serviceability, maximum capacity, and peak operating efficiency.
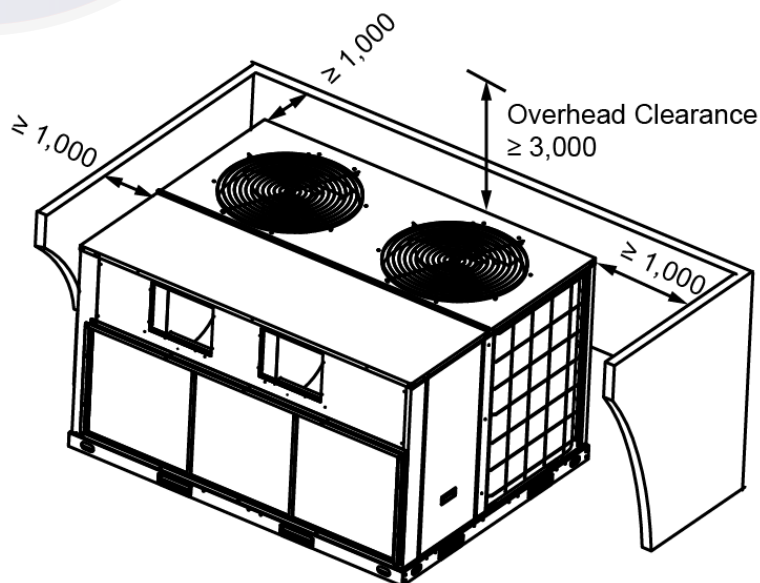

(Unit: mm)

✧ Any reduction of the unit clearances indicated in these pictures may result in condenser coil starvation or the recirculation of warm condenser air. Actual clearances which appear to be inadequate should be reviewed.

3. Lifting

✧ Rigging cables should have adequate capability to resist 3 times weight of unit. Before lift, please check and ensure that hooks are holding tightly to unit and lifting angles are no less than 60°.

✧ Cloth material or hard-paper should be padded in the contact place between unit and rigging cable. Rigging cable should be entwined a round at the hook for prevent danger by cable slip because of weight unbalance.

✧ During lifting, anyone forbidden lingering under the lifting unit.
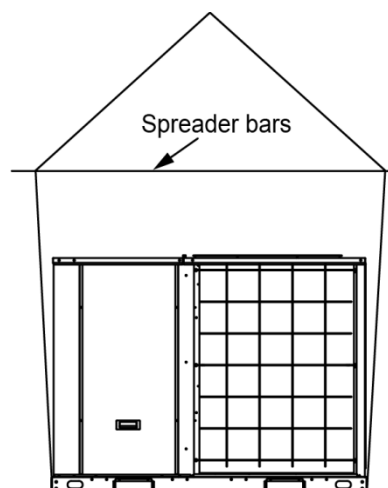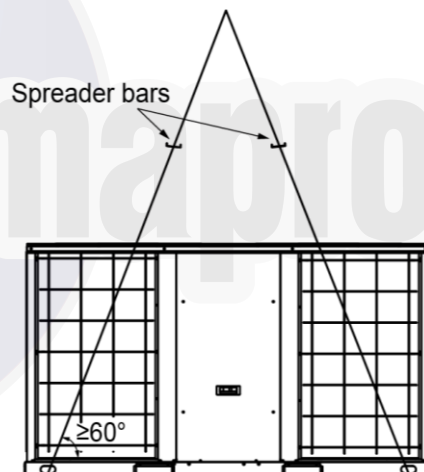
4. Installation

4.1 For roof top applications using a field fabricated frame and ducts:
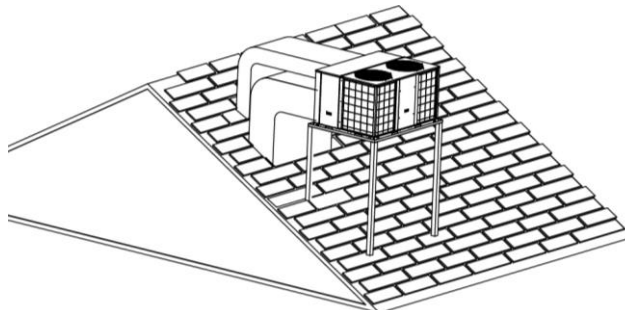
- ✧ The frame must be located and secured by bolting or welding to the roof. Flashing is required.

- ✧ The hole in the roof must be prepared in advance of installing the unit.

- ✧ Secure the ducts to the roof.

- ✧ Place the unit to the frame or roof curb.

- ✧ Insulate any ductwork outside of the structure with at least 2 inches of insulation and then weatherproof. There must be a weatherproof seal where the duct enters the structure.

- ✧ Complete the installation according to the instructions.

- ✧ Typical rooftop application with frame.

4.2 For ground level installations:
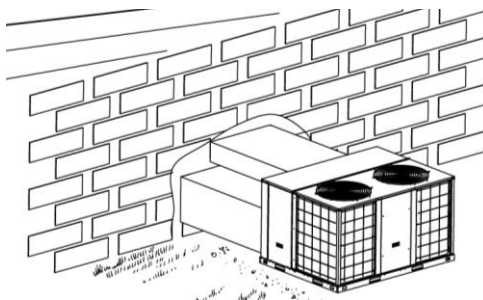
- ✧ The unit should be positioned on a pad in the size of the unit or larger. The unit must be level on the pad. The pad must not come in contact with the structure. Be sure the outdoor portion of the supply and return air ducts are as short as possible.

- ✧ Place the unit on the pad.

$\diamond$ Attach the supply and return air ducts to the unit.

$\diamond$ Insulate any ductwork outside of the structure with at least 2 inches of insulation and weatherproof. There must be a weatherproof seal where the duct enters the structure.

$\diamond$ Complete the installation.

5. Condensate drainage
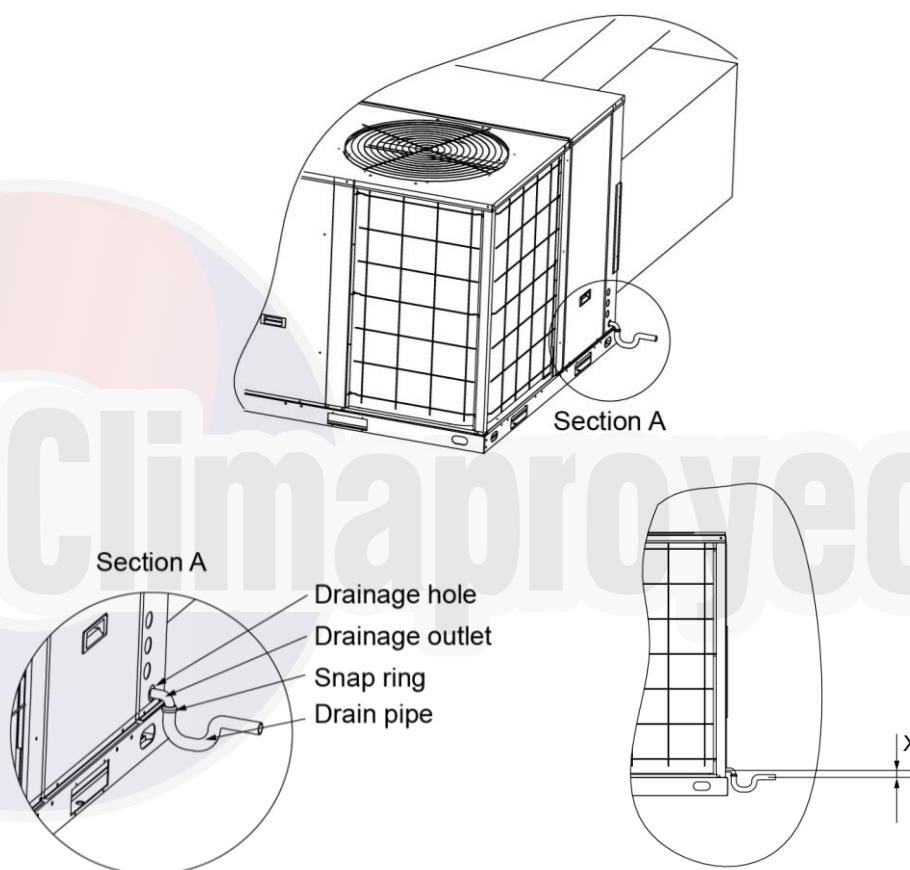
Model	X value (mm)
MRCT-075CWN1-D(C)	20 ≤ X ≤ 40
MRCT-100CWN1-D(C)	20 ≤ X ≤ 40
MRCT-150CWN1-D(C)	20 ≤ X ≤ 40
MRCT-200CWN1-D(C)	20 ≤ X ≤ 40
MRCT-250CWN1-D(C)	20 ≤ X ≤ 40

6. Duct work

Unit

Weather proof
this seam

Field duct
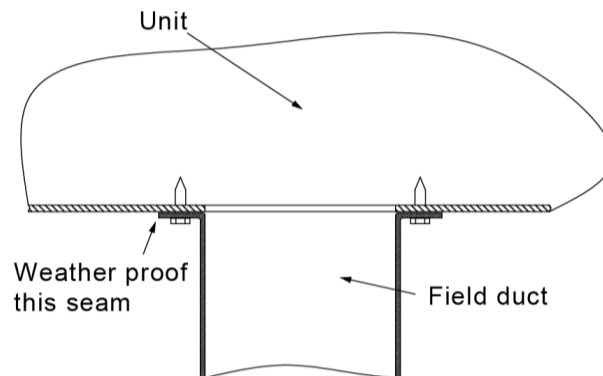
✧ All conditioned air ductwork should be insulated to minimize heating and cooling duct losses.
Use a minimum of 2 inches of insulation with a vapor barrier. The outside ductwork must be
weatherproofed between the unit and the building.

✧ When attaching ductwork to a horizontal unit, provide a flexible watertight connection to prevent
noise transmission from the unit to the ducts. The flexible connection must be indoors and made
out of heavy canvas.

✧ Do not draw the canvas taut between the solid ducts.

✧ At least 1m flame resistant layer must be laid at the end of air duct internal surface.

7. Electrical wiring

7.1 Warning

✧ An all-pole disconnection switch having a contact separation of at least 3mm in all poles
should be connected in fixed wiring.

✧ The appliance shall be installed in accordance with national wiring regulations.

✧ An all-pole disconnection device which has at least 3mm separation distance in all pole and
a residual current device (RCD) with the rating of above 10mA shall be incorporated in the
fixed wiring according to the national rule.

✧ The appliance shall be installed in accordance with national wiring regulations.

7.2 Wiring provision

✧ The units are internally wired at the factory according to generally accepted electrical
technology.

✧ Main power wiring to the unit control wiring between the control center and the unit, and earth wiring are required in the field.

✧ The following components are required: main power fuses; conduit coupling.

✧ Wire and fuse sizes should be selected in accordance with national and standard, taking the designed maximum current shall be the total of the compressor maximum current, condenser fan motor current and evaporator fan motor current.

✧ The wire size between the wired controller and the unit should be determined according to the following table, because the 24V power source is applied to the control circuit.

	Wiring length between wired controller and unit (One way)				
Min. wire size (mm^2)	10m	15m	20m	30m	40m
	0.5	0.5	0.75	0.75	1.0

✧ Main power supply parameters:

Model	Main power	Main power switch	Fuse
MRCT-075CWN1-D(C)		63A	50A
MRCT-100CWN1-D(C)		75A	63A
MRCT-150CWN1-D(C)	220V 3Ph 60Hz	100A	90A
MRCT-200CWN1-D(C)		125A	110A
MRCT-250CWN1-D(C)		150A	125A

Model	Wires for power supply	Type of wires
MRCT-075CWN1-D(C)	3×16mm² + 2×10mm²	3 × UL1015 5AWG 2 × UL1015 7AWG
MRCT-100CWN1-D(C)	3×16mm² + 2×10mm²	3 × UL1015 5AWG 2 × UL1015 7AWG
MRCT-150CWN1-D(C)	3×25mm² + 2×10mm²	3 × UL1015 3AWG 2 × UL1015 7AWG
MRCT-200CWN1-D(C)	3×35mm² + 2×16mm²	3 × UL1015 2AWG 2 × UL1015 5AWG
MRCT-250CWN1-D(C)	3×50mm² + 2×25mm²	3 × UL1015 1/0AWG 2 × UL1015 3AWG

♦ Power supply wiring diagram
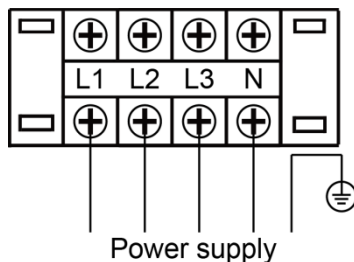
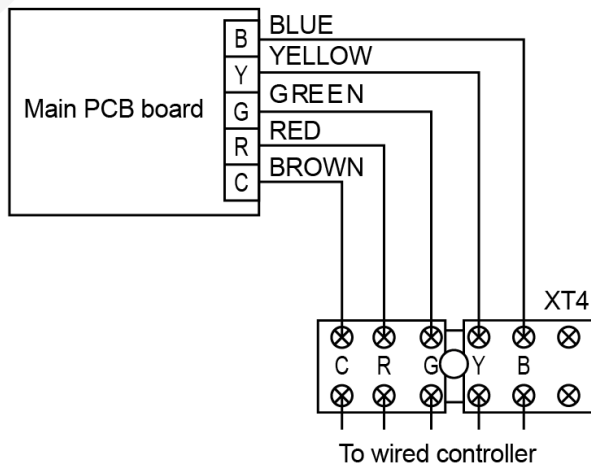♦ Wired controller wiring diagram (Standard wired controller)

MRCT-100CWN1-D(C), MRCT-150CWN1-D(C),

MRCT-200CWN1-D(C), MRCT-250CWN1-D(C):
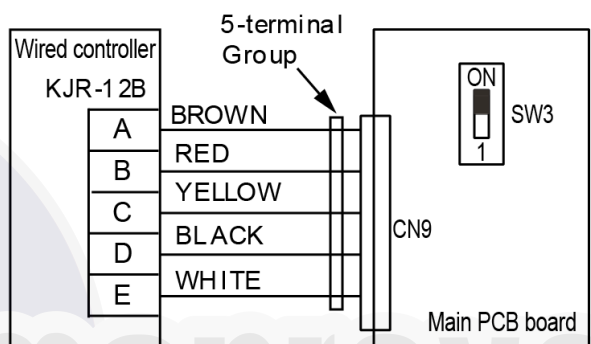
The standard wired controller model of these units is KJR-12B/dp(T)-E. When KJR-12B is

connected, the switch SW3 should be set to ON.

MRCT-075CWN1-D(C):

The standard wired controller model of these units is KJR-25B.

✧ Wired controller wiring diagram (Optional wired controller)

MRCT-075CWN1-D(C):

These units cannot directly connect with wired controller KJR-12B. If these units connect

with KJR-12B, it should be customized to change the main PCB board of the unit.

MRCT-100CWN1-D(C), MRCT-150CWN1-D(C),

MRCT-200CWN1-D(C), MRCT-250CWN1-D(C):
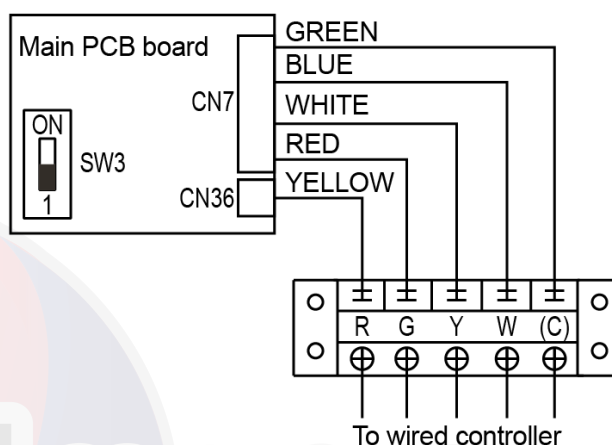
If choose KJR-23B or Non-programmed electrical thermostat of other brand, such as

Honeywell. Wiring should refer to the manual of the thermostat. After connection, set SW3

in 1. Finally, shut off the power supply and then repower.

8. Start-up

Before starting unit:

✧ Is the unit properly located and level with the proper clearance?

✧ Is the duct work correctly sized, run, taped, insulated, and weatherproofed with proper unit

   arrangement?

✧ Is the wiring properly sized and run according to the unit wiring diagram?

✧ Are all the wiring connections tight, including those in the unit?

✧ Has the unit been properly grounded and fused with the recommended fuse size?

✧ Has the air conditioning system been checked at the service ports for charge and leak tested if

   necessary?

✧ Does the condenser fan and indoor blower fan free without rubbing, and are they tight on the

shafts?

✧ Are all covers and access panels in place to prevent air loss and safety hazards?

Starting the unit:

✧ When the unit operates under cooling mode, please check the line voltage of the unit. The voltage should be within the range shown on the unit nameplate.

✧ If low voltage is encountered, check the size and the length of power supply wire from the mian disconnect to the unit. The line may be undersized for the length of the run.

Shut-down the unit:

✧ Place the system selector in the OFF position or reset thermostat (Wired controller) at a setting above room temperature.

✧ Do not de-energize the main power supply disconnect except when unit is to be serviced.

9. Safety control

Functions

✧ Minutes delay for the compressor start-up:

At the beginning of energizing, 3-minutes delay should be taken to start the compressor. While after the stop of the compressor, 7-minutes delay should be taken to restart the compressor.

✧ Compressor discharge temperature protection:

When the temperature of compressor discharge is higher than 125°C (257°F), the compressor will stop. Once the temperature is lower than 90°C (194°F), the compressor can be started again.

✧ Reverse phase protection relay:

The reverse phase protection relay will make the unit not start, when the power supply source is in correctly conneted.

The checking of phase order is just carried out at the first time of electrifying. If malfunction happens then the checking will be going on until the order of phase is right, and the error code will be displayed on the board. If there is no problem in the first checking, then it will be omitted.

✧ High pressure and low pressure protection :

When high pressure is equal or higher than 638 Psi, and lower pressure is equal or lower than

21Psi, the unit will stop.

Error & protection code

✦ **MRCT-100CWN1-D(C), MRCT-150CWN1-D(C)**

MRCT-200CWN1-D(C), MRCT-250CWN1-D(C):

Type	Content	Code	Remarks
Normal	Standby	------	
Normal	Constraint cool	ON	
Normal	Run	10.	
Error	Compressor phase sequence error or phase lack	E0	
Error	Condenser pipe temperature sensor (T3) in system A error	E1	
Error	Condenser pipe temperature sensor (T3) in system B error	E2	
Error	Over current protection of system A's compressor is active 3 times within 1 hour	E3	Unit shall be power-off to recovery
Error	Over current protection of system B's compressor is active 3 times within 1 hour	E4	Unit shall be power-off to recovery
Error	Evaporator pipe temperature sensor (T2) in system A error	E5	
Error	Evaporator pipe temperature sensor (T2) in system B error	E6	
Error	High & low pressure protection, or high discharge temperature protection of system A reached 3 times within 1 hour.	E7	
Error	High & low pressure protection, or high discharge temperature protection of system B reached 3 times within 1 hour.	E8	
Error	Indoor side room temperature sensor (T1) error	E9	
Error	Ambient temperature sensor (T4) error	EA	
Error	Wired controller communication error	Eb	
Error	Eeprom error	EE	
Protection	Over-current protection of compressor in system A	P0	
Protection	Over-current protection of compressor in system B	P1	
Protection	Over-current protection of indoor side fan motor	P2	

Continued :

Type	Content	Code	Remarks
Protection	Comprehensive protection of outdoor side fan motor	P3	
Protection	Protection of high/low pressure or high temperarture protection of discharge sensor in system A	P4	Comprehensive protection of system A
Protection	Protection of high/low pressure or high temperarture protection of discharge sensor in system B	P5	Comprehensive protection of system B
Protection	High temperature protection of condenser in system A	P8	Power off to recovery.
Protection	High temperature protection of condenser in system B	P9	Power off to recovery.
Protection	Anti-freezing protection of evaporator in system A	Pc	
Protection	Anti-freezing protection of evaporator in system B	Pd	
Protection	Protection of outdoor ambient temperature	PA	

Notes: If same protection which includes all system for 2-stage products is triggered 3 times within 1 hour, the unit should be power-off to recovery.

✧ **MRCT-075CWN1-D(C):**

Content	LED1 (Red)	LED2 (Yellow)	LED3 (Green)
Standby	OFF	OFF	ON
Normal operation	ON	ON	ON
Phase sequence error or phase lack	FLASH	FLASH	FLASH
Indoor side room temperature (T1) error, or high pressure protection, or high temperature protection of discharge sensor	FLASH	FLASH	OFF
Evaporator pipe temperature sensor (T2) error	FLASH	OFF	FLASH
Condenser pipe temperature sensor (T3) error	OFF	FLASH	FLASH
Ambient temperature sensor (T4) error	ON	FLASH	FLASH
Over-current protection of compressor	OFF	OFF	FLASH
Low temperature protection of evaporator	OFF	FLASH	OFF

Continued:

Content	LED1	LED2	LED3
	(Red)	(Yellow)	(Green)
Low temperature protection of evaporator	OFF	FLASH	OFF
High temperature protection of condenser	FLASH	OFF	OFF
Wired controller communication error	FLASH	FLASH	ON
Low pressure protection	FLASH	ON	FLASH

Phase sequence error or phase default:
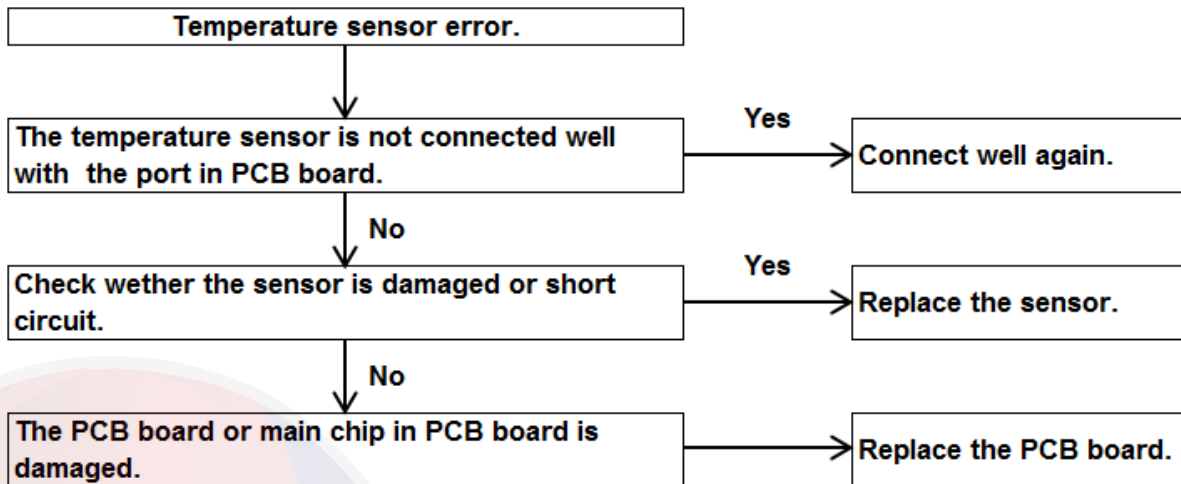
Compressor sequence error or phase default:
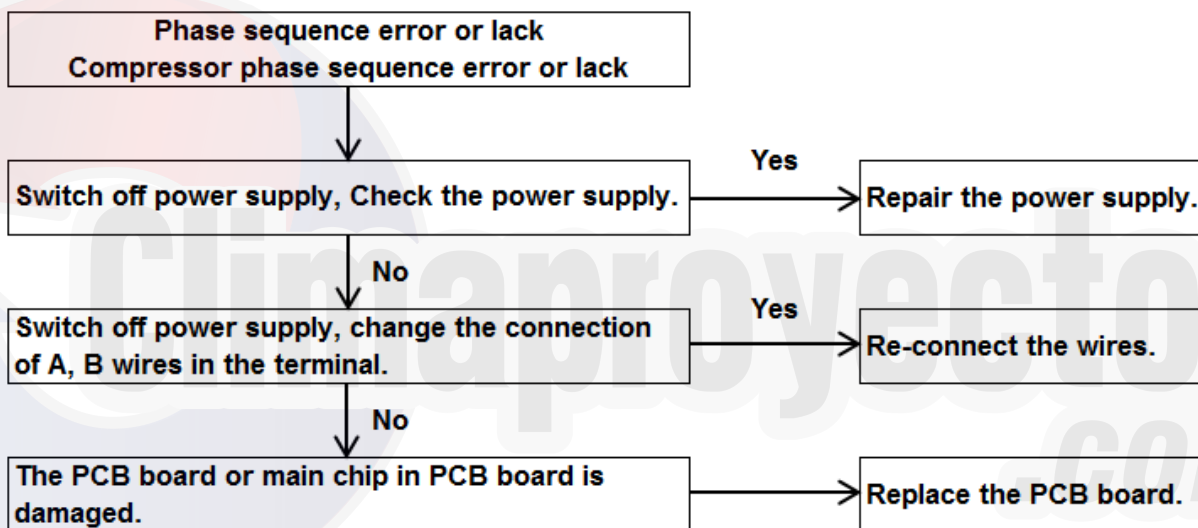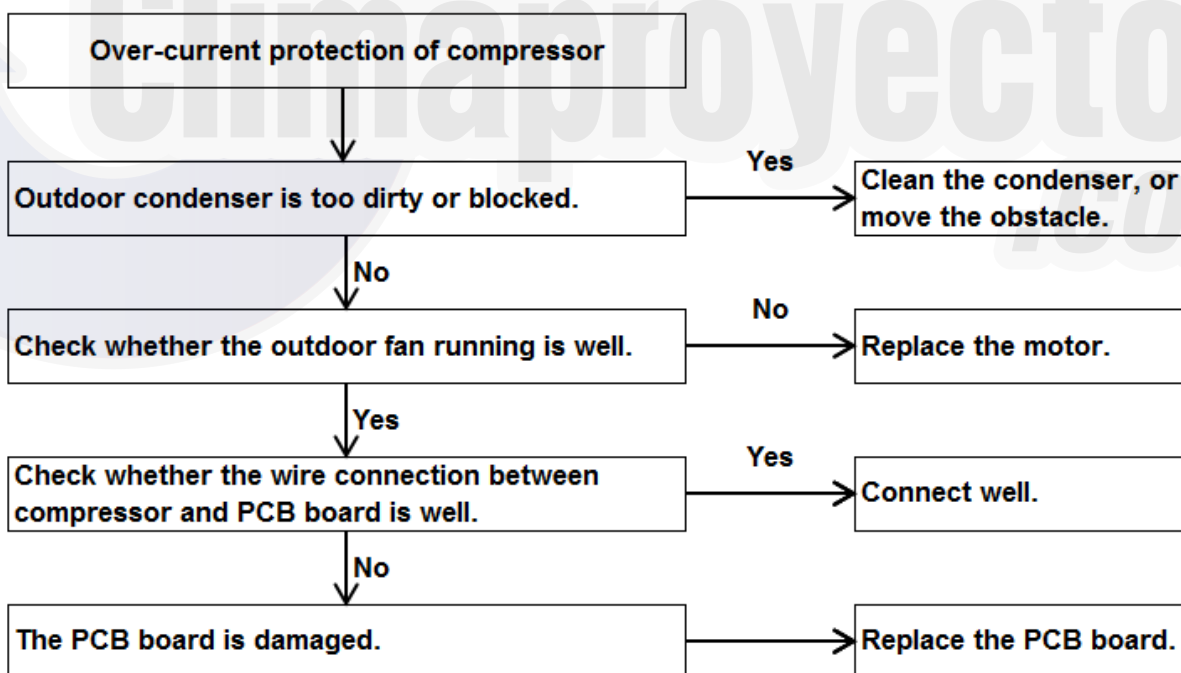
Evaporator pipe temperature sensor (T2) error:

Condenser pipe temperature sensor (T3) error :

Ambient temperature sensor (T4) error:

Indoor side room temperature sensor (T1) error :

Temperature sensor error.

↓

The temperature sensor is not connected well with the port in PCB board.	**Yes** →	Connect well again.

↓ **No**

Check wether the sensor is damaged or short circuit.	**Yes** →	Replace the sensor.

↓ **No**

The PCB board or main chip in PCB board is damaged.	→	Replace the PCB board.

Over-current protection of compressor:

Over-current protection of compressor

↓

Outdoor condenser is too dirty or blocked.	**Yes** →	Clean the condenser, or move the obstacle.

↓ **No**

Check whether the outdoor fan running is well.	**No** →	Replace the motor.

↓ **Yes**

Check whether the wire connection between compressor and PCB board is well.	**Yes** →	Connect well.

↓ **No**

The PCB board is damaged.	→	Replace the PCB board.

High pressure protection:

High discharge temperature protection :

```
┌─────────────────────────────────────┐
│ High pressure protection or high      │
│ temperature protection of discharge   │
│ sensor.                               │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Outdoor condenser is too dirty or     ├────────▶│ Clean the condenser, or│
│ blocked.                              │         │ move the obstacle.     │
└─────────────────────────────────────┘         └──────────────────────┘
              │ No
              ▼
┌─────────────────────────────────────┐   No    ┌──────────────────────┐
│ Check whether the outdoor fan running ├────────▶│ Replace the motor.     │
│ is well.                              │         └──────────────────────┘
└─────────────────────────────────────┘
              │ Yes
              ▼
┌─────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Check whether the hi-pressure sensor  ├────────▶│ Replace the sensor and │
│ and discharge sensor is well.         │         │ connect it well.       │
└─────────────────────────────────────┘         └──────────────────────┘
              │ No
              ▼
┌─────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Check whether the pressure of system  ├────────▶│ It is normal.          │
│ is high, suction/discharge            │         └──────────────────────┘
│ temperature is high.                  │
└─────────────────────────────────────┘
              │ No
              ▼
┌─────────────────────────────────────┐         ┌──────────────────────┐
│ The PCB board is damaged.             ├────────▶│ Replace the PCB board. │
└─────────────────────────────────────┘         └──────────────────────┘
```

Wired controller communication error :

```
┌─────────────────────────────────────┐
│ Wired controller communication error  │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐   No    ┌──────────────────────┐
│ Check the connection between PCB      ├────────▶│ Connect it well.       │
│ board and wired controller is well.   │         └──────────────────────┘
└─────────────────────────────────────┘
              │ Yes
              ▼
┌─────────────────────────────────────┐   No    ┌──────────────────────┐
│ Check the connection wire between PCB ├────────▶│ Replace the wire.      │
│ board and wired controller is well.   │         └──────────────────────┘
└─────────────────────────────────────┘
              │ Yes
              ▼
┌─────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Replace another wired controller,     ├────────▶│ Replace the wired      │
│ check whether the display is normal.  │         │ controller.            │
└─────────────────────────────────────┘         └──────────────────────┘
              │ No
              ▼
┌─────────────────────────────────────┐         ┌──────────────────────┐
│ The PCB board is damaged.             ├────────▶│ Replace the PCB board. │
└─────────────────────────────────────┘         └──────────────────────┘
```

Low pressure protection :

```
┌─────────────────────────────────┐
│     Low pressure protection.    │
└─────────────────────────────────┘
                 │
                 ▼                      No      ┌─────────────────────────┐
┌─────────────────────────────────┐ ─────────> │ Replace the sensor and  │
│ Check whether the low pressure  │            │ connect it well.        │
│ sensor is well.                 │            └─────────────────────────┘
└─────────────────────────────────┘
                 │ Yes
                 ▼                      Yes     ┌─────────────────────────┐
┌─────────────────────────────────┐ ─────────> │ Clean the evaporator or │
│ Check whether indoor evaporator │            │ repair the indoor fan.  │
│ is dirty or fan stops / runs    │            └─────────────────────────┘
│ slowly.                         │
└─────────────────────────────────┘
                 │ No
                 ▼                      Yes     ┌─────────────────────────┐
┌─────────────────────────────────┐ ─────────> │ Repair the leakge, and  │
│ Check whether there is any      │            │ re-charge refrigerant.  │
│ leakage in system or            │            └─────────────────────────┘
│ refrigerant is not enough.      │
└─────────────────────────────────┘
                 │ No
                 ▼                      Yes     ┌─────────────────────────┐
┌─────────────────────────────────┐ ─────────> │ It is normal.           │
│ Check whether the low side      │            └─────────────────────────┘
│ pressure is low.                │
└─────────────────────────────────┘
                 │ No
                 ▼                              ┌─────────────────────────┐
┌─────────────────────────────────┐ ─────────> │ Replace the PCB board.  │
│ The PCB board is damaged.       │            └─────────────────────────┘
└─────────────────────────────────┘
```

Eeprom error :

```
┌─────────────────────────────────┐
│          Eeprom error           │
└─────────────────────────────────┘
                 │
                 ▼                      No      ┌─────────────────────────┐
┌─────────────────────────────────┐ ─────────> │ Set again.              │
│ Check whether the Eeprom is     │            └─────────────────────────┘
│ connected with PCB board        │
│ tightly.                        │
└─────────────────────────────────┘
                 │ Yes
                 ▼
┌─────────────────────────────────┐
│ Replace the PCB board.          │
└─────────────────────────────────┘
```

Over-current protection of indoor side fan motor :

```
┌─────────────────────────────────────────┐
│ Over-current protection of indoor side   │
│ fan motor                                 │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Evaporator is too dirty or blocked.       │───────▶│ Clean, or move the   │
└─────────────────────────────────────────┘         │ obstacle.            │
                    │ No                              └──────────────────────┘
                    ▼
┌─────────────────────────────────────────┐   No    ┌──────────────────────┐
│ Check whether the fan motor is well.      │───────▶│ Replace the motor.   │
└─────────────────────────────────────────┘         └──────────────────────┘
                    │ Yes
                    ▼
┌─────────────────────────────────────────┐         ┌──────────────────────┐
│ The PCB board is damaged.                 │───────▶│ Replace the PCB board.│
└─────────────────────────────────────────┘         └──────────────────────┘
```

Comprehensive protection of outdoor side fan motor :

```
┌─────────────────────────────────────────┐
│ Comprehensive protection of outdoor side │
│ motor.                                    │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Check whether condenser is too dirty or   │───────▶│ Clean the condenser, or│
│ block.                                    │         │ move the obstacle.   │
└─────────────────────────────────────────┘         └──────────────────────┘
                    │ No
                    ▼
┌─────────────────────────────────────────┐   Yes   ┌──────────────────────┐
│ Check whetehr the outdoor side fan is     │───────▶│ Replace the motor.   │
│ fault.                                    │         └──────────────────────┘
└─────────────────────────────────────────┘
                    │ No
                    ▼
┌─────────────────────────────────────────┐         ┌──────────────────────┐
│ The PCB board is damaged.                 │───────▶│ Replace the PCB board.│
└─────────────────────────────────────────┘         └──────────────────────┘
```

High temperature protection of condenser :

High temperature protection of condenser

Check whether the pipe temperature sensor of condenser is well or connected well. → **No** → Replace the sensor or re-connect again.

↓ **Yes**

Check whether the condenser is too dirty or blocked. → **Yes** → Clean the condenser, or move the obstacle.

↓ **No**

Check whether outdoor fan-motor is stop. → **Yes** → Repair the fan motor.

↓ **No**

Check whether the ambient temperature is higher than 52°C. → **Yes** → It is normal.

↓ **No**

The PCB board is damaged. → Replace the PCB board.

Low temperature protection of evaporator:

Anti-freezing protection of evaporator :

Low temperature protection of evaporator

Check whether the pipe temperature sensor of condenser is well or connected well. → **No** → Replace the sensor or re-connect again.

↓ **Yes**

Check whether the evaporator is too dirty or blocked. → **Yes** → Clean the evaporator, or move the obstacle.

↓ **No**

Check whether indoor fan-motor is stop. → **Yes** → Repair the fan motor.

↓ **No**

The PCB board is damaged. → Replace the PCB board.

Protection of outdoor ambient temperature :

10. Maintenance

Caution

✧ Do not operate the unit without the evaporator fan access panel in place. Reinstall the access panel after performing any maintenance. Operating the unit without the access panel may result in severe personal injury.

✧ Disconnect the power supply before cleaning and maintenance.

Regular maintenance

Some regular maintenance has been carry on by user. It includes: change the one-time dust filter, clean casing, wash condenser and replace a new belt, as well as do some test for the equipment.
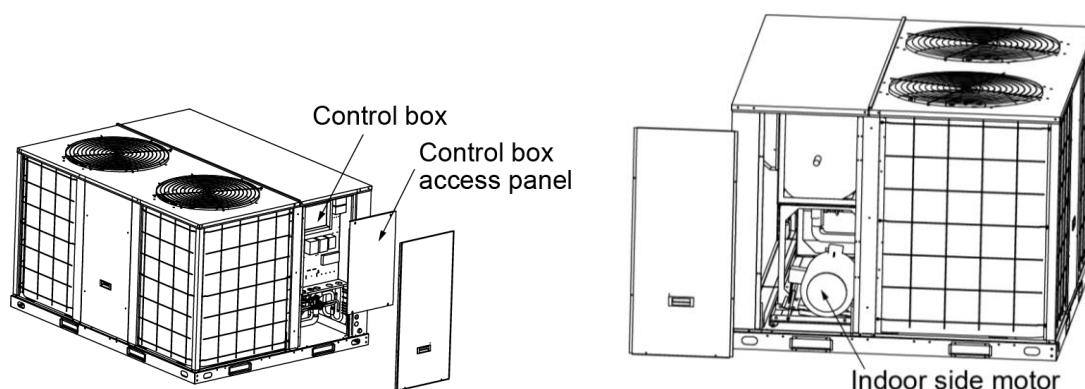
Regulating belt of tension

Refer to the following figure, loose 2 bolts, and move the electric motor to adjust belt tension. These

two bolts are used for precision adjustment.

2 bolts
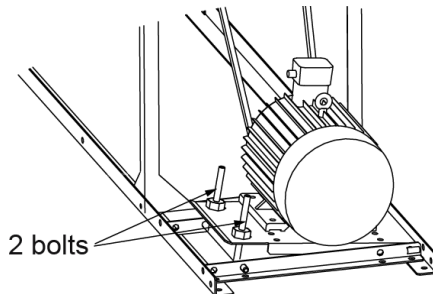
Belt tension is measured by belt tension indicator

✧ Calculate the deflection, deflection (L) = A/64.
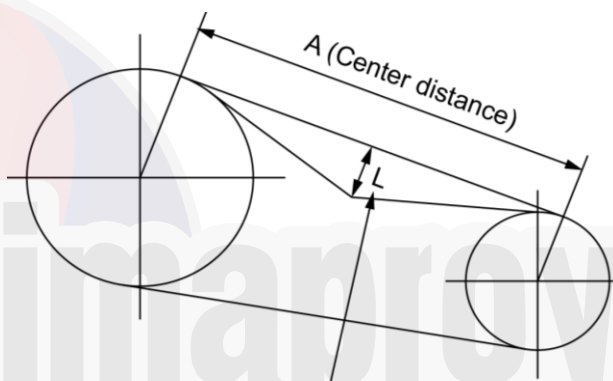
Belt tension indicator applied
to middle center distance

Notes: L=A/64

Model	A (mm)
MRCT-100CWN1-D(C)	380
MRCT-150CWN1-D(C)	560
MRCT-200CWN1-D(C)	580
MRCT-250CWN1-D(C)	480

✧ Measure the belt deflection force, the force should be between the values shown in the

following lists.

✧ The belt which is too tight or too loose may generate noise and be harmful to the unit.

Belt section	For required to deflection		
	Small pulley diameter	Newton	Kilogram-force
SPA	80mm~132mm	25N~35N	2.5kg.f~3.6kg.f

Air intake filter clean (The filter should be customized).

Air intake filter should be customized as one individual packing, which is installed in site.

Step 1: Dismantle the air filter.

◇ Twist of screws and get out the plate.

◇ Pull out the filter along the supporting slot.

Plate   Air filter   Air filter assembly
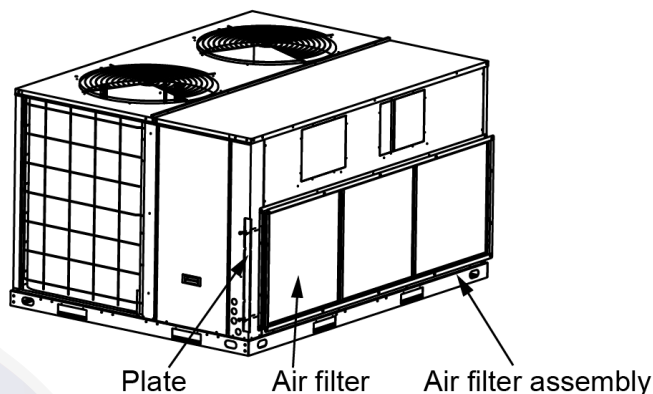
Step 2: Clean the air filter.

◇ Vacuum cleaner or fresh water may be used to clean the air filter. If the dust accumulated too much, please use soft brush and mild detergent to clean.

◇ The air-in side should face up when using vacuum cleaner.

◇ The air-in side should face down when using water.
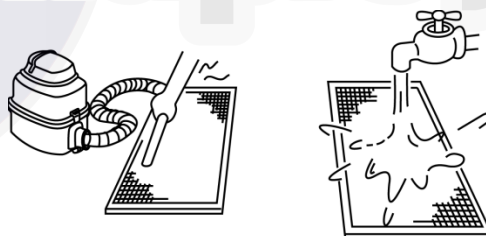
◇ After cleaning, please dry out in cool place. Do not dry out the air filter under direct sunshine or heat.

Step 3: Re-install the air filter.

Condenser coil

Unfiltered air circulates through the unit's condenser coil can cause the coil's surface to become clogged with dust. Clean the coil, vertically (i.e., with the fins), and stroke the coil surface with a soft brush. Be sure to keep all vegetation away from the condenser coil area.

Periodic maintenance

To keep the unit operating safety and efficiently, the entire system should be checked at least once

each year. The examining the areas include:

- ✓ Filter;

- ✓ Motors and drive system components;

- ✓ Economizer gaskets (Reserved);

- ✓ Safety controls;

- ✓ Electrical components and wiring (For possible replacement and connection tightness);

- ✓ Condenser drainage (For cleaning);

- ✓ Unit duct connections (To check that they are physically sound and sealed to the unit casing);

- ✓ Unit mounting support (For structural integrity);

- ✓ The unit (For obvious unit deterioration).

Appendix: - Temperature sensor

Room / Pipe temperature sensor Resistance Valve (R25 = 10 kOhm±1%, B25/50 = 4100K±1%)

Temperature (°C)	R Max. (KΩ)	R Nor. (KΩ)	R Min. (KΩ)	Temperature Tolerance (°C)	
0	35.630	34.840	34.064	-0.41	0.42
1	33.741	33.011	32.292	-0.40	0.42
2	31.963	31.288	30.624	-0.39	0.41
3	30.290	29.666	29.051	-0.38	0.40
4	28.714	28.137	27.569	-0.38	0.39
5	27.230	26.697	26.172	-0.37	0.39
6	25.831	25.339	24.853	-0.36	0.38
7	24.513	24.058	23.609	-0.36	0.37
8	23.270	22.850	22.435	-0.35	0.36
9	22.097	21.710	21.327	-0.34	0.36
10	20.991	20.633	20.279	-0.33	0.35
11	19.947	19.617	19.290	-0.32	0.34
12	18.961	18.656	18.355	-0.32	0.33
13	18.030	17.749	17.471	-0.31	0.32
14	17.150	16.891	16.635	-0.30	0.32
15	16.318	16.080	15.844	-0.29	0.31
16	15.532	15.313	15.095	-0.29	0.30
17	14.788	14.587	14.386	-0.28	0.29
18	14.085	13.899	13.715	-0.27	0.28
19	13.419	13.249	13.079	-0.26	0.27
20	12.789	12.632	12.477	-0.25	0.27
21	12.191	12.048	11.906	-0.25	0.26
22	11.626	11.495	11.364	-0.24	0.25
23	11.090	10.970	10.850	-0.23	0.24

Continued:

Temperature (°C)	R Max. (KΩ)	R Nor. (KΩ)	R Min. (KΩ)	Temperature Tolerance (°C)	
24	10.582	10.472	10.363	-0.22	0.23
25	10.100	10.000	9.9000	-0.21	0.22
26	9.6518	9.5519	9.4520	-0.22	0.23
27	9.2262	9.1265	9.0270	-0.23	0.25
28	8.8218	8.7226	8.6235	-0.25	0.26
29	8.4376	8.3389	8.2405	-0.26	0.27
30	8.0723	7.9743	7.8767	-0.27	0.28
31	7.7250	7.6279	7.5312	-0.28	0.29
32	7.3947	7.2985	7.2028	-0.29	0.31
33	7.0805	6.9853	6.8906	-0.30	0.32
34	6.7814	6.6873	6.5939	-0.32	0.33
35	6.4968	6.4038	6.3116	-0.33	0.34
36	6.2257	6.1340	6.0431	-0.34	0.35
37	5.9676	5.8772	5.7875	-0.35	0.37
38	5.7216	5.6326	5.5443	-0.36	0.38
39	5.4873	5.3996	5.3127	-0.38	0.39
40	5.2639	5.1776	5.0922	-0.39	0.40
41	5.0509	4.9660	4.8821	-0.40	0.42
42	4.8478	4.7644	4.6819	-0.41	0.43
43	4.6541	4.5721	4.4911	-0.43	0.44
44	4.4692	4.3887	1.3092	-0.44	0.45
45	4.2928	4.2137	4.1357	-0.45	0.47
46	4.1244	4.0468	3.9702	-0.46	0.48
47	3.9636	3.8874	3.8123	-0.48	0.49
48	3.8100	3.7353	3.6617	-0.49	0.51

Continued:

Temperature (°C)	R Max. (KΩ)	R Nor. (KΩ)	R Min. (KΩ)	Temperature Tolerance (°C)	
49	3.6632	3.5900	3.5179	-0.50	0.52
50	3.5230	3.4512	3.3805	-0.52	0.53
51	3.3890	3.3186	3.2494	-0.53	0.55
52	3.2608	3.1919	3.1241	-0.54	0.56
53	3.1383	3.0708	3.0044	-0.56	0.57
54	3.0211	2.9550	2.8900	-0.57	0.59
55	2.9090	2.8442	2.7806	-0.58	0.60
56	2.8017	2.7382	2.6760	-0.60	0.61
57	2.6990	2.6369	2.5759	-0.61	0.63
58	2.6006	2.5398	2.4802	-0.63	0.64
59	2.5064	2.4469	2.3886	-0.64	0.66
60	2.4162	2.3580	2.3009	-0.65	0.67
61	2.3298	2.2728	2.2170	-0.67	0.68
62	2.2470	2.1912	2.1366	-0.68	0.70
63	2.1676	2.1130	2.0596	-0.70	0.71
64	2.0914	2.0381	1.9858	-0.71	0.73
65	2.0184	1.9662	1.9151	-0.73	0.74
66	1.9484	1.8973	1.8474	-0.74	0.76
67	1.8812	1.8312	1.7824	-0.76	0.77
68	1.8167	1.7678	1.7201	-0.77	0.78
69	1.7548	1.7070	1.6603	-0.79	0.80
70	1.6954	1.6486	1.6029	-0.80	0.81

Appendix: - EHK (Electrical Heater Kits)

1. EHK Parameter

Model	EHK					
	Controlling Box	EH Duct	Input (kW)	FLA (A)	MCA (A)	MOP (A)
MRCT-075CWN1-D(C)	EHK-BOX-A	EHK-15A(D)	15	39.4	49.3	50
MRCT-100CWN1-D(C)	EHK-BOX-A	EHK-20A(D)	20	52.5	65.6	70
MRCT-150CWN1-D(C)	EHK-BOX-A	EHK-20A(D)	20	52.5	65.6	70
	EHK-BOX-B	EHK-30A(D)	30	78.8	98.5	100
MRCT-200CWN1-D(C)	EHK-BOX-B	EHK-40A(D)	40	105	131.3	150
MRCT-250CWN1-D(C)	EHK-BOX-B	EHK-40B(D)	40	105	131.3	150

Notes:

1. EHK (Electrical heater kits) includes controlling box and EH (Electrical heater) duct. It is independently packaged, and should be fixed with rooftop package unit on-site.

2. MRCT-150CWN1-R(C) can be customized with 20kW EHK or 30kW electrical heater kits;

3. FLA: Full Load Amps;

4. MCA: Min. Current Amps;

5. MOP: Max. Over Protector;

6. The values of FLA, MCA and MOP are based on the power supply of 220V.

2. Airflow pressure drop

Model	Airflow pressure drop (inches W.C. [Pa])			
	15kW EHK	20kW EHK	30kW EHK	40kW EHK
MRCT-075CWN1-D(C)	0.32 [80]	-	-	-
MRCT-100CWN1-D(C)	-	0.32 [80]	-	-
MRCT-150CWN1-D(C)	-	0.32 [80]	0.40 [100]	-
MRCT-200CWN1-D(C)	-	-	-	0.64 [160]
MRCT-250CWN1-D(C)	-	-	-	0.64 [160]

3. Assemble

Step 1: Assembly the electrical heater duct to the supply opening by 10 pieces of screws.
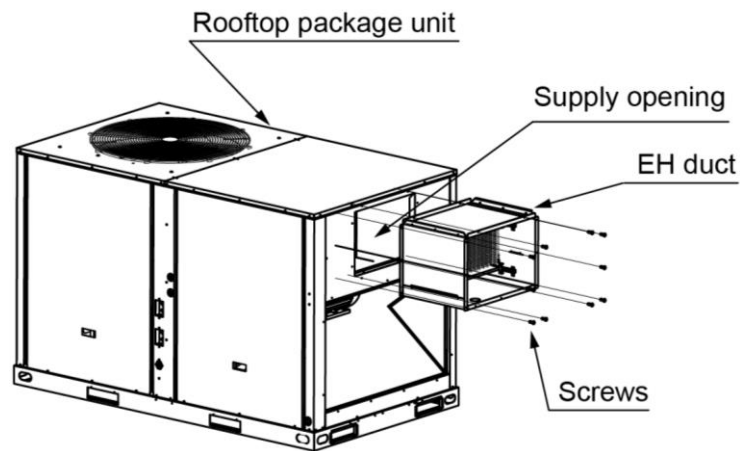
Step 2: Place the controlling box into the buckle of the electrical heater duct.
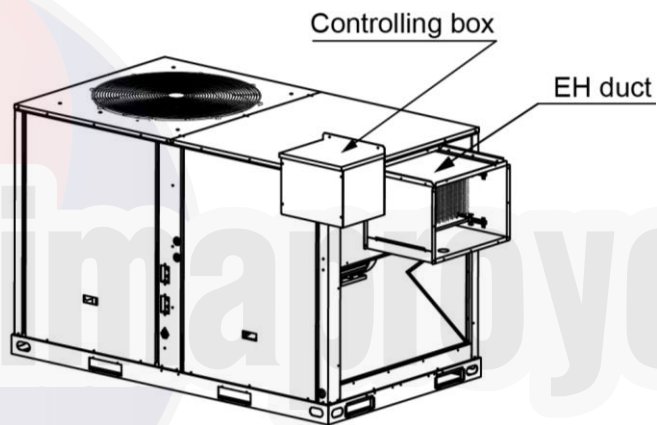
Step 3: Assembly the controlling box to the electrical heater duct by 3 pieces of screws.
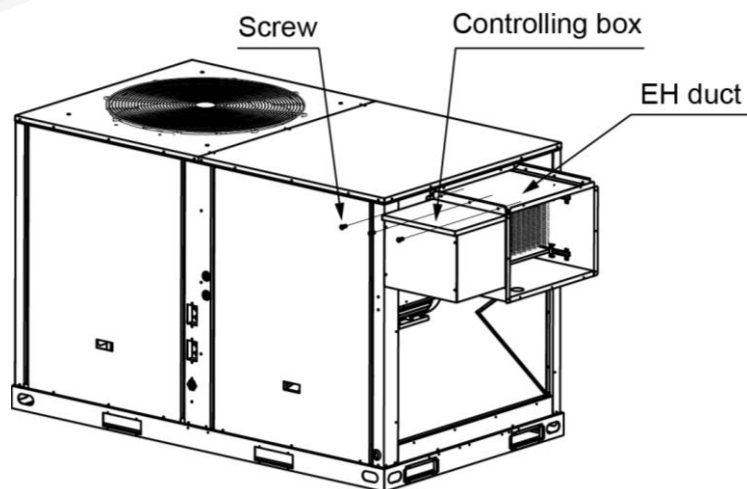
Step 4: Wiring

Electric diagram – 15kW/20kW EHK:
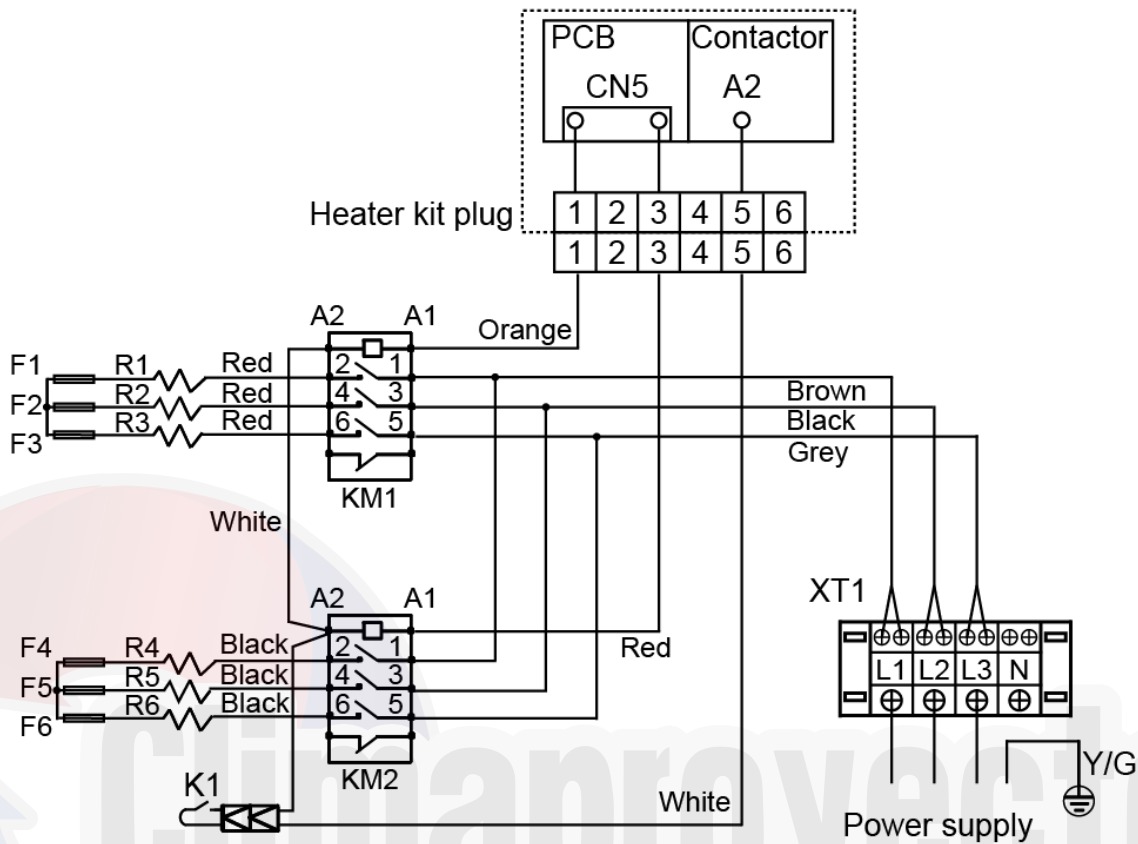
Code	Title
F1~F6	Thermal cut-off
R1~R6	Electrically heated pipe
KM1~KM2	Contactor
K1	Temperature protection switch
XT1	4-way terminal

Electric diagram – 30kW/40kW EHK:
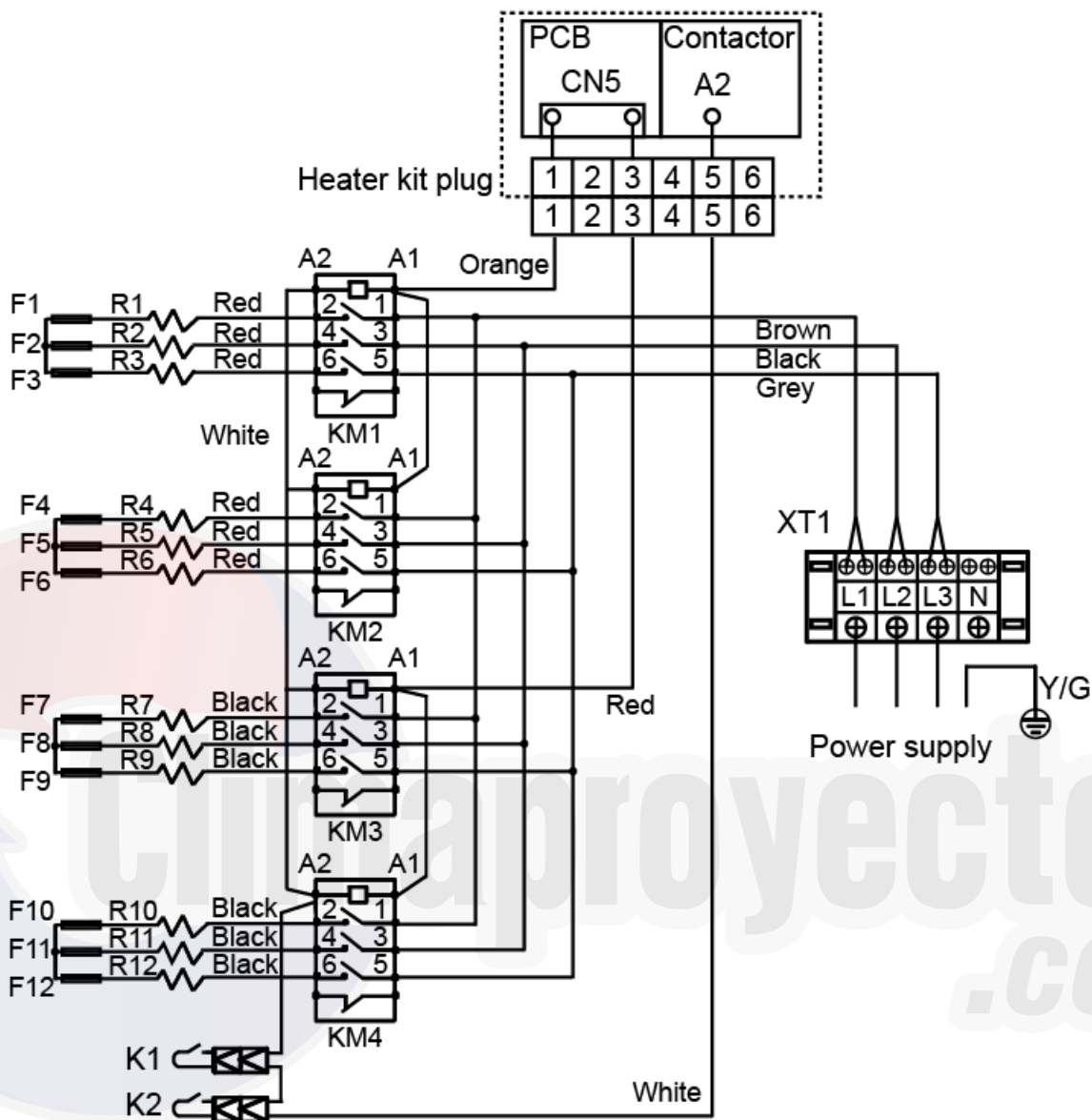
Code	Title
F1~F12	Thermal cut-off
R1~R12	Electrically heated pipe
KM1~KM4	Contactor
K1~K2	Temperature protection switch
XT1	4-way terminal

✧ From the electric diagram, the bundle of signal line coming from the heat kit into the rooftop unit can be found. First, one line connect to PCB of the unit. When unpack the packing of the controlling box, the bundle of signal line also can be found.
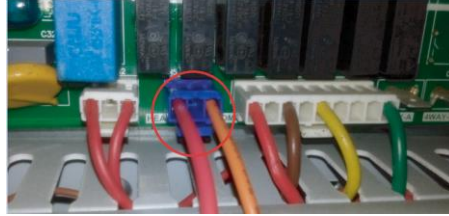
✧ The other line is connected to contactor of the rooftop package unit.
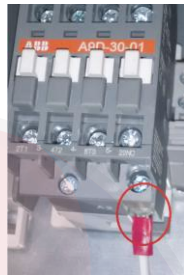
✧ After connect all wires, check all screws of breaker and make sure all screws are properly right. Failure to do so will result in breaker malfunction, fire, death, personal injure or property damage.

Part. 4 Controller
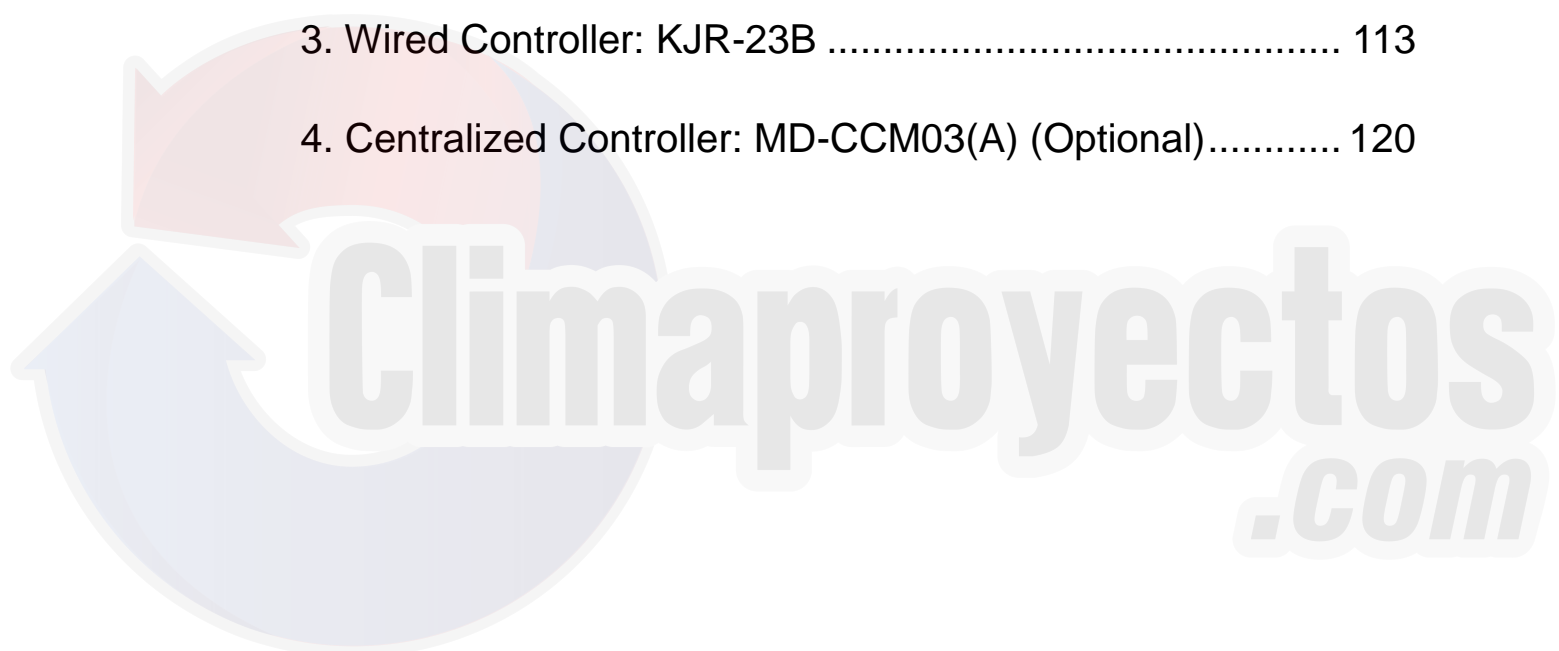
1. Wired controller: KJR-12B

KJR-12B/dP(T)-E

1.1 Wired controller specifications

Model	KJR-12B/dP(T)-E
Power supply	5.0V DC
Operation temperature	-15°C～43°C
Operation humidity	40%~90% RH

1.2 Introduction of indicators function
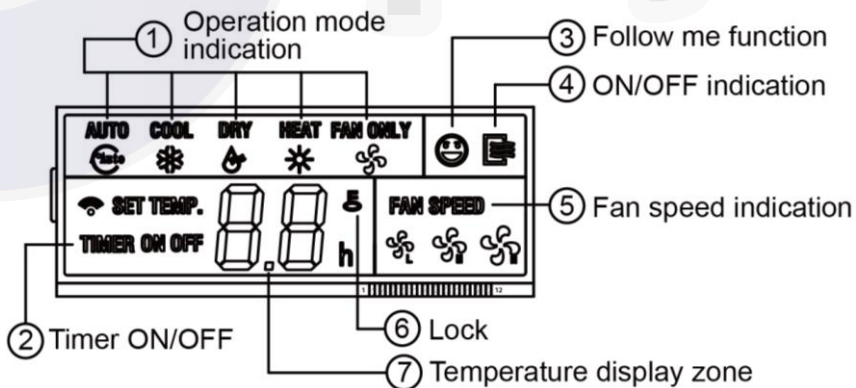
1. Operation mode indication:

When press '**MODE**' button, the following mode can be selected in circle.
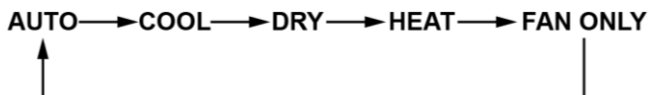
For cooling only model, the indicator '***HEAT'*** is skipped.

2. Timer ON/OFF

When adjust setting on time or only on time is set, the indicator '***ON***' is lighted.

When adjust setting off time or only off time is set, the indicator '***OFF***' is lighted.

If timer-on and timer-off timer both set, the indicators '***ON***' and '***OFF***' will be both lighted.

3. Follow me function

There is a temperature sensor inside the wired controller, after setting temperature; the detected temperature by this sensor will be compared with setting temperature. The space of wired controller will be same as the setting temperature.

It is available under cooling, heating and auto mode.

4. ON/OFF indication

When it is on, the icon will be displayed, otherwise it is extinguished.

5. Fan speed indication (For rooftop packages, it is not available.)

There are four fan modes: low, medium, high and auto. For some models, there is not medium fan speed, and the medium fan speed is seen as high speed.

6. LOCK

When the '**LOCK**' button is pressed, the icon will be displayed and other button is unable.

Press the '**LOCK**' again, the icon will be extinguished.

7. Temperature display zone

Generally it displays setting temperature, it can be adjusted by press temperature button ▲ and ▼. But in fan only mode, the temperature display zone will be blank.

1.3 Introduction of buttons
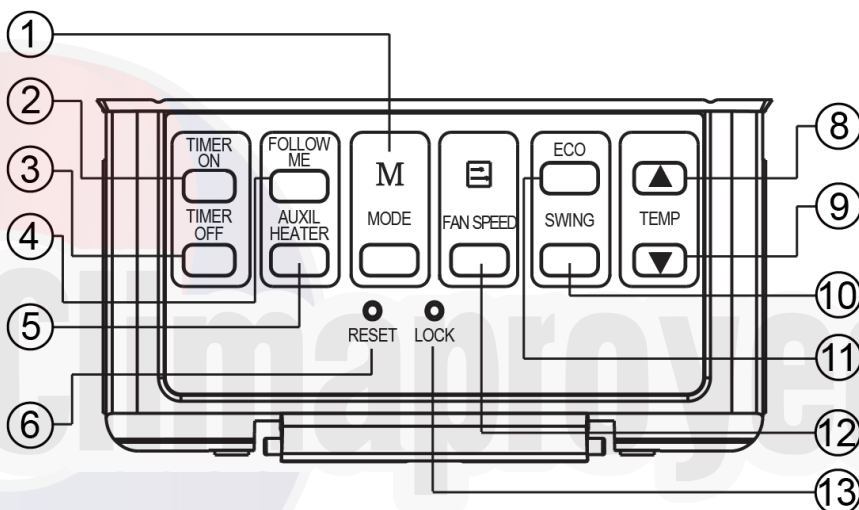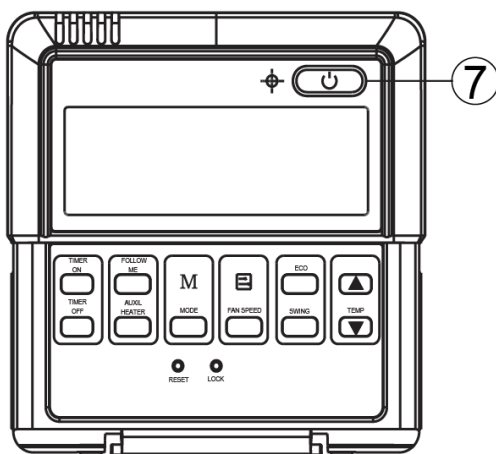
1. **Mode** button:

When press this button, the operation mode changes as the following sequence:

$$AUTO \longrightarrow COOL \longrightarrow DRY \longrightarrow HEAT \longrightarrow FAN\ ONLY$$
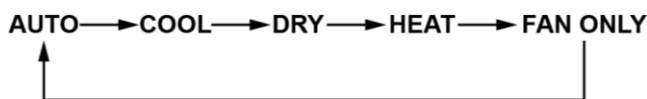
But for the cooling only model, the heating mode is skipped.

2. **TIMER ON** button:

Press this button, timer-on function is active. Then every press, the time will increase 0.5h,

after 10 hours, increase by 1 hour for each press. If cancel this function, just set it to 0.0.

3. **Timer off** button:

Press this button, timer-off function is active. Then Then every press, the time will increase

0.5h, after 10 hours, increase by 1 hour for each press. If cancel this function, just set it to

0.0

4. **FOLLOW ME** button:

When under cool, heat and auto mode, and press this button, follow me function is active. Press again, this function is ineffective.

5. **AUXIL HEATER** button: (Only available for Cooling only with EHK model.)

If press this button in heat mode, electrical heater function become ineffective.

6. **RESET** button: (Hidden)

Use a 1 mm stick to press in the little hole, then the current setting is canceled. The wired controller enters into original state.

7. **ON/OFF** button

When in off state, press this button, the indicator is on, the wired controller enters into on state, and send setting information to main PCB board. When in on state, press this button, the indicator is off, and send instruction. If timer-on or timer-off has been set, it cancels this setting then sends instruction to stop the machine.

8. **TEMP ▲** adjust button:

Set indoor temperature up. If press and hold on, it will increase at 1°C (2°F) per 0.5 second.

9. **TEMP ▼** adjust button:

Set indoor temperature up. If press and hold on, it will decrease at 1°C (2°F) per 0.5 second.

10. **SWING** button: (Reserved)

First press, then start swing function; after second press, stop swing.

11. **ECO** button: (Economy operation, Reserved)

Press this button, and then the unit will operate in economy mode. Press again, this mode can be exited.

12. **FAN SPEED** button: (For rooftop packages, it is not available.)

When press this button consecutively, and then the indoor side fan speed will circles as following:
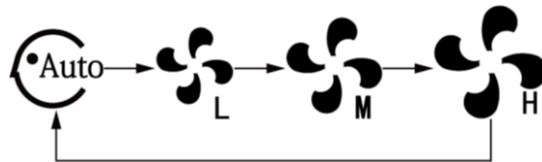
13. **LOCK** button: (Hidden)

When push the **LOCK** button, all current settings are locked in and the wired controller does not accept any instruction except that of the **LOCK** button. Use the lock mode when want to prevent setting from being changed accidentally or play fully. Push the **LOCK** button again when want to cancel the lock mode.

1.4 Operation

Automatic operation

Connect to the power supply, and the operation lamp in main PCB board will flash.

Step 1: Press **MODE** button, and select *AUTO* icon.

Step 2: Press the button ▲ and ▼, set temperature as requirement; generally it is among from 17°C to 30°C.

Step 3: Press **ON/OFF** button, operation lamp is on, the unit can be worked in auto mode, and indoor side fan speed is auto, and cannot be changed. Auto is displayed on LCD. Press it again to stop.

Notes: Economy operation is valid in auto mode.

Cool / Heat / Fan only mode operation

Step 1: Press **MODE** button, and select *COOL*, or *HEAT*, or *FAN ONLY* icon.

Step 2: Press temperature adjust button to select setting temperature.

Step 3: Press **FAN SPEED** button to select high, medium, low or auto. (For rooftop packages, it is not available.)

Step 4: Press **ON/OFF** button, indoor unit operation lamp on, it works in selected mode. Press **ON/OFF** button again, it stops to work.

Notes: In fan only mode, temperature cannot be set.

Dry operation

Step 1: Press **MODE** button, select *DRY* icon.

Step 2: Press temperature adjust button to select setting temperature.

Step 3: Press **ON/OFF** button, indoor unit operation lamp on, it works in dry mode. Press

ON/OFF button again, it stops to work.

Notes: Under dry mode, economy operation and fan speed adjustment are ineffective.

Timer setting

The timer time is relative time, and that is delay after setting time. So when timer is set, the

standard time cannot be adjusted.

Timer setting – Timer on only

Step 1: Press **TIME ON** button, it display *SET* on LCD screen, and display *H* and *ON*, it is

waiting for timer on setting.

Step 2: Press **TIMER ON** button repeatedly to adjust time setting.

Step 3: If press this button and hold on, the time will increase at 0.5h, after 10 hours, it increase

at 1 hour.

Step 4: After setting 0.5 second, the wired controller sends timer-on information to the unit, it is

finished.

Timer setting – Timer off only

Step 1: Press **TIME OFF** button, it display *SET* on LCD screen, and display *H* and *OFF*, it is

waiting for timer on setting.

Step 2: Press **TIMER OFF** button repeatedly to adjust time setting.

Step 3: If press this button and hold on, the time will increase at 0.5h, after 10 hours, it increase

at 1 hour.

Step 4: After setting 0.5 second, the wired controller sends timer-on information to the unit, it is

finished.

Timer-on and timer-off both

Step 1: Set timer-on time as the corresponding step 1 and step 2.

Step 2: Set timer-off time as the corresponding step 1 and step 2.

Notes: Timer-off time must be longer than timer-on time.

Step 3: 0.5 second after setting, the wired controller send information to the unit. And the setting is finished.

Change timer

When need to change timer time, press corresponding button to revise it. If cancel timer, please change timer time to 0.0.

1.5 Installation of wired controller

Caution

✦ Do not install it in a place where combustible gas easily leaks. Once combustible gas leaks and remains around wired controller, fire may be cause. Do not install it in a place with oil, steam or sulphur gas, or else deform or malfunction may occur.

✦ Wires must be suitable for the current of the wired controller. Otherwise, electricity leakage or heating may be caused, which may result in fire.

✦ Install the wire joint (5P) to the appointed position of the electric controlling box.

✦ Circuit of wired controller is low voltage circuit, and never connected with a standard 220V or 380V circuit. Also do not put it into a same wiring tube, and the interval must be more than 300~ 500mm.

✦ The shield cable must be connected stable to the ground, otherwise transmission may fail.

✦ Wire must be suitable for wired controller, never bring outside force to bear on the terminal.

✦ Do not to attempt to extend the shield cable by cutting. If it is necessary, please use terminal connection block to connect.

Accessories

Item	Quantity	Remarks
Wired controller	1	\
Wood mounting screw	3	M4×20 (For mounting on the wall)
Mounting screw	3	M4×25 (For mounting on the electrical switch box)
Installation manual	1	\
Owner's manual	1	\
5P terminal group	\	\
Installation screw	\	For fixing terminal.

Preparing at site

Item	Quantity	Remarks
5-core shield cable	1	RVVP-05mm^2×5. The longest wire is 30m.
Switch box	1	\
Wiring tube	1	Insulating sleeve and tightening screw.

Wiring principle
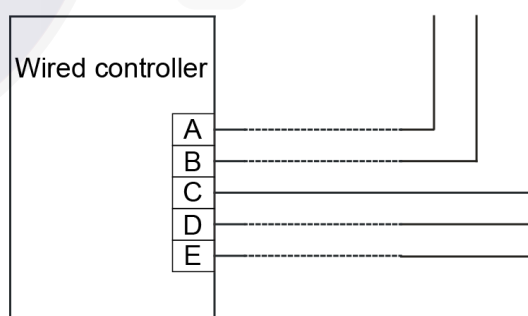
When it is necessary to use the wired controller, please follow the label of A/B/C/D/E to

connect the wired controller. And the other side of the signal wire should be connected with

main PCB board well. A is anode, and B is cathode. C is +5V. D is GND and E is RUN.

Installation:

Confirm the installed location of wired controller, before install the wired controller. If install it

on the wall without electric switch box, the hole for 5P-terminal of wired controller is

necessary.

Dimension of rear cover as following picture (Unit: mm):
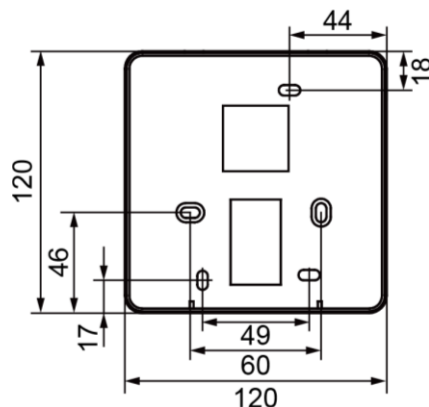
Installation figure as following:
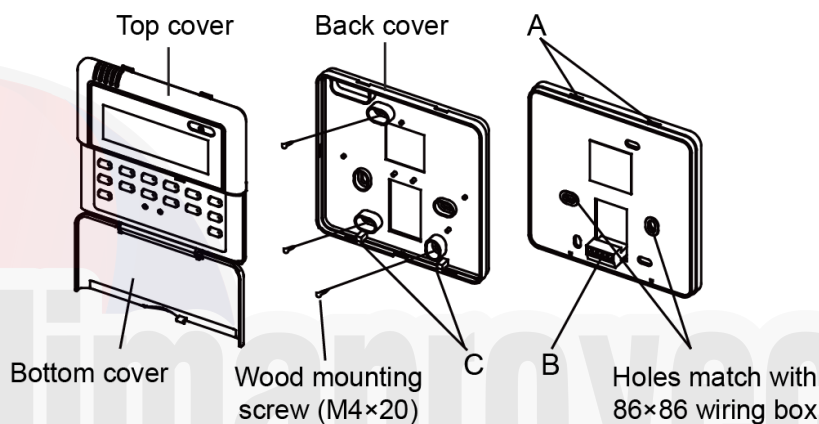
A: Turn a screwdriver at the concave on bottom panel of the wired controller to remove the back cover.

B: When installing the wired controller cover, it is sure that there is a hole in the wall to avoid the wired controller back cover being fixed directly to the wall which is not allowed for the wire joint extrudes out of the back cover.

C: When installing the wired controller, adjust the bottom of the controller board to the back cover which should be fixed first, then press the other end of the controller board.

Notes: The connecting wire should be a little longer as to take away the switch board and controller easily for maintenance.

2. Wired Controller: KJR-25B

KJR-25B

2.1 Wired controller specifications

Model	KJR-25B
Power Supply Voltage	AC 24V
Temperature display range	0°C～37°C
Temperature control range	7°C～35°C
Temperature control accuracy	±0.5°C
Sensor	NTC 1%, B=3950

2.2 Introduction of button
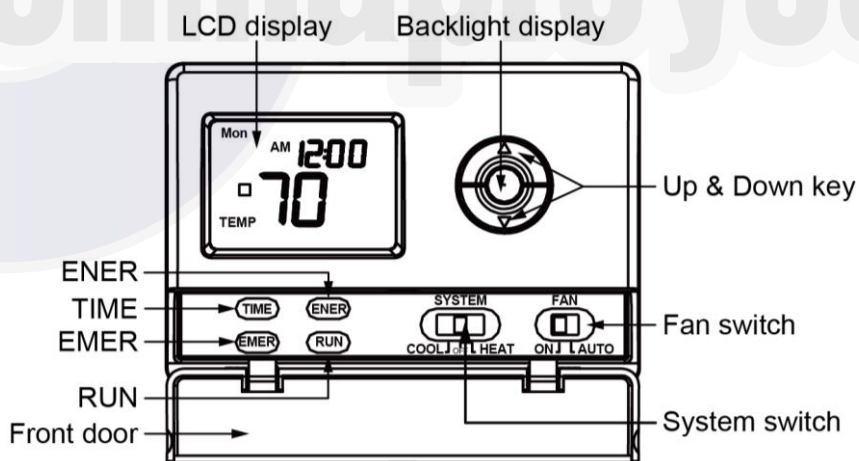
TIME:

Be used to entering time.

ENER:

Measures and displays heating and cooling system operating time for today, yesterday, this

week, last week or total. By monitoring energy usage, the thermostat can be programed to

optimize energy savings.

EMER:

It is used to select operating under EMER mode.

RUN:

Returns display to current time and temperature.

Backlight display:

This key allows users to operate the device in a dark room. The device lights up when a button is

pressed, and turns off when a given operation is completed. The display will remain illuminated

for 8 seconds after the last key is pressed. If the controller is in low battery warning condition,

this function will not operate. Replace with 2 AA alkaline batteries to restore the function.

Up & Down key:

It is used to change the temperature setting. Also used for increasing and decreasing selections

in the time, program and span functions.

Fan switch:

It is used to select automatic or continuous fan operation. It should normally be located in the

AUTO position. The fan will be turned on along with normal operation of the unit. To run the fan

on continuously, slide the FAN switch to the **ON** position.

System switch:

It can determine the operating mode of the wired controller. Select **COOL**, **OFF** and **HEAT**.

Anytime you install or remove the controller from the wall plate, slide the system selector to the

OFF position to prevent the possibility of a rapid system ON-OFF.

Front door:

Cover keys open with one finger from left or right.

2.3 Configuration

After installation and wiring connection of wired controller, it should be operated configuration

first.

Set **SYSTEM** switch to **OFF**, and then press both **UP** and **DOWN** keys for 5 seconds to enter

configuration menu. The display will show the first item in the configuration menu.

Press button	Displayed (Factory default)	Press up or down button to select	Comments
Backlight button	MS 2	SS1	Single stage
		MS1	Multi-stage
		HP1	Heat Pump (Single stage)
		HP2	Heat Pump (2-stage)
Backlight button	(RECO)off	On	Recovery enable
		Off	Recovery disabled
Backlight button	(SPAN)2	1	Span(one stage)1
		2	Span(one stage)2
		3	Span(one stage)3
Backlight button	(BLIT)on	On	Backlight on
		Off	Backlight off
Backlight button	(SP2)2	1	Span(Two Stage) 1
		2	Span(Two Stage) 2
		3	Span(Two Stage)3
Backlight button	(TEMP)F	F	Selects temperature display °F
		C	Selects temperature display °C
Backlight button	HOUR(12)	12	Selects time format display 12hours
		24	Selects time format display 24hours
Backlight button	COMP(OFF)	OFF	Selects Compressor Lockout OFF
		ON	Selects Compressor Lockout ON
Backlight button	COOL(2)	2	This model must select 2
		1	Just use for one stage system
Backlight button	FACT(0)	0	Display normal
		1	Use for another model to go back to factory default
		2	All the setting will go back to factory default

The configuration menu allows you to set certain thermostat operating characteristics to your system or personal requirements.

The configuration menu table summarizes the configuration options. An explanation of each option follows. Press **Backlight** button to change to the next menu item.

Press **RUN** button to exit the menu and unit will return to the normal operation. If no keys are pressed within 15 seconds, the thermostat will revert to normal operation.

1) Single Stage, Multi-stage or Heat Pump System Configuration

This control can be configured for Heat Pump or two stage heat/one stage cool multi-stage operation. The display indicates *MS2* (default for multi-stage mode) in the display. The Multi-stage configuration can be toggled to *SS1* or *HP1* by pressing the up or down key. In Multi-stage configuration, EMER mode is useless.

2) Fast or Slow Cycle Selection (one stage)

3) Select Backlight function OFF or ON

4) Fast or Slow Cycle Selection (two stages)

5) Select °F or °C Readout. Changes the display readout to Centigrade or Fahrenheit as required

6)   Selects time format display 12hours or 24hours

7) Select Compressor Lockout COMP OFF or ON.

Selecting *COMP ON* will cause the thermostat to wait 4 minutes before turning on the compressor if the heating and cooling system loses power. It will also wait 5 minutes minimum between cooling and heating cycles. This is intended to help protect the compressor from short cycling. Some newer compressors already have a time delay built in and do not require this feature. Your compressor manufacturer can tell you if the lockout feature is already present in their system. When the thermostat compressor time delay occurs it will flash the set point for about four minutes.

8) This model must select 1.

9) This model must select 1 to back factory Default.

2.4 Operation instructions

1) Fan operation:

Step 1: Turn on power supply to system.

Step 2: Move **FAN** switch to **ON** position. The fan of unit will begin to operate.

Step 3: Move **FAN** switch to **AUTO** position. The fan of unit will operate according to the setting of system immediately.

2) Cooling operation:

Step 1: Move **SYSTEM** switch to **COOL** position to select cool mode.

Step 2: Press to adjust the wired controller setting below room temperature. The fan of indoor side should come on immediately on high speed, followed by cold air circulation. The display should show *STG1*.

Step 3: Adjust temperature setting to 2°C below room temperature. The second stage cooling should begin to operate and display should show *STG1+2*.

Step 4: Press to adjust the temperature setting above room temperature. The cooling system should stop operating.

3) Heating operation (Only for heat pump unit):

Step 1: Move **SYSTEM** switch to heat mode. If the auxiliary heating system has a standing pilot, be sure to light it.

Step 2: Press to adjust the wired controller setting to 1°C above room temperature. The heating system should begin to operate. The display should show *STG1*. However, if the set point temperature display is flashing, the compressor lockout feature is operating.

Step 3: Adjust temperature setting to 3°C above room temperature. If the system configuration is set at *MS2*, *HP2* or *HP1*, the auxiliary heat system should begin to operate and the display should show *STG1+2*.

Step 4: Press to adjust the wired controller below room temperature. The heating system should stop operating.

4) Emergency operation (Only for heat pump unit)

EMER by passed the heat pump to use the heat source wired to terminal E on the wired controller. EMER is typically used when compressor operations is not desired, or prefer back-up heat only.

Step 1: Press **SYSTEM** switch to select heat mode, then press **EMER** key. *EMER* will show on the display.

Step 2: Press to adjust wired controller setting above room temperature. The Aux. heating

system will begin to operate. The display will show *STG1*, *EMMER* to indicate that the Aux.

heating system is operating.

Step 3: Adjust temperature setting to 2°C above room temperature. The auxiliary heat system

should begin to operate and the display should show *STG1+2*.

Step 4: Press to adjust the wired controller below room temperature. The Aux. heating system

should stop operating.

5) Day and time setting

The LCD will show this following figure information when batteries are first installed. The

temperature will update after a few seconds. During time and day setting mode, the temperature

displays will go blank.
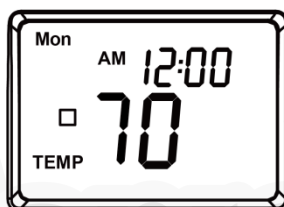
Examples: Set the wired controller to the current time of 2:16 PM on Saturday.

Step 1: Press **TIME** to enter time and day setting mode. The current hour and *AM* / *PM* indicator

   will be flashing.
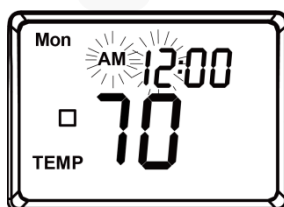
Press **UP** or **DOWN** to change the hour up or down to the current hour.

Notes: The *AM* / *PM* indicator, as the display will change at 12 AM and 12PM.

Step 2: Press **TIME** again to change from hour setting to minute setting. The current minute will

   be flashing.
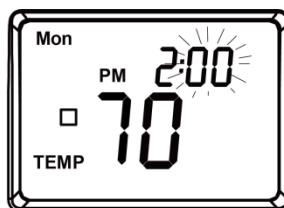
Press **UP** or **DOWN** to change the minute up or down to the current minute.

Step 3: Press **TIME** again to change from minute setting to day setting. The current days will be flashing. Press **UP** or **DOWN** to change the day up or down to the current day.
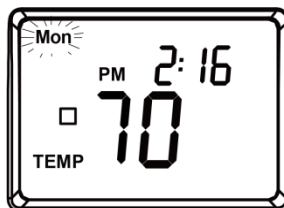
Step 4: Press **TIME** again to change back to the normal display.
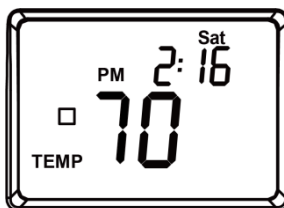
6) Reviewing the current temperature setting

Press **UP** and **DOWN** keys for less than 1 second. The setting temperature is shown above current room temperature.
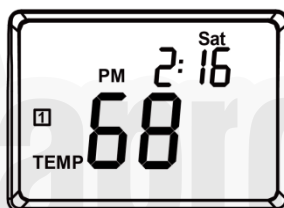
7) Energy monitor

The energy monitor feature measures and stores the amount of time the heating and air conditioning system operates. Press **ENER** key, and the usage can be display for today (Since 12 AM), yesterday, this week (Since Monday), last week (Last Monday through Sunday), and total (Up to 999 hours). By monitoring energy usage, it is easy to know how much the set-back periods are saving. To review energy usage, press **ENER** to cycle through today, yesterday, this week, last week and total. Press it again to return to normal mode, or wait 15 seconds for display to return to normal mode. Also, return to normal mode at any time by pressing **RUN**.
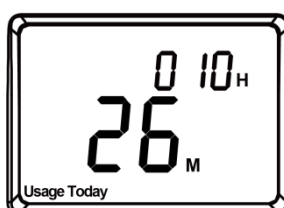
Example: this LCD display shows today's usage to be 10 hours, 26 minutes. Press **RUN** and hold for 3 seconds to reset the energy monitor's counters. The display will blink and counter will be cleared to zero.

Clearing the energy monitor counter will also clear the filter monitor counter, as filter usage and total energy usage are the same. Also, clearing the filter monitor counter will clear all energy monitor counters as well.

8) Filter monitor

This controller also keeps a record of the number of hours filter has been in use. To maximize unit's performance and energy efficiency, changing or clearing filter regularly is necessary.

When the total system run-time for heat and cool reaches 500 hours, the filter is needed to clean or change, and the FILT will continue to flash until the counter is set back to zero.

Press **ENER** to review total filter usage. The display will blink FILT. Then show the filter monitor counter. After 15 seconds, the display will return to normal mode, or press **RUN** to exit immediately.

The filter monitor will display up to 999 hours and 59 minutes of usage. In this example ,the counter is at 410 hours and 26 minutes.
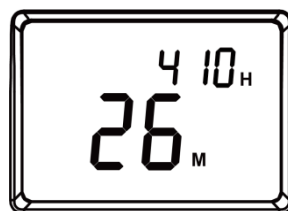
9) Keyboard lock

The keyboard can be locked to prevent unauthorized changes to the controller. To lock or unlock the keyboard, press and hold **RUN** key for 3 seconds. The keyboard is locked. When *LOCK* appears on the display, all keys are locked, and any time a key is pressed, *LOCK* will appear on the display for 1 second.

10) Low battery warning

The controller has a two-stage lower battery warning system. When the batteries are first detected to be weak, the first stage low battery warning is indicated by **BATT** flashing on the LCD display. At earliest convenience, the batteries with 2 new AA alkaline batteries should be replaced.

When the batteries become too weak for normal operation, the controller enters the second stage low battery warning which shuts down the controller. In this condition, **BATT** flashes alone on the display screen and the thermostat will turn unit off. The unit will remain shut-off until the batteries are replaced.

The controller will still keep the current set temperature and filter run-time in memory until new batteries are installed. After confirming that new batteries have been inserted, the controller will return to normal operation.

2.5 Installation of wired controller

Caution:

✧   This controller cannot connect with 110/220 and 380V power.

✧   To prevent electrical shock and / or unit damage, disconnect electric power to unit at main fuse or circuit breaker box until installation is complete.

Electric / gas switch:

This controller is configured from the factory to operate a heat/ cool, fossil fuel (gas, oil, etc.), forced-air system. It is configured correctly for any system that DOES NOT requires the controller to energize the fan on a call for heat.

If the system is an electric heat or heat-pump system that requires the controller to turn on the fan on a call for heat, locate the **ELEC**/**GAS** switch on the back of the controller and switch it to the **ELEC** position.

This will allow the controller to energize the fan immediately on a call for heat. If it is unsure if the heating/ cooling system requires the thermostat to control the fan, contact a qualified heating and air conditioning service person. When the controller is configured for heat pump, the controller will always power the circulator fan on a call for heat in the heat mode. The **ELEC**/**GAS** switch must be set to match the type of auxiliary heat system uses for proper operation in the emergency mode.

All wiring diagrams are for typical systems only.
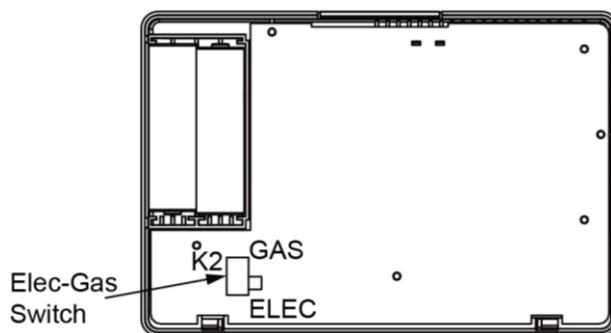
Installation:

Step 1: Remove the packing material from the controller. Gently pull the cover straight off the base. Forcing or prying on the controller will cause damage to the unit.

Step 2: Connect wires beneath terminal screws on base using appropriate wiring schematic.

Notes: The default setting value of the reminding function is 2,500 hours, and it can change to be 5,000 hours or 10,000 hours. The setting methods refer to the part of wired controller initial parameter setting.
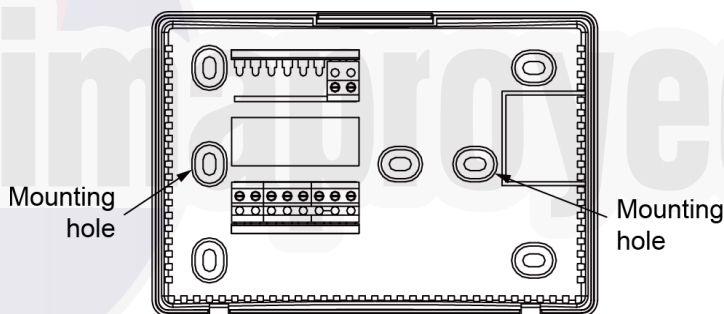
Step 3: Place base over hole in wall and mark the locations of mounting hole on wall using base as a template.

Step 4: Move base out of the way. Drill mounting holes.

Step 5: Fasten base loosely to wall, using two mounting screws. Place a level against bottom of base, adjust until level, and then tighten screws. Leveling is for appearance only and will not affect the controller operation. If using existing mounting holes, or if holes drilled are too large and do not allow to tighten base snugly, use plastic screw anchors to secure sub-base.

Step 6: Push excess wire into wall and plug hole with a fire-resistant material (such as fiberglass insulation) to prevent drafts from affecting controller operation.

3. Wired Controller: KJR-23B

KJR-23B

3.1 Wired controller specifications

Model	KJR-23B
Power Supply Voltage	AC 24V
Temperature display range	0°C～37°C
Temperature control range	7°C～35°C
Temperature control accuracy	±0.5°C
Sensor	NTC 1%, B=3950

3.2 Outlook of controller

3.3 Operation introduction

1) Start-up

The LCD will show the factory default display of 70˚F (21˚C) when battery are first installed. The temperature will update after a few seconds.
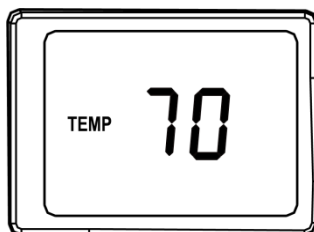
2) system selector switch

The system selector switch is in the front of the thermostat determines the operating mode of the controller. **cool**, **off** and **heat** can be selected.

Notes: Anytime install or remove the controller from the wall plate, slide the system selector to the **off** position to prevent the possibility of a rapid system on-off.
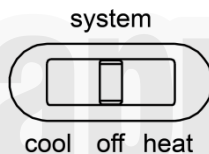
3) fan switch

The **fan** switch should normally be located in the **auto** position. The indoor side fan will be turned on along with normal operation of your system. In a normal gas or oil furnace, the fan will be turned on by your furnace after its warm-up delay. For electric heat, air conditioning, and heat pump operation, the Fan will turn on with the system.

To run the fan on continuously, slide the **fan** switch to the **on** position.
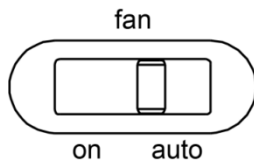
4) Review current set temperature

Press either the **UP** or **DOWN** key once to see the setting temperature.

The factory default is 68˚F (20˚C) when started with the system switch off or heat, and 78˚F (26˚C) when started with the system switch on cool.

5) Setting new temperature

Press either the **UP** or **DOWN** once and display the set temperature.

Press either **UP** or **DOWN** again to change to your desired setting temperature. Hold the key

down for over 2 seconds to fast advance the setting temperature.

The display will return to the normal room temperature after the keys have been released for 5

 seconds.
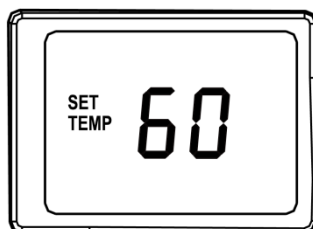
6) Filter monitor

The controller counts the number of hours your system's filter has been in use. To maximize your

system's performance and energy efficiency, change or clean your filter regularly. If the total

systems run time for heat and cool reaches 400 hours, the filter change indicator will flash as a

reminder to check your system's filter.

After changing or cleaning the system filter, press and hold the **Filter** hole for 3 seconds. The

display will blink, and the counter will be reset to zero.

Notes: Pressing the **Filter** key at any time for less than 3 seconds will cause the filter change

indicator to appear on the LCD. This is only to confirm key operation, and the counter is not

affected unless the key is held for greater than 3 seconds.
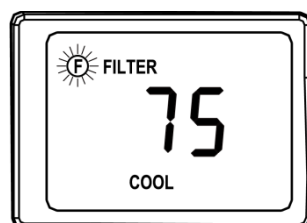
7) Span setting

The controller is set at the factory to cycle at 2˚F (1˚C) above and below the set temperature.

(Span = 2) This setting has been designed to provide a comfortable room temperature under

most all conditions. However, if you find your system cycling too fast or too slow, then the span

can be adjusted to modify the cycle time.

Press **UP** and **DOWN** buttons for 3 seconds.

SPAN will be displayed on the LCD.

Press **UP** to raise the span to 3. This setting increases to cycle time by allowing your system to run longer.

Press **DOWN** to lower the span to 1. This setting decreases the cycle time by causing your system to run shorter.

The span settings remain the same for both heat and cool, and can be changed in any system switch position.

When batteries are installed in the controller, the span is reset back to setting 2.

8) Backlight

The wired controller has an electroluminescent lamp that backlights the display for easy viewing in the dark. When any key is pressed, the display is illuminated.

The display will remain illuminated for **5** seconds after the last key is pressed. This allows the light to stay on if you need to operate several keys.

Notes: If the controller is in low battery warning condition, the backlight will not operate. Replace with 1 new AA alkaline battery to restore the backlight function.

9) Changing the battery

One fresh AA alkaline battery should provide well about one year of service. However, when the batteries become drained, the controller is shut down. At your earliest convenience, you need to replace the battery with 1 new AA alkaline battery.

Notes: If you plan to be away from the premises over 30 days, we recommend that you replace the old battery with new alkaline battery prior to leaving.

10) Auto turn-on

The controller will automatically cut off in heat mode if the room temperature rises above 95˚F (35˚C). It will cut off in cool mode if the room temperature drops below 45˚F (7˚C).
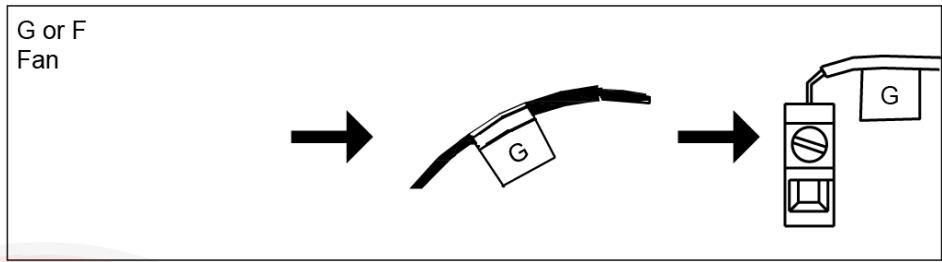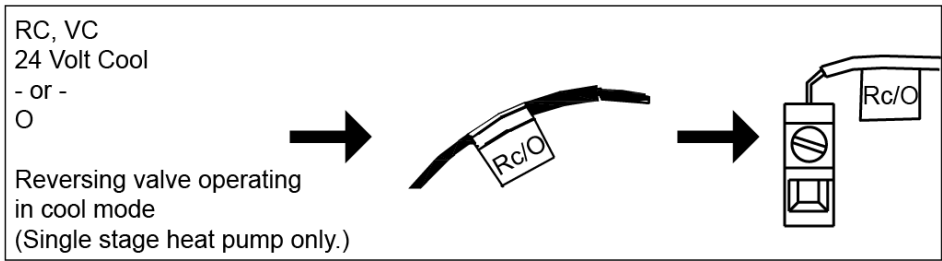
Note that if your system has malfunctioned and no longer responds to controller controls, the auto cut-off will have no effect.

3.4 Wiring of the wired controller

Each wire coming from the wall to the existing controller is connected to a terminal point on that controller. Each of these terminal points is usually marked with a code latter as shown in following figures.

✧ Note that this controller has multiple function terminals that allow single-stage heat pump capability. Standard systems use: Rh, Rc, G, Y, W. [Single-Stage Heat Pumps use: R, Y, G, and O or B.] Following table will show the multiple functions of the terminals. Use the terminals that match your system.

✧ The number of wires in your system can be as few as two (for heat only systems), as many as eight, or any number in between. If you follow the labeling procedures correctly, you do not have to be concerned about how many wires there are.

✧ There is often no terminal marking on the existing thermostat of two wires, heat only systems. Just connect either of the wires to the RH terminal, and then connect the other wire to the W terminal to complete the circuit.

✧ Important things: Before connecting any wires, apply the self-adhesive labels provided to the wire as shown in the following figures. (For example, attach the label marked W to the wire.) Ignore the color of the wires since these do not always comply with the standard.


```
AC24V

C
```



```
RH, R, VR, or 4
24 Volt
- or -
B

Reversing valve operating
in heat mode.
(Single stage heat pump only)
```

RC, VC
24 Volt Cool
- or -
O

Reversing valve operating
in cool mode
(Single stage heat pump only.)

G or F
Fan

Y, Y1, C or M
Air conditioning compressor
- or -

Single stage heat pump
Compressor

W or H

Heating

R

24 Volt

Single stage heat pump only.
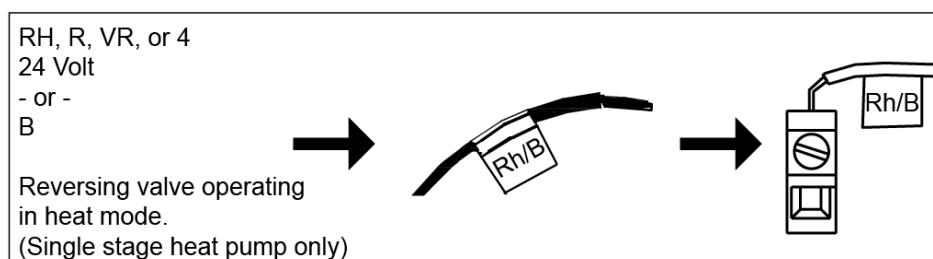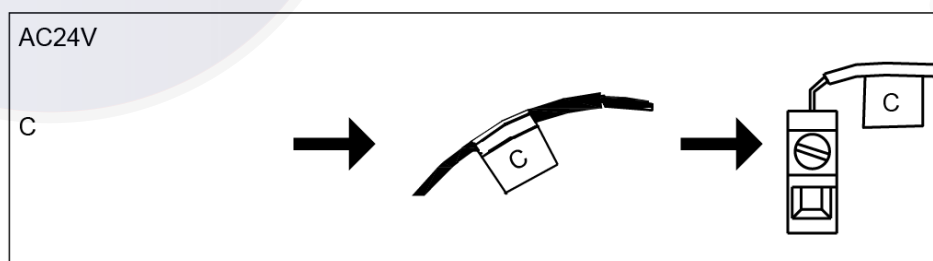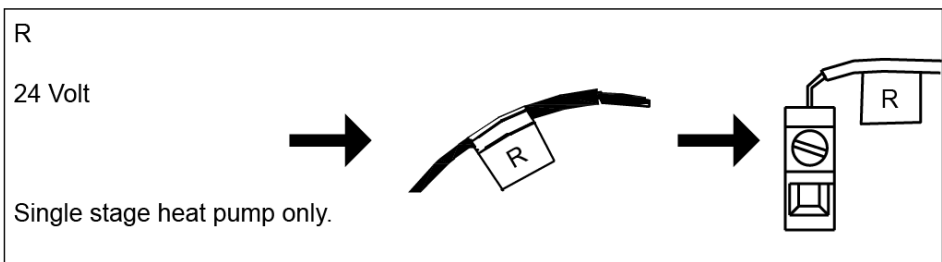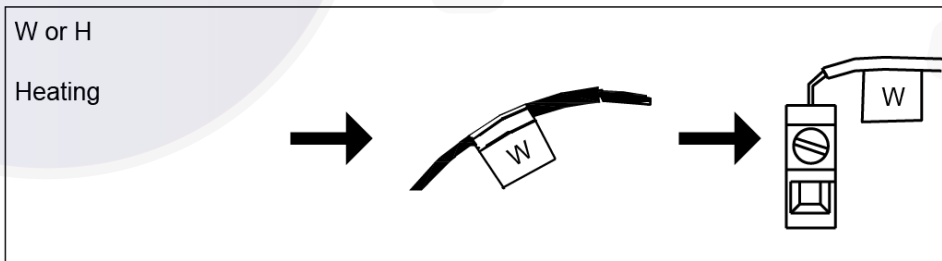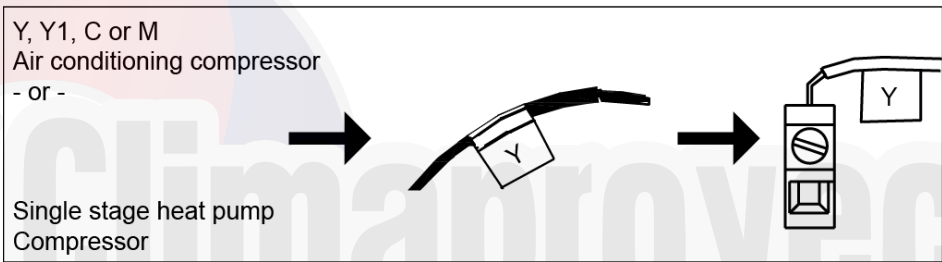
Notes: Do not connect a 'Common' wire (Sometimes labeled 'C') to any terminal on this controller. Tape up the wire and do not use. This wire provides electricity to non-battery powered

controller.

3.5 Mount wall-plate and controller

✧ Remove the wall-plate from the controller by pressing the release tab on the bottom of the controller.

✧ Position wall-plate on wall and pull existing wires through large opening. Then level for appearance. Mark holes for plastic anchors provided, if existing holes do not line up with those on the wall-plate.

✧ Drill holes with 3/16" bit and gently tap anchors into the holes until flush with wall.

✧ Reposition wall plate to wall, pulling wires through large opening. Insert mounting screws provided into wall anchor and tighten.
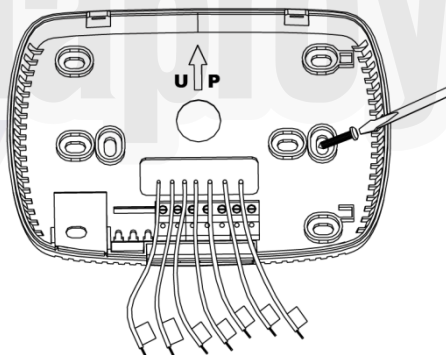
✧ Match and connect the labeled wires to the appropriate coded terminal screws on the wall-plate. Ignore any wires which may be present, but which were note connected to the old thermostat.

✧ Refer to the wiring diagrams of the rooftop packages, connect the wiring correctly.

✧ Be sure to tighten the terminal screws securely, otherwise a loose wire could cause operational problems with the units and controller.

✧ Push excess wire back into the hole to prevent interference when installing the controller to the wall-plate.

✧ Make sure the **system** switch is set to **OFF**, and the **fan** switch is set to **AUTO**.

✧ Insert the tabs on top of the controller body into the slots at the top of the wall-plate. Press the bottom of the controller body into the snap on the bottom of the wall-plate. Do not force the controller onto the wall plate, as the terminal pins may be damaged. If it does not snap properly, the controller will not work.

✧ Insert the one AA size alkaline battery, observing the polarity marked inside the battery compartment.

✧ Switch on the main power at the panel or furnace.

4. Centralized Controller: MD-CCM03(A) (Optional)

Notes: For some model, the products with factory default cannot be connected with centralized controller.

3.1 Centralized controller specifications

Model	MD-CCM03(A)
Power Supply Voltage	220~240V 50Hz 1Ph
Ambient Temperature Range	-15°C～43°C
Ambient Humidity Range	RH40%~RH90%

Performance Features

1. System composition, centralized control.

2. Keywords and general function description.

3. Technical indices and requirements.

4. Indoor unit working status display.

5. Locking remote controller, locking keyboard of centralized controller and locking running mode.

3.2 Keypad of centralized controller
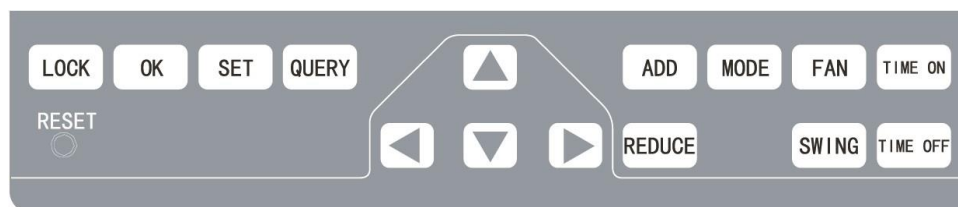
1) LOCK: In the mode setting mode, press the lock key, and the remote controller of the currently selected air conditioner will be locked or unlocked. The operation mode is: If the single-machine setting is selected, the operation is performed for the air conditioner of the current address only. If the remote controller of the air conditioner is locked currently, issue the lock command; otherwise, send the lock command. If the single-machine mode is not selected, and the remote controller of one or more currently selected air conditioners is locked, issue the unlock command; if the remote controllers of all currently selected air conditioners are in the non-locked status, issue the remote controller lock command.

When the remote controller of the air conditioner is locked, the air conditioner does not receive remote control signals from the remote controller or wired controller until the remote controller is unlocked. Press THE **QUERY** key and then press the **LOCK** key, and the keys of the centralized controller will be locked or unlocked. If the keys are currently locked, press the **LOCK** and ▲ keys concurrently again, and the keys will be unlocked; if the keys are currently unlocked, press the **LOCK** and ▲ keys concurrently, and the keys will be locked. If the keys are locked, pressing any key will be ineffective, except unlock operation. In the unified setting page, press the ▲ key and the **LOCK** key concurrently to lock all air conditioner modules in the network. The mode locking is cancelled when the key is pressed again.

Note: When locking or cancelling lock, the corresponding icon indication appears or disappears only after all the attached air conditioners are set completely, so it takes a time period. When there are many attached air conditioners, please wait patiently.

2) **OK:** In the setting page, press it to send the currently selected mode status and the auxiliary function status to the selected air conditioner, and display the mode setting operation results. After select the operation mode and auxiliary function status information of the air conditioner, if do not press the **OK** key, the selected information will not be sent to the air conditioner, and will not affect the current operation of the air conditioner.

The operations of remote controller locking and unlocking need no pressing of the **OK** key. The command information is sent directly after the **LOCK** key is pressed.

3) **SET:** In other display mode, press this key to enter the setting mode. By default, it is single setting, and the first in-service air conditioner is displayed. In setting operation mode, press the key again, and the operation will be performed for all air conditioners in the network. Press it repeatedly to shift between single setting and global setting.

$$\rightarrow \text{Single} \longrightarrow \text{Global} \longrightarrow$$
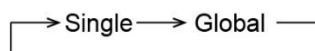
4) **QUERY:** Any time when pressing the key, the selected operation mode is to query the operation status of the air conditioner. By default, the first in-service air conditioner will be queried. Through the **ADD** and **REDUCE** keys, the parameter page can be changed to be queried. Through the ▲, ▼, ◀ and ▶ keys, the query status of other air conditioners can be changed.

5) ▲**:** In the query mode, every time when pressing the key, the operation status data of the air conditioner corresponding to the previous row of the matrix will be displayed. If it is currently in the first row, press the key, and the data of the air conditioner corresponding to the last row will be displayed. If this key was held down, the row will decrease one by one. In the setting mode, every time when press the key, if it is in the single operation mode, the air conditioner corresponding to the last row will be selected. If it is in the global operation mode, no effect will result after the key is pressed. In the main page, press the key to enter the query mode. By default, it is the first in-service air conditioner.

6) ▼**:** In the query mode, every time when pressing the key, the operation status data of the air conditioner corresponding to the next row of the matrix will be displayed. If it is currently in the last row, press the key, and the data of the air conditioner corresponding to the first row will be displayed. If this key was held down, the row will increase one by one. In the setting

mode, every time when press the key, if it is in the single operation mode, the air conditioner corresponding to the last row will be selected. If it is in the global operation mode, no effect will result after the key is pressed. In the main page, press the key to enter the query mode. By default, it is the first in-service air conditioner.

7) ◀: In the query mode, every time when pressing the key, the operation status data of the previous air conditioner will be displayed. If it is currently on the first machine, press it again, and the data of the last machine will be displayed. If this key was held down, the address will decrease one by one. In the setting mode, every time when pressing the key, if it is in single operation mode, the air conditioner of previous in-service address number will be selected. If it is in the global operation mode, no effect will result after the key is pressed. In the main page, press it to enter the query mode. By default, it is the first in-service air conditioner.

8) ▶: In the query mode, every time when pressing the key, the operation status data of the last air conditioner will be displayed. If it is currently on the last machine, press it again, and the data of the first machine will be displayed. If this key was held down, the address will increase one by one. In the setting mode, every time when pressing the key, if it is in single operation mode, the air conditioner of previous in-service address number will be selected. If it is in the global operation mode, no effect will result after the key is pressed. In the main page, press it to enter the query mode. By default, it is the first in-service air conditioner.

9) ADD: In the main page or the query mode, every time when pressing the key, the data of the current page will be displayed. If it is now in the last page, press the key again, and the first page will be displayed. In the setting mode, every time when pressing the key, if it is in the temperature regulation mode, the set temperature will decrease by 1°C (or 2°C) until the highest allowed set temperature. If it is in the timing startup/shutdown time setting mode, select the upper-level set time, if no time is set, 0.0 will be displayed, if hold down the key, the upper-level data will be selected consecutively. The specific change mode is as follows:

0.0→0.5→1.0→1.5→2.0→2.5→3.0→3.5→4.0→4.5→5.0→5.5→6.0→6.5→7.0 ⌐

└→7.5→ 8.0→8.5→9.0→9.5→10→11→12→13→14→15→16→17→18→19 ⌐

└→20→21→22→23→24

10) REDUCE: In the main page or the query mode, every time when pressing the key, the data of the current page will be displayed. If it is now in the first page, press the key again, and the last page will be displayed. In the setting mode, every time when pressing the key, if it is in the temperature regulation mode, the set temperature will decrease by 1°C (or 2°C) until the lowest allowed set temperature. If it is in the timing startup/shutdown time setting mode, select the upper-level set time, if no time is set, 0.0 will be displayed, if hold down the key, the upper-level data will be selected consecutively. The specific change mode is as follows:

$$0.0 \leftarrow 0.5 \leftarrow 1.0 \leftarrow 1.5 \leftarrow 2.0 \leftarrow 2.5 \leftarrow 3.0 \leftarrow 3.5 \leftarrow 4.0 \leftarrow 4.5 \leftarrow 5.0 \leftarrow 5.5 \leftarrow 6.0 \leftarrow 6.5 \leftarrow$$
$$7.0 \leftarrow 7.5 \leftarrow 8.0 \leftarrow 8.5 \leftarrow 9.0 \leftarrow 9.5 \leftarrow 10 \leftarrow 11 \leftarrow 12 \leftarrow 13 \leftarrow 14 \leftarrow 15 \leftarrow 16 \leftarrow 17 \leftarrow$$
$$18 \leftarrow 19 \leftarrow 20 \leftarrow 21 \leftarrow 22 \leftarrow 23 \leftarrow 24$$

11) MODE: In setting operation mode, press this key to set the operation.

$$\rightarrow \text{Cooling} \longrightarrow \text{Heating} \longrightarrow \text{Fan} \rightarrow \text{Stop} \longrightarrow$$

In other display mode, press this key to enter the setting mode. By default, it is single-machine setting, and the first in-service air conditioner is displayed.

12) FAN: In setting operation mode, press this key to set the fan of the indoor unit of the air conditioner to run in the following picture: (For rooftop packages, it is not available.)

$$\rightarrow \text{Auto} \longrightarrow \text{Low} \longrightarrow \text{Medium} \longrightarrow \text{High} \longrightarrow$$

13) TIME ON/TIME OFF: In setting operation mode, press them to set the timing startup of air conditioner. Press them again to exit the timing setting, and restore the normal temperature regulation operation mode.

$$\rightarrow \text{Time on} \longrightarrow \text{Set temperature regulation} \longrightarrow$$

14) SWING: In the setting operation mode, press this key to enable or disable the swing function. If all currently selected air conditioner have no swing function, no effect will result after pressing the key. (For rooftop packages, it is not available.)

15) RESET: Anytime when the **RESET** key is pressed, the centralized controller will reset. The result is the same as the result of restoring power-on after power failure.

16) ON/OFF: Any time when pressing the key, the centralized startup/shutdown operation is performed for all current in-service air conditioners in the centralized controller network. If all

in-service air conditioners in the network are in the power-off status, press the key to perform the startup operation. If it is in the mode setting page currently, and the parameters such as startup mode, temperature and air speed are selected, the air conditioner will be started according to the selected parameters. If no mode is selected currently, and the air conditioner is powered off or it is in other display page currently, and the default startup mode is: cooling, high speed fan air, set temperature 24°C, swing function enabled. The default startup mode is locked according to the system mode or judged according to other constraint conditions. If any conflict exists, the next conflict-free mode will apply automatically. If conflict exists for all modes, startup will be impossible. If one or more in-service air conditioners in the network (including in the timing process of timing startup/shutdown), pressing this key will shut down all air conditioners. When performing the shutdown operation, the shutdown command is issued to the air conditioners in the startup status only, and is not issued to those in the shutdown status.

3.3 Display of the centralized controller
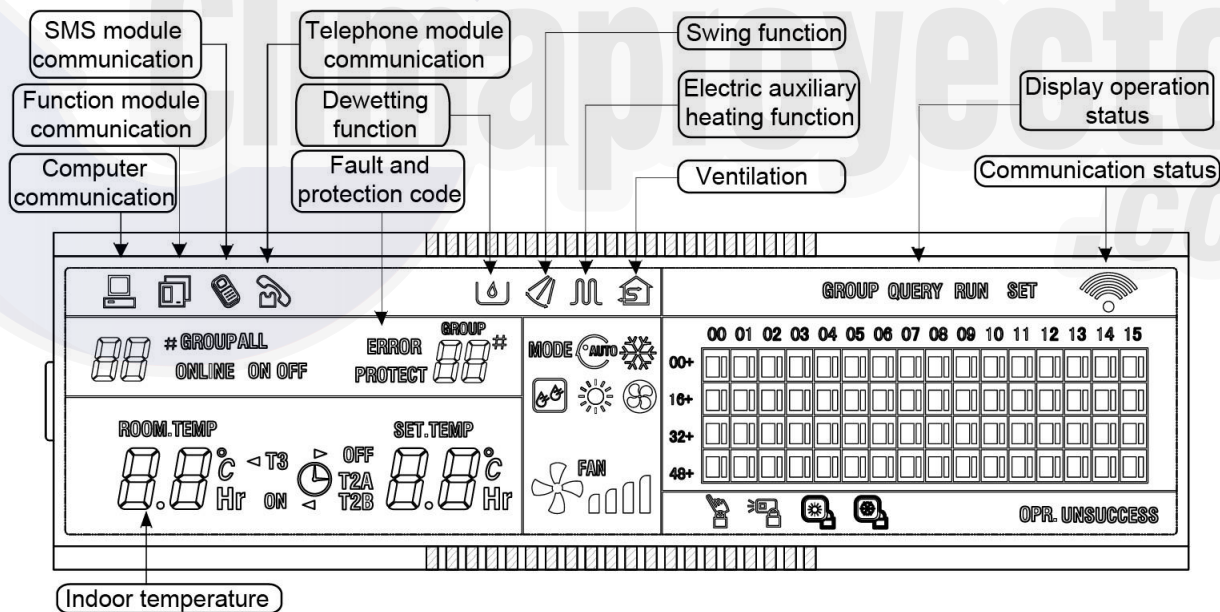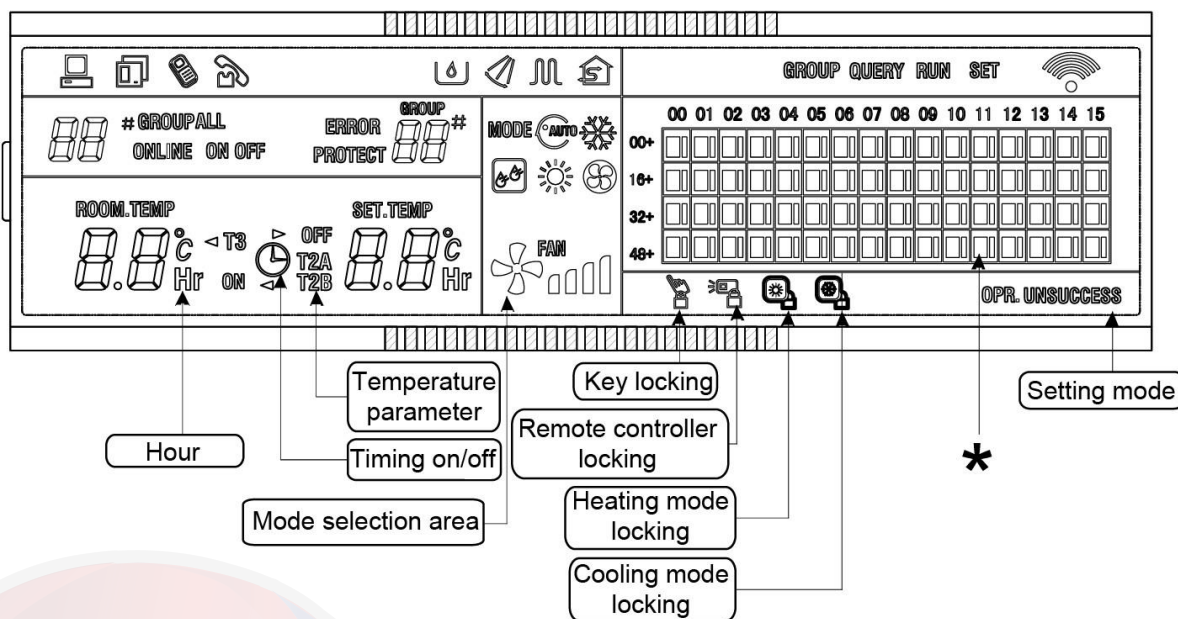
*: The matrix is composed of 4×16 grids and each grid is composed of two blocks of different sizes. The matrix include horizontal coordinates 00-15 and vertical coordinates 00+, 16+, 32+ and 48+, which indicate the address of the indoor unit. The sum of the horizontal coordinate and vertical coordinate of the grid is the address of the grid. Each grid corresponds to an indoor unit of this address.

3.4 Operation instructions

1) System composition:

✓ The centralized controller is used to perform centralized control and data query for the network air conditioner. Each centralized controller can communicate with a maximum of 64 air conditioners to make up an air conditioner LAN, and implement centralized monitoring for the air conditioners in the network.

✓ The centralized controller can be interfaced with computer or gateway to implement centralized control and status query for all air conditioners in the network. It can be connected with WAN via computer or gateway to implement remote computerized control (with support of computer software). Each local computer or gateway can be connected to 16 centralized controllers as a maximum.

✓ The master or slave answer mode is implemented for communication between the centralized controller and the air conditioner, between the computer and the centralized

controller. In the LAN composed of centralized controller and air conditioner, the centralized controller is a master, and the air conditioner is a slave. In the LAN composed of computer and centralized controller, the computer or gateway is a master, and the centralized controller is a slave.

✓ The schematic diagram of network control system composition of air conditioner:
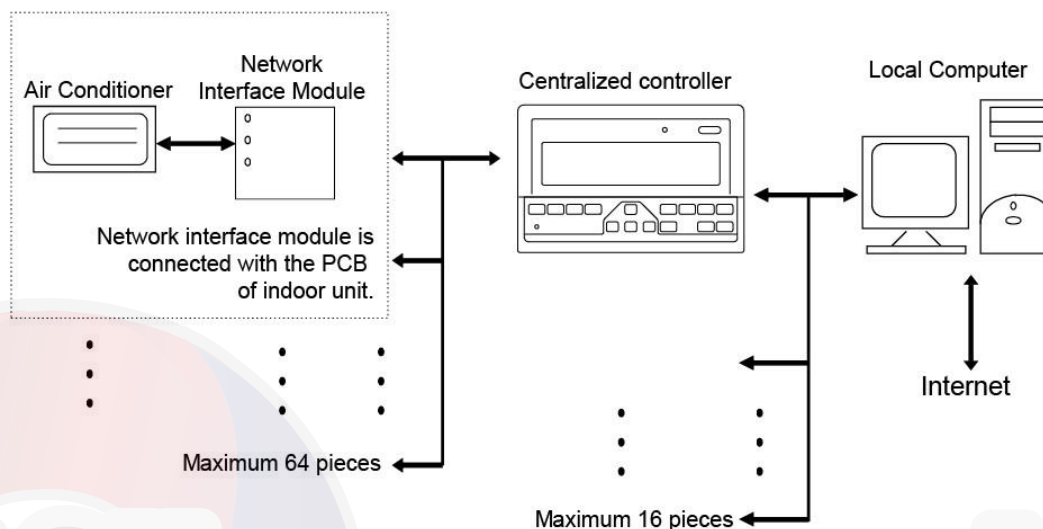
2) **Keywords and general function description:**

✓ Power on or reset:

When the centralized controller is powered on or reset, all display segments of the LCD are luminous for 2 seconds and then goes off. 1 second later, the system enters the normal display status. The centralized controller is in the main page display status and displays the first page, and searches the in-service air conditioners in the network. Once the search is finished, the centralized controller enters the mode setting page, and sets the first in-service air conditioner by default.

✓ Network area address of centralized controller:

The local computer or gateway can be connected with 16 centralized controllers for communication. Each centralized controller serves as an area of the air conditioner network. The centralized controllers are differentiated by bit selection address. The configurable range is 0~15.

✓ State indication:

If any local keypad operation is setting the operation status of the air conditioner, the indicator is on when the signals are sent. Upon completion of the setting process, the

indicator goes off. If an in-service air conditioner in the network is faulty, or the centralized controller network itself is faulty, the indicator will blink at 2Hz.

If one or more in-service air conditioners in the network are running, including under setting of timing start or shutdown, the indicator will be luminous. Otherwise, the indicator is off.

✓ Locking of centralized controller:

After receiving the centralized controller locking command sent from the computer, the centralized controller disables the startup or shutdown and setting or the air conditioner, and sends commands to lock remote controllers of all air conditioners in the network of the centralized controller. After receiving the unlocking command, the centralized controller enables the startup or shutdown operation, and sends commands to unlock the remote controller of all air conditioners.

The locking status of the remote controller can be locked or unlocked by the computer or centralized controller separately. The locking status of the centralized controller is memorized after power failure of the centralized controller, and will not vanish after the power supply is restored, unless the command of unlocking is received.

✓ Mode locking function:

After the mode locking command is received, the command is forwarded to the air conditioner, and the centralized controller displays the mode locking flag. After the command of unlocking is received, the non-conflict mode can be selected freely. The centralized controller can also lock modes of all indoor units.

✓ Emergent shutdown and compulsory startup:

If the emergent switch of the centralized controller was switch off, all air conditioners in the network of the centralized controller will be shut down compulsorily. The centralized controller and computer and all functional modules are disabled from startup and shutdown until the foregoing switch is turned off. If the switch was turned on, all air conditioners in the network of the centralized controller will be start up compulsorily. By default, they will run in the cooling mode. The startup and shut-down operations of the centralized controller and the computer and all functional modules will be disabled (Only the command of startup is sent to the air conditioner, without affecting operation of the remote controller after startup)

until the foregoing switch is turned off. If the foregoing two switches are turned on concurrently, the emergent shutdown switch shall have preference.

3.5 General display data entries

1) General display data is displayed in all display pages.

✓ Under the interconnected control of the computer or gateway, the data is displayed in graphic (🖳). Otherwise, no data is displayed.

✓ If the centralized controller is connected with the functional module for communication, the data is displayed in graphics (🗇). Otherwise, no data is displayed.

✓ If the centralized controller is connected with the SMS remote control module for communication, the data is displayed in graphics (📲). Otherwise, no data is displayed.

✓ If the centralized controller is connected with the telephone remote control module for communication, the data is displayed in graphics (📞). Otherwise, no data is displayed.

✓ In normal operation of the centralized controller, the periodical cycle module communicates with the network interface module, and the data is displayed dynamically and cyclically: (blank), ○ , 🛜 , 🛜 .

✓ In the centralized control locked status or the keypad locked status, the locking flag (🔏) is displayed. After unlocking, it is not displayed. In the centralized controller locked status or the keypad locked status, the locking flag is displayed constantly. If both of them are locked concurrently, the locking flag is displayed constantly.

✓ In the setting page, if the selected air conditioner is in the remote controller locked status (in case of non-single machine operation, as long as one machine is in the remote controller locked status, it is deemed the locked status), the flag (🔏) is displayed constantly.

✓ If all indoor units lock the cooling mode, this flag (❄🔒) will display, and if all indoor units lock the heating mode, the flag (🔥🔒) will display.

2) Data display handling

✓ Indoor unit code (address) display: display range: 00~63, and with # being luminous concurrently.

✓ Indoor temperature display: display range: 00~99°C. The indoor temperature is displayed concurrently. If the temperature is higher than 99°C, 99°C will be displayed. If the temperature value is invalid, '--' will be displayed.

✓ If timing startup or shutdown is set, the flag (🕒) is displayed.

✓ T3, T2A and T2B display: in the single-machine query page, display can shift between T3, T2A and T2B; by the way, the temperature value is displayed concurrently, with the corresponding °C being luminous.

✓ In case of air conditioner fault or protection, the corresponding fault code or protection, the corresponding fault code or protection code can be displayed.

✓ Liquid crystal matrix display description:
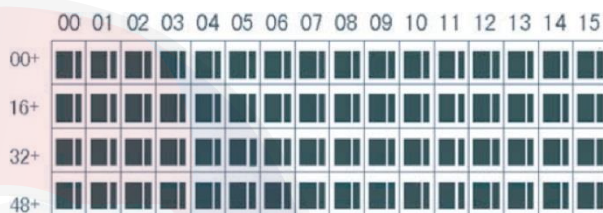
The liquid crystal matrix is composed of 4×16 grids, and each grid is composed of two blocks of different sizes. The matrix includes horizontal coordinates 00~15 on the upper side and vertical coordinates 00+, 16+, 32+ and 48+ on the left side, which indicate the address of the indoor unit. The sum of the horizontal coordinate and the vertical coordinate of the grid is the address of the grid. Each grid corresponds to an indoor unit of this address. One grid is composed of two blocks of different sizes. The status indication table is as follows;

	Constantly on	Slow blink		Fast blink
Big black block	In-service	Selected		Out of service
Small black block	Power on		Fault of indoor or outdoor unit	Power off

3) LCD display description

✓ Description of the standby page

The LCD displays the standby page, 60 air conditioners are in service, of which 28 are

powered on and 32 off.
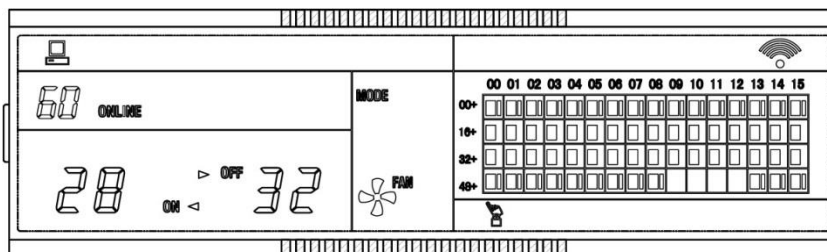
In the matrix, the bid dots from (00, 16+) to (15, 32+) are luminous, and the small dots

are not luminous. It indicates the 32 air conditioners with the addresses from 16 to 47

are powered off.

In the matrix, the big and small dots from (09, 48+) to (12, 48+) are not luminous. It

indicates the four air conditioners with the address from 57 to 60 are outside the

network.

All other big and small dots in the matrix are luminous. It indicates all other air

conditioners are in the network and powered on.

The address of the air conditioner is sum of the coordinates. For example, the address

of (09, 48+) is 09+48=57.

The centralized controller keypad is locked, and the centralized controller

communicates with the computer normally.

✓ Description of the query page
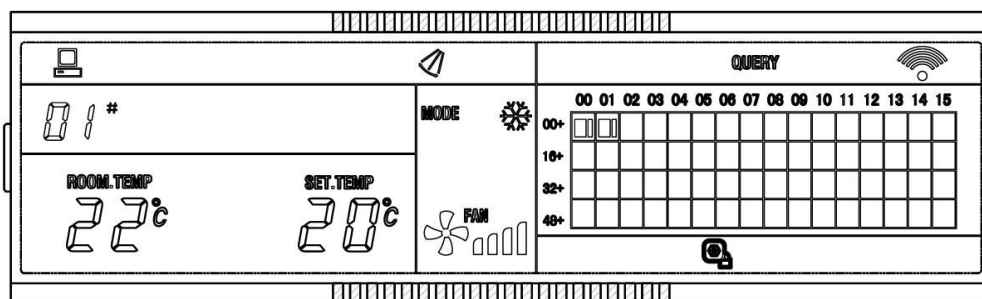
The LCD displays the query page, and the air conditioner with the address of 08 is

being queried. Mode of the air conditioner with the address 01 is cooling, high speed air

supply, swing on, indoor temperature 22°C, setting temperature 20°C and cooling mode locked.

In the matrix, only the big and small black dots at (00, 00+) and (01, 00+) are luminous. It indicates the in-service and power-on status of the air conditioners with the addresses of 00 and 01.

The centralized controller communicates with the computer normally.

✓ Description of the setting page
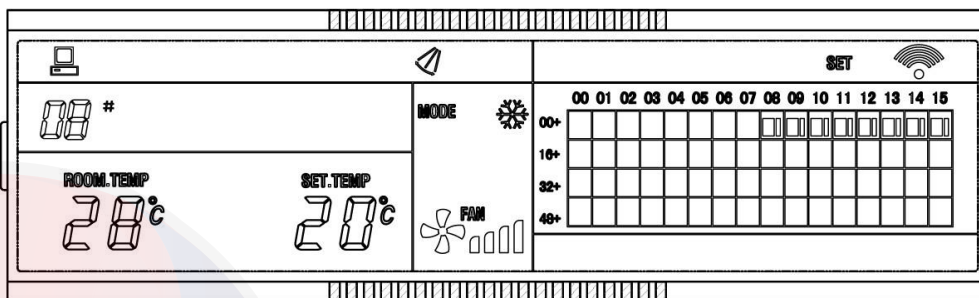
The LCD displays the setting page, and queries the air conditioner with the address of 08. The mode of the air conditioner with the address 08 is: cooling, high speed air supply, swing on, indoor temperature 28°C, setting temperature 22°C and cooling.

In the matrix, only the big black dots from (08, 00+) to (15, 00+) are luminous. It indicates the air conditioners with the addresses from 08 to 15 are in service.

The centralized controller communicates with the computer normally.

✓ Fault page display description
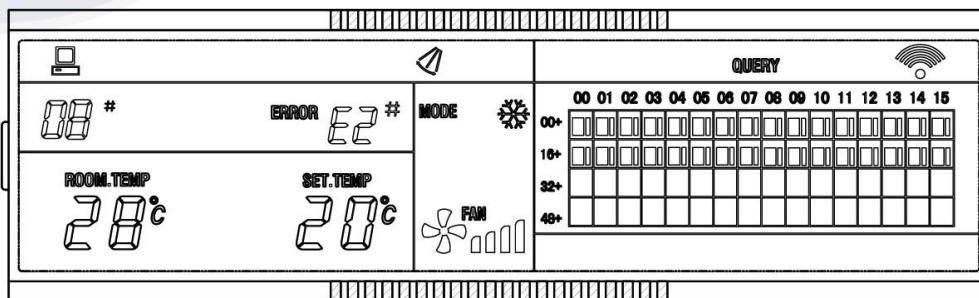
Query the air conditioner with the address of 08 in the query page. The air conditioner with the address of 08 is faulty, and the fault code is E2. The big black dot below (08, 00+) blinks.

In the matrix, only the big and small black dots from (00, 00+) to (15, 16+) illuminate. It indicates the in-service status of the air conditioners with the addresses from 00 to 31.

The centralized controller communicates with the computer normally.

Fault code table:

Fault code	Fault content
EF	Other faults
ED	Outdoor unit fault protection
EA	Over-current of compressor (4 times)
E9	Fault of communication between main board and display board
E7	EEPROM error
E6	Zero crossing detection error
E5	T3 or T4 temperature sensor fault
E4	T2B sensor fault
E3	T2A sensor fault
E2	T1 sensor fault
E1	Communication fault
E0	Phase order error or phase loss

Protection code table:

Fault code	Fault content
PF	Other protection
P8	Over-current of compressor
P6	Discharge low pressure protection
P5	Discharge high pressure protection
P4	Discharge pipe temperature protection
P2	Condenser hi-temperature protection
P1	Anti-cool air or defrost protection (Only for heat pump units)
P0	Evaporator temperature protection

3.6 Installation

The wireless remote controller is the standard controller for split series air conditioner. Wired controller as optional controller can directly be connected with the display board of the indoor

units. Centralized controller should be connected with the main PCB board of the indoor unit through network interface module, which is named as MD-NIM01.
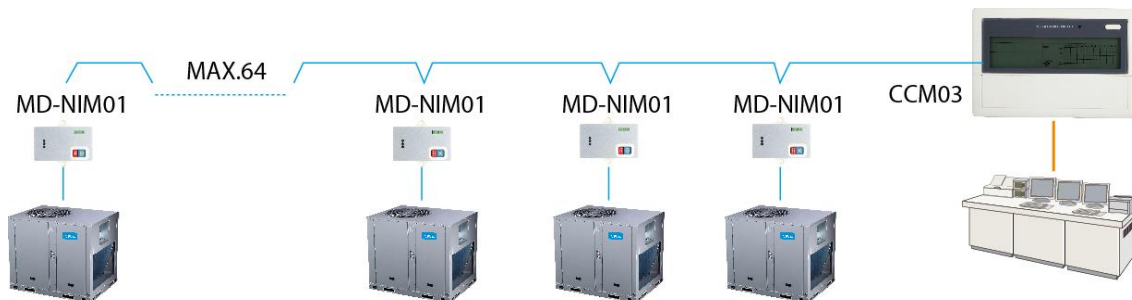
1) The installation of network interface module

Outlook of MD-NIM01
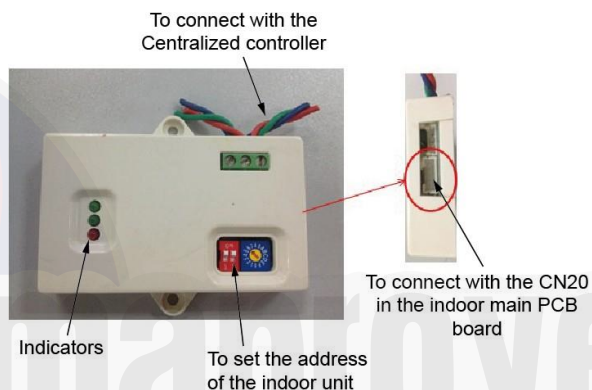
The first green lighter: Ready indicator. When the module and controller is connected rightly, the lighter will be on; otherwise, it will be off. If the unit is in the status of locking remote controller and locking mode, the lighter will flash.

The second green lighter: Communication indicator. When there is any signal between the network interface module and centralized controller, the indicator will be on.

The third lighter: Alarm indicator. If there is any error between the module and controller for communication, it will be on.

Dimension of MD-N1M01
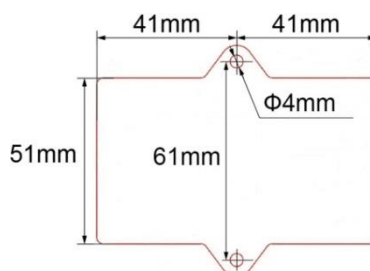
Connect the network interface module with the port CN22 in the main PCB board of indoor unit

through the signal wire, which is as the attachment of the module.
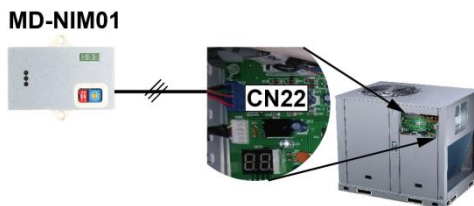
Fix the network interface module on the wall near the indoor unit. And set the different address of
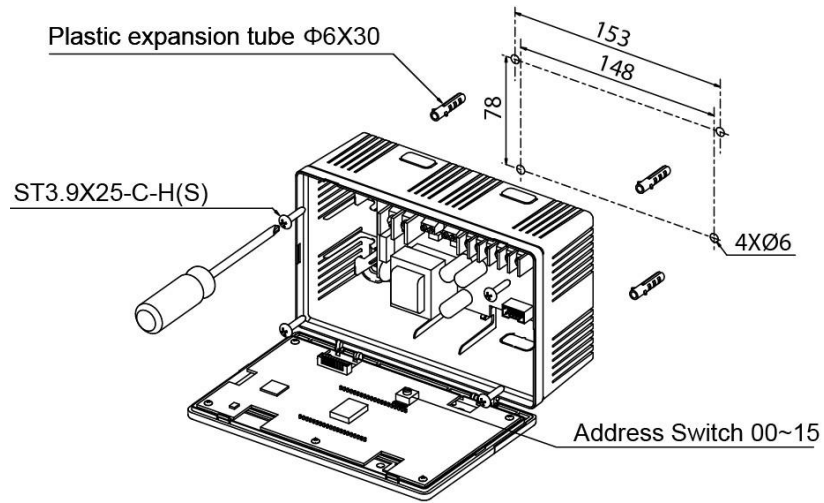
the indoor unit.

2) The installation of centralized controller

Open the front panel of the centralized controller by screwdriver as the following picture: (Unit:
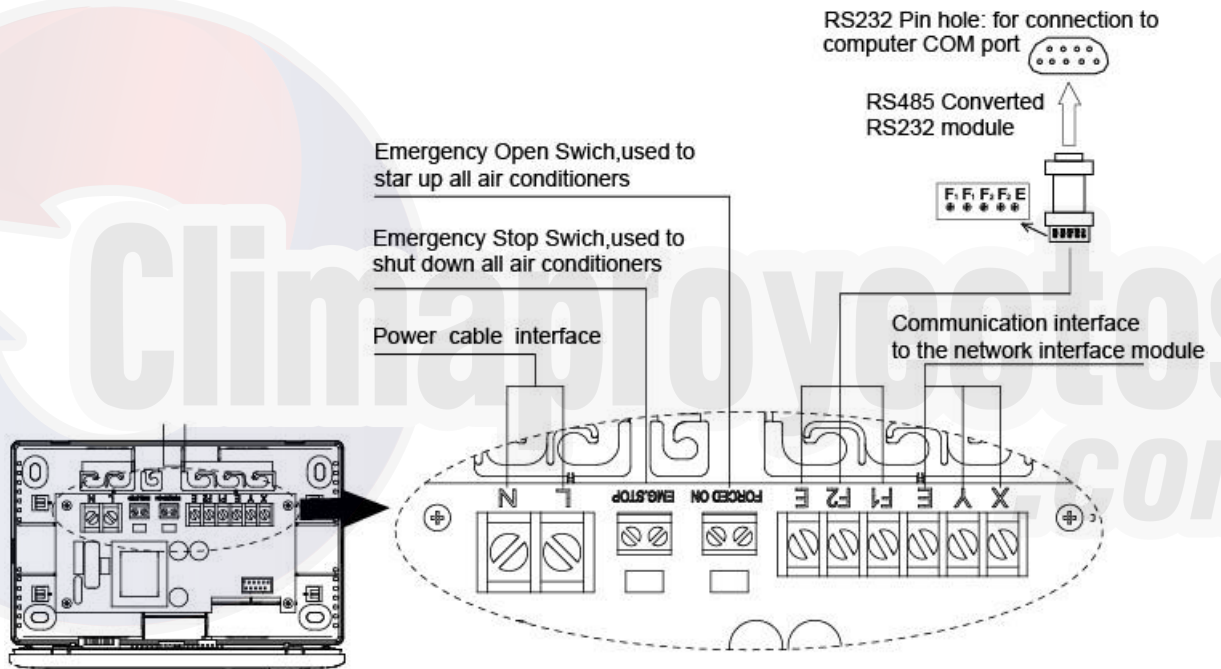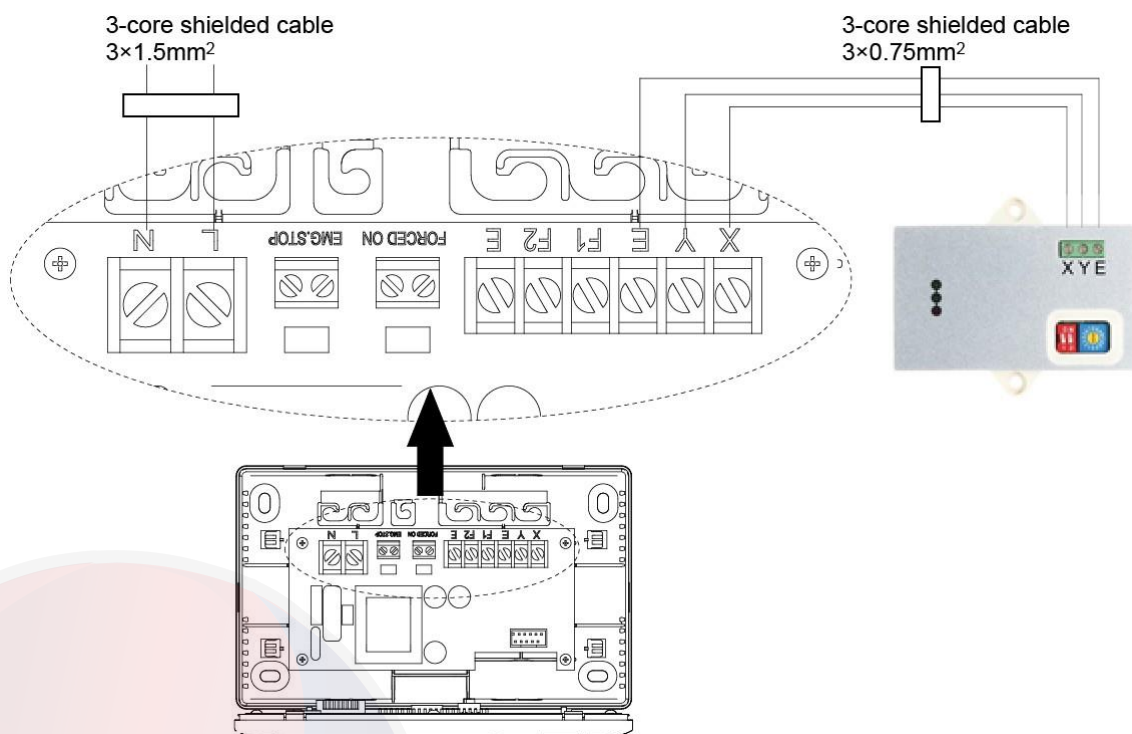
mm)
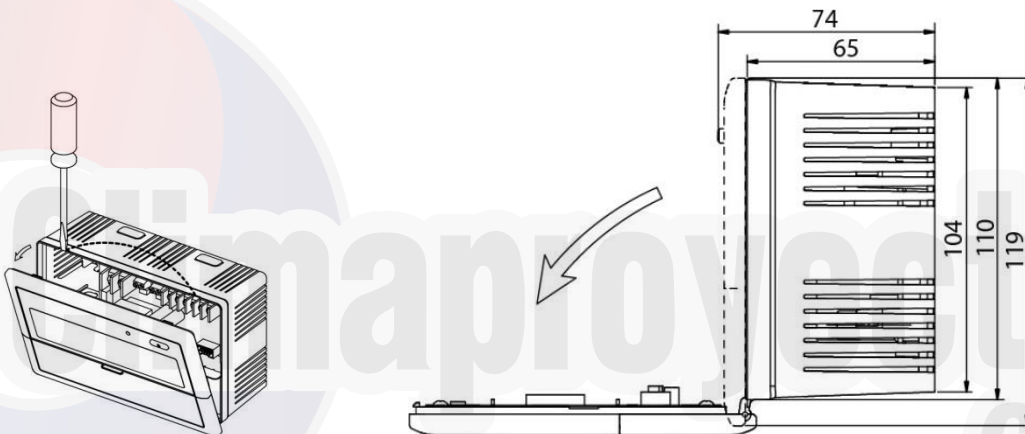
According to size of the hole in controller body, fix the controller on the place as needed. (Unit:
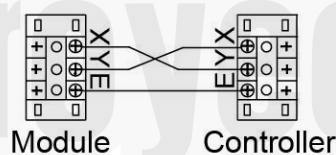
mm)

Plastic expansion tube Φ6X30

ST3.9X25-C-H(S)

153

148

78

4XØ6

Address Switch 00~15

3) The wire connection

RS232 Pin hole: for connection to computer COM port

RS485 Converted RS232 module

Emergency Open Swich,used to star up all air conditioners

Emergency Stop Swich,used to shut down all air conditioners

Power cable interface

Communication interface to the network interface module

N   L   EMG.STOP   FORCED ON   E   F2   F1   E   Y   X

3-core shielded cable
3×1.5mm^2

3-core shielded cable
3×0.75mm^2

Correct connection

Module   Controller

Incorrect connection

Module   Controller

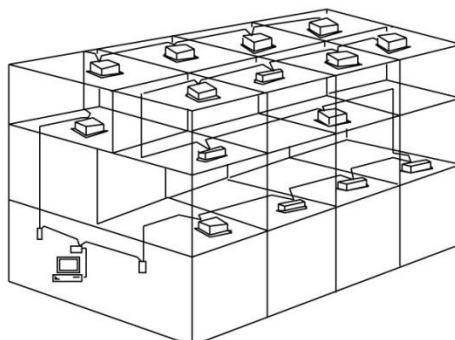Incorrect connection

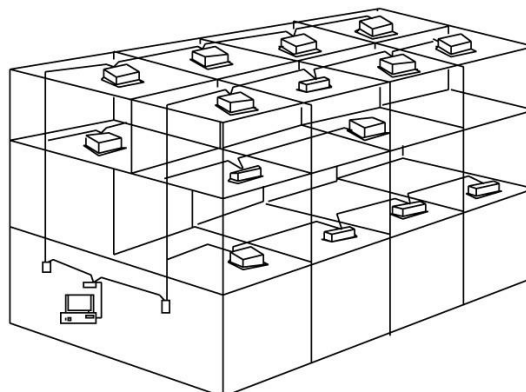Module   Controller

Incorrect connection

Module   Controller

4) System wiring instruction

✓ Wiring diagram of building network air conditioning system

Wiring diagram with good communication effect

Wiring diagram with poor communication effect (not recommended because it may lead to poor communication

✓ System wiring diagram of centralized monitoring and indoor unit of air conditioner

Both of the following wiring modes of centralized monitor and indoor unit are applicable: (Quantity of indoor units connected with each centralized monitor is less than or equal to 64).