



TECHNICAL SERVICE MANUAL

Rooftop package

Models:

MRBT-062C(H/E)WN1-R
MRBT-075C(H/E)WN1-R
MRBT-085C(H/E)WN1-R
MRBT-100C(H/E)WN1-R
MRBT-150C(H/E)WN1-R
MRBT-175C(H/E)WN1-R
MRBT-200C(H/E)WN1-R
MRBT-300C(H/E)WN1-R



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※ Manufacture reserves the right to discontinue, or change at any time, specifications or designs without notices and without incurring obligations.

1. Product List

Nominal Capacity Ton	Model		Refrigerant	Power Supply
	Model Name	Function		V, ph, Hz
5	MRBT-60CWN1-R	Cooling + EAH(Optional)	R410A	380-415V 3N~50Hz
6.2	MRBT-062CWN1-R	Cooling		380-400V 3N~50Hz
6.2	MRCT-062EWN1-R	Cooling + EAH		
6.2	MRBT-062HWN1-R	Heating & Cooling		
7.5	MRBT-075CWN1-R	Cooling		
7.5	MRCT-075EWN1-R	Cooling +EAH		
7.5	MRBT-075HWN1-R	Heating & Cooling		
8.5	MRBT-085CWN1-R	Cooling		
8.5	MRCT-085EWN1-R	Cooling +EAH		
8.5	MRBT-085HWN1-R	Heating & Cooling		
10	MRBT-100CWN1-R	Cooling		
10	MRCT-100EWN1-R	Cooling +EAH		
10	MRBT-100HWN1-R	Heating & Cooling		
15	MRBT-150CWN1-R	Cooling		
15	MRCT-150EWN1-R	Cooling +EAH		
15	MRBT-150HWN1-R	Heating & Cooling		
17.5	MRBT-175CWN1-R	Cooling		
17.5	MRCT-175EWN1-R	Cooling +EAH		
17.5	MRBT-175HWN1-R	Heating & Cooling		
20	MRBT-200CWN1-R	Cooling		
20	MRCT-200EWN1-R	Cooling +EAH		
20	MRBT-200HWN1-R	Heating & Cooling		
30	MRCT-300HWN1-R	Heating & Cooling		

Note: EAH- Electric Auxiliary Heater

2. External Appearance

5 Ton



6.2&7.5Ton



8.5&10 Ton



15&17.5&20 Ton

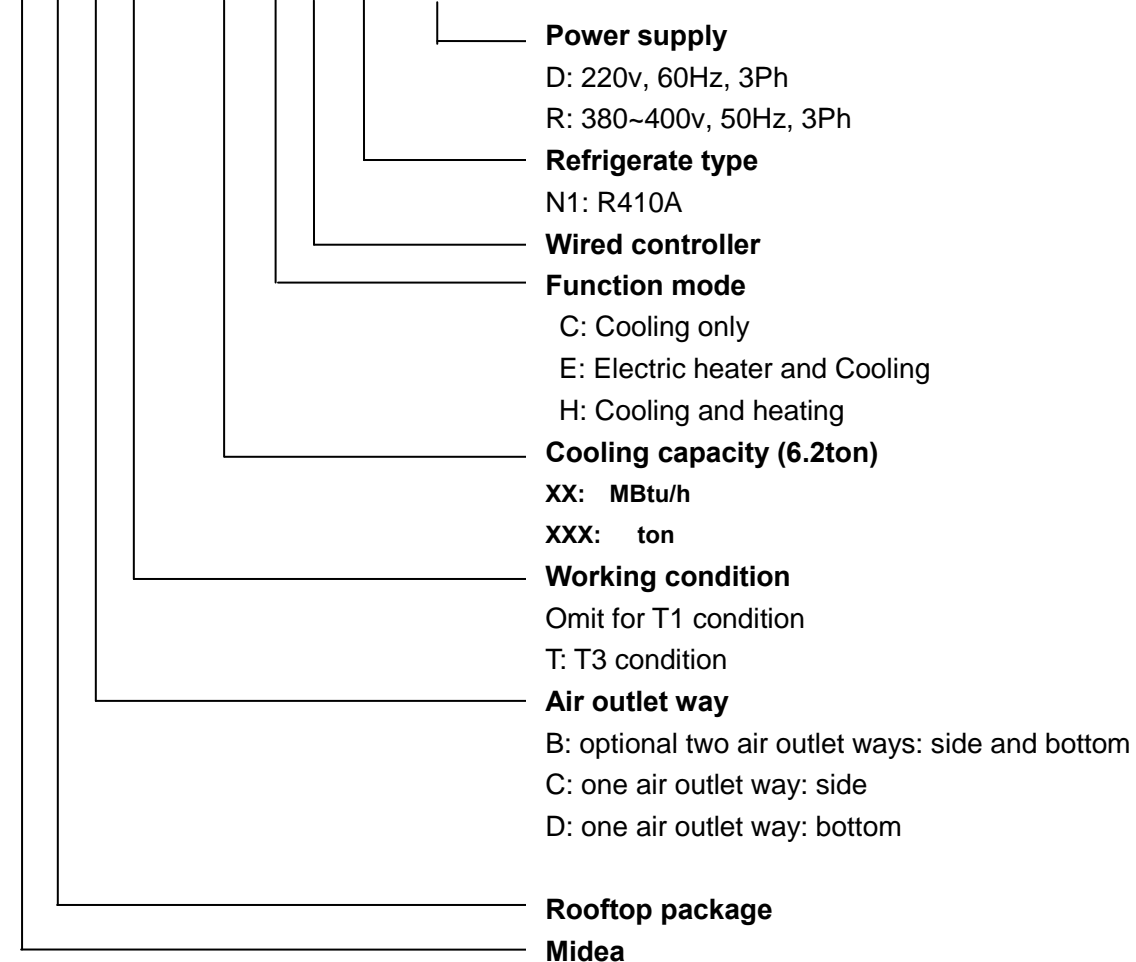


30 Ton



3. Nomenclature

M R C T - 062 C W N1 - R



4. Features

1. The adoption of anticorrosive-box

The reinforced anticorrosion by using galvanization armor plate and coated with man-composed paint. The appearance is stylish and be easy for maintenance.
(Has been passed 1000 hours salt spray test)

2. The adoption of credible protection system

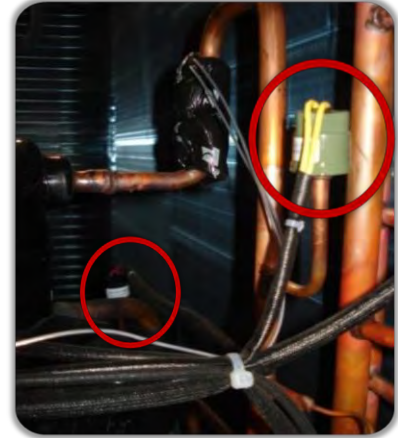
2.1 The protection of compressor

High-pressure protection, low-pressure protection, compressor's current protection and so on. The series' protectors can ensure compressor operating normally.

It adopts independent system, except for protection of sequence and wired controller output, any related protection to its corresponding compressor. Once a compressor protection energized, the corresponding compressor will stop, the others working still.

2.2 Fan motor

The fan motors for evaporator have over-heat protection and over-current protection function. The fan motors for condenser have the temperature controller protection function.



3. Energy saving design

3.1 High efficiency compressor

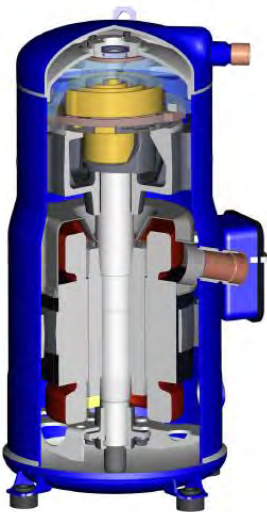
Using professional compressor, heat exchanger and optimum connection pipe, the compressor can startup under low power input. Provide maximum reliability, efficiency and quiet operation.

Two refrigerant circuits on larger units (above 12.5ton) provide efficient part load performance.

Standard low and high pressure safety switches.

Well compressor control

Compressor staging is controlled directly by the control temperature. When the control temperature is warmer than the cooling set point, cooling is staged up; when the control temperature is cooler than the cooling set point, cooling is staged down. However, a stage change can only occur when the control temperature is outside the dead band. Staging is constrained by an inter-stage delay timer. These constraints protect the compressors from short cycling while eliminating temperature variations near the diffusers.



3.2 Condenser

By using high-efficient thin wing, the condenser has high-efficient heat exchanger, the energy waste decreases greatly.

3.3 Evaporator

By using the high-efficient, super thin wing and inner grooved copper pipe, the evaporators get the higher capacity and the lower noise level.

3.4 The heat insulation of indoor unit

The heat insulation of indoor unit can availably decrease heat loss.

3.5 The control and refrigerant cycle system

There are two independent refrigerant cycle systems, the capacity output is adjusted automatically by

different demand, save energy when one control system is in running according to low capacity output.

4. Optional collocation

4.1 Operation in high temperature

The air-conditioner designed for high temperature can run, despite the ambient temperature reaches up to 52°C (125°F) .

4.2 Strong air flow

Large air volume from the air inlet is forced ventilating by the condenser fan.

4.3 Minimum installation arrangement

The installation is fast and low cost with the easy installation and ready operation.

4.4 Pre-drilled duct flange

Flanges are prepared at the supply and return duct connections so that they can reduce duct connection work at site.



4.5 Quiet operation

Noise and vibration have been effectively reduced by adopting new style hermetic compressor. The centrifugal fan and fan casing are optimum shaped for efficient and low noise operation.

5. Cabinet

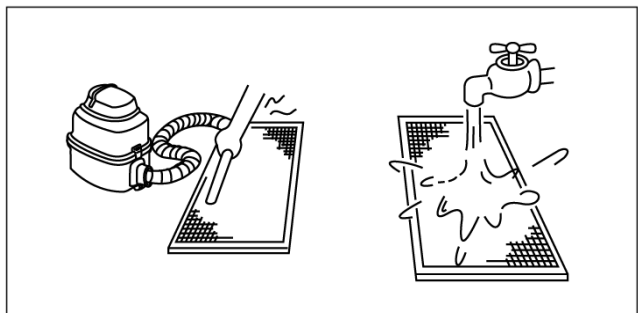
5.1 Sloped drain pan and drain pipe.

5.2 Cabinets have forklift and lifting holes for easy transportation.

5.3 Cabinets have fresh air function, and the filter can be washable.



Fresh air inlet



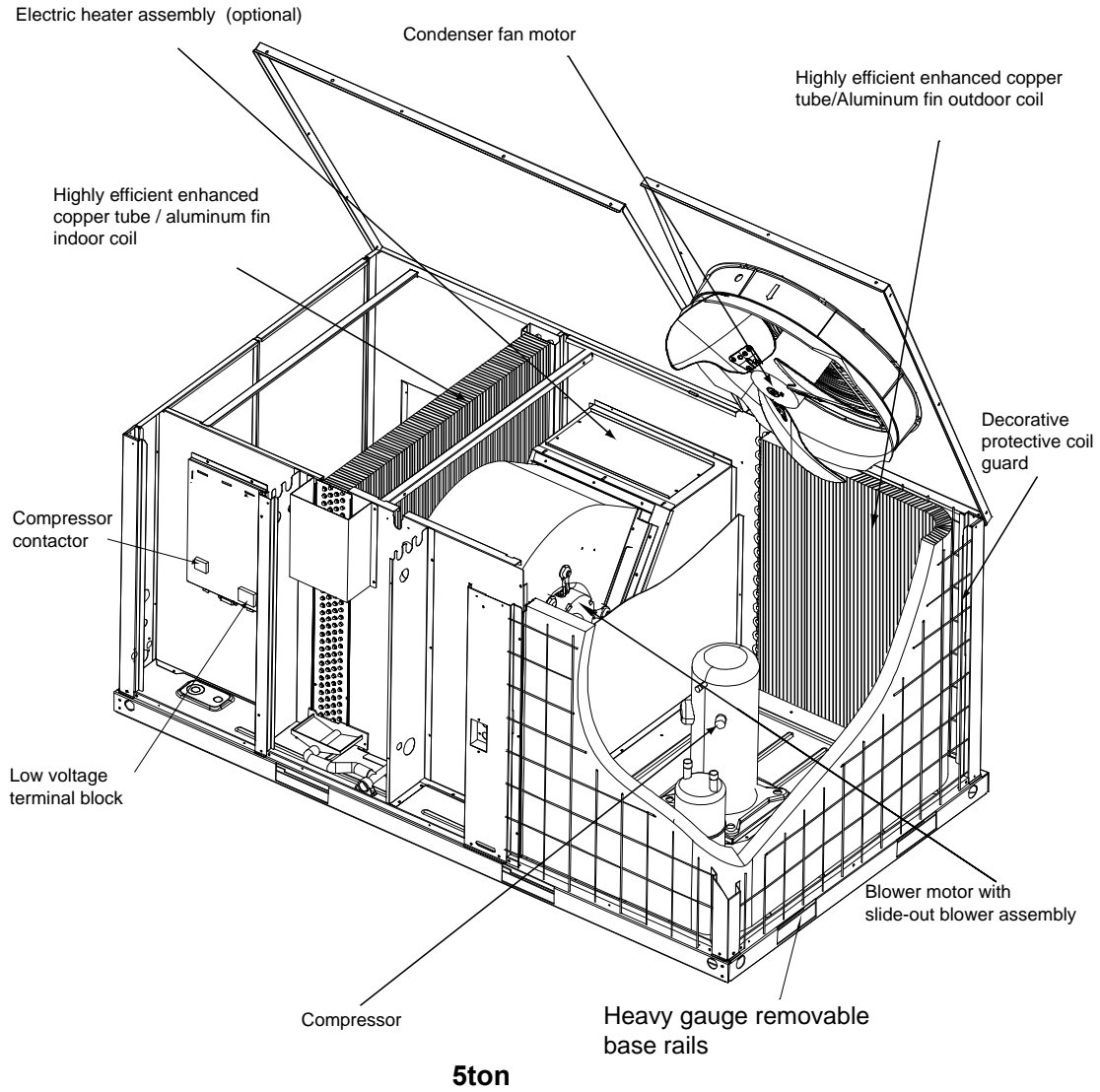
5.4 External pressure gauge ports.

With the gauge ports mounted externally, an accurate diagnostic of system operation can be performed quickly and easily without disrupting airflow.

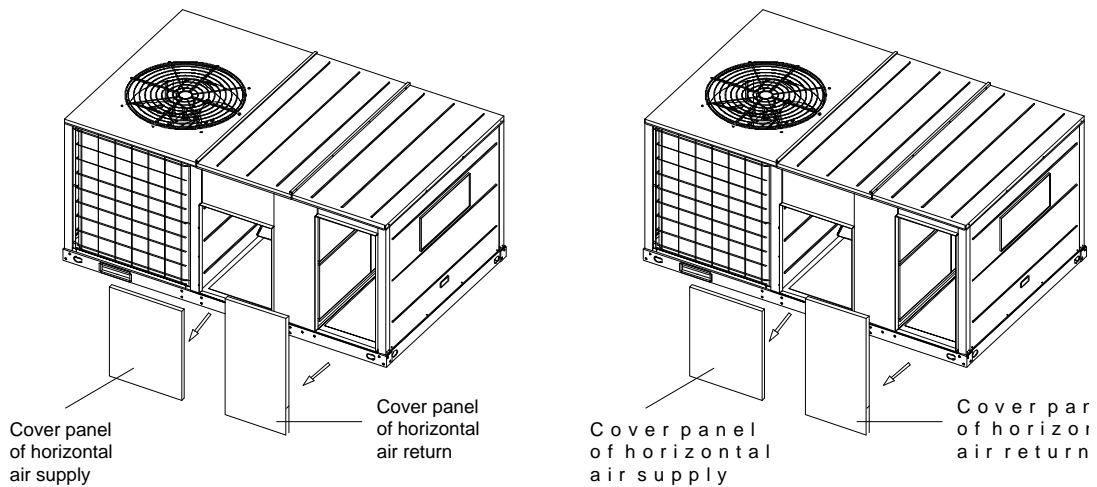
5.5 Durable construction.

Weather-resistant construction with capped seams and sloped top panels.

G90 galvanized heavy gauge plate conforming to ASTM-A-653, Zinc content of galvanized plate is 275 g/m² .



6. Optional supply/return airflow design, from side or bottom, It could be flexibly applied to multi-position. The rooftop and ground installation are optional.



7. Certificate of compressor

The compressors have CE certified, UL certified.

5. List of Functions

5.1 Standard specifications

A. General

Packaged cooling or combination heating and cooling units suitable for mounting on the roof or ground. The packaged unit consists of scroll compressors, evaporator coil, condenser coil, control wiring and interconnecting piping- all factory assembled and mounted on heavy gauge G-90 galvanized steel sheet press formed base, ready for field connection to utilities and ducts. The packaged unit is of rigid construction with holes provided in the base rails for overhead rigging. The unit is provided with an integral weather resistant control panel.

B. Unit enclosure

Panels are of heavy gauge, G-90 galvanized steel sheet with removable access panels, completely weatherized for outdoor installation and properly reinforced and brazed. Panels and access door are provided for inspection and access for all internal parts. Enclosures are provided with adequately reinforced points of support for setting in the unit. Steel sheet panels are zinc-coated and galvanized by the hot dip process of lock forming quality conforming to ASTM A 653 commercial weight G-90, followed by baked on electrostatic polyester dry powder coat paint, on all external panel.

C. Compressor

Compressors are scroll for all the models. They are provided with all the standard controls and accessories necessary for safe operation. These are equipped with internal motor protector; factory installed crank case heater and rubber vibration isolator for quiet and efficient operation.

D. Air-cooled condensing section

1. The air-cooled condensing section is enclosed within the unit housing and consists of condenser coil, fan(s) electric motor(s) and inherently protected compressor(s). Inner grooved copper tubes with wall thickness of 0.3mm, mechanically bonded to enhanced louvered aluminum fins are standard for all condenser coils. As an option, enhanced coated aluminum fins may be provided. Tube support sheets are galvanized steel, formed to provide structural strength.
2. Fans are propeller type, direct driven, upward discharge and provided with fan grille mounted on the casing.
3. Motors are totally enclosed air-over type with class F insulation. Inherent thermal protection is automatic reset type.

E. Evaporator coil section

1. All cooling coils are of enhanced louvered fins and inner grooved copper tubes with wall thickness of 0.3mm, mechanically bonded to aluminum fins. As option, enhanced coated aluminum fins may be provided. Tube support sheets are galvanized steel, formed to provide structural strength.
2. Drainage pan: An insulated drainage pan made of G-90 galvanized steel is provided, for additional corrosion protection.
3. Insulation: Insulation is supplied in adequate density and thickness for all units to prevent condensation from forming on the unit casing. Insulation meets the requirements of NFPA 90A and is protected against deterioration and erosion from air currents.

F. Evaporator fan

Evaporator fan is of centrifugal forward-curved blade design capable of handling total required CFM and static pressure in the low and the medium ranges. Casings are made of galvanized steel. Blower motors are of open drip proof type (totally enclosed types are optional) and conform to NEMA MG-1 and MG-2.

Blower motor is mounted on adjustable base and secured by locking device. Pillow block bearing are selected for at 200,000 hours average life at design operating conditions. Shaft is turned, ground and polished from solid steel. Fans and pulleys are keyed to shaft and designed for continuous operation at maximum motor horse power and fan speed. All rotating components and assemblies are statically and dynamically balanced and every unit is vibration tested before shipment from the factory.

G. Electronic thermostats

General information: A dedicated electronic thermostat is supplied with unit controls as standard. This thermostat controls one or two stage heating and cooling applications. The thermostat normally displays room temperature and mode of operation.

The temperature can be set by up/down buttons for both cooling and heating cycles. The thermostat also allows you to select continuous fan operation, or have the fan on intermittent operation with the equipment. It also displays the status of unit, thus providing maximum information for the end user.

5.2 Electric auxiliary heater

Electric auxiliary heaters are the resistance open coil type and conform to the requirements of UL 573 or equivalent. Electrical characteristics, kW capacities and number of stages are as indicated. Airflow switches, fusible links and overheat limit thermostats are provided to shut-off power in case of airflow failure/overheat. Electric heater kit is installed as an externally mounted kit at the supply opening.

5.3 Standard features/options/accessories

Description	Standard features	Option (factory installed)	Accessory (field installed)
Horizontal discharge	◆		
Compressor crankcase heaters	◆		
Evaporator fan-belt driven	◆		
Evaporator fan motor-ODP type(TEFC type optional)	◆		
Condenser fan-direct drive, propeller type(Except 5ton)	◆		
Condenser fan-direct drive, axial type(Only 5ton)	◆		
Condenser fan motor-totally enclosed air-over type	◆		
Electric auxiliary heater		◆	◆
Filter, Nylon(Thickness 10&12.5mm, except 5ton)	◆		
Filter, aluminum(Thickness 25mm)		◆	
Compressor overload protection	◆		
Low &high pressure switch	◆		
Cooling & heating thermostat	◆		
Condenser fan guard	◆		
Condenser coil guard	◆		
Wired controller KJR-12B	◆		
Wired controller KJR-23B			◆
Wired controller KJR-25B			◆
Drainage pipe			◆
Drainage outlet			◆
Snap ring			◆

6. Specifications

Nominal ton		(Ton)	5	6.2	6.2	6.2
Model			MRBT-60CWN1-R	MRBT-062CWN1-R	MRCT-062EWN1-R	MRBT-062HWN1-R
Cooling	Cooling Capacity (1)	Btu/h	59000	75000	75000	75000
		KW	17	22	22	22
	Power Input (1)	KW	5.6	7.7	7.7	7.7
	Cooling Capacity (2)	Btu/h	51200	65000	65000	65000
		KW	15	19	19	19
Power Input (2)	KW	6.7	8.6	8.6	8.6	
Heating	Heating Capacity	Btu/h	-	-	47800	89000
		KW	-	-	14	26
	Power Input	KW	-	-	14	7.6
Capacity steps		%	0/100	0/100	0/100	0/100
Electrical data	Power supply	V/PH/Hz	380-415V/3/50	380-400/3/50	380-400/3/50	380-400/3/50
	Max. input consumption (Except EAH)	KW	8.1	10.9	10.9	11.3
	Max. current	A	18	20.1	20.1	21
Performance	Indoor fan air flow (High speed)	CFM	1800	2600	2600	2600
	ESP	Pa	70	60	60	60
	EER 1	Btu/h/W	10.4	9.7	9.7	9.7
	EER 2	Btu/h/W	7.6	7.5	7.5	7.5
	COP	Btu/h/W	/	/	/	11.6
Indoor Coil	Number of rows		4	2	2	2
	Fin spacing	mm	1.6	1.6	1.6	1.6
		inch	1/16	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94
		inch	3/8	5/16"	5/16"	5/16"
	Coil length X height	mm	837x704	880X847	880X847	880X847
inch		32.9x27.7	34.6x33.3	34.6x33.3	34.6x33.3	
Number of circuits			12	10	10	10
Indoor fan	Type		FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal
	Quantity		1	1	1	1
	Diameter(Width)	mm	282	254	254	254
		inch	11.1	10	10	10
	Drive type		Direct	Belt	Belt	Belt
	Motors quantity		1	1	1	1
	Motor model		YDK550-4E	YFD90L-4-1.5	YFD90L-4-1.5	YFD90L-4-1.5
	Motor output	KW	0.55	1.5	1.5	1.5
Motor rpm	r/min	948	1400	1400	1400	
Compressor	Type		Scroll	Scroll	Scroll	Scroll
	Quantity		1	1	1	1
	Model		ZP67KCE-TFD-522	SH090A4ALC	SH090A4ALC	SH090A4ALC
	Brand		Copeland	Danfoss	Danfoss	Danfoss

R410a Tropical Rooftop Package Unit 50Hz

	Capacity	Btu/h	55000	76090	76090	76090
	Input	KW	5.2	7.185	7.185	7.185
	Rated load Amps (RLA)	A	11.8	14.3	14.3	14.3
	Locked rotor Amps(LRA)	A	74.0	20	20	20
	Refrigerant oil charge	ml	1656	3000	3000	3000
Outdoor Coil	Number of rows		3	3	3	3
	Fin spacing	mm	1.3	1.6	1.6	1.6
		inch	1/16	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	(outer2124/middle2074/inner2024) X 756	1404X968	1404X968	1404X968
inch		(outer83.6/middle81.7/inn9.7er7) X 29.8	55.3 X38.1	55.3 X38.1	55.3 X38.1	
Number of circuits			16	21	21	21
Outdoor Fan	Type		Axial fan	Propeller	Propeller	Propeller
	Quantity		1	1	1	1
	Diameter(Width)	mm	600	650	650	650
		inch	23.62	25.6	25.6	25.6
	Drive type		direct	Direct	Direct	Direct
	Motors quantity		1	1	1	1
	Motor model		YDK230-6G-6	YS600-6P	YS600-6P	YS600-6P
	Motor output	KW	0.23	0.6	0.6	0.6
Motor rpm	r/min	915	930	930	930	
Outdoor sound level(sound pressure level)		dB(A)	62.9	70.3	70.3	70.3
Refrigerant	Type		R410A	R410A	R410A	R410A
	Refrigerant volume	kg	5	5.2	5.2	5.2
	Refrigerant Control		Piston	Capillary	Capillary	Capillary
Controller	Wired controller type		Wired controller	Wired controller	Wired controller	Wired controller
Operation temp		°C	17~30	17~30	17~30	17~30
Outdoor ambient temp	Cooling	°C	18~52	18~52	18~52	18~52
	Heating	°C	-	-	-	-10~24
Dimensions	Net(WxHxD)	mm	1920X840X1068	1630X1065X1068	1630X1065X1068	1630X1065X1068
		inch	75.6X33.1X42	64.2 X 41.9 X 42	64.2 X 41.9 X 42	64.2 X 41.9 X 42
	Packing(WxHxD)	mm	1955X870X1085	1700X1110X1160	1700X1110X1160	1700X1110X1160
		inch	77X34.3X42.7	66.9 X 43.7 X 45.7	66.9 X 43.7 X 45.7	66.9 X 43.7 X 45.7
Weight	Net weight	kg(lbs)	230(507)	315(694.4)	323(712)	320(705.4)
	Gross weight	kg(lbs)	234(516)	335(738.5)	343(756)	340(749.6)
Filter	Type		Nylon	Nylon	Nylon	Nylon
	Quantity	Pieces	1	2	2	2
	Size (WxHxD)	mm	410 X 495 X 25	447 X 885 X 10	447 X 885 X 10	447 X 885 X 10
		inch	16.1X19.5X1	17.6 X34.8 X0.4	17.6 X34.8 X0.4	17.6 X34.8 X0.4
Shipping	Qty/Per 20'/40'/40'HQ	Pieces	12/24/36	12/28/28	12/28/28	12/28/28

Note:

The data are based on the following conditions:

Cooling: (1): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 35°C(95°F) DB.

(2): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 46°C(114°F) DB.

Heating and Power input: Indoor Temperature 20°C(68°F) DB/15°C(59°F) WB; - Outdoor Temperature 7°C(44.6°F) DB/6°C(42.8°F) DB

Electrical data: Indoor Temperature 32°C(90°F) DB / 24°C(74°F) WB; - Outdoor Temperature 52°C(125°F) DB

R410a Tropical Rooftop Package Unit 50Hz

Nominal ton		(Ton)	7.5	7.5	7.5	8.5	8.5
Model			MRBT-075CWN1-R	MRCT-075EWN1-R	MRBT-075HWN1-R	MRBT-085CWN1-R	MRCT-085EWN1-R
Cooling	Cooling Capacity 1	Btu/h	89000	89000	89000	103000	103000
		KW	26	26	26	30	30
	Power Input 1	KW	9.2	9.2	9.2	10.4	10.4
		Cooling Capacity 2	Btu/h	80100	80100	80100	91450
	KW		23.5	23.5	23.5	26.8	26.8
Power Input 2	KW	10.7	10.7	10.7	11.9	11.9	
	Heating Capacity	Btu/h	-	47800	102000	-	71700
KW		-	14	30	-	21	
Power Input	KW	-	14	8.8	-	21	
	Capacity steps	%	0/100	0/100	0/100	0/100	0/100
Electrical data	Power supply	V/PH/Hz	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50
	Max. input	KW	13	13	13	14	14
	Max. current	A	25	25	24	26.3	26.3
Performance	Indoor fan air	CFM	2900	2900	2900	3600	3600
	ESP	Pa	60	60	60	75	75
	EER 1	Btu/h/W	9.7	9.7	9.7	9.8	9.8
	EER 2	Btu/h/W	7.5	7.5	7.5	7.7	7.7
	COP	Btu/h/W	/	/	11.6	/	/
Indoor Coil	Number of rows		2	2	2	3	3
	Fin spacing	mm	1.6	1.6	1.6	1.4	1.4
		inch	1/16"	1/16"	1/16"	1/18"	1/18"
	Tube diameter	mm	7.94	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	880X847	880X847	880X847	1117X792	1117X792
		inch	34.6x33.3	34.6x33.3	34.6x33.3	44 X31.2	44 X31.2
Number of circuits		10	10	10	18	18	
Indoor fan	Type		FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal
	Quantity		1	1	1	1	1
	Diameter(Width)	mm	254	254	254	305	305
		inch	10	10	10	12	12
	Drive type		Belt	Belt	Belt	Belt	Belt
	Motors quantity		1	1	1	1	1
	Motor model		YFD90L-4-1.5	YFD90L-4-1.5	YFD90L-4-1.5	YFD90L-4-1.5	YFD90L-4-1.5
	Motor output	KW	1.5	1.5	1.5	1.5	1.5
Motor rpm	r/min	1400	1400	1400	1400	1400	
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity		1	1	1	1	1
	Model		SH105A4ALC	SH105A4ALC	SH105A4ALC	SH120A4ALC	SH120A4ALC
	Brand		Danfoss	Danfoss	Danfoss	Danfoss	Danfoss
	Capacity	Btu/h	91500	91500	91500	102200	102200

R410a Tropical Rooftop Package Unit 50Hz

	Input	KW	8.472	8.472	8.472	9.462	9.462
	Rated load Amps (RLA)	A	16.7	16.7	16.7	20.7	20.7
	Locked rotor Amps(LRA)	A	142	142	142	142	142
	Refrigerant oil charge	ml	3000	3000	3000	3300	3300
Outdoor Coil	Number of rows		3	3	3	3	3
	Fin spacing	mm	1.6	1.6	1.6	1.6	1.6
		inch	1/16"	1/16"	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	1404X968	1404X968	1404X968	1748X880	1748X880
inch		55.3 X38.1	55.3 X38.1	55.3 X38.1	68.8X34.6	68.8X34.6	
Number of circuits			21	21	21	20	20
Outdoor Fan	Type		Propeller	Propeller	Propeller	Propeller	Propeller
	Quantity		1	1	1	1	1
	Diameter(Width)	mm	650	650	650	700	700
		inch	25.6	25.6	25.6	27.6	27.6
	Drive type		Direct	Direct	Direct	Direct	Direct
	Motors quantity		1	1	1	1	1
	Motor model		YS600-6P	YS600-6P	YS600-6P	YS1100-6	YS1100-6
	Motor output	KW	0.6	0.6	0.6	1.1	1.1
Motor rpm	r/min	930	930	930	940	940	
Outdoor sound level(sound)		dB(A)	70.3	70.3	70.3	72.2	72.2
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A
	Refrigerant	kg	5.6	5.6	6	6.5	6.5
	Refrigerant Control		Capillary	Capillary	Capillary	Capillary	Capillary
Controller			Wired controller	Wired controller	Wired controller	Wired controller	Wired controller
Operation temp		°C	17~30	17~30	17~30	17~30	17~30
Outdoor ambient temp	Cooling	°C	18~52	18~52	18~52	18~52	18~52
	Heating	°C	-	-	-10~24	-	-
Dimensions	Net(WxHxD)	mm	1630X1065X1068			2165X1021X1335	
		inch	64.2 X 41.9 X 42			85.2 X 40.2 X 52.6	
	Packing(WxHxD)	mm	1700X1110X1160			2220X1140X1415	
		inch	66.9 X 43.7 X 45.7			87.4 X 44.9 X 55.7	
Weight	Net weight	kg(lbs)	315(694.4)	323(712)	380(837.7)	445(981)	455(1003)
	Gross weight	kg(lbs)	335(738.5)	343(756)	390(859.8)	458(1009.7)	468(1031.7)
Filter	Type		Nylon	Nylon	Nylon	Nylon	Nylon
	Quantity	Pieces	2	2	2	2	2
	Size (WxHxD)	mm	447 X 885 X 10	447 X 885 X 10	447 X 885 X 10	566 X 814 X 10	566 X 814 X 10
		inch	17.6 X34.8 X0.4	17.6 X34.8 X0.4	17.6 X34.8	22.3 X 32X0.4	22.3 X 32X0.4
Shipping	Qty/Per	Pieces	12/28/28	12/28/28	12/28/28	8/16/16	8/16/16

Note:

The data are based on the following conditions:

Cooling: (1): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 35°C(95°F) DB.

(2): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 46°C(114°F) DB.

Heating and Power input: Indoor Temperature 20°C(68°F) DB/15°C(59°F) WB; - Outdoor Temperature 7°C(44.6°F) DB/6°C(42.8°F) DB

Electrical data: Indoor Temperature 32°C(90°F) DB / 24°C(74°F) WB; - Outdoor Temperature 52°C(125°F) DB

R410a Tropical Rooftop Package Unit 50Hz

Nominal ton		(Ton)	8.5	10	10	10	15
Model			MRBT-085HW N1-R	MRBT-100CW N1-R	MRCT-100EW N1-R	MRBT-100HW N1-R	MRBT-150CWN1-R
Cooling	Cooling Capacity 1	Btu/h	103000	120000	120000	120000	180000
		KW	30	35	35	35	53
	Power Input 1	KW	10.4	11.8	11.8	11.8	18.6
	Cooling Capacity 2	Btu/h	91450	97000	97000	97000	158700
		KW	26.8	31.4	31.4	31.4	46.5
Power Input 2	KW	11.9	13.1	13.1	13.1	21.3	
Heating	Heating Capacity	Btu/h	120000	-	71700	126000	-
		KW	35	-	21	37	-
	Power Input	KW	10.1	-	21	10.9	-
Capacity steps		%	0/100	0/100	0/100	0/100	0/50/100
Electrical data	Power supply	V/PH/Hz	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50
	Max. input consumption (Except EAH)	KW	14	17.7	17.7	17	27
	Max. current	A	27.5	30	30	31	53
Performance	Indoor fan air flow (High speed)	CFM	3600	4030	4030	4030	6150
	ESP	Pa	75	75	75	75	90
	EER 1	Btu/h/W	9.8	10.2	10.2	10.2	9.7
	EER 2	Btu/h/W	7.7	8.2	8.2	8.2	7.5
	COP	Btu/h/W	11.6	/	/	11.6	/
Indoor Coil	Number of rows		3	3	3	3	3
	Fin spacing	mm	1.4	1.4	1.4	1.4	1.4
		inch	1/18"	1/18"	1/18"	1/18"	1/18"
	Tube diameter	mm	7.94	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	1117X792	1117X792	1117X792	1117X792	1607X880
inch		44 X31.2	44 X31.2	44 X31.2	44 X31.2	63.3X346.	
Number of circuits		18	18	18	18	10+10	
Indoor fan	Type		FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal
	Quantity	Pieces	1	1	1	1	1
	Diameter(Width)	mm	305	305	305	305	383
		inch	12	12	12	12	15
	Drive type		Belt	Belt	Belt	Belt	Belt
	Motors quantity	Pieces	1	1	1	1	1
	Motor model		YFD90L-4-1.5	YFD90L-4-1.5	YFD90L-4-1.5	YFD90L-4-1.5	YFD132S-4-5.5
	Motor output	KW	1.5	1.5	1.5	1.5	5.5
Motor rpm	r/min	1400	1400	1400	1400	1440	
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity	Pieces	1	1	1	1	2
	Model		SH120A4ALC	SH140A4ALC	SH140A4ALC	SH140A4ALC	SH105A4ALC
	Brand		Danfoss	Danfoss	Danfoss	Danfoss	Danfoss
	Capacity	Btu/h	102200	119000	119000	119000	91500

R410a Tropical Rooftop Package Unit 50Hz

	Input	KW	9.462	10.862	10.862	10.862	8.472
	Rated load Amps (RLA)	A	20.7	21.4	21.4	21.4	16.7
	Locked rotor Amps(LRA)	A	142	147	147	147	156
	Refrigerant oil charge	ml	3300	3300	3300	3300	3000
Outdoor Coil	Number of rows		3	3	3	3	3
	Fin spacing	mm	1.6	1.6	1.6	1.6	1.6
		inch	1.6	1/16"	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	1748X880	1748X880	1748X880	1748X880	2179X1100
inch		68.8X34.6	68.8X34.6	68.8X34.6	68.8X34.6	85.8X43.3	
Number of circuits			20	20	20	20	12+12
Outdoor Fan	Type		Propeller	Propeller	Propeller	Propeller	Propeller
	Quantity	Pieces	1	1	1	1	2
	Diameter(Width)	mm	700	700	700	700	650
		inch	27.6	27.6	27.6	27.6	25.6
	Drive type		Direct	Direct	Direct	Direct	Direct
	Motors quantity	Pieces	1	1	1	1	2
	Motor model		YS1100-6	YS1100-6	YS1100-6	YS1100-6	YS600-6P
	Motor output	KW	1.1	1.1	1.1	1.1	0.6 X 2
Motor rpm	r/min	940	940	940	940	930	
Outdoor sound level (sound pressure level)		dB(A)	72.2	72.2	72.2	72.2	72.4
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A
	Refrigerant volume	kg	6.8	6.7	6.7	7.5	5.8 X 2
	Refrigerant Control		Capillary	Capillary	Capillary	Capillary	Capillary
Controller			Wired controller	Wired controller	Wired controller	Wired controller	Wired controller
Operation temp		℃	17~30	17~30	17~30	17~30	17~30
Outdoor ambient temp	Cooling	℃	18~52	18~52	18~52	18~52	18~52
	Heating	℃	-10~24	-	-	-10~24	-
Dimensions	Net(WxHxD)	mm	2165X1021X1335				2230 X1245X1824
		inch	85.2 X 40.2 X 52.6				87.8 X 71.8 X 49
	Packing(WxHxD)	mm	2220X1140X1415				2236 X1300X1855
		inch	87.4 X 44.9 X 55.7				88 X 51.2 X 73
Weight	Net weight	kg(lbs)	450(990)	445(981)	455(1003)	450(992)	710/ (1565.3)
	Gross weight	kg(lbs)	463(1018.6)	458(1009.7)	468(1031.7)	463(1020.7)	730(1609.3)
Filter	Type		Nylon	Nylon	Nylon	Nylon	Nylon
	Quantity	Pieces	2	2	2	2	2
	Size (WxHxD)	mm	566 X 814 X 10	566 X 814 X 10	566 X 814 X 10	566 X 814 X 10	900 X 815 X 12.5
		inch	22.3 X 32X0.4	22.3 X 32X0.4	22.3 X 32X0.4	22.3 X 32X0.4	35.4 X32 X 0.5
Shipping	Qty/Per 20'/40'/40'HQ	Pieces	8/16/16	8/16/16	8/16/16	8/16/16	3/6/12

Note:

The data are based on the following conditions:

Cooling: (1): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 35°C(95°F) DB.

(2): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 46°C(114°F) DB.

Heating and Power input: Indoor Temperature 20°C(68°F) DB/15°C(59°F) WB; - Outdoor Temperature 7°C(44.6°F) DB/6°C(42.8°F) DB

Electrical data: Indoor Temperature 32°C(90°F) DB / 24°C(74°F) WB; - Outdoor Temperature 52°C(125°F) DB

R410a Tropical Rooftop Package Unit 50Hz

Nominal ton		(Ton)	15	15	17.5	17.5
Model			MRCT-150EWN1-R	MRBT-150HWN1-R	MRBT-175CWN1-R	MRCT-175EWN1-R
Cooling	Cooling Capacity 1	Btu/h	180000	180000	205000	205000
		KW	53	53	60	60
	Power Input 1	KW	18.6	18.6	20	20
	Cooling Capacity 2	Btu/h	158700	158700	176500	176500
		KW	46.5	46.5	51.7	51.7
Power Input 2	KW	21.3	21.3	23.5	23.5	
Heating	Heating Capacity	Btu/h	102400	191000	-	102400
		KW	30	56	-	30
	Power Input	KW	30	17.5	-	30
Capacity steps		%	0/50/100	0/50/100	0/50/100	0/50/100
Electrical data	Power supply	V/PH/Hz	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50
	Max. input consumption (Except EAH)	KW	27	27	29	29
	Max. current	A	53	45	65	65
Performance	Indoor fan air flow (High speed)	CFM	6150	6150	7311	7311
	ESP	Pa	90	90	90	90
	EER 1	Btu/h/W	9.7	9.7	10.2	10.2
	EER 2	Btu/h/W	7.5	7.5	7.5	7.5
	COP	Btu/h/W	/	11	/	/
Indoor Coil	Number of rows		3	3	3	3
	Fin spacing	mm	1.4	1.4	1.4	1.4
		inch	1/18"	1/18"	1/18"	1/18"
	Tube diameter	mm	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	1607X880	1607X880	1607X880	1607X880
inch		63.3X346.	63.3X346.	63.3X346.	63.3X346.	
Number of circuits			10+10	10+10	10+10	10+10
Indoor fan	Type		FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal
	Quantity	Pieces	1	1	1	1
	Diameter(Width)	mm	383	383	383	383
		inch	15	15	15	15
	Drive type		Belt	Belt	Belt	Belt
	Motors quantity		1	1	1	1
	Motor model		YFD132S-4-5.5	YFD132S-4-5.5	YFD132S-4-5.5	YFD132S-4-5.5
	Motor output	KW	5.5	5.5	5.5	5.5
Motor rpm	r/min	1440	1440	1440	1440	
Compressor	Type		Scroll	Scroll	Scroll	Scroll
	Quantity	Pieces	2	2	2	2
	Model		SH105A4ALC	SH105A4ALC	SH120A4ALC	SH105A4ALC
	Brand		Danfoss	Danfoss	Danfoss	Danfoss
	Capacity	Btu/h	91500	91500	102200	102200
	Input	KW	8.472	8.472	9.462	9.462

R410a Tropical Rooftop Package Unit 50Hz

	Rated load Amps (RLA)	A	16.7	16.7	20.7	20.7
	Locked rotor Amps(LRA)	A	156	156	142	142
	Refrigerant oil charge	ml	3000	3000	3300	3300
Outdoor Coil	Number of rows		3	3	3	3
	Fin spacing	mm	1.6	1.6	1.6	1.6
		inch	1/16"	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94
		inch	5/16"	5/16"	5/16"	5/16"
	Coil length X height	mm	2179X1100	2179X1100	2179X1100	2179X1100
inch		85.8X43.3	85.8X43.3	85.8X43.3	85.8X43.3	
Number of circuits			12+12	12+12	12+12	12+12
Outdoor Fan	Type		Propeller	Propeller	Propeller	Propeller
	Quantity	Pieces	2	2	2	2
	Diameter(Width)	mm	650	650	650	650
		inch	25.6	25.6	25.6	25.6
	Drive type		Direct	Direct	Direct	Direct
	Motors quantity	Pieces	2	2	2	2
	Motor model		YS600-6P	YS600-6P	YS1100-6	YS1100-6
	Motor output	KW	0.6 X 2	0.6 X 2	1.3 X 2	1.3 X 2
Motor rpm	r/min	930	930	940	940	
Outdoor sound level(sound pressure level)		dB(A)	72.4	72.4	72.4	72.4
Refrigerant	Type		R410A	R410A	R410A	R410A
	Refrigerant volume	kg	5.8 X 2	6.5 X 2	5.2X 2	5.2 X 2
	Refrigerant Control		Capillary	Capillary	Capillary	Capillary
Controller			Wired controller	Wired controller	Wired controller	Wired controller
Operation temp		°C	17~30	17~30	17~30	17~30
Outdoor ambient temp	Cooling	°C	18~52	18~52	18~52	18~52
	Heating	°C	-	-10~24	-	-
Dimensions	Net(WxHxD)	mm	2230 X1245X1824	2230 X1245X1824	2230 X1245X1824	2230 X1245X1824
		inch	87.8 X 71.8 X 49	87.8 X 71.8 X 49	87.8 X 71.8 X 49	87.8 X 71.8 X 49
	Packing(WxHxD)	mm	2236 X1300X1855	2236 X1300X1855	2236 X1300X1855	2236 X1300X1855
		inch	88 X 51.2 X 73	88 X 51.2 X 73	88 X 51.2 X 73	88 X 51.2 X 73
Weight	Net weight	kg(lbs)	720/ (1609.3)	730/ (1609.3)	710/ (1565.3)	720/ (1609.3)
	Gross weight	kg(lbs)	740(1653.4)	750(1653.4)	730(1609.3)	740(1653.4)
Filter	Type		Nylon	Nylon	Nylon	Nylon
	Quantity	Pieces	2	2	2	2
	Size (WxHxD)	mm	900 X 815 X 12.5	900 X 815 X 12.5	900 X 815 X 12.5	900 X 815 X 12.5
		inch	35.4 X32 X 0.5	35.4 X32 X 0.5	35.4 X32 X 0.5	35.4 X32 X 0.5
Shipping	Qty/Per 20'/40'/40'HQ	Pieces	3/6/12	3/6/12	3/6/12	3/6/12

Note:

The data are based on the following conditions:

Cooling: (1): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 35°C(95°F) DB.

(2): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 46°C(114°F) DB.

Heating and Power input: Indoor Temperature 20°C(68°F) DB/15°C(59°F) WB; - Outdoor Temperature 7°C(44.6°F) DB/6°C(42.8°F) DB

Electrical data: Indoor Temperature 32°C(90°F) DB / 24°C(74°F) WB; - Outdoor Temperature 52°C(125°F) DB

Nominal ton		(Ton)	17.5	20	20	20	30
Model			MRBT-175HWN1-R	MRBT-200CW N1-R	MRCT-200EWN1-R	MRBT-200HWN1-R	MRCT-300HWN1-R
Cooling	Cooling Capacity (1)	Btu/h	180000	240000	240000	240000	331000
		KW	53	70	70	70	97
	Power Input (1)	KW	18.6	23.6	23.6	23.6	33
	Cooling Capacity (2)	Btu/h	158700	210000	210000	210000	299600
		KW	51.7	61.4	61.4	61.4	87.8
Power Input (2)	KW	23.5	27.7	27.7	27.7	40.1	
Heating	Heating Capacity	Btu/h	191000	-	133100	256000	358000
		KW	67	-	39	75	105
	Power Input	KW	19.8	-	39	23.4	34.8
Capacity steps		%	0/50/100	0/50/100	0/50/100	0/50/100	0/50/100
Electrical data	Power supply	V/PH/Hz	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50	380-400/3/50
	Max. input consumption	KW	29	36	36	36	49
	Max. current	A	65	66	66	75	86.5
Performance	Indoor fan air flow (High speed)	CFM	7311	8400	8400	8400	12000
	ESP	Pa	90	100	100;;	100	250
	EER 1	Btu/h/W	10.2	10.1	10.1	10.1	10
	EER 2	Btu/h/W	7.5	7.6	7.6	7.6	7.5
	COP	Btu/h/W	11.5	/	/	11	10.3
Indoor Coil	Number of rows		3	3	3	3	3
	Fin spacing	mm	1.4	1.6	1.6	1.6	1.5
		inch	1/18"	1/16"	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94	7
		inch	5/16"	5/16"	5/16"	5/16"	9/32"
	Coil length X height	mm	1607X880	1882X1012	1882X1012	1882X1012	1882X1428
inch		63.3X346.	74.1X39.8	74.1X39.8	74.1X39.8	74.1X56.2	
Number of circuits			10+10	11+12	11+12	11+12	17+17
Indoor fan	Type		FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal	FC centrifugal
	Quantity	Pieces	1	1	1	1	1
	Diameter(Width)	mm	383	452	452	452	500
		inch	15	17.8	17.8	17.8	19.7
	Drive type		Belt	Belt	Belt	Belt	Belt
	Motors quantity	Pieces	1	1	1	1	1
	Motor model		YFD132S-4-5.5	YFD132S-4-5.5	YFD132S-4-5.5	YFD132S-4-5.5	Y(2)132M-4-7.5
	Motor output	KW	5.5	5.5	5.5	5.5	7.5
Motor rpm	r/min	1440	1440	1440	1440	1440	
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity	Pieces	2	2	2	2	2
	Model		SH120A4ALC	SH140A4ALC	SH140A4ALC	SH140A4ALC	SH184A4ALC
	Brand		Danfoss	Danfoss	Danfoss	Danfoss	Danfoss
	Capacity	Btu/h	102200	119000	119000	119000	152426

R410a Tropical Rooftop Package Unit 50Hz

	Input	KW	9.462	10.862	10.862	10.862	13.732
	Rated load Amps (RLA)	A	20.7	21.4	21.4	21.4	27.6
	Locked rotor Amps(LRA)	A	142	147	147	147	197
	Refrigerant oil charge	ml	3300	3300	3300	3300	3600
Outdoor Coil	Number of rows		3	4	4	4	4
	Fin spacing	mm	1.6	1.6	1.6	1.6	1.5
		inch	1/16"	1/16"	1/16"	1/16"	1/16"
	Tube diameter	mm	7.94	7.94	7.94	7.94	7
		inch	5/16"	5/16"	5/16"	5/16"	9/32"
	Coil length X height	mm	2179X1100	2650X1100	2650X1100	2650X1100	2650X1512
	inch	85.8X43.3	104.3X43.3	104.3X43.3	104.3X43.3	104.3X59.5	
Number of circuits			12+12	11+12	11+12	11+12	12+12
Outdoor Fan	Type		Propeller	Propeller	Propeller	Propeller	Propeller
	Quantity	Pieces	2	2	2	2	2
	Diameter(Width)	mm	650	750	750	750	750
		inch	25.6	29.5	29.5	29.5	29.5
	Drive type		Direct	Direct	Direct	Direct	Direct
	Motors quantity	Pieces	2	2	2	2	2
	Motor model		YS1100-6	YS1500-6	YS1500-6	YS1500-6	YS1500-6
	Motor output	KW	1.3 X 2	1.5 X 2	1.5 X 2	1.5 X 2	1.5 X 2
Motor rpm	r/min	940	910	910	910	910	
Outdoor sound level (sound pressure level)		dB(A)	72.4	74.2	74.2	74.2	75.4
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A
	Refrigerant volume	kg	5.6 X 2	8.1 X 2	8.1 X 2	8.8 X 2	9.4 X 2
	Refrigerant Control		Capillary	Capillary	Capillary	Capillary	Capillary
Controller			Wired controller	Wired controller	Wired controller	Wired controller	Wired controller
Operation temp		°C	17~30	17~30	17~30	17~30	17~30
Outdoor ambient temp	Cooling	°C	18~52	18~52	18~52	18~52	18~52
	Heating	°C	-10~24	-	-	-10~24	-10~24
Dimensions	Net(WxHxD)	mm	2230 X1245X1824	2753 X1245X2157	2753 X1245X2157	2753 X1245X2157	2753 X1674X2157
		inch	87.8 X 71.8 X 49	108.4 X 49 X 84.9	108.4 X 49 X 84.9	108.4 X 49 X 84.9	108.4 X 65.9 X 84.8
	Packing (WxHxD)	mm	2236 X1300X1855	2755 X1300X2180	2755 X1300X2180	2755 X1300X2180	2755 X1690X2180
		inch	88 X 51.2 X 73	108.5X51.2 X85.8	108.5X51.2 X85.8	108.5X51.2 X85.8	108.5X66.5 X85.8
Weight	Net weight	kg(lbs)	730/(1609.3)	925(2039.2)	940(2072.3)	940(2072.3)	1110(2447.1)
	Gross weight	kg(lbs)	750(1653.4)	940(2072.3)	955(2105.4)	955(2105.4)	1130(2491.2)
Filter	Type		Nylon	Nylon	Nylon	Nylon	Nylon
	Quantity	Pieces	2	3	3	3	3
	Size (WxHxD)	mm	900 X 815 X 12.5	640 X 1008 X 12.5	640 X 1008 X 12.5	640 X 1008 X 12.5	1492 X 640 X 12.5
		inch	35.4 X32 X 0.5	25.2 X39.7 X 0.5	25.2 X39.7 X 0.5	25.2 X39.7 X 0.5	59 X26 X 0.5
Shipping	Qty/Per 20'/40'/40'HQ	Pieces	3/6/12	2/4/8	2/4/8	2/4/8	2/4/4

Note:

The data are based on the following conditions:

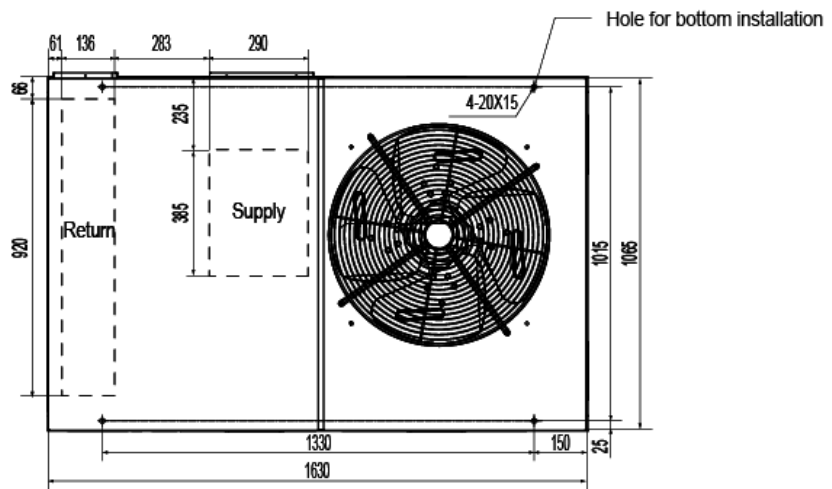
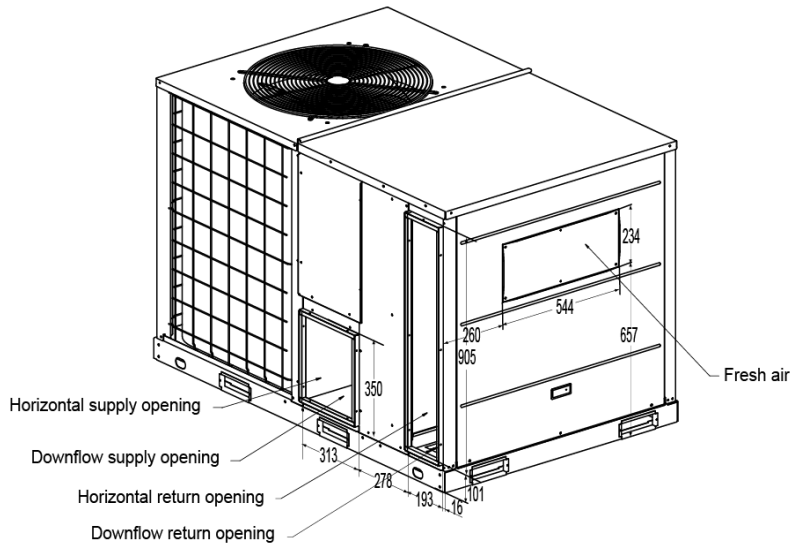
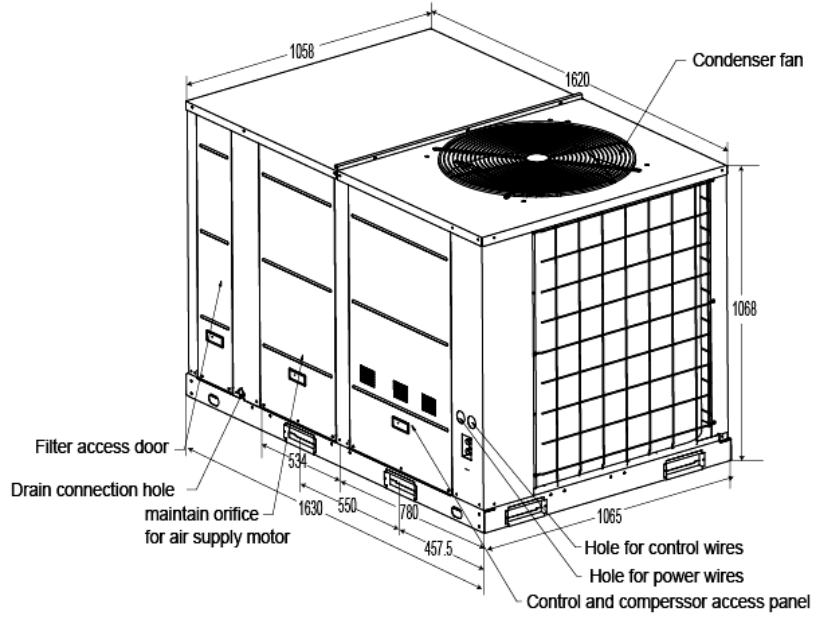
Cooling: (1): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 35°C(95°F) DB.

(2): Indoor Temperature 26.7°C(80°F) DB / 19.4°C(67°F) WB; - Outdoor Temperature 46°C(114°F) DB.

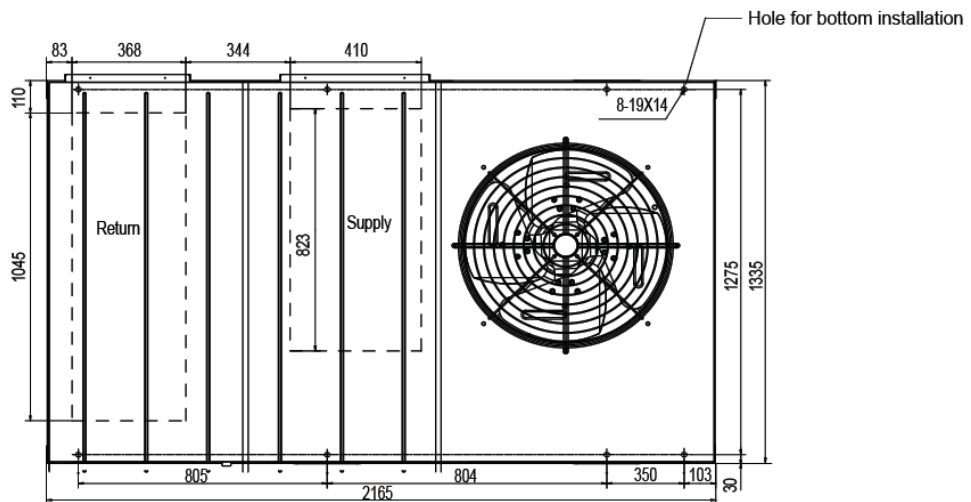
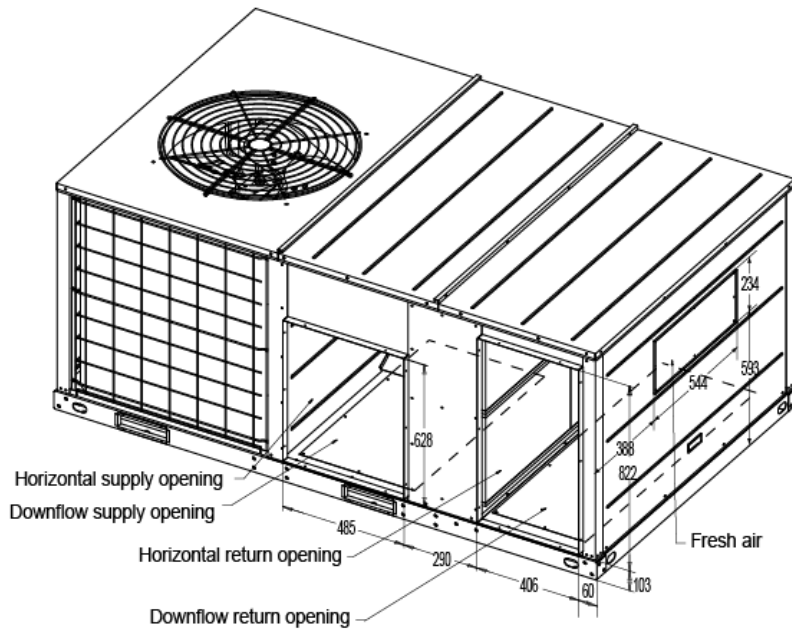
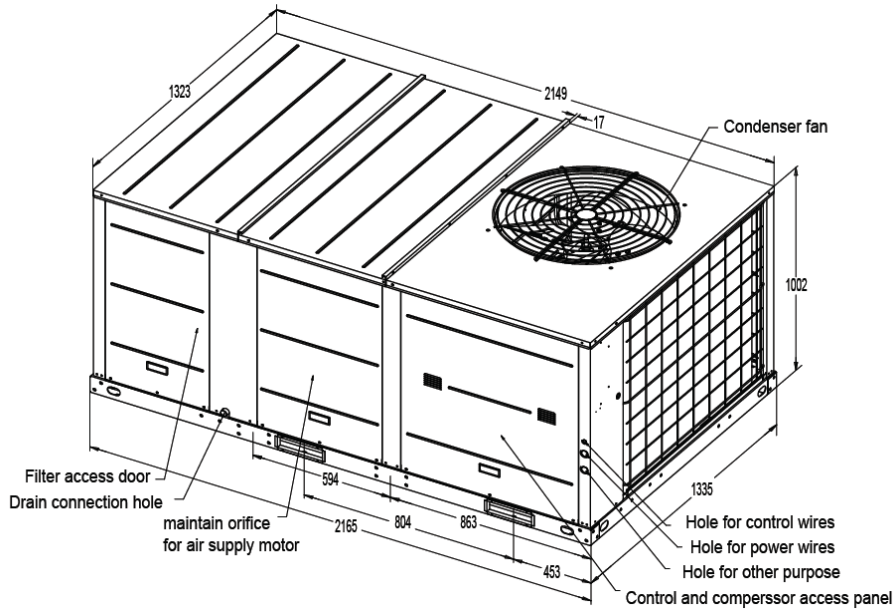
Heating and Power input: Indoor Temperature 20°C(68°F) DB/15°C(59°F) WB; - Outdoor Temperature 7°C(44.6°F) DB/6°C(42.8°F) DB

Electrical data: Indoor Temperature 32°C(90°F) DB / 24°C(74°F) WB; - Outdoor Temperature 52°C(125°F) DB

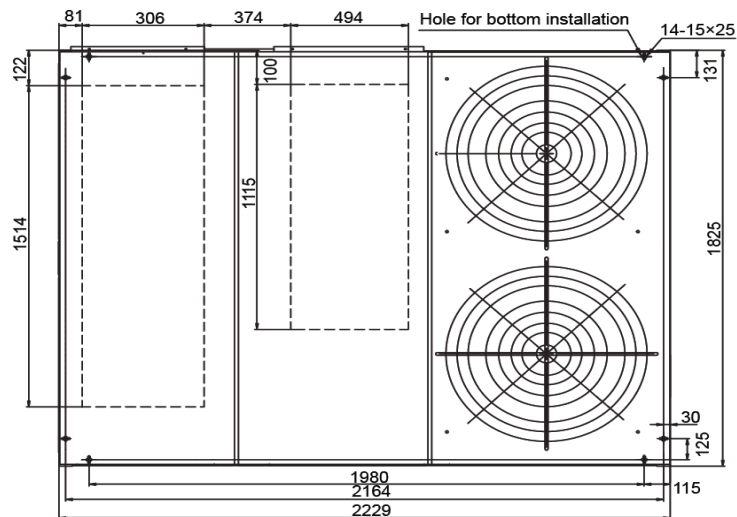
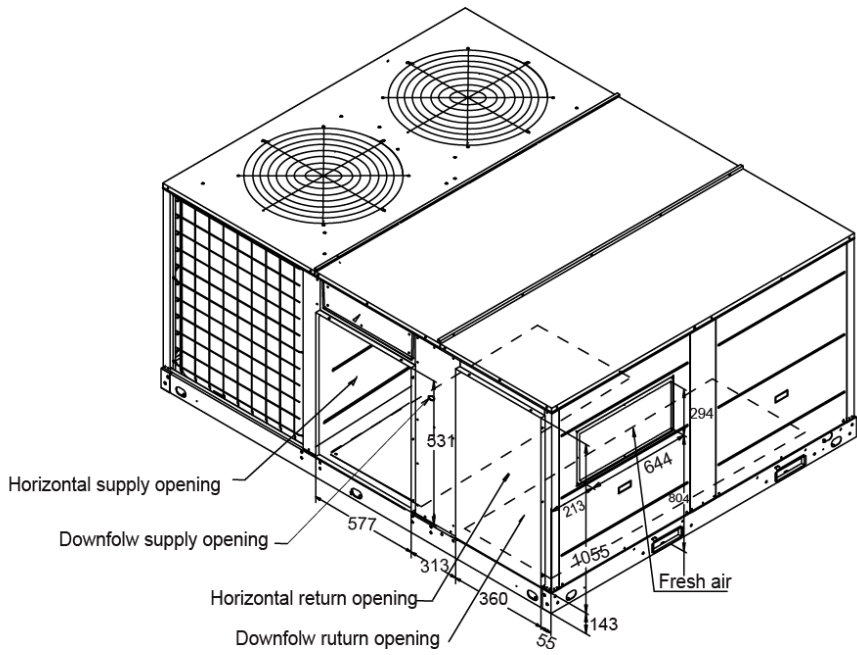
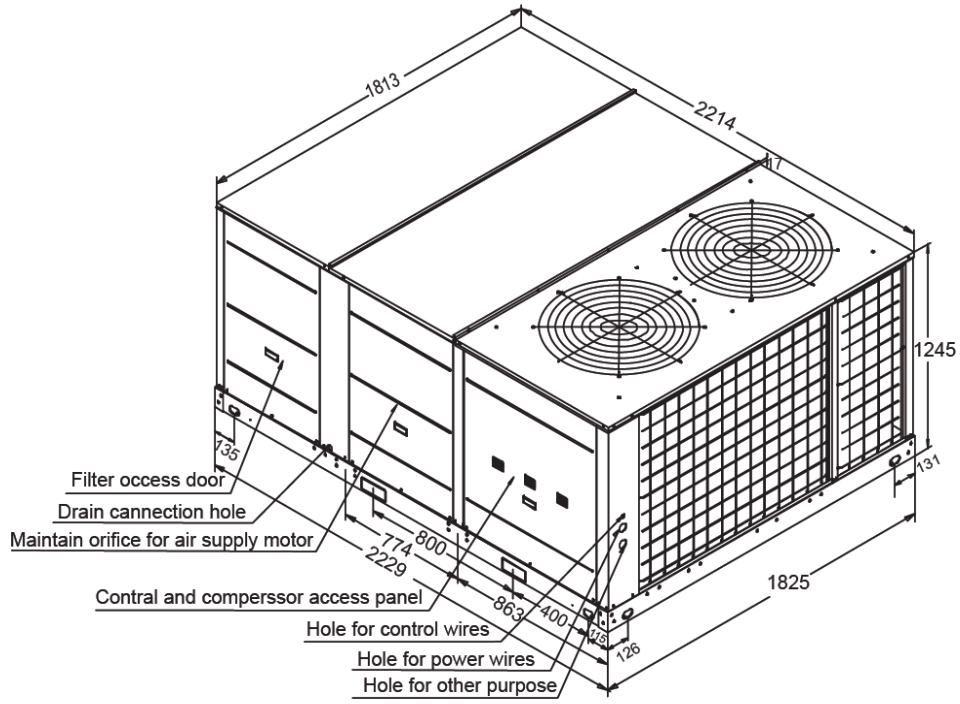
7.2 6.2&7.5ton



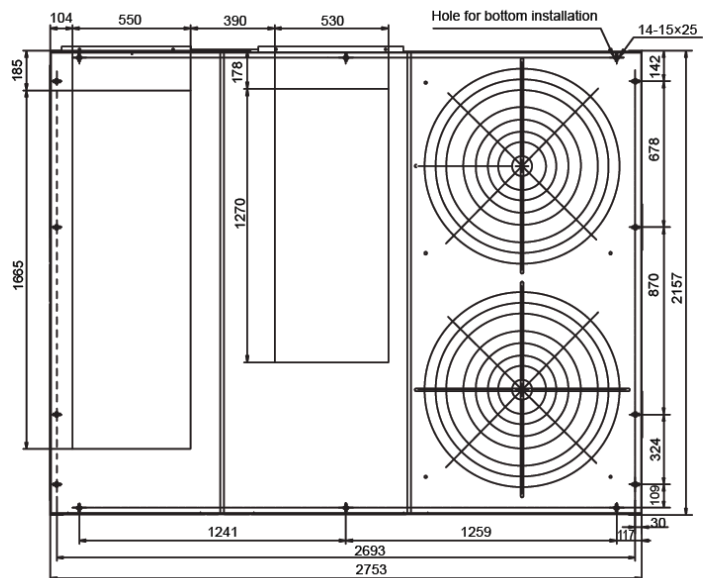
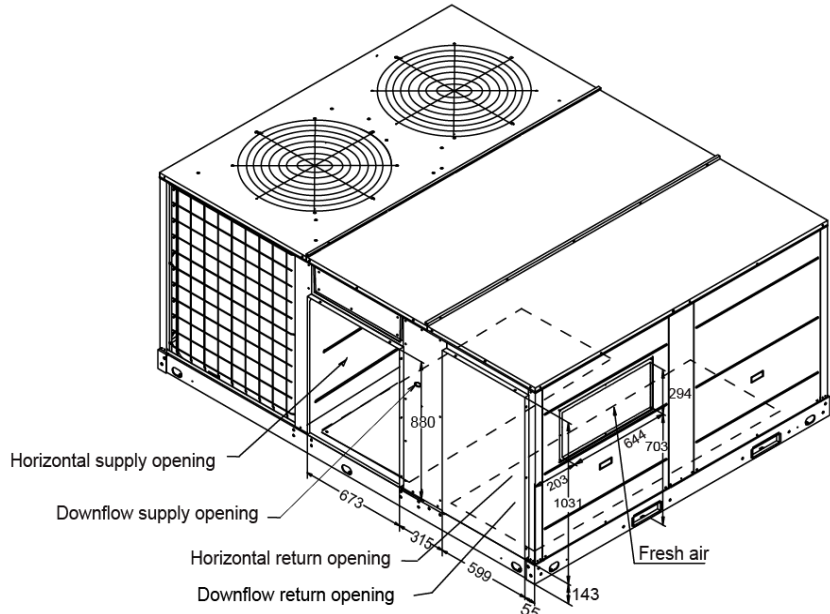
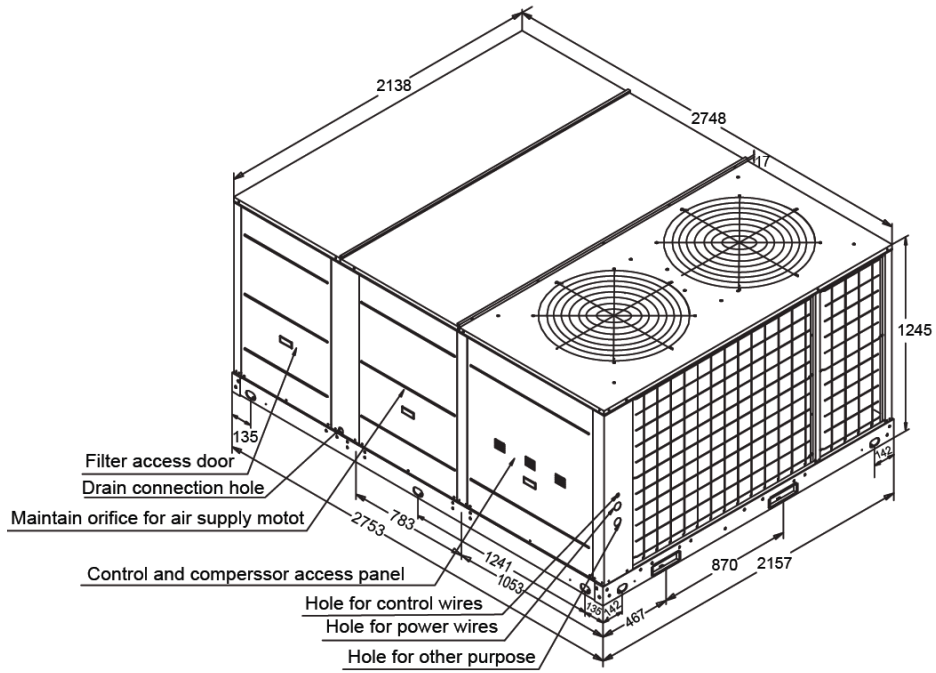
7.3 8.5&10ton



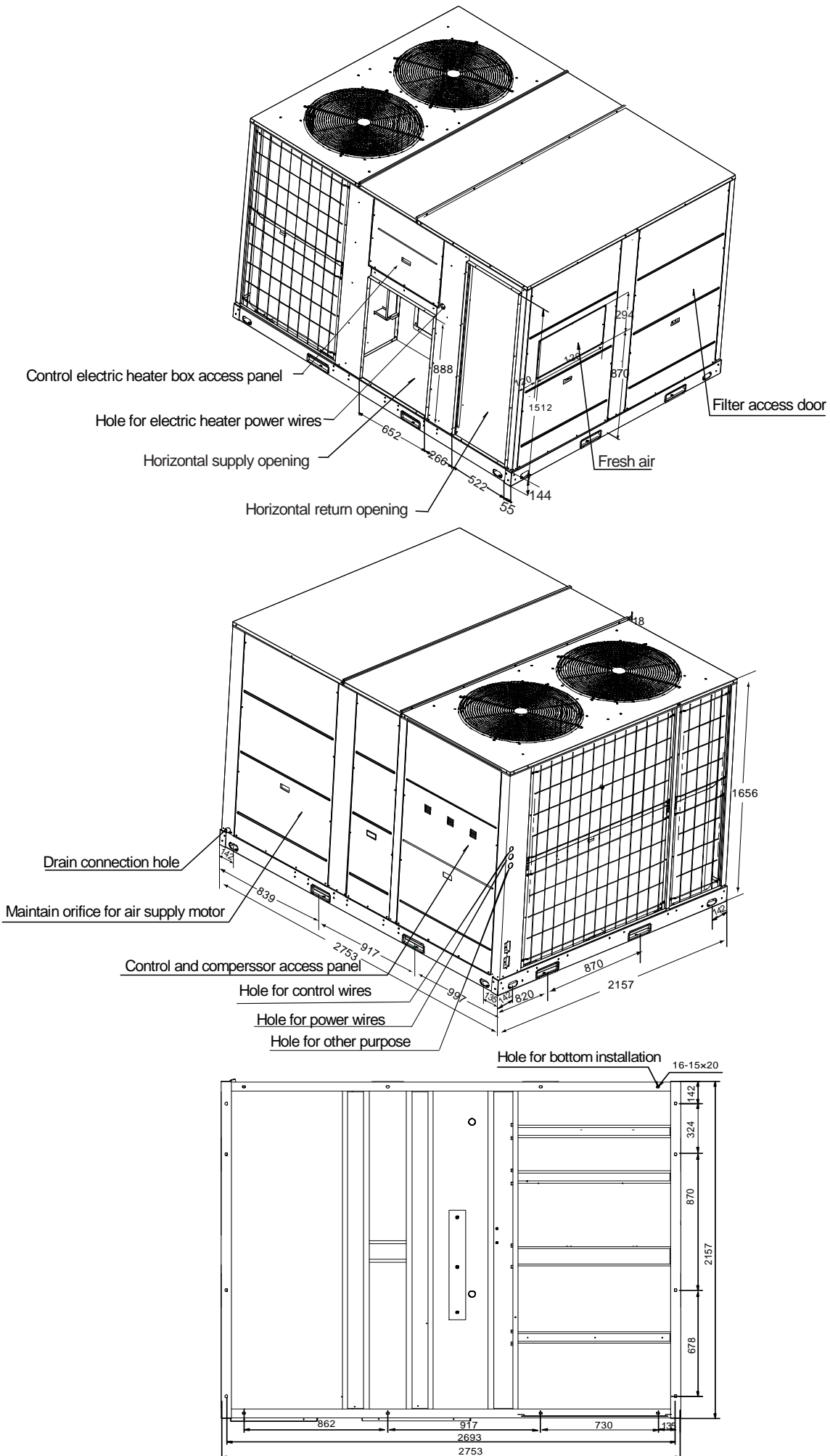
7.4 15&17.5ton



7.5 20ton



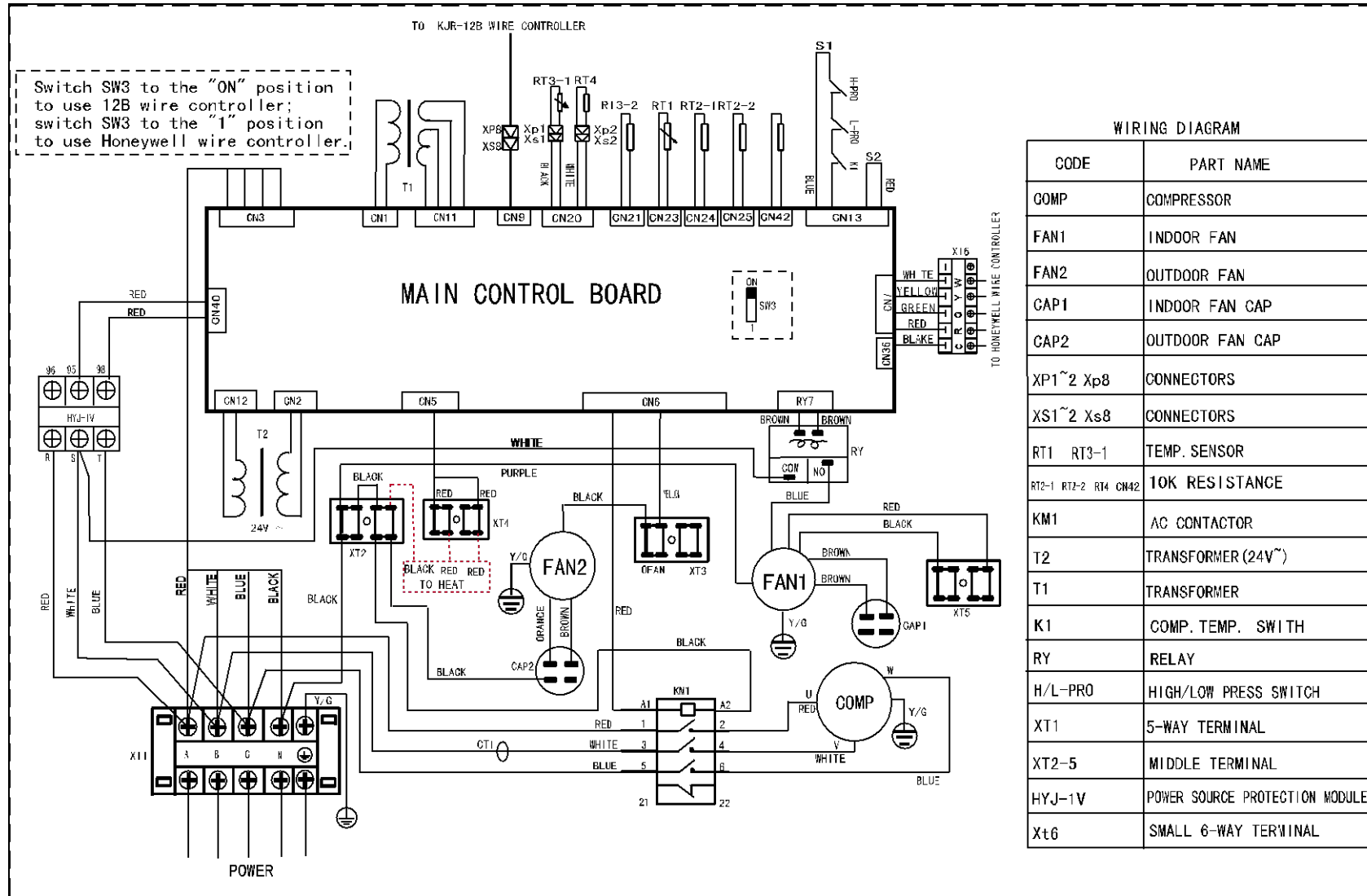
7.6 30ton



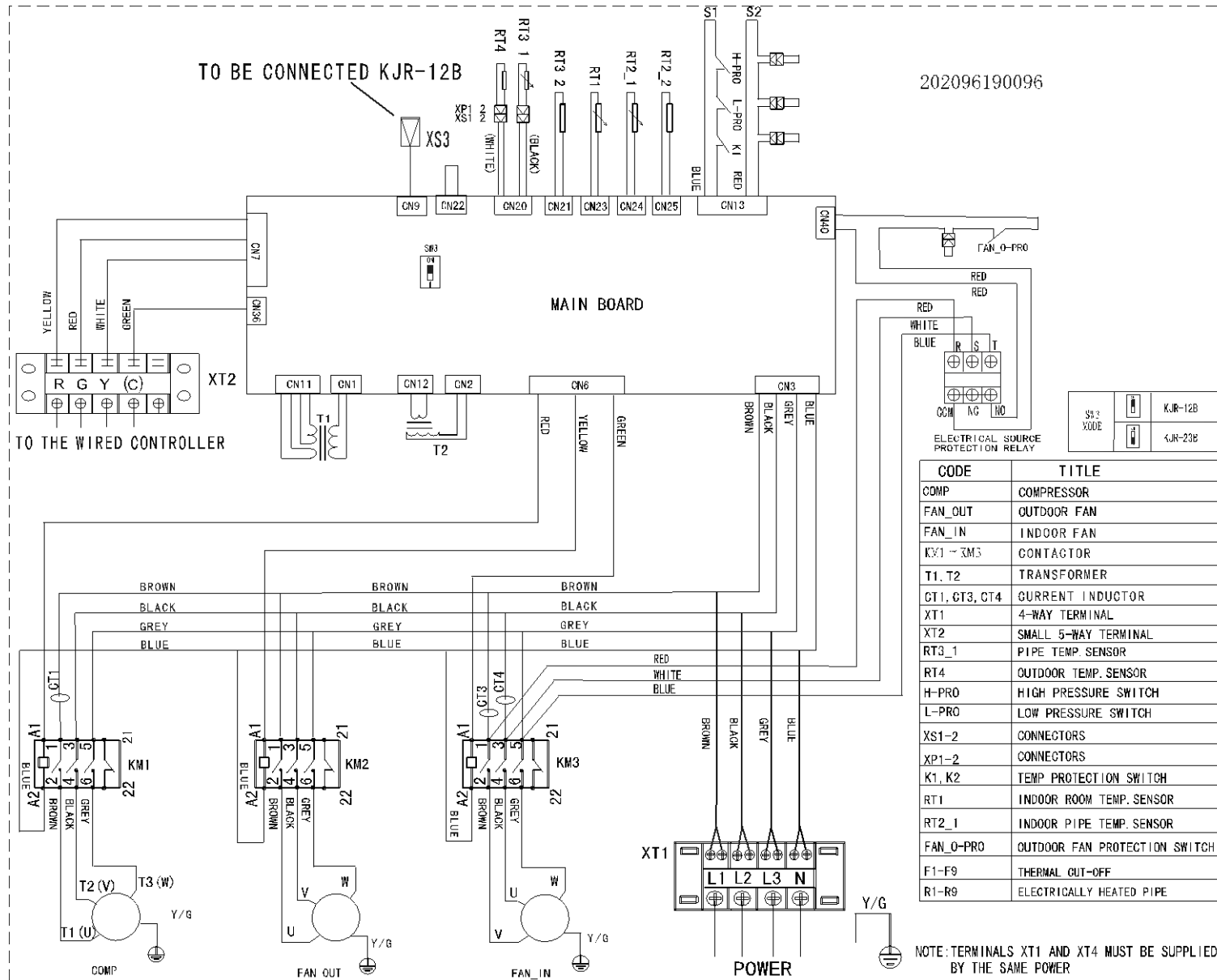
8. Wiring Diagrams

8.1 5ton

MRBT-60CWN1-R



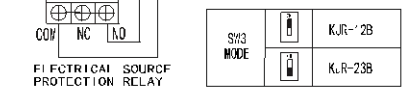
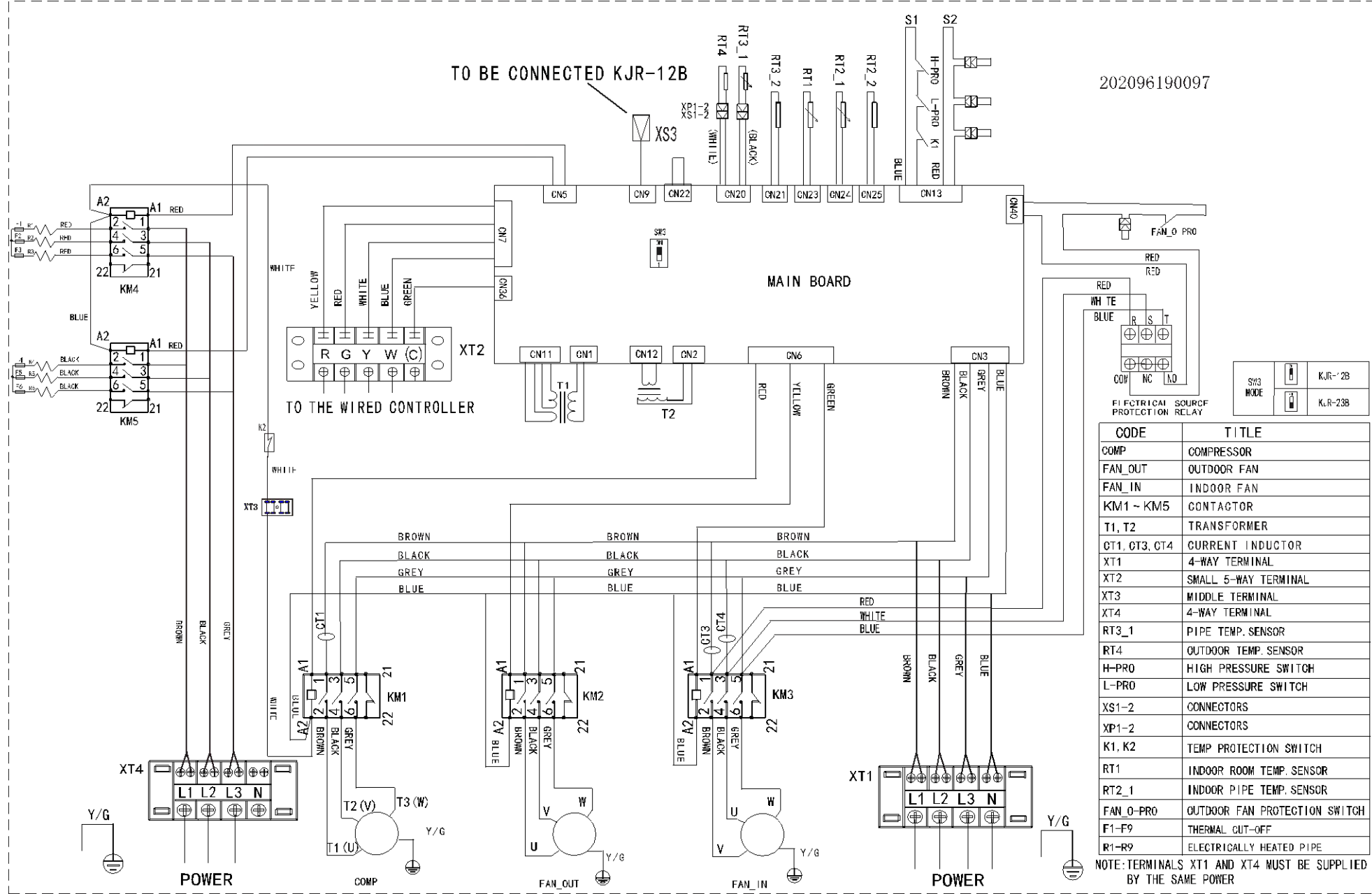
8.2 6.2ton
MRBT-062CWN1-R



CODE	TITLE
COMP	COMPRESSOR
FAN_OUT	OUTDOOR FAN
FAN_IN	INDOOR FAN
KX1 - KM3	CONTACTOR
T1, T2	TRANSFORMER
CT1, CT3, CT4	CURRENT INDUCTOR
XT1	4-WAY TERMINAL
XT2	SMALL 5-WAY TERMINAL
RT3_1	PIPE TEMP. SENSOR
RT4	OUTDOOR TEMP. SENSOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
XS1-2	CONNECTORS
XP1-2	CONNECTORS
K1, K2	TEMP PROTECTION SWITCH
RT1	INDOOR ROOM TEMP. SENSOR
RT2_1	INDOOR PIPE TEMP. SENSOR
FAN_O-PRO	OUTDOOR FAN PROTECTION SWITCH
F1-F9	THERMAL OUT-OFF
R1-R9	ELECTRICALLY HEATED PIPE

MRCT-062EWN1-R

202096190097

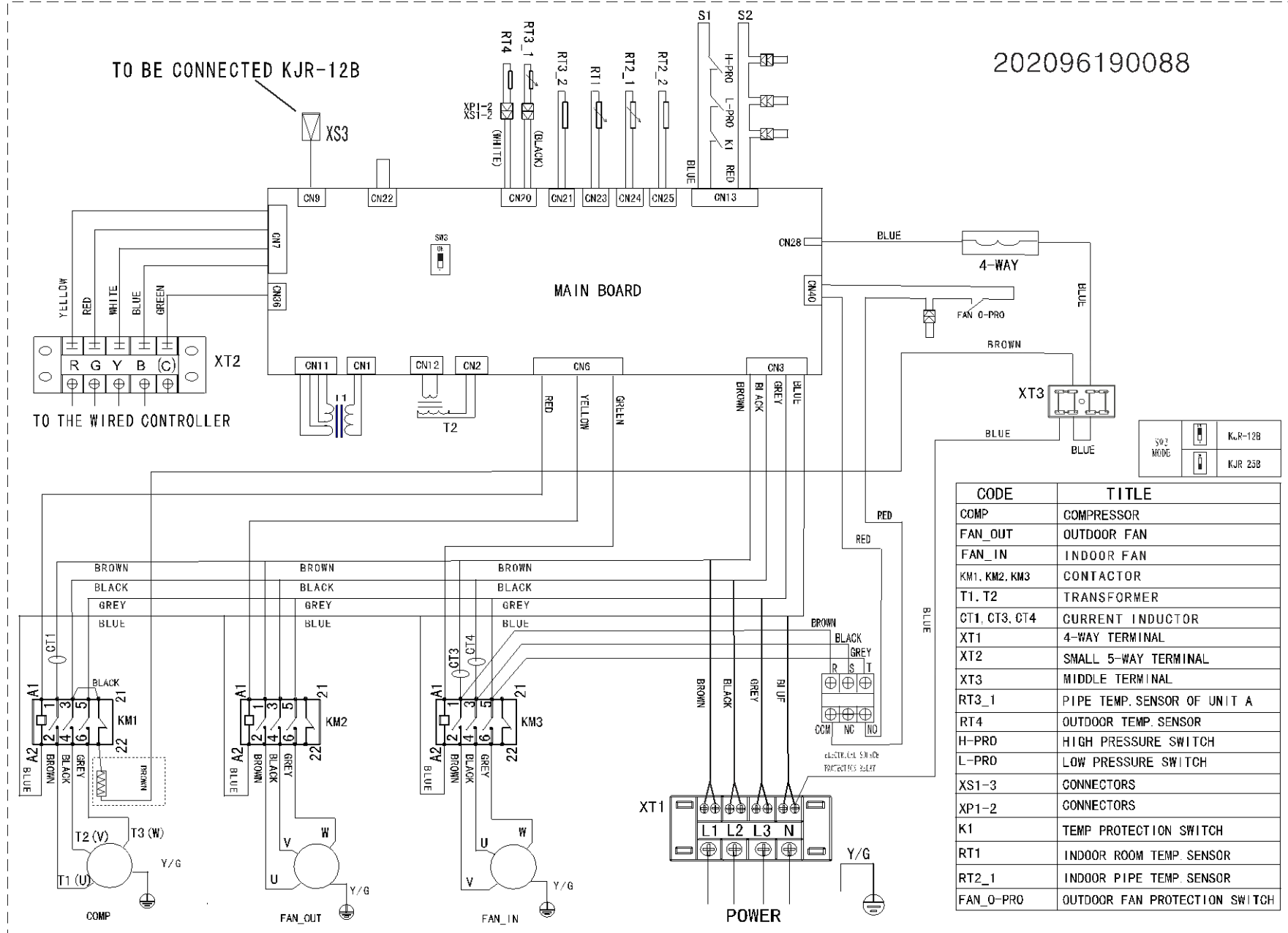


CODE	TITLE
COMP	COMPRESSOR
FAN_OUT	OUTDOOR FAN
FAN_IN	INDOOR FAN
KM1 ~ KM5	CONTACTOR
T1, T2	TRANSFORMER
CT1, CT3, CT4	CURRENT INDUCTOR
XT1	4-WAY TERMINAL
XT2	SMALL 5-WAY TERMINAL
XT3	MIDDLE TERMINAL
XT4	4-WAY TERMINAL
RT3_1	PIPE TEMP. SENSOR
RT4	OUTDOOR TEMP. SENSOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
XS1-2	CONNECTORS
XP1-2	CONNECTORS
K1, K2	TEMP PROTECTION SWITCH
RT1	INDOOR ROOM TEMP. SENSOR
RT2_1	INDOOR PIPE TEMP. SENSOR
FAN_O-PRO	OUTDOOR FAN PROTECTION SWITCH
F1-F9	THERMAL CUT-OFF
R1-R9	ELECTRICALLY HEATED PIPE

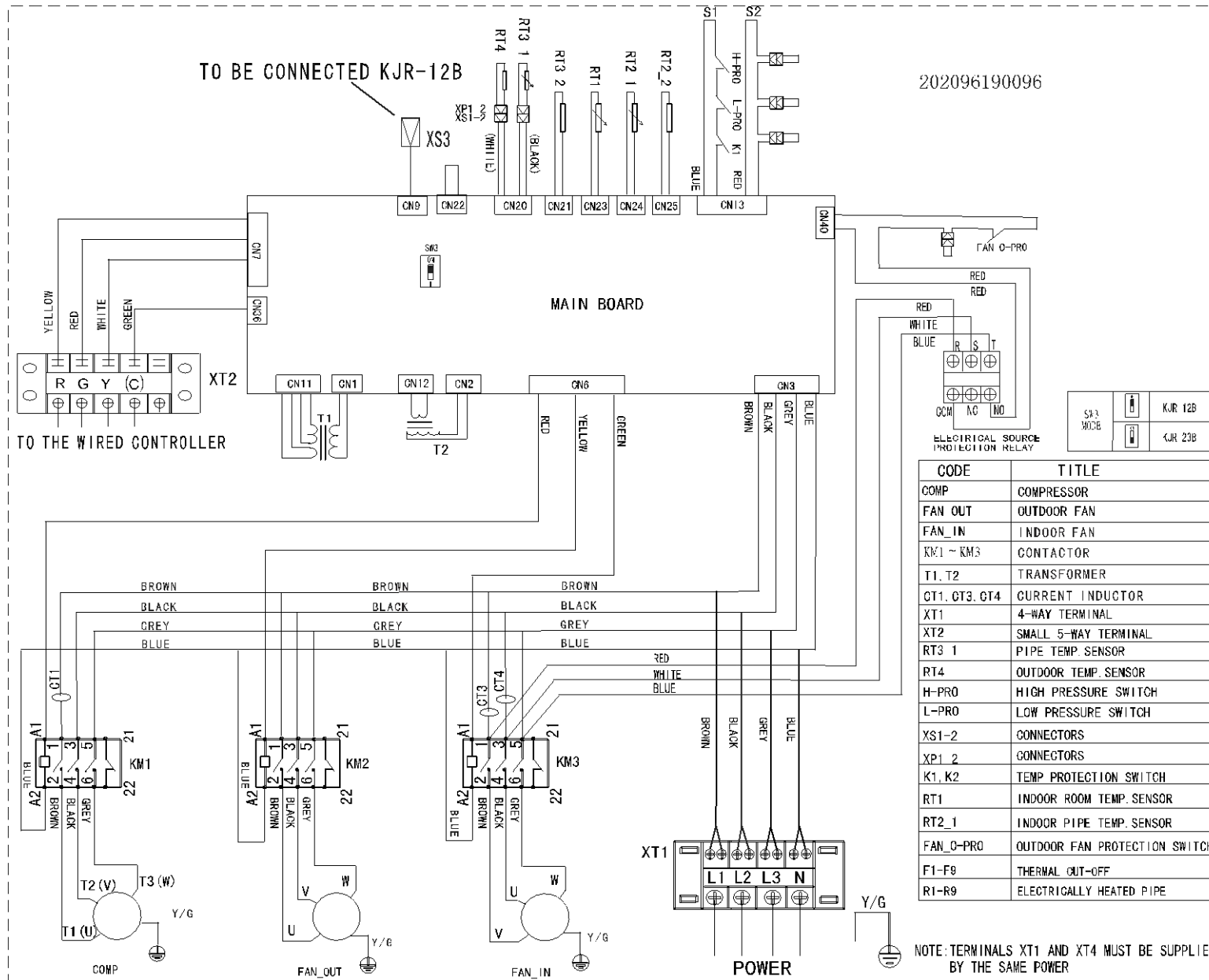
NOTE: TERMINALS XT1 AND XT4 MUST BE SUPPLIED BY THE SAME POWER

MRBT-062HWN1-R

202096190088

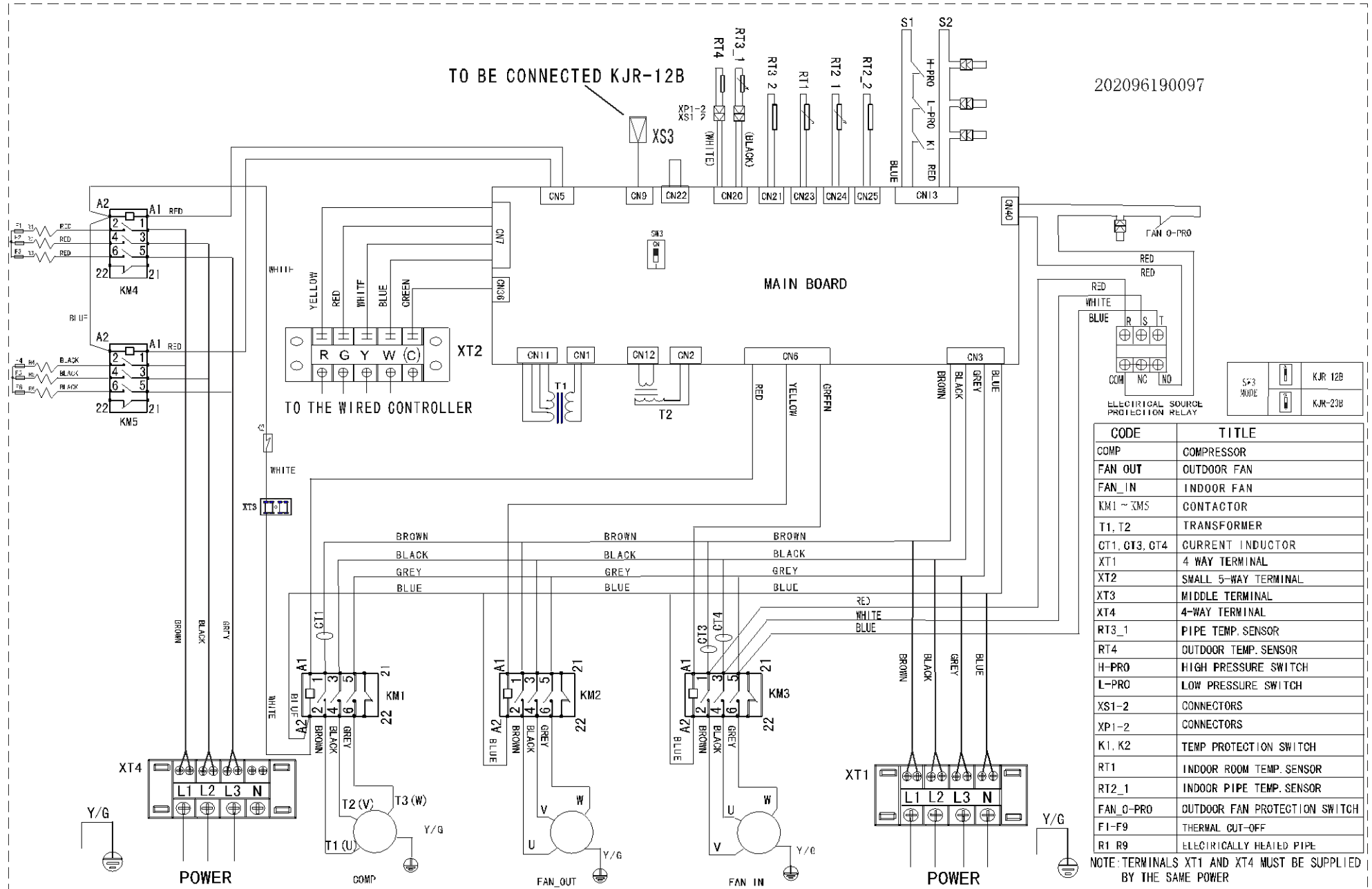


8.3 7.5ton
MRBT-075CWN1-R



MRCT-075EWN1-R

202096190097

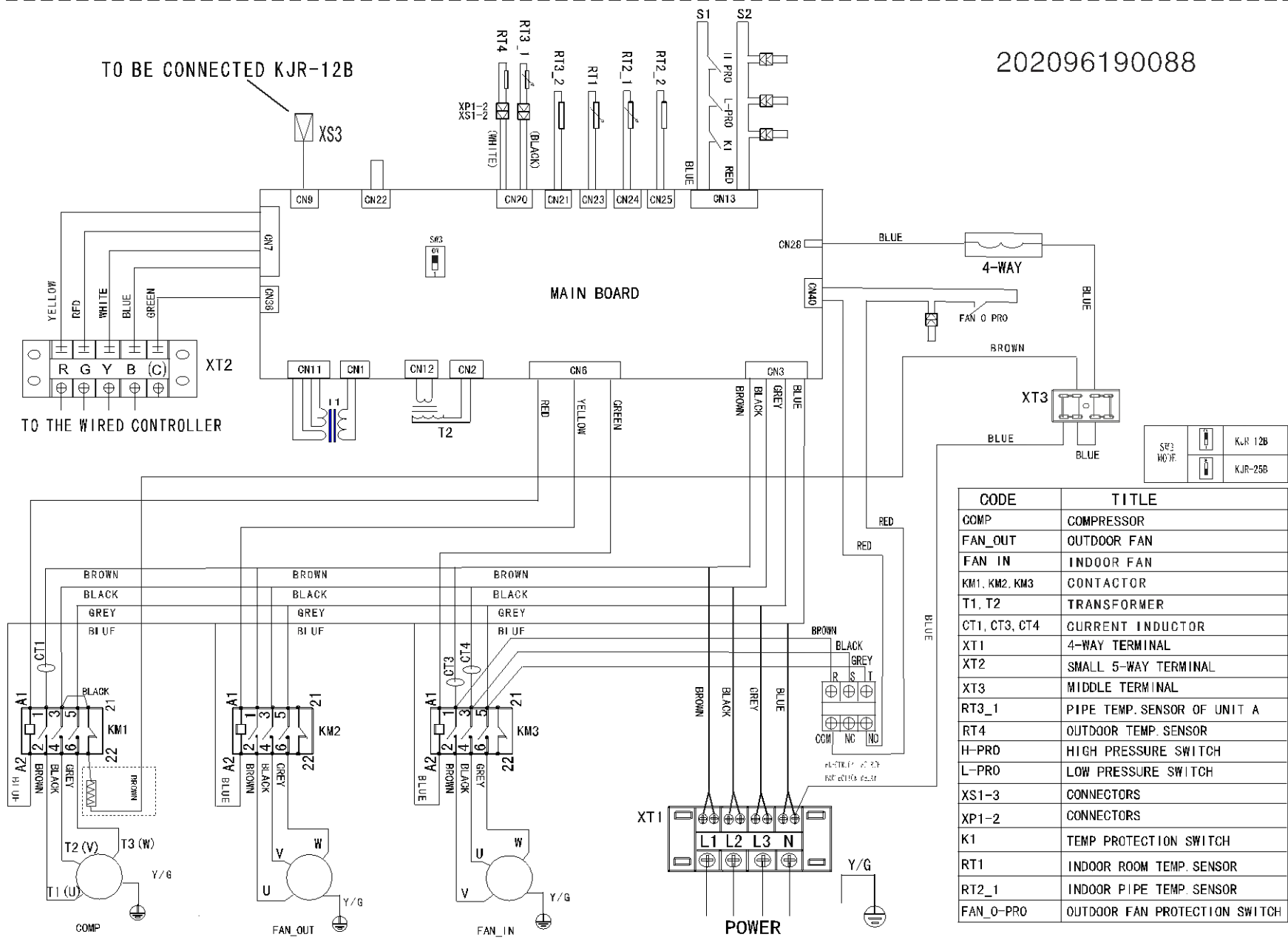


CODE	TITLE
COMP	COMPRESSOR
FAN_OUT	OUTDOOR FAN
FAN_IN	INDOOR FAN
KM1 ~ KM5	CONTACTOR
T1, T2	TRANSFORMER
CT1, CT3, CT4	CURRENT INDUCTOR
XT1	4 WAY TERMINAL
XT2	SMALL 5-WAY TERMINAL
XT3	MIDDLE TERMINAL
XT4	4-WAY TERMINAL
RT3_1	PIPE TEMP. SENSOR
RT4	OUTDOOR TEMP. SENSOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
XS1-2	CONNECTORS
XP1-2	CONNECTORS
K1, K2	TEMP PROTECTION SWITCH
RT1	INDOOR ROOM TEMP. SENSOR
RT2_1	INDOOR PIPE TEMP. SENSOR
FAN O-PRO	OUTDOOR FAN PROTECTION SWITCH
F1-F9	THERMAL CUT-OFF
R1 R9	ELECTRICALLY HEATED PIPE

NOTE: TERMINALS XT1 AND XT4 MUST BE SUPPLIED BY THE SAME POWER

MRBT-075HWN1-R

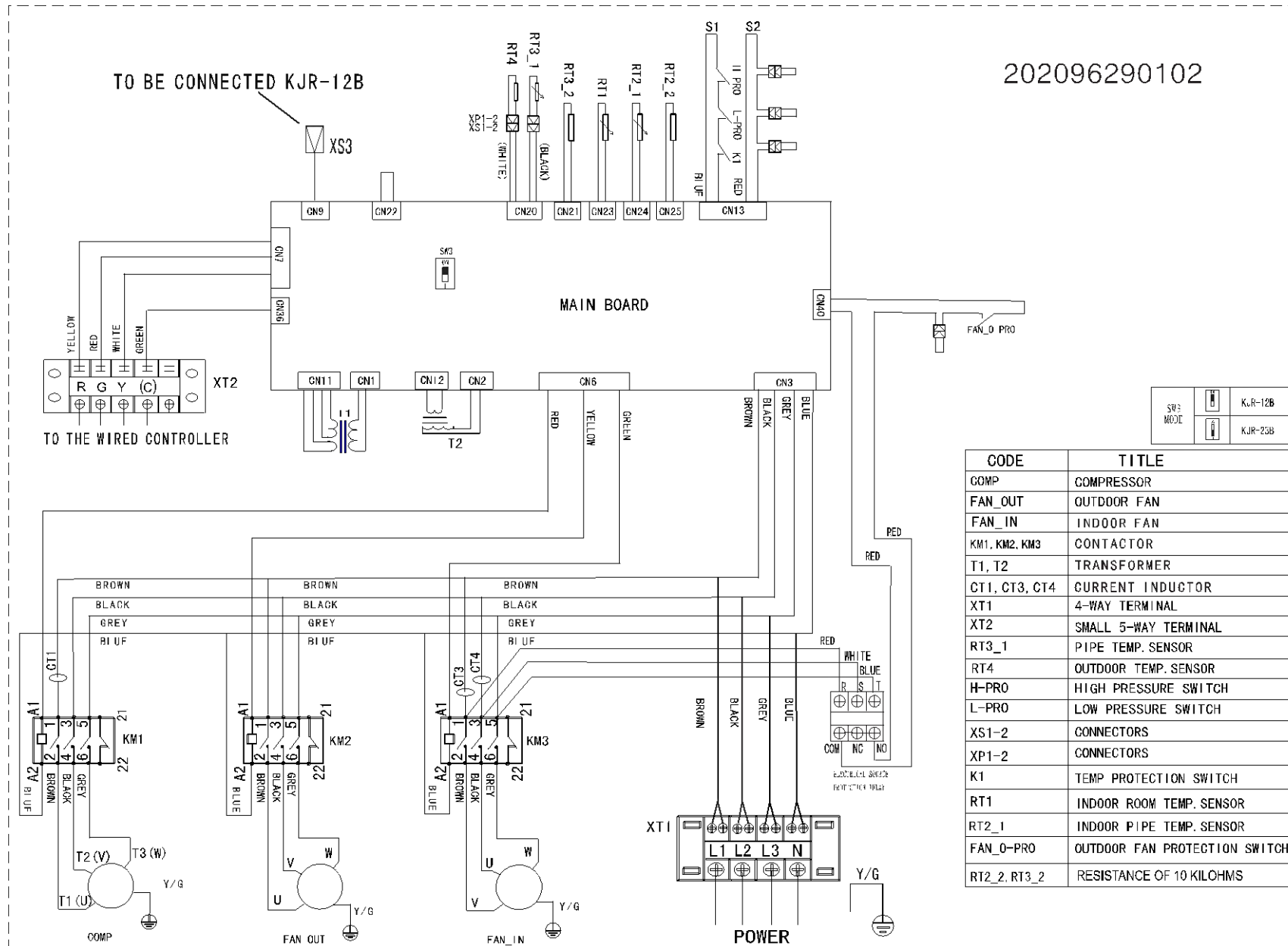
202096190088



SR3		KJR-12B
HO3F		KJR-25B

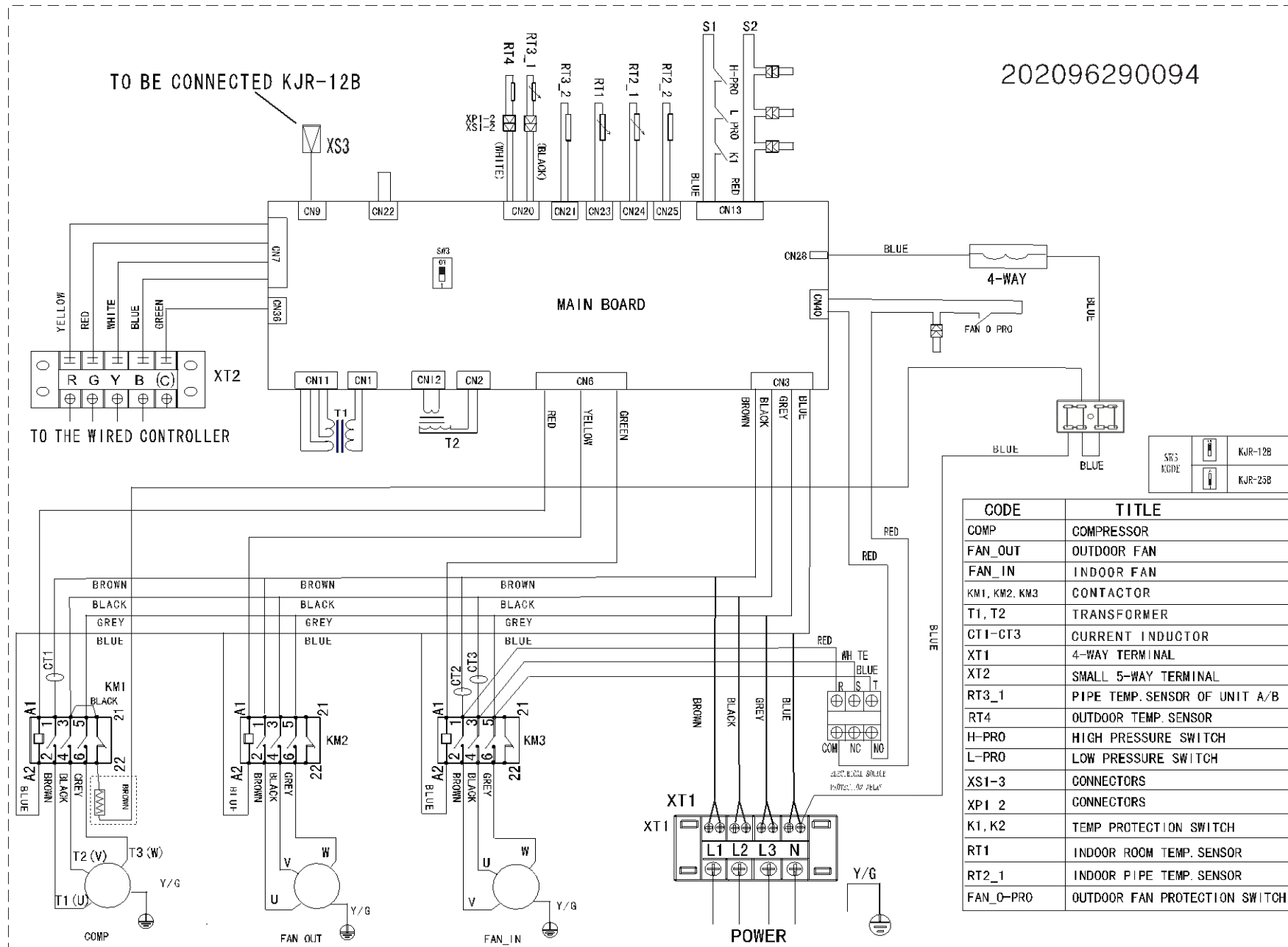
CODE	TITLE
COMP	COMPRESSOR
FAN_OUT	OUTDOOR FAN
FAN_IN	INDOOR FAN
KM1, KM2, KM3	CONTACTOR
T1, T2	TRANSFORMER
CT1, CT3, CT4	CURRENT INDUCTOR
XT1	4-WAY TERMINAL
XT2	SMALL 5-WAY TERMINAL
XT3	MIDDLE TERMINAL
RT3_1	PIPE TEMP. SENSOR OF UNIT A
RT4	OUTDOOR TEMP. SENSOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
XS1-3	CONNECTORS
XP1-2	CONNECTORS
K1	TEMP PROTECTION SWITCH
RT1	INDOOR ROOM TEMP. SENSOR
RT2_1	INDOOR PIPE TEMP. SENSOR
FAN_0-PRO	OUTDOOR FAN PROTECTION SWITCH

8.4 8.5ton
MRBT-085CWN1-R



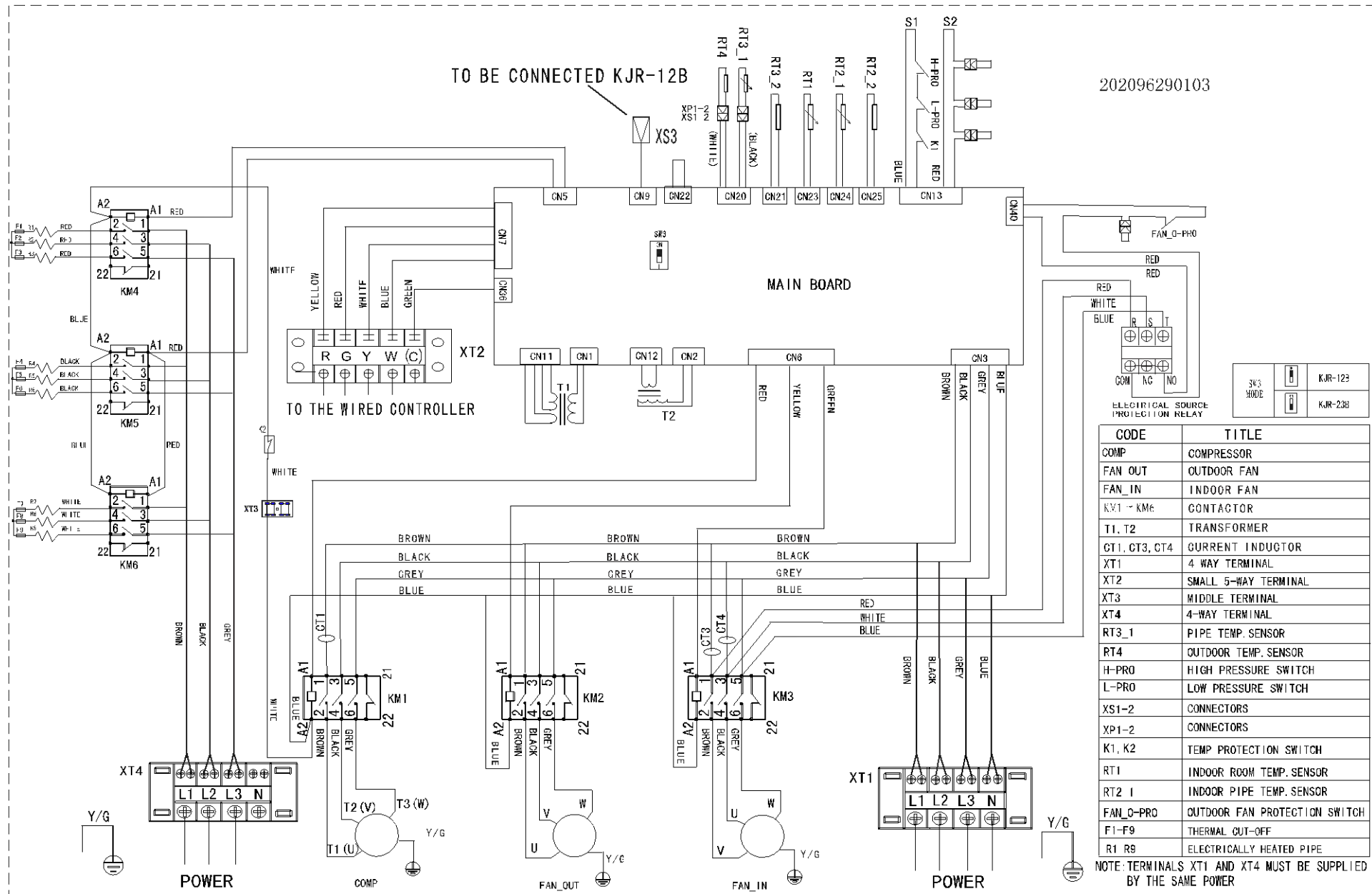
MRBT-085HWN1-R

202096290094



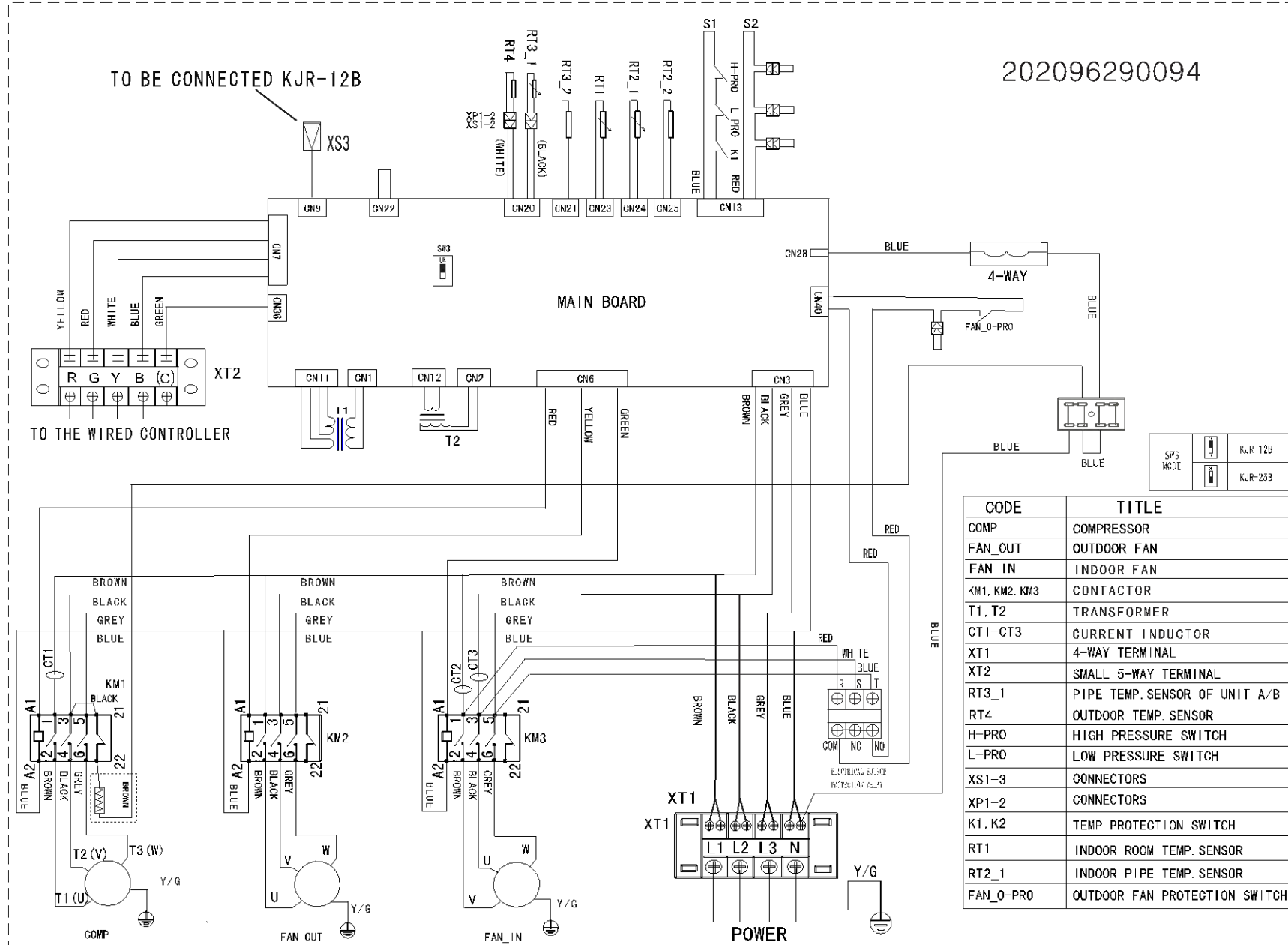
CODE	TITLE
COMP	COMPRESSOR
FAN_OUT	OUTDOOR FAN
FAN_IN	INDOOR FAN
KM1, KM2, KM3	CONTACTOR
T1, T2	TRANSFORMER
CT1-CT3	CURRENT INDUCTOR
XT1	4-WAY TERMINAL
XT2	SMALL 5-WAY TERMINAL
RT3_1	PIPE TEMP. SENSOR OF UNIT A/B
RT4	OUTDOOR TEMP. SENSOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
XS1-3	CONNECTORS
XP1 2	CONNECTORS
K1, K2	TEMP PROTECTION SWITCH
RT1	INDOOR ROOM TEMP. SENSOR
RT2_1	INDOOR PIPE TEMP. SENSOR
FAN_O-PRO	OUTDOOR FAN PROTECTION SWITCH

MRCT-100EWN1-R



MRBT-100HWN1-R

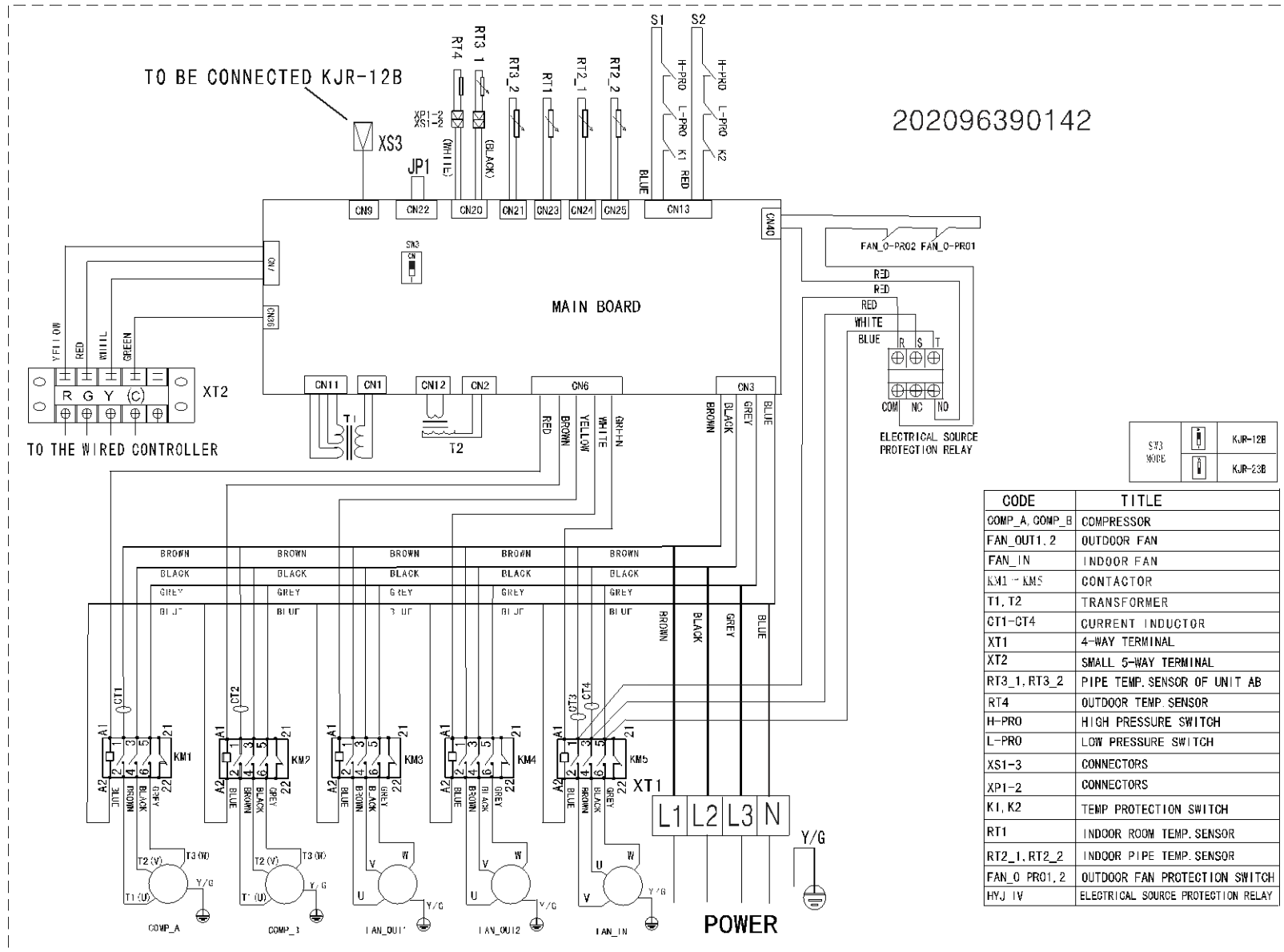
202096290094



8.6 15ton

MRCT-150CWN1-R

202096390142

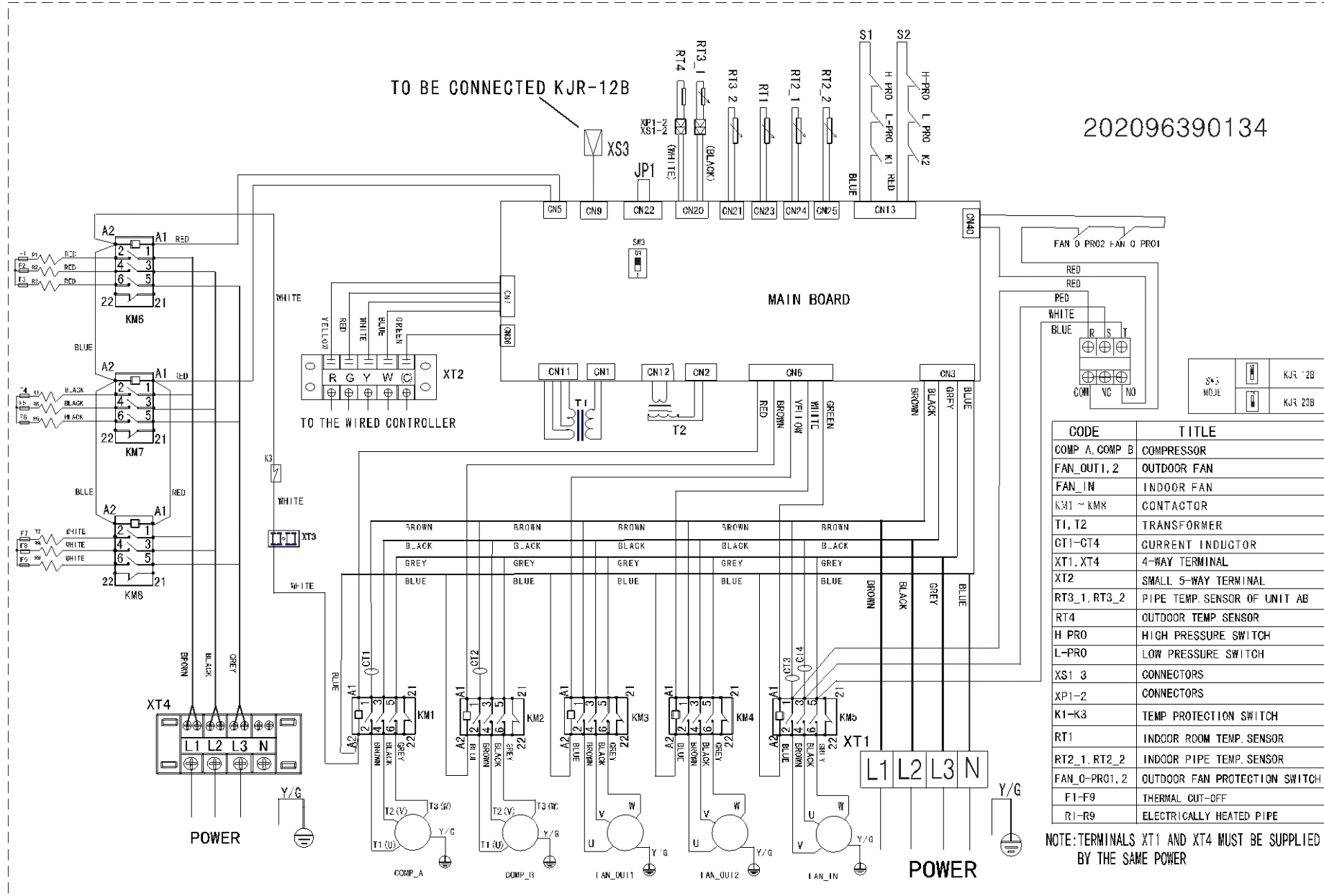


XS3		KJR-12B
XS3		KJR-23B

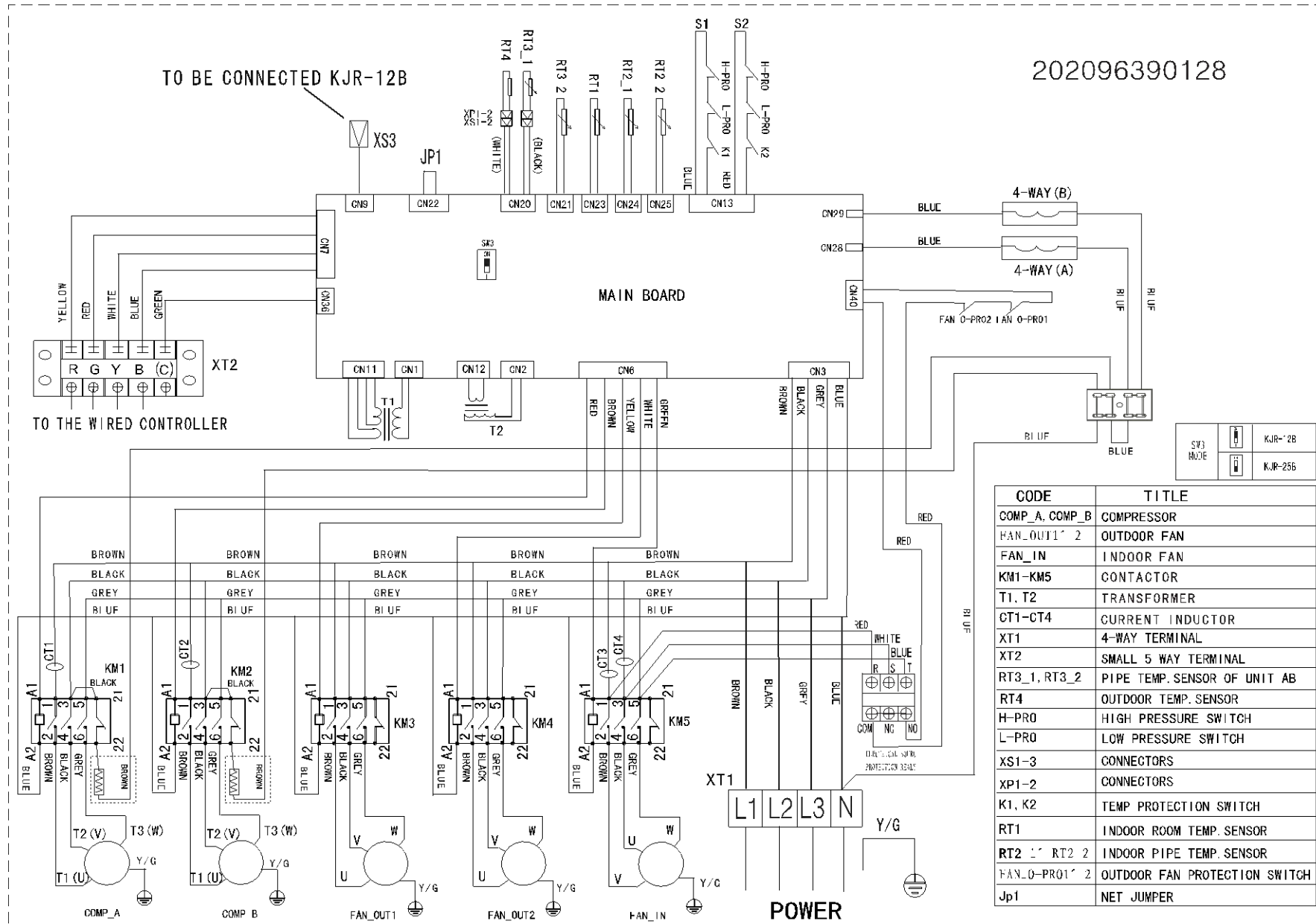
CODE	TITLE
COMP_A, COMP_B	COMPRESSOR
FAN_OUT1, 2	OUTDOOR FAN
FAN_IN	INDOOR FAN
KM1 ~ KM5	CONTACTOR
T1, T2	TRANSFORMER
CT1-CT4	CURRENT INDUCTOR
XT1	4-WAY TERMINAL
XT2	SMALL 5-WAY TERMINAL
RT3_1, RT3_2	PIPE TEMP. SENSOR OF UNIT AB
RT4	OUTDOOR TEMP. SENSOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
XS1-3	CONNECTORS
XP1-2	CONNECTORS
K1, K2	TEMP PROTECTION SWITCH
RT1	INDOOR ROOM TEMP. SENSOR
RT2_1, RT2_2	INDOOR PIPE TEMP. SENSOR
FAN_O PRO1, 2	OUTDOOR FAN PROTECTION SWITCH
XS3	ELECTRICAL SOURCE PROTECTION RELAY

MRCT-150EWN1-R

202096390134

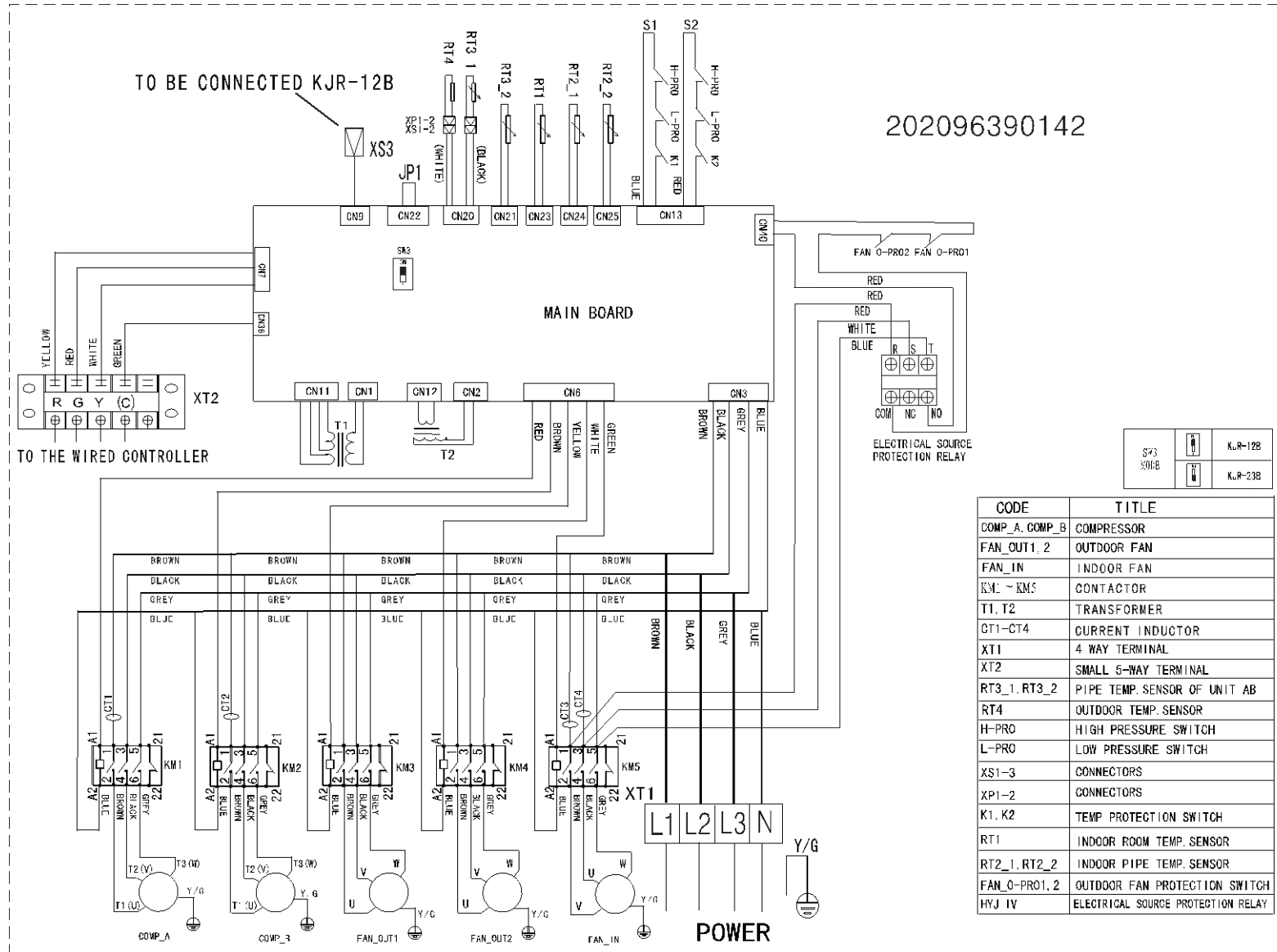


MRBT-150HWN1-R

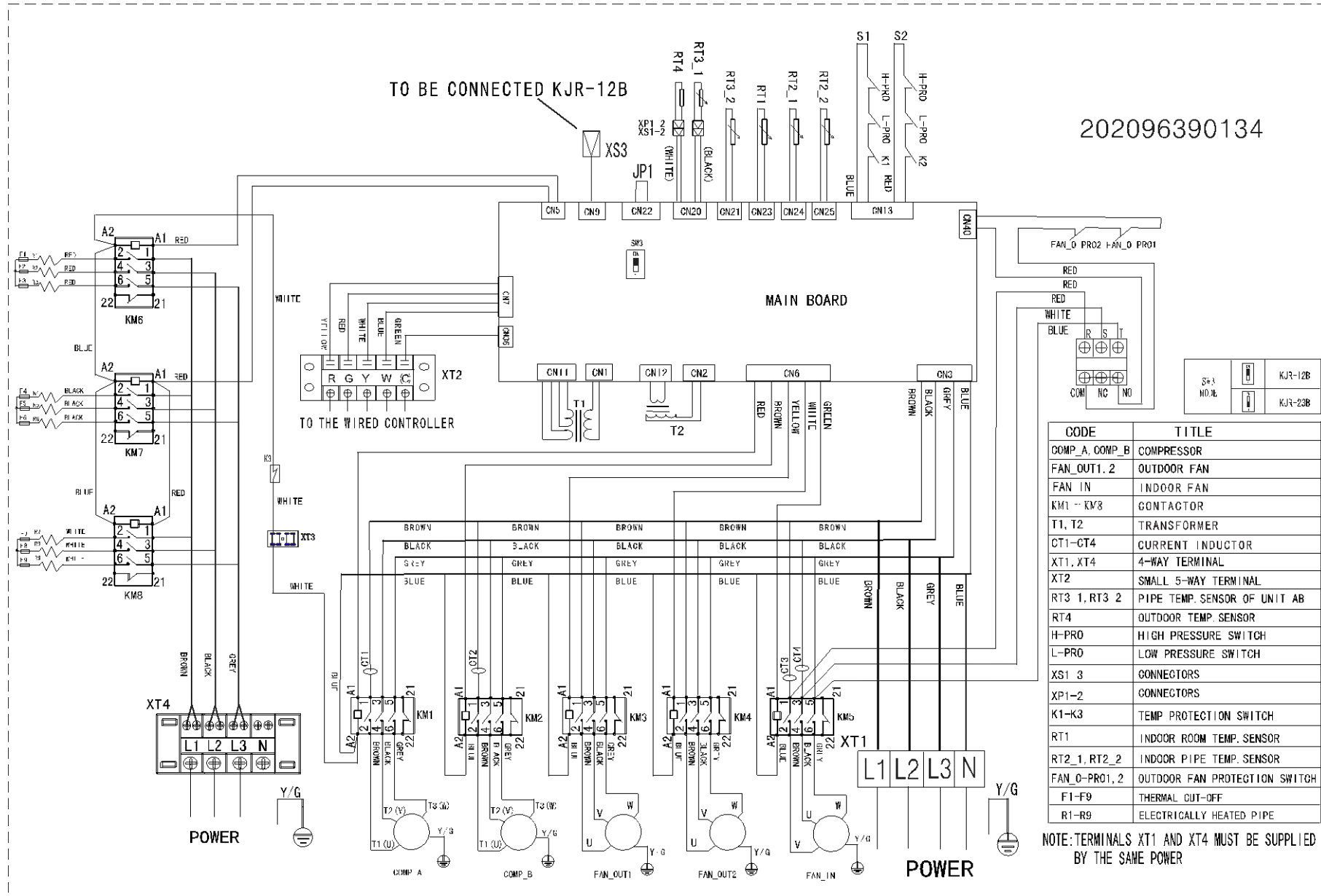


8.7 17.5ton

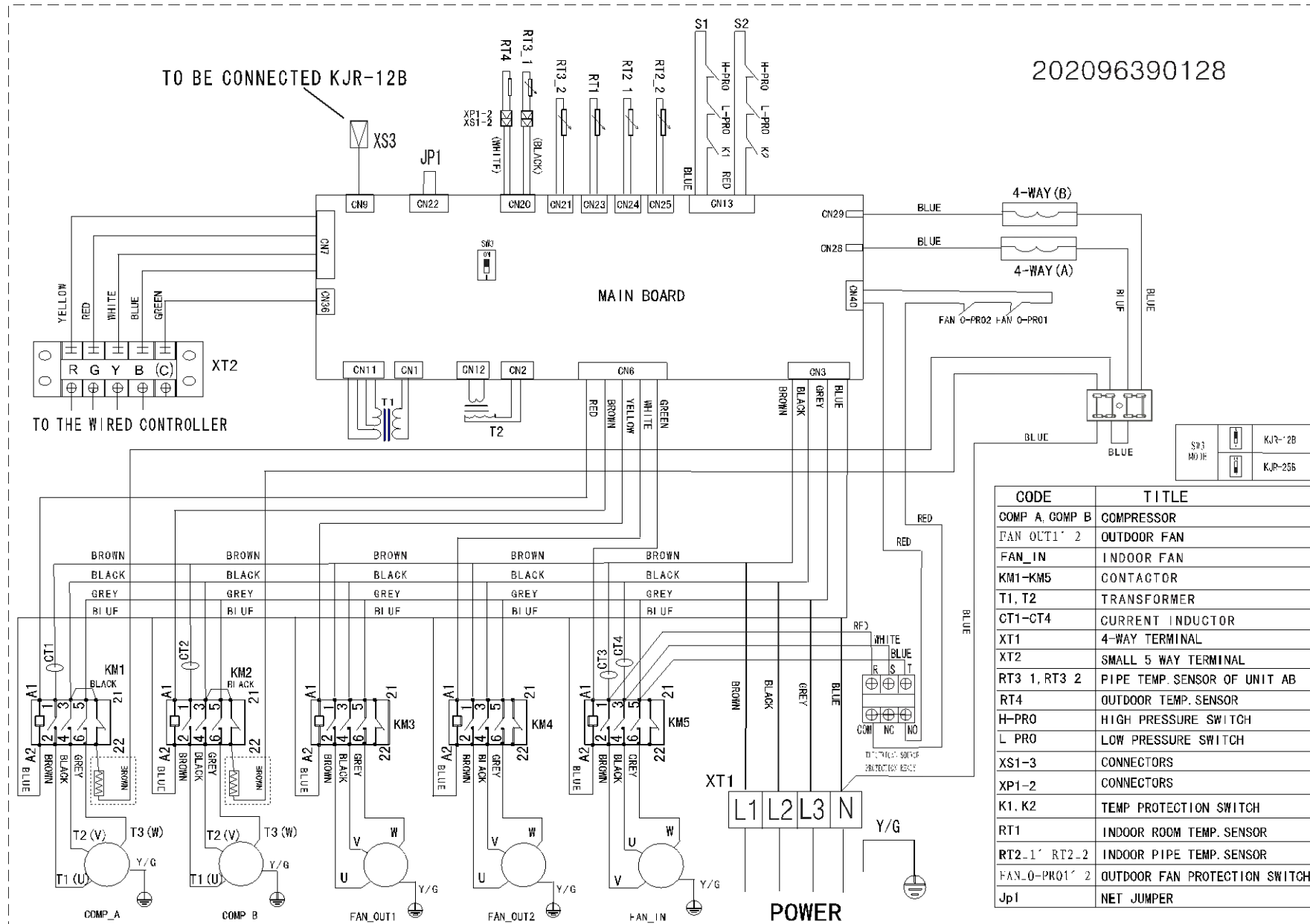
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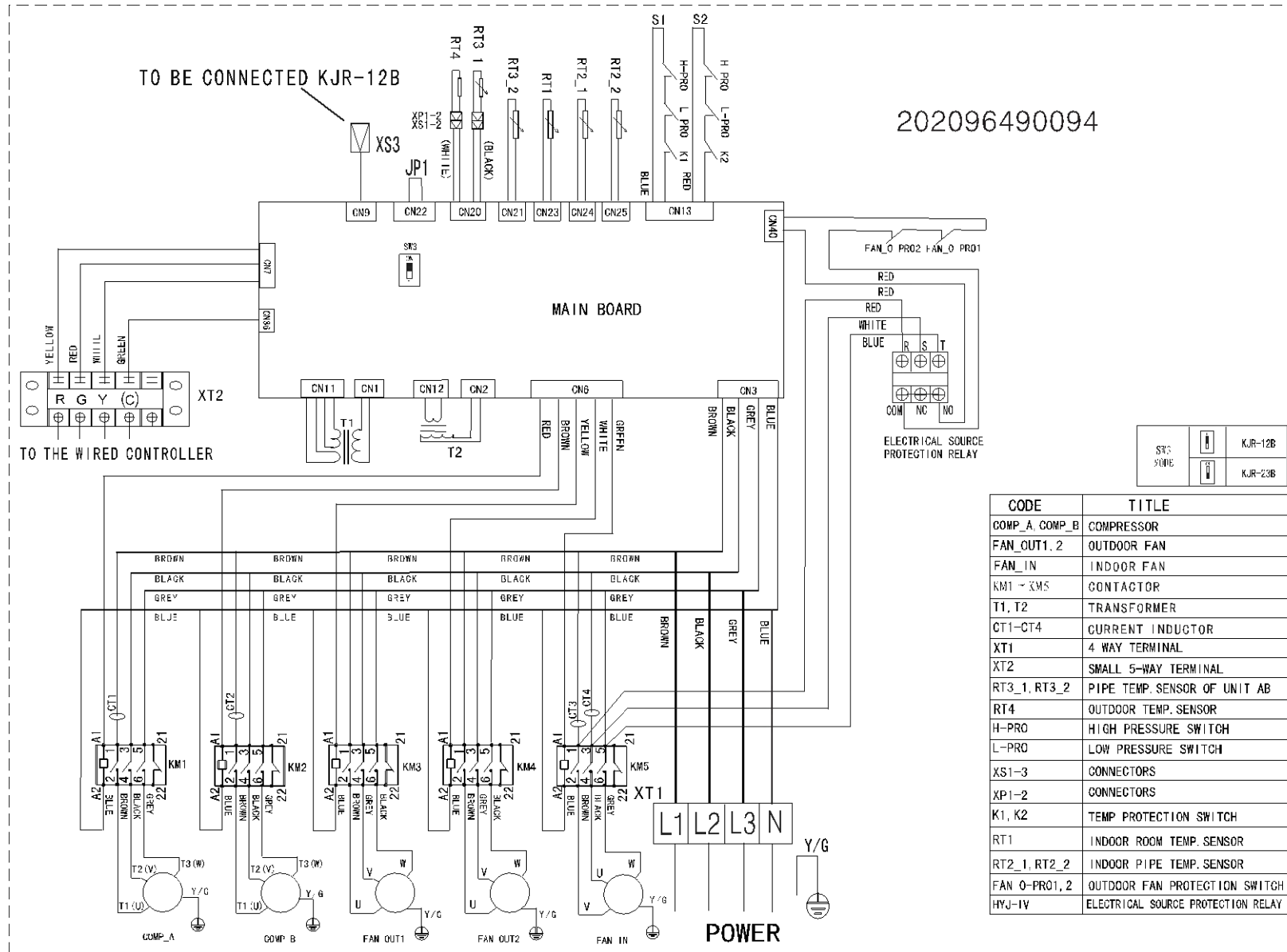


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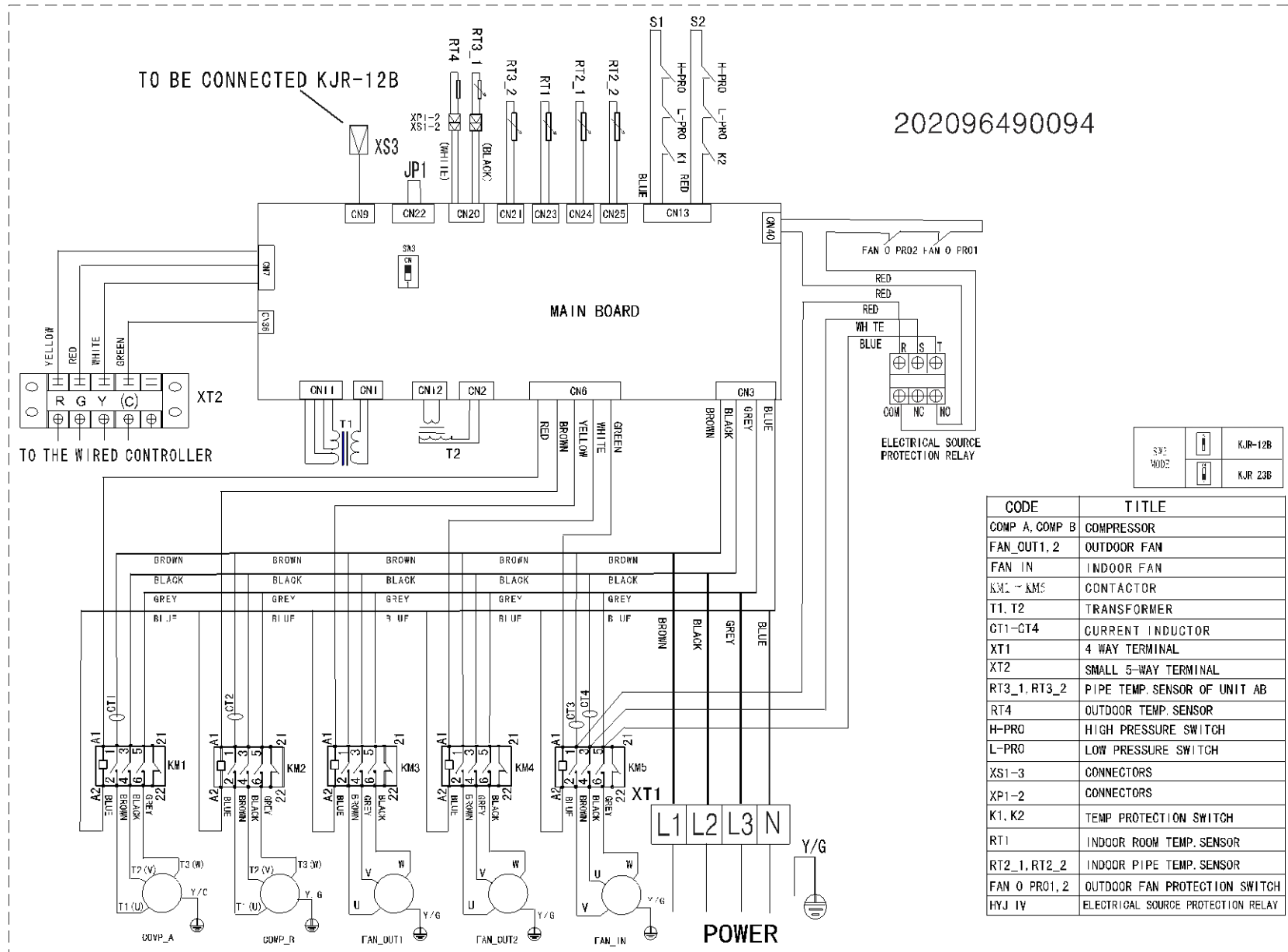


8.8 20ton

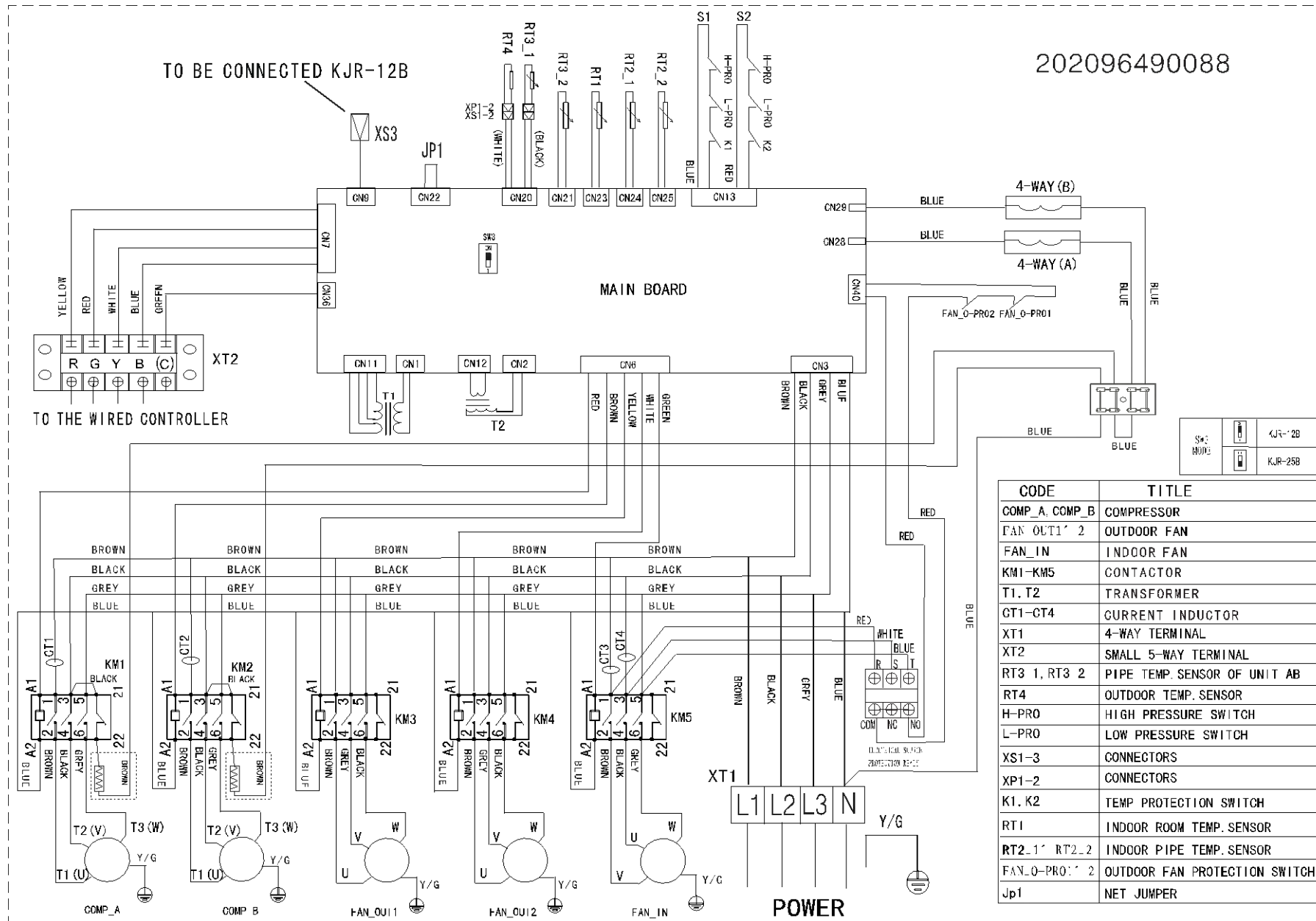
MRBT-200CWN1-R



MRCT-200EWN1-R

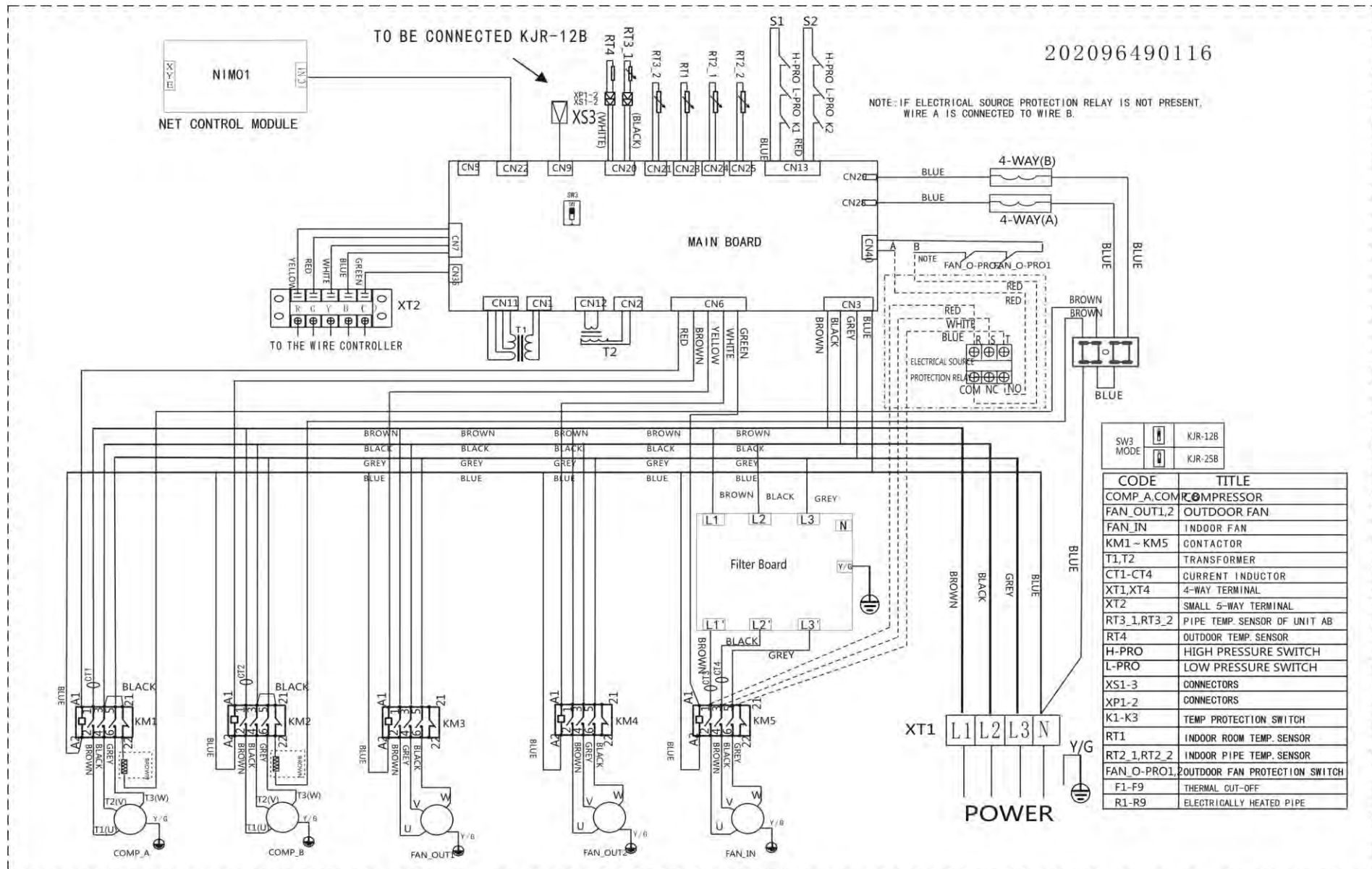


MRBT-200HWN1-R



8.9 30ton

MRCT-300HWN1-R



9. Performance Data

9.1 Cooling capacity for 5Ton:

		Air Flow		CFM	1800			
		Ent DB		(°F)	75	80	85	90
Ambient Temperature(°F)	75	Entering Wet Bulb(°F)	61	TGC	63.6	66.8	72.8	75
				SHC	46.8	48.1	51.7	53.2
			67	TGC	65.7	69	74.5	76.7
				SHC	47.3	49	52.9	54.5
			73	TGC	67.4	70.7	76.4	78.3
				SHC	47.8	50.2	54.2	55.7
	85		61	TGC	59.6	62.6	68.2	70.3
				SHC	42.9	45.1	49.1	50.6
			67	TGC	61.5	64.6	69.7	71.8
				SHC	44.3	46.5	50.2	51.7
			73	TGC	63	66.2	71.5	73.3
				SHC	45.4	47.7	51.5	52.8
	95		61	TGC	55.5	58.3	63	64.8
				SHC	41.1	43.1	46.6	48
			67	TGC	57.1	60	65	66.9
				SHC	41.7	44	47.2	48.8
			73	TGC	58.7	61.7	66.6	68.3
				SHC	42.9	45	48.6	49.8
	105		61	TGC	51.6	54.2	59	60.8
				SHC	39.7	41.7	45.5	46.8
			67	TGC	53.2	55.9	60.3	62.2
				SHC	40.4	42.5	45.9	47.2
			73	TGC	54.6	57.3	61.9	63.4
				SHC	40.9	43	46.4	47.6
115	61	TGC	47.4	49.7	54.2	55.8		
		SHC	38.8	39.3	42.8	44.1		
	67	TGC	48.8	51.2	55.7	57.4		
		SHC	39	39.8	43.7	45.4		
	73	TGC	49.9	52.4	57.1	58.6		
		SHC	39.4	41.4	45.1	46.2		

Notes:

1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
2. TGC=Total Gross Capacity. (Unit: MBtu/h).
3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

9.2 Cooling capacity for 6.2Ton:

		Air Flow		CFM	2400				2600				2800			
		Ent DB			(°F)	75	80	85	90	75	80	85	90	75	80	85
Ambient Temperature(°F)	85	Entering Wet Bulb(°F)	61	TGC	73.9	75.3	76.8	78.4	75.6	77.1	78.6	80.2	77.0	78.5	80.1	81.7
				SHC	65.5	71.3	74.6	77.1	69.4	71.5	74.4	78.1	72.9	76.4	79.1	80.6
			67	TGC	81.1	82.8	84.4	86.1	81.8	83.4	85.1	86.8	82.3	83.9	85.6	87.4
				SHC	49.1	61.4	72.3	81.5	50.3	62.4	74.6	84.7	51.4	64.1	76.7	85.3
			73	TGC	83.9	85.6	87.3	89.0	84.1	85.8	87.5	89.3	84.4	86.1	87.7	89.5
				SHC	31.6	42.9	52.7	63.5	32.0	46.4	53.6	63.8	32.4	48.0	54.3	65.0
	95		61	TGC	68.5	69.9	71.3	72.8	70.5	71.9	73.4	74.8	72.2	73.6	75.1	76.6
				SHC	61.2	66.5	68.7	72.2	63.6	67.1	70.7	73.4	70.9	72.0	73.8	75.6
			67	TGC	73.7	75.2	77.4	79.8	74.1	75.6	77.9	80.2	78.9	83.0	85.4	86.2
				SHC	47.6	60.6	73.2	77.3	49.7	63.5	76.8	77.8	51.7	66.1	80.0	81.1
			73	TGC	83.2	84.9	86.6	88.3	83.5	85.2	86.9	88.6	83.4	85.1	86.8	88.5
				SHC	30.6	43.3	54.2	65.4	31.1	44.0	55.5	67.0	31.6	47.0	56.6	68.6
	105	61	TGC	63.0	64.2	65.5	66.8	64.7	66.0	67.4	68.7	66.3	67.7	69.0	70.4	
			SHC	60.2	61.3	64.6	66.3	63.7	64.7	65.9	68.0	64.4	66.5	67.9	69.8	
		67	TGC	73.0	74.5	76.0	77.5	74.3	75.8	77.3	78.9	75.4	76.9	78.4	80.0	
			SHC	45.4	56.0	71.9	76.4	47.6	62.0	76.7	78.1	49.8	65.3	76.2	78.2	
		73	TGC	80.6	82.2	83.8	85.5	81.8	83.4	85.1	86.8	82.2	83.8	85.5	87.2	
			SHC	28.9	42.6	55.5	66.7	30.0	44.2	56.9	68.5	30.4	45.2	58.3	70.7	
	115	61	TGC	56.9	58.0	59.1	60.3	59.1	60.2	61.4	62.7	61.0	62.2	63.5	64.7	
			SHC	51.8	54.4	57.2	58.5	56.9	58.5	60.1	61.9	59.5	60.2	62.3	64.1	
		67	TGC	66.4	67.8	69.1	70.5	63.1	65.0	66.3	68.3	69.0	70.3	71.8	73.2	
			SHC	42.7	55.8	66.3	69.5	44.9	59.4	61.2	63.0	47.1	63.0	69.5	72.4	
		73	TGC	72.8	74.2	75.7	77.3	78.6	80.2	81.8	83.4	79.2	80.8	82.4	84.0	
			SHC	27.9	41.0	53.7	66.1	28.5	42.6	56.4	69.6	29.0	44.4	58.7	72.7	
125	61	TGC	52.2	53.2	54.2	55.3	54.2	55.3	56.4	57.5	55.9	57.1	58.2	59.4		
		SHC	47.5	49.9	52.5	53.6	52.2	53.6	55.1	56.9	54.6	55.3	57.1	58.8		
	67	TGC	60.9	62.2	63.4	64.6	62.2	63.5	64.7	66.0	63.3	64.6	65.8	67.1		
		SHC	39.2	51.3	60.8	63.7	41.2	54.5	63.7	65.7	43.2	57.8	63.7	66.4		
	73	TGC	66.8	68.1	69.5	70.8	72.1	73.5	75.1	76.5	72.7	74.1	75.6	77.1		
		SHC	25.6	37.6	49.3	60.7	26.1	39.1	51.7	63.9	26.7	40.8	53.9	66.7		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 6.2Ton:

Outdoor Temp(° F) 70% RH	Net Capacities(kW)-2600 CFM							
	Peak Net Heating(kW) at Indicated Dry Bulb(° F)				Peak Total Power (kW) at Indicated Dry Bulb(° F)			
	59	68	75.2	80.6	59	68	75.2	80.6
23	15.7	15.2	14.8	14.3	6.0	6.3	6.5	6.7
26.6	17.4	16.9	16.4	15.9	6.3	6.6	6.8	7.0
32	19.3	18.8	18.2	17.7	6.7	6.9	7.2	7.4
37.4	22.8	22.1	21.4	20.8	7.0	7.3	7.5	7.8
44.6	26.8	26.0	25.2	24.5	7.4	7.6	7.9	8.2
48.2	28.7	27.8	27.0	26.2	7.5	8.3	8.8	9.3
53.6	30.4	29.5	28.6	27.7	7.8	8.7	9.1	9.7
59	32.2	31.3	30.3	29.4	7.9	8.9	9.3	9.9
64.4	34.1	33.1	32.1	31.2	8.2	9.0	9.6	10.2
69.8	36.2	35.1	34.1	33.0	8.3	9.2	9.7	10.2
75.2	38.3	37.2	36.1	35.0	8.5	9.3	10.1	10.4

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.3 Cooling capacity for 7.5Ton:

		Air Flow		CFM	2800				3000				3200			
		Ent DB			(°F)	75	80	85	90	75	80	85	90	75	80	85
Ambient Temperature(°F)	85	Entering Wet Bulb(°F)	61	TGC	82.5	84.2	85.8	87.5	87.3	89	90.8	92.6	89.3	91.1	92.9	94.8
				SHC	72.7	80.4	85.3	87.5	77.4	84.3	88.2	91.1	82	84.5	87.9	92.3
			67	TGC	94.8	96.7	98.6	100.6	95.9	97.8	99.8	101.8	96.7	98.6	100.6	102.6
				SHC	55.6	68.8	81.8	94.3	58	72.6	85.4	96.3	59.5	73.8	83.2	100.1
			73	TGC	98.6	100.6	102.6	104.6	99.2	101.2	103.2	105.2	99.4	101.4	103.4	105.5
				SHC	36.8	51	62	72.4	37.3	50.7	62.3	75.1	37.8	54.8	63.3	75.4
	95		61	TGC	78.6	80.2	81.8	83.4	81	82.6	84.3	86	83.3	85	86.7	88.4
				SHC	69.6	75.6	78	81.4	72.3	78.6	81.2	85.3	75.2	79.3	83.5	86.7
			67	TGC	85.6	87.3	89.1	90.8	87.1	89	96.6	98	91.4	96.2	98.1	99.8
				SHC	53.9	67.7	81.6	86.2	56.3	71.6	86.5	91.3	58.7	75	90.8	92
			73	TGC	97.8	99.8	101.8	103.8	98.3	100.3	102.3	104.3	98.7	100.7	102.7	104.7
				SHC	35.7	50.2	62.3	74.5	36.2	51.2	64.1	77.3	36.8	52	65.6	79.2
	105	61	TGC	72.1	73.5	75	76.5	74.4	75.9	77.4	79	76.5	78	79.6	81.2	
			SHC	66.4	68.3	71.3	73.2	71.2	72.4	76.3	78.4	75.3	76.5	77.9	80.4	
		67	TGC	84.4	86.1	87.8	89.6	86.3	88	89.8	91.6	87.8	89.6	91.3	93.2	
			SHC	51	65	79.2	86.3	53.7	66.2	85	90.3	56.3	73.3	90.6	92.3	
		73	TGC	95.3	97.2	99.2	101.1	95.2	97.1	99	101	96.7	98.6	100.6	102.6	
			SHC	34.2	48.9	64.2	76.8	34.1	50.4	65.6	78.8	35.4	52.2	67.2	80.9	
	115	61	TGC	65.3	66.6	67.9	69.3	67.2	68.5	69.9	71.3	69.8	71.2	72.6	74.1	
			SHC	63.2	64.6	66.4	68.6	61.2	64.3	67.6	69.1	67.3	69.1	71	73.2	
		67	TGC	76.7	78.2	79.8	81.4	78.5	80.1	81.7	83.3	80.1	817	83.3	85	
			SHC	47.8	62.1	75.4	80.2	50.5	66	78.3	82.1	53.1	70.2	82.1	84.6	
		73	TGC	90.8	92.6	94.5	96.4	86	87.7	89.5	91.3	92.9	94.8	96.7	98.6	
			SHC	32.4	46.3	61.2	76.4	33	48.4	63.5	78.1	33.7	50.4	66.6	82.3	
125	61	TGC	59.9	61.1	62.3	63.6	61.7	62.9	64.1	65.4	64	65.3	66.6	68		
		SHC	58	59.3	60.9	62.9	56.1	59	62	63.4	61.7	63.4	65.1	67.2		
	67	TGC	70.4	71.8	73.2	74.7	72	73.5	74.9	76.4	73.5	75	76.5	78		
		SHC	43.9	57	69.2	73.6	46.3	60.6	71.8	75.3	48.7	64.4	75.3	77.6		
	73	TGC	83.3	85	86.7	88.4	78.9	80.5	82.1	83.7	85.2	86.9	88.7	90.4		
		SHC	29.7	42.5	56.1	70.1	30.3	44.4	58.3	71.7	30.9	46.2	61.1	75.5		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 7.5Ton:

Net Capacities(kW)-3000 CFM								
Outdoor Temp(°F) 70% RH	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power(KW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	14.9	14.0	13.7	13.4	6.9	7.6	8.0	8.5
10.4	16.0	15.3	15.0	14.9	7.1	7.7	8.1	8.6
15.8	17.0	16.5	16.4	16.4	7.1	7.8	8.2	8.8
21.2	17.8	17.3	17.1	16.9	7.2	7.9	8.3	8.9
26.6	18.8	18.5	18.4	18.1	7.3	8.0	8.5	9.1
32	20.3	20.0	19.7	19.4	7.4	8.1	8.6	9.2
37.4	23.3	23.1	22.7	22.4	7.5	8.3	8.8	9.3
44.6	30.3	30	29.6	29.2	7.8	8.8	9.1	9.6
48.2	30.5	30.2	29.9	29.6	8.1	9.0	9.5	10.1
53.6	32.4	33.5	33.4	33.1	8.4	9.4	9.9	10.5
59	35.0	34.4	34.2	33.8	8.6	9.6	10.1	10.7
64.4	37.1	36.4	36.0	35.7	8.9	9.8	10.4	11.0
69.8	39.8	38.9	38.4	37.9	9.0	10.0	10.5	11.0
75.2	42.0	40.9	40.2	39.8	9.2	10.1	10.9	11.3

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.4 Cooling capacity for 8.5Ton:

		Air Flow		CFM	3000				3300				3600			
		Ent DB			(°F)	75	80	85	90	75	80	85	90	75	80	85
Ambient Temperature(°F)	85	Entering Wet Bulb(°F)	61	TGC	91.6	95.5	99.3	102.4	96.5	100.7	104.5	107.8	98.6	102.8	106.7	110.2
				SHC	71.4	82.1	90.1	94.9	76.8	88.1	96.6	101.7	80.8	92.8	101.7	107.1
			67	TGC	101.4	103.2	104.7	105.6	106.7	108.6	110.2	111.4	109	110.9	112.5	113.7
				SHC	54.1	67.9	81.7	90.6	58.1	72.8	87.7	97.3	61.2	76.6	92.3	102.6
			73	TGC	103.2	104.8	106.4	107.7	108.6	109.5	111.2	113.5	112.4	114.1	115.8	117.1
				SHC	23.9	44.5	61.6	74.9	25.8	48.3	67.9	86.1	27.2	56.3	74.6	97.8
	95		61	TGC	88.5	92.3	95.8	99.0	93.1	97.1	100.8	104.2	95.1	99.2	102.9	106.3
				SHC	72.6	83.2	91.7	96.3	78.2	89.8	98.6	103.7	82.4	94.6	98.1	102.1
			67	TGC	97.8	99.6	101.0	102.3	99.8	101.8	104.3	105.4	101.1	103.0	105.5	107.7
				SHC	55.2	68.7	83.4	92.4	59.2	74.3	89.4	99.8	62.4	78.1	94.1	104.5
			73	TGC	104.1	106	107.5	109.1	110.7	111.8	112.9	114.1	113.2	114.6	116.3	118.7
				SHC	26.4	55.2	67.8	88.9	26.1	48.9	69.8	82.3	30.8	67.2	94.3	106.7
	105	61	TGC	83.7	87.5	90.8	93.8	88.1	91.9	95.4	98.5	90.1	93.8	97.4	100.6	
			SHC	69.7	80.0	87.7	92.3	74.7	85.8	94.1	98.5	78.7	90.4	93.5	96.5	
		67	TGC	92.6	94.2	95.8	97.1	97.4	99.1	100.5	101.7	99.5	101.2	102.7	103.8	
			SHC	52.8	66.1	79.5	88.4	56.6	70.8	86.1	98.3	59.6	74.7	89.9	99.8	
		73	TGC	94.5	96.1	97.8	99.4	104.1	105.6	107.2	108.6	106.9	108.3	109.7	111.2	
			SHC	23.3	44.7	59.8	72.6	82.3	87.1	90.6	99.8	31.2	67.4	98.6	106.8	
	115	61	TGC	78.3	81.6	84.7	87.6	82.3	86.1	89.6	92.3	84.1	87.7	92.1	94.0	
			SHC	67.2	77.1	83.5	86.6	72	82.7	89.1	92.0	75.8	87.1	91.0	92.7	
		67	TGC	76.5	78.1	79.3	80.6	81	82.6	84.0	85.4	89.9	91.6	95.4	99.5	
			SHC	50.9	63.7	76.7	85.2	54.5	68.7	82.3	94.6	57.4	71.9	86.6	96.2	
		73	TGC	95.1	96.4	97.8	99.8	97.8	99.3	101.4	103.6	99.9	101.3	103.4	105.2	
			SHC	22.5	41.8	57.7	70.5	28.3	53.2	89.1	101.6	32.1	68.4	98.9	103.6	
125	61	TGC	71.2	74.2	77.0	79.6	74.8	78.3	81.5	83.9	76.5	79.7	83.7	85.5		
		SHC	61.1	70.1	76.8	78.5	65.5	75.2	81.0	83.6	68.9	79.2	82.7	84.3		
	67	TGC	78.6	80.1	81.2	82.4	82.7	84.2	85.5	86.7	84.5	86.0	87.3	88.3		
		SHC	46.3	57.9	69.7	77.5	49.5	62.5	74.8	86.0	52.2	65.4	78.7	87.5		
	73	TGC	86.5	87.6	88.9	90.7	88.9	90.3	92.2	94.2	90.8	92.1	94.0	95.6		
		SHC	20.5	38.0	52.5	64.1	25.7	48.4	81.0	92.4	29.2	62.2	89.9	94.2		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 8.5Ton:

Net Capacities(kW)-3600 CFM								
Outdoor Temp(°F) 70% RH	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power(KW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	18.7	17.6	17.2	16.9	8.6	8.8	9.2	9.7
10.4	20.1	19.3	18.9	18.7	8.8	8.9	9.4	9.9
15.8	21.4	20.8	20.6	20.6	8.9	9.1	9.6	10.1
21.2	22.4	21.8	21.6	21.3	9.0	9.3	9.9	10.3
26.6	23.7	23.4	23.2	22.8	9.1	9.6	10.1	10.5
32	25.5	25.2	24.8	24.5	9.2	9.8	10.3	10.8
37.4	29.4	29.1	28.7	28.3	9.4	10.0	10.5	11.0
44.6	35.4	35.0	33.0	32.8	9.7	10.2	10.7	11.2
48.2	38.5	38.0	37.7	37.3	9.9	10.4	10.9	11.5
53.6	40.9	42.3	42.1	41.7	10.1	10.6	11.1	11.7
59	44.1	43.4	43.1	42.7	10.3	10.9	11.4	12.1
64.4	46.7	45.9	45.4	45.0	10.5	11.1	11.7	12.3
69.8	50.1	49.1	48.4	47.8	10.9	11.4	11.9	12.5
75.2	53.0	51.6	50.7	50.1	11.1	11.6	12.2	12.8

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.5 Cooling capacity for 10Ton:

		Air Flow		CFM	3800				4000				4200			
		Ent DB		(°F)	75	80	85	90	75	80	85	90	75	80	85	90
Ambient Temperature(°F)	85	Entering Wet Bulb(°F)	61	TGC	110.9	113.1	115.4	117.7	113.8	116.1	118.4	120.8	116.5	118.8	121.2	123.6
				SHC	96.8	98.7	100.7	102.7	103.2	105.3	107.4	109.5	109.2	111.4	113.6	115.9
			67	TGC	123.4	125.9	128.4	131	124.6	127.1	129.6	132.2	125.7	128.2	130.8	133.4
				SHC	73.2	92	108.3	124.8	75.6	94.3	112.8	128.5	78	97.3	116.5	130.4
			73	TGC	127.9	130.5	133.1	135.7	128.3	130.9	133.5	136.2	128.6	131.2	133.8	136.5
				SHC	47.7	64.9	79.6	95.3	48.3	65.8	81.2	96.7	49	72.1	82.4	98.4
	95		61	TGC	102.8	104.9	107	109.1	105.9	108	110.2	112.4	108.9	111.1	113.3	115.6
				SHC	92.7	94.6	96.4	98.4	99.2	101.2	103.2	105.3	105.4	107.5	109.7	111.9
			67	TGC	116.7	117	118.5	121	119.5	121	123.5	126	124	126	128.7	132.3
				SHC	70.8	89.8	108.6	123.4	74.3	94.8	114	124.3	77.4	99.3	120.3	128.4
			73	TGC	126.8	129.3	131.9	134.6	127.1	129.6	132.2	134.9	127.8	130.4	133	135.6
				SHC	46.3	65.4	81.5	97.8	47.2	66.7	84.3	101.9	47.5	67.6	85.8	104.7
	105	61	TGC	94.5	96.4	98.3	100.3	97.8	99.8	101.8	103.8	99.8	101.8	103.8	105.9	
			SHC	88.6	90.4	92.2	94	95.2	97.1	99	101	93.4	95.3	97.2	99.1	
		67	TGC	110.3	112.5	114.8	117.1	112.9	115.2	117.5	119.8	114.6	116.9	119.2	121.6	
			SHC	67.6	86.4	105.9	115.6	71.3	92.1	113.7	117.9	74.2	98.3	115.5	117.6	
		73	TGC	123.8	126.3	128.8	131.4	124.6	127.1	129.6	132.2	125.2	127.7	130.3	132.9	
			SHC	44.3	63.2	81	98.3	45.2	65.6	85.3	103.7	45.7	67.5	86.9	106.8	
	115	61	TGC	86.3	88	89.8	91.6	89.2	91	92.8	94.7	92.3	94.1	96	97.9	
			SHC	84.6	86.3	88	89.8	86.2	87.9	89.7	91.5	90.2	92	93.8	95.7	
		67	TGC	101.3	103.3	105.4	107.5	103.2	107	107.4	109.5	105.6	107.7	109.9	112.1	
			SHC	63.5	83.2	102.1	104.1	67.3	88.2	105.3	107.4	70.8	94.1	107.3	110.5	
		73	TGC	119.2	121.6	124	126.5	120.1	122.5	125	127.5	120.8	123.2	125.7	128.2	
			SHC	42.2	61.3	80.1	98.7	42.9	64.1	84.3	104.1	43.7	66.8	87.9	109.3	
125	61	TGC	78.5	80	81.6	83.3	81.1	82.7	84.4	86.1	83.9	85.6	87.8	89		
		SHC	76.9	78.4	80	81.6	78.4	79.9	81.5	83.2	82	83.6	85.3	87		
	67	TGC	92.1	93.9	95.8	97.7	93.8	97.9	98.2	99.6	96	98.1	99.9	101.9		
		SHC	57.7	75.6	92.8	94.7	61.2	80.2	95.7	97.6	64.4	85.5	97.7	100.5		
	73	TGC	108.4	110.5	112.7	115	109.2	111.4	113.6	115.9	109.8	112	114.3	116.5		
		SHC	38.4	55.7	72.8	89.7	39	58.3	76.6	94.6	39.7	60.7	79.9	99.4		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 10Ton:

Net Capacities(kW)-4000 CFM								
Outdoor Temp(°F) 70% RH	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power(kW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	19.8	18.6	18.2	17.9	9.2	10.1	10.7	11.3
10.4	21.3	20.4	20	19.8	9.4	10.3	10.8	11.5
15.8	22.6	22	21.8	21.8	9.5	10.4	10.9	11.7
21.2	23.7	23	22.8	22.5	9.6	10.5	11.1	11.9
26.6	25.1	24.7	24.5	24.1	9.7	10.6	11.3	12.1
32	27	26.6	26.2	25.9	9.8	10.8	11.5	12.2
37.4	31.1	30.8	30.3	29.9	10	11	11.7	12.4
44.6	37.8	37	36.3	35.7	10.4	10.9	11.9	12.8
48.2	40.7	40.2	39.8	39.4	10.8	12	12.7	13.5
53.6	43.2	44.7	44.5	44.1	11.2	12.5	13.2	14
59	46.6	45.9	45.6	45.1	11.5	12.8	13.5	14.3
64.4	49.4	48.5	48	47.6	11.8	13.1	13.9	14.6
69.8	53	51.9	51.2	50.5	12	13.3	14	14.7
75.2	56	54.5	53.6	53	12.3	13.5	14.5	15

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.6 Cooling capacity for 15Ton:

		Air Flow		CFM	5500				6000				6500			
		Ent DB			(°F)	75	80	85	90	75	80	85	90	75	80	85
Ambient Temperature(°F)	85	Entering Wet Bulb(°F)	61	TGC	163.6	165.6	172.9	182.7	168	171.6	179	188.7	169.9	174.2	185.1	193.6
				SHC	131.5	155.8	166	175.3	138.7	165.6	173.6	183	146.1	167.2	177.7	185.9
			67	TGC	183.3	185.5	187.6	190.2	188.7	190	191.1	192.4	191	192.5	193.6	195.1
				SHC	104.7	127.8	149.8	172.9	109.3	132.7	157.1	180.2	111.2	136.4	162	187.6
			73	TGC	193.6	197.3	199.8	202.2	195.8	198.5	202.2	204.5	198.3	201	203.3	205.8
				SHC	72.2	96.8	117	136.4	73.6	99	119.6	138.6	74.9	99.9	121.6	143.7
	95		61	TGC	153.4	157.1	164.5	175.4	155.3	162	171.7	181.4	160.8	164.5	176.6	186.3
				SHC	125.3	149.8	159.5	170.1	132.7	157.1	166.6	176	140.1	159.5	171.3	180.8
			67	TGC	171.7	174.2	176.6	180.2	179	180	182.7	183.9	185.1	186.5	187.7	188.7
				SHC	99.9	123	146.1	169.2	104.1	129	153.5	179	108.1	132.8	160.8	186.3
			73	TGC	188.8	191.1	193.5	196.1	190.2	192.2	195.2	198.5	191.9	194.3	196.8	198
				SHC	69	93.1	114.8	135.2	70.5	96.3	117.8	140.1	71.8	97.9	120.7	143.7
	105	61	TGC	142.7	146.4	153.8	166.1	147.6	151.3	163.6	171	150.1	156.2	169.7	180.8	
			SHC	119.6	140.5	147.6	159.4	127.9	145.2	157	164.1	135.3	151.5	164.6	173.2	
		67	TGC	163.6	166.1	169.7	171	164.8	168.5	173.4	175.9	173.4	175.9	178.4	180.8	
			SHC	94.6	118.1	141.3	165.7	109	124.2	149.8	170.6	102.6	130.3	157.1	175.4	
		73	TGC	185.7	187	188.2	189.4	188.2	189.4	190.7	193.1	190.7	191.9	193.1	194.3	
			SHC	65.6	89.2	111.7	132.8	67	92.3	115.5	138.9	68.3	95.3	118.6	142.4	
	115	61	TGC	130.4	135.3	147.6	159.9	134.1	141.5	153.8	166.1	137.8	140.4	150.9	172.2	
			SHC	114.5	131.2	143.2	155.1	121.6	135.8	147.6	159.4	127.9	136.2	146.9	167	
		67	TGC	153.8	156.2	157.4	160.9	155	158.7	161.1	163.6	163.6	166.1	169.7	174	
			SHC	98.4	113.4	136.5	159.9	103.3	119.9	145.1	163.6	108.2	125.5	151.3	168.8	
		73	TGC	173.4	175.9	178.4	179.6	178.4	180.8	182	183.3	182	183.3	184.5	185.7	
			SHC	62.1	85.6	108.9	131.6	63.5	89.8	113.2	136.5	66.4	92.3	118.1	143.9	
125	61	TGC	125.4	130.1	141.9	152.1	128.9	136	147.8	159.7	132.5	140.7	153.8	165.6		
		SHC	110.1	126.2	137.7	147.5	117	131.9	143.4	154.9	13	136.5	149.1	160.6		
	67	TGC	147.8	150.2	151.4	153.8	149	152.6	154.9	157.3	157.3	159.7	163.2	167.1		
		SHC	94.6	109	131.3	153.8	99.3	115.3	139.6	152.6	104.1	120.6	145.5	162.1		
	73	TGC	166.8	169.1	171.5	172.7	171.5	173.9	175	176.2	175	176.2	177.4	178.6		
		SHC	59.7	82.3	104.7	126.5	61	86.3	108.8	131.3	63.9	88.7	113.5	138.4		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 15Ton:

Outdoor Temp(°F) 70% RH	Net Capacities(kW)-6000 CFM							
	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power(kW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	29.7	27.9	27.3	26.9	13.8	15.2	16.1	17.0
10.4	32.0	30.6	30.0	29.7	14.1	15.5	16.2	17.3
15.8	33.9	33.0	32.7	32.7	14.3	15.6	16.4	17.6
21.2	35.6	34.5	34.2	33.8	14.4	15.8	16.7	17.9
26.6	37.7	37.1	36.8	36.2	14.6	15.9	17.0	18.2
32	40.5	39.9	39.3	38.9	14.7	16.2	17.3	18.3
37.4	46.7	46.2	45.5	44.9	15.0	16.5	17.6	18.6
44.6	56.7	56	54.3	53.7	15.6	17.5	18.2	19.2
48.2	61.1	60.3	59.7	59.1	16.2	18.0	19.1	20.3
53.6	64.8	67.1	66.8	66.2	16.8	18.8	19.8	21.0
59	69.9	68.9	68.4	67.7	17.3	19.2	20.3	21.5
64.4	74.1	72.8	72.0	71.4	17.7	19.7	20.9	21.9
69.8	79.5	77.9	76.8	75.8	18.0	20.0	21.0	22.1
75.2	84.0	81.8	80.4	79.5	18.5	20.3	21.8	22.5

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.7 Cooling capacity for 17.5Ton:

		Air Flow		CFM	6800				7300				7600			
		Ent DB			(°F)	75	80	85	90	75	80	85	90	75	80	85
Ambient Temperature(°F)	85	Entering Wet Bulb(°F)	61	TGC	187.6	189.9	198.3	209.5	192.6	196.8	205.3	216.4	194.8	199.7	212.2	222.0
				SHC	150.8	178.7	190.3	201.0	159.0	189.9	199.1	209.8	167.5	191.7	203.8	213.2
			67	TGC	210.2	212.7	215.1	218.1	216.4	217.9	219.1	220.6	219.0	220.7	222.0	223.7
				SHC	120.1	146.5	171.8	198.3	125.3	152.2	180.1	206.6	127.5	156.4	185.8	215.1
			73	TGC	222.0	226.2	229.1	231.9	224.5	227.6	231.9	234.5	227.4	230.5	233.1	236.0
				SHC	82.8	111.0	134.2	156.4	84.4	113.5	137.1	158.9	85.9	114.6	139.4	164.8
	95		61	TGC	175.9	180.1	188.6	201.1	178.1	185.8	196.9	208.0	184.4	188.6	202.5	213.6
				SHC	143.7	171.8	182.9	195.0	152.2	180.1	191.0	201.8	160.6	182.9	196.4	207.3
			67	TGC	196.9	199.7	202.5	206.6	205.3	206.4	209.5	210.9	212.2	213.9	215.2	216.4
				SHC	114.6	141.0	167.5	194.0	119.4	147.9	176.0	205.3	124.0	152.3	184.4	213.6
			73	TGC	216.5	219.1	221.9	224.9	218.1	220.4	223.8	227.6	220.0	222.8	225.7	227.0
				SHC	79.1	106.8	131.6	155.0	80.8	110.4	135.1	160.6	82.3	112.3	138.4	164.8
	105	61	TGC	163.6	167.9	176.4	190.5	169.2	173.5	187.6	196.1	172.1	179.1	194.6	207.3	
			SHC	137.1	161.1	169.2	182.8	146.7	166.5	180.0	188.2	155.1	173.7	188.7	198.6	
		67	TGC	187.6	190.5	194.6	196.1	189.0	193.2	198.8	201.7	198.8	201.7	204.6	207.3	
			SHC	108.5	135.4	162.0	190.0	125.0	142.4	171.8	195.6	117.6	149.4	180.1	201.1	
		73	TGC	212.9	214.4	215.8	217.2	215.8	217.2	218.7	221.4	218.7	220.0	221.4	222.8	
			SHC	75.2	102.3	128.1	152.3	76.8	105.8	132.4	159.3	78.3	109.3	136.0	163.3	
	115	61	TGC	149.5	155.1	169.2	183.4	153.8	162.3	176.4	190.5	158.0	161.0	173.0	197.5	
			SHC	131.3	150.4	164.2	177.8	139.4	155.7	169.2	182.8	146.7	156.2	168.4	191.5	
		67	TGC	176.4	179.1	180.5	183.4	177.7	182.0	184.7	187.6	187.6	190.5	194.6	199.5	
			SHC	112.8	130.0	156.5	183.4	118.5	137.5	166.4	187.6	124.1	143.9	173.5	193.6	
		73	TGC	198.8	201.7	204.6	205.9	204.6	207.3	208.7	210.2	208.7	210.2	211.6	212.9	
			SHC	71.2	98.2	124.9	150.9	72.8	103.0	129.8	156.5	76.1	105.8	135.4	165.0	
125	61	TGC	143.8	149.2	162.7	174.4	147.8	155.9	169.5	183.1	151.9	161.3	176.4	189.9		
		SHC	126.2	144.7	157.9	169.1	134.2	151.2	164.4	177.6	141.0	156.5	171.0	184.2		
	67	TGC	169.5	172.2	173.6	176.4	170.9	175.0	177.6	180.4	180.4	183.1	187.1	191.6		
		SHC	100.4	125.0	150.6	176.4	113.5	132.2	160.1	175.0	119.4	138.3	166.8	185.9		
	73	TGC	191.3	193.9	196.7	198.0	196.7	199.4	200.7	202.0	200.7	202.0	203.4	204.8		
		SHC	68.5	94.4	120.1	145.1	69.9	99.0	124.8	150.6	73.3	101.7	130.1	158.7		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 17.5Ton:

Outdoor Temp(°F) 70% RH	Net Capacities(kW)-7300 CFM							
	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power(kW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	35.6	33.5	32.8	32.3	15.6	17.2	18.2	19.2
10.4	38.4	36.7	36.0	35.6	15.9	17.5	18.3	19.5
15.8	40.7	39.6	39.2	39.2	16.2	17.6	18.5	19.9
21.2	42.7	41.4	41.0	40.6	16.3	17.9	18.9	20.2
26.6	45.2	44.5	44.2	43.4	16.5	18.0	19.2	20.6
32	48.6	47.9	47.2	46.7	16.6	18.3	19.5	20.7
37.4	56.0	55.4	54.6	53.9	17.0	18.6	19.9	21.0
44.6	68.5	67.0	62.9	62.5	17.6	19.8	20.6	21.7
48.2	73.3	72.4	71.6	70.9	18.3	20.3	21.6	22.9
53.6	77.8	80.5	80.2	79.4	19.0	21.2	22.4	23.7
59	83.9	82.7	82.1	81.2	19.5	21.7	22.9	24.3
64.4	88.9	87.4	86.4	85.7	20.0	22.3	23.6	24.7
69.8	95.4	93.5	92.2	91.0	20.3	22.6	23.7	25.0
75.2	100.8	98.2	96.5	95.4	20.9	22.9	24.6	25.4

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.8 Cooling capacity for 20Ton:

		Air Flow		CFM	7700				8400				9000			
		Ent DB			(°F)	75	80	85	90	75	80	85	90	75	80	85
Ambient Temperature (°F)	85	Entering Wet Bulb (°F)	61	TGC	216.1	218.7	228.5	241.3	222.0	226.7	236.4	249.3	224.4	230.1	244.6	255.8
				SHC	173.7	205.9	221.6	234.1	183.3	218.7	229.3	241.8	193.1	223.2	237.2	248.1
			67	TGC	242.1	245.1	247.8	251.2	249.3	251.1	252.5	254.2	252.4	254.3	255.8	257.7
				SHC	138.3	168.8	197.9	228.5	144.5	175.3	207.5	238.1	146.9	180.2	214.0	247.8
			73	TGC	255.8	260.7	263.9	267.2	258.7	262.3	267.2	270.2	262.0	265.5	268.6	271.9
				SHC	95.4	127.9	154.5	180.2	97.2	130.8	158.0	183.1	99.0	132.0	160.7	189.8
	95		61	TGC	202.6	207.5	217.3	231.7	205.2	214.0	226.9	239.7	212.4	217.3	233.4	246.2
				SHC	165.6	197.9	210.7	224.8	175.3	205.5	217.8	230.1	185.1	210.7	226.3	238.8
			67	TGC	226.9	230.1	233.4	238.1	236.4	240.0	241.3	242.9	244.6	246.4	248.0	249.3
				SHC	132.0	162.5	193.1	223.6	137.5	170.5	202.8	236.4	142.8	175.5	212.4	246.2
			73	TGC	249.4	252.5	255.6	259.0	251.2	254.0	257.9	262.3	253.5	256.8	260.0	261.6
				SHC	91.2	123.0	151.6	178.6	93.1	127.2	155.7	185.1	94.9	129.4	159.4	189.8
	105	61	TGC	188.5	193.4	203.1	219.4	195.0	199.9	216.1	225.9	198.3	206.4	224.3	238.9	
			SHC	158.0	187.6	197.0	212.8	169.0	193.9	209.6	219.1	178.8	200.2	217.5	231.7	
		67	TGC	216.1	219.4	224.3	225.9	217.8	222.6	229.1	232.4	229.1	232.4	235.6	238.9	
			SHC	125.0	156.0	186.7	218.9	144.0	164.1	197.9	209.1	135.5	172.1	207.5	238.9	
		73	TGC	245.4	247.0	248.6	250.3	248.6	250.3	251.9	255.1	251.9	253.5	255.1	256.8	
			SHC	86.6	117.8	147.6	175.5	88.6	122.0	152.6	183.5	90.2	125.9	156.7	188.2	
	115	61	TGC	172.3	178.8	195.0	211.3	177.1	186.9	203.1	219.4	182.0	193.4	211.3	227.5	
			SHC	151.3	173.4	189.2	204.9	160.7	181.3	197.0	212.8	169.0	187.6	204.9	220.7	
		67	TGC	203.1	206.4	208.0	211.3	204.8	209.6	212.9	216.1	216.1	219.4	224.3	227.5	
			SHC	130.0	149.8	180.4	211.3	136.5	158.4	191.8	216.1	143.0	165.8	199.9	227.5	
		73	TGC	229.1	232.4	235.6	237.3	235.6	238.9	240.5	242.1	240.5	242.1	243.8	245.4	
			SHC	82.1	113.1	143.8	173.9	83.9	118.6	149.5	180.4	87.8	121.9	156.0	190.1	
125	61	TGC	162.5	168.6	184.0	199.3	167.1	176.3	191.6	207.0	171.6	182.4	199.3	214.6		
		SHC	147.2	163.6	178.4	193.3	151.6	171.0	185.9	200.7	159.4	177.0	193.3	208.2		
	67	TGC	191.6	194.7	196.2	210.3	193.2	197.8	200.8	203.9	203.9	207.0	211.6	214.6		
		SHC	122.6	141.3	170.2	189.3	128.8	149.5	180.9	199.8	134.9	156.4	188.6	210.3		
	73	TGC	216.2	219.2	222.3	223.8	222.3	225.4	226.9	228.4	226.9	228.4	230.0	231.5		
		SHC	77.4	106.7	135.7	164.0	79.1	111.9	141.0	170.2	82.8	115.0	147.2	179.4		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 20Ton:

Net Capacities(kW)-8400 CFM								
Outdoor Temp(°F) 70% RH	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power(KW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	39.6	37.2	36.4	35.8	18.4	20.2	21.4	22.6
10.4	42.6	40.8	40.0	39.6	18.8	20.6	21.6	23.0
15.8	45.2	44.0	43.6	43.6	19.0	20.8	21.8	23.4
21.2	47.4	46.0	45.6	45.0	19.2	21.0	22.2	23.8
26.6	50.2	49.4	49.0	48.2	19.4	21.2	22.6	24.2
32	54.0	53.2	52.4	51.8	19.6	21.6	23.0	24.4
37.4	62.2	61.6	60.6	59.8	20.0	22.0	23.4	24.8
44.6	75.8	75	74.2	73.6	20.8	23.4	24.2	25.6
48.2	81.4	80.4	79.6	78.8	21.6	24.0	25.4	27.0
53.6	86.4	89.4	89.0	88.2	22.4	25.0	26.4	28.0
59	93.2	91.8	91.2	90.2	23.0	25.6	27.0	28.6
64.4	98.8	97.0	96.0	95.2	23.6	26.2	27.8	29.2
69.8	106.0	103.8	102.4	101.0	24.0	26.6	28.0	29.4
75.2	112.0	109.0	107.2	106.0	24.6	27.0	29.0	30.0

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

9.9 Cooling capacity for 30Ton:

		Air Flow (CFM)			11000				12000				13000			
		Ent	DB	(F)	75	80	85	90	75	80	85	90	75	80	85	90
					Ambient Temperature (°F)											
	85	61	TGC	289.0	292.9	307.0	326.0	297.5	304.5	318.8	337.6	301.2	309.5	330.6	347.0	
			SHC	231.3	278.2	298.0	315.9	245.2	297.2	312.7	324.8	259.5	300.3	320.6	336.4	
		67	TGC	327.1	331.4	335.4	340.5	337.6	340.1	342.2	344.7	342.0	344.9	347.0	349.9	
			SHC	179.4	224.1	266.6	311.3	188.3	233.6	280.8	325.4	192.0	240.7	290.2	319.7	
		73	TGC	347.0	354.2	359.0	363.7	351.3	356.5	363.7	368.1	356.1	361.3	365.8	370.6	
			SHC	116.6	164.2	203.2	240.7	119.3	168.4	208.3	245.0	121.8	170.2	212.1	254.8	
	95	61	TGC	269.3	276.5	290.8	311.8	273.0	313.2	304.7	323.4	283.6	290.8	314.2	332.9	
			SHC	219.3	266.6	285.4	305.9	233.6	276.0	299.1	317.3	247.9	285.4	308.2	326.6	
		67	TGC	315.0	319.8	324.5	331.4	329.1	331.0	336.3	338.6	340.9	343.6	345.9	347.9	
			SHC	170.2	214.8	259.5	304.1	230.3	278.4	301.8	313.1	233.0	249.8	293.9	319.2	
		73	TGC	337.8	342.2	346.8	351.9	340.5	344.3	350.1	356.5	343.7	348.4	353.2	355.5	
			SHC	110.4	157.0	199.0	238.4	113.3	163.2	204.8	247.9	115.8	166.3	210.4	254.8	
	105	61	TGC	248.6	255.8	270.1	293.9	258.1	265.3	289.0	303.3	262.9	274.7	300.8	322.3	
			SHC	208.3	248.7	262.4	285.2	224.3	257.7	280.6	294.3	238.6	269.9	295.3	311.9	
		67	TGC	289.0	293.9	300.8	303.3	291.4	298.5	308.0	312.8	308.0	312.8	317.6	322.3	
			SHC	159.9	205.4	250.2	297.4	187.8	217.1	266.6	306.9	175.4	228.9	280.8	316.1	
		73	TGC	331.8	334.3	336.6	338.9	336.6	338.9	341.4	346.1	341.4	343.7	346.1	348.0	
			SHC	103.9	149.5	193.0	233.8	106.6	155.5	200.3	245.6	109.1	161.3	206.3	252.3	
	115	61	TGC	234.8	244.3	268.1	291.9	242.0	256.3	280.1	303.9	249.2	254.2	274.5	315.7	
			SHC	198.4	230.7	253.9	276.9	212.1	239.6	262.4	285.2	224.3	238.3	251.0	289.9	
		67	TGC	290.1	294.7	297.0	301.9	292.4	299.6	302.2	309.0	309.0	313.9	320.8	329.1	
			SHC	192.9	221.9	266.5	291.0	202.3	234.4	283.2	287.0	216.8	250.3	290.1	294.0	
		73	TGC	308.0	312.8	317.6	320.0	317.6	322.3	324.6	327.1	324.6	327.1	329.4	331.8	
			SHC	97.1	142.5	187.6	231.5	102.8	150.6	195.9	240.9	105.4	155.5	205.4	255.2	
125	61	TGC	215.2	224.3	247.1	266.8	221.9	235.7	258.5	281.5	228.9	244.8	270.1	292.9		
		SHC	189.9	201.0	223.2	242.2	203.2	232.0	254.3	276.5	214.8	230.9	255.3	285.5		
	67	TGC	258.5	263.1	265.4	270.1	260.8	267.8	272.2	276.9	276.9	281.5	288.3	295.8		
		SHC	146.4	187.8	230.9	254.4	168.4	199.9	246.9	262.1	178.3	210.2	258.3	286.4		
	73	TGC	295.2	299.7	304.3	306.6	304.3	308.9	311.1	313.4	311.1	313.4	315.7	318.0		
		SHC	92.4	136.1	179.4	221.6	95.0	143.9	187.4	230.9	100.6	148.5	196.5	244.6		

- Notes: 1. All capacities are gross and have not considered indoor fan heat. To obtain NET cooling capacity subtract indoor fan heat.
 2. TGC=Total Gross Capacity. (Unit: MBtu/h).
 3. SHC=Sensible Heat Capacity. (Unit: MBtu/h).

Heating capacity for 30Ton:

Net Capacities(kW)-12000 CFM								
Outdoor Temp(°F) 70% RH	Peak Net Heating(kW) at Indicated Dry Bulb(°F)				Peak Total Power (kW) at Indicated Dry Bulb(°F)			
	59	68	75.2	80.6	59	68	75.2	80.8
5	59.4	55.8	54.6	53.8	27.6	30.4	32.2	34
10.4	64	61.2	60	59.4	28.2	31	32.4	34.6
15.8	67.8	66	65.4	65.4	28.6	31.2	32.8	35.2
21.2	71.2	69	68.4	67.6	28.8	31.6	33.4	35.8
26.6	75.4	74.2	73.6	72.4	29.2	31.8	34	36.4
32	81	79.8	78.6	77.8	29.4	32.4	34.6	36.6
37.4	93.4	92.4	91	89.8	30	33	35.2	37.2
44.6	107.4	105.0	104.8	104.2	31.2	34.8	36.4	38.4
48.2	122.2	120.6	119.4	118.2	32.4	36	38.2	40.6
53.6	129.6	134.2	133.6	132.4	33.6	37.6	39.6	42
59	139.8	137.8	136.8	135.4	34.6	38.4	40.6	43
64.4	148.2	145.6	144	142.8	35.4	39.4	41.8	43.8
69.8	159	155.8	153.6	151.6	36	40	42	44.2
75.2	168	163.6	160.8	159	37	40.6	43.6	45

- Notes: 1. For other airflows, see heating capacity correction factor tables.
 2. Heating capacities and power are integrated to include the effects of defrost in the frost region.

10. Electrical Data

10.1 Electrical Data

380-400V/3Ph/50Hz(Tolerance:342V-440V)

Model	Power Supply			Compressor				Evaporator fan motor			Condenser fan motor		
	MCA	TOCA	MFA	STC	RNC	IPT	Qty	RNC	IPT	Qty	RNC	IPT	Qty
※ MRBT-60CWN1-R	19.75	21.5	25	74	11.8	5.2	1	3.5	0.8	1	1.5	0.35	1
MRBT-062CWN1-R	23	29	38	98	14.3	7.185	1	3.7	1.5	1	1.7	0.6	1
MRCT-062EWN1-R	23	29	38	98	14.3	7.185	1	3.7	1.5	1	1.7	0.6	1
MRBT-062HWN1-R	23	29	38	98	14.3	7.185	1	3.7	1.5	1	1.7	0.6	1
MRBT-075CWN1-R	26	32	42	142	16.4	8.47	1	3.7	1.9	1	1.7	0.85	1
MRCT-075EWN1-R	26	32	42	142	16.4	8.47	1	3.7	1.9	1	1.7	0.85	1
MRBT-075HWN1-R	26	32	42	142	16.4	8.47	1	3.7	1.9	1	1.7	0.85	1
MRBT-085CWN1-R	32	39	53	142	20.7	9.5	1	3.4	1.66	1	3.5	1.02	1
MRCT-085EWN1-R	32	39	53	142	20.7	9.5	1	3.4	1.66	1	3.5	1.02	1
MRBT-085HWN1-R	32	39	53	142	20.7	9.5	1	3.4	1.66	1	3.5	1.02	1
MRBT-100CWN1-R	33	40	55	147	29.5	10.8	1	3.7	1.9	1	2.7	1.3	1
MRCT-100EWN1-R	33	40	55	147	29.5	10.8	1	3.7	1.9	1	2.7	1.3	1
MRBT-100HWN1-R	33	40	55	147	29.5	10.8	1	3.7	1.9	1	2.7	1.3	1
MRBT-150CWN1-R	56	67	89	110	32.8	16.8	2	9.2	4.65	1	1.7	0.85	2
MRCT-150EWN1-R	56	67	89	110	32.8	16.8	2	9.2	4.65	1	1.7	0.85	2
MRBT-150HWN1-R	56	67	89	110	32.8	16.8	2	9.2	4.65	1	1.7	0.85	2
MRBT-175CWN1-R	66	79	108	142	20.7	9.5	2	10.3	5.3	1	2.7	1.3	2
MRCT-175EWN1-R	66	79	108	142	20.7	9.5	2	10.3	5.3	1	2.7	1.3	2
MRBT-175HWN1-R	66	79	108	142	20.7	9.5	2	10.3	5.3	1	2.7	1.3	2
MRBT-200CWN1-R	72	85	115	140	42.8	21.6	2	11.8	5.5	1	3.3	1.7	2
MRCT-200EWN1-R	72	85	115	140	42.8	21.6	2	11.8	5.5	1	3.3	1.7	2
MRBT-200HWN1-R	72	85	115	140	42.8	21.6	2	11.8	5.5	1	3.3	1.7	2
MRCT-300HWN1-R	91	109	146	197	55.2	27.4	2	13	7.0	1	6.5	3.4	2

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 (kW)

Note:

1. The item with ※ power supply: 380-415V/3Ph/50Hz(Tolerance:342V-440V);
2. The starting current is indicated for each compressor motor.
3. The maximum currents of the compressor can be estimated as follows.

	One compressor unit	Two compressor unit
Max. current	RNC×Max. IPT×/IPT	RNC×Max. IPT×/IPT
Max. instantaneous current	STC	STC+RNC×0.5×Max. IPT×/IPT

Max. IPT×: Compressor power input from the performance table at the expected maximum condition

STC, IPT, RNC: Compressor data from the above table

11. The data in the compressor motor column shall indicate the respective values of the refrigeration cycle.

Voltage imbalance between phases to be <2%.

10.2 Motor protection class

Model	Compressor	Indoor fan motor		Indoor coil	Outdoor fan motor		Outdoor coil
	Motor protection	Insulation class	Safe class	Pressure	Insulation class	Safe class	Pressure
MRBT-60CWN1-R	IOP	F	IPX0	250psi	B	IPX4	450psi
MRBT-062CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-062EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-062HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-075CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-075EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-075HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-085CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-085EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-085HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-100CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-100EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-100HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-150CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-150EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-150HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-175CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-175EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-175HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-200CWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-200EWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRBT-200HWN1-R	IOP	F	IP54	250psi	F	IP54	450psi
MRCT-300HWN1-R	IOP	F	IP54	250psi	F	IP44	450psi

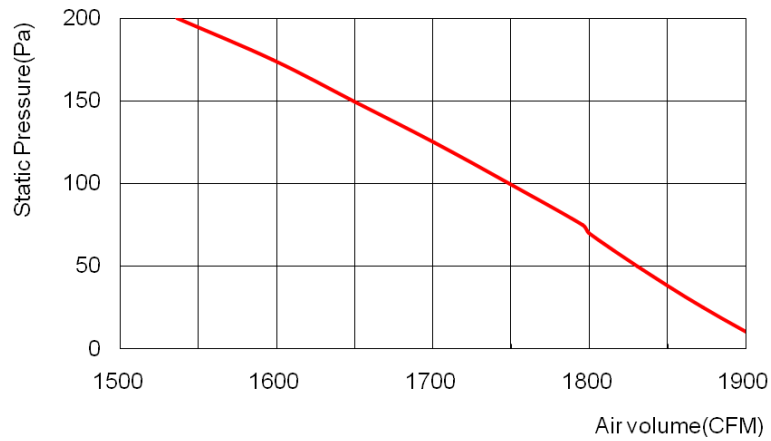
IOP: Internal overload protector

11. Parameter and Pressure Chart for Air Volume

11.1 Model:5ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	25	50	70	75	100	125	150	175	200
Air flow (CFM)	1920	1872	1831	1800	1795	1749	1701	1649	1598	1536
Brake power (kW)	0.7782	0.7634	0.752	0.742	0.7417	0.73	0.716	0.7015	0.687	0.67
Fan speed (rpm)	846	881	914	944	948	975	1006	1036	1067	1096



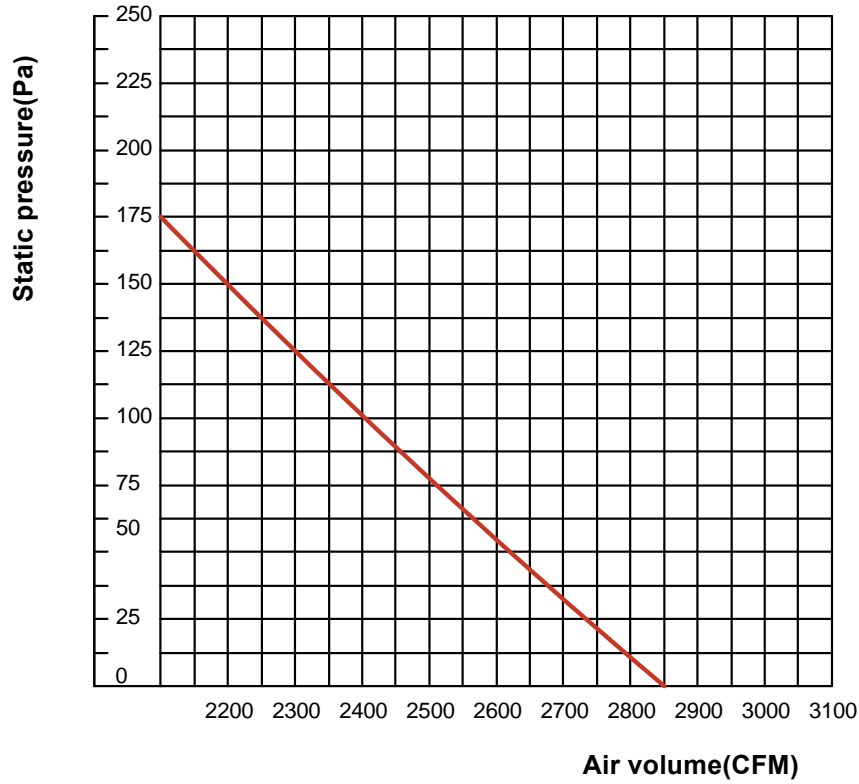
Parameter table for outdoor unit air volume:

Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
5Ton	0	4114	0.345	1080

11.2 Model:6.2ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	25	50	60	75	100	125	150	175
Air flow (CFM)	2853	2754	2632	2602	2522	2413	2310	2236	2108
Brake power (kW)	1.51	1.4	1.36	1.34	1.2	1.14	1.09	1.05	0.98
Fan speed (rpm)	1068	1072	1077	1077	1080	1082	1085	1089	1091



Parameter table for outdoor unit air volume:

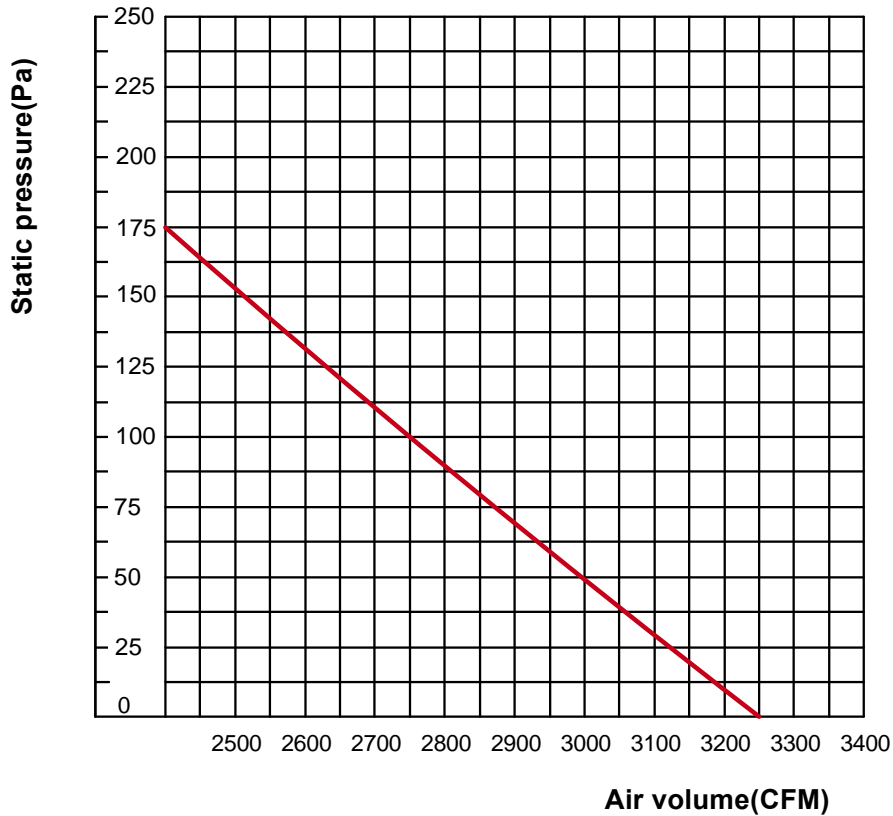
Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
6.2Ton	0	5880	0.78	900
	10	5647	0.79	889
	20	5411	0.80	875

11.3 Model: 7.5Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	20	50	60	75	100	125	150	175
Air flow (CFM)	3240	3149	2996	2941	2886	2782	2664	2540	2411
Brake power (kW)	1.83	1.78	1.70	1.66	1.63	1.58	1.53	1.47	1.41
Fan speed (rpm)	1260	1265	1268	1271	1274	1277	1281	1285	1287

Curve diagram of static pressure, air flow volume:



Parameter table for outdoor unit air volume:

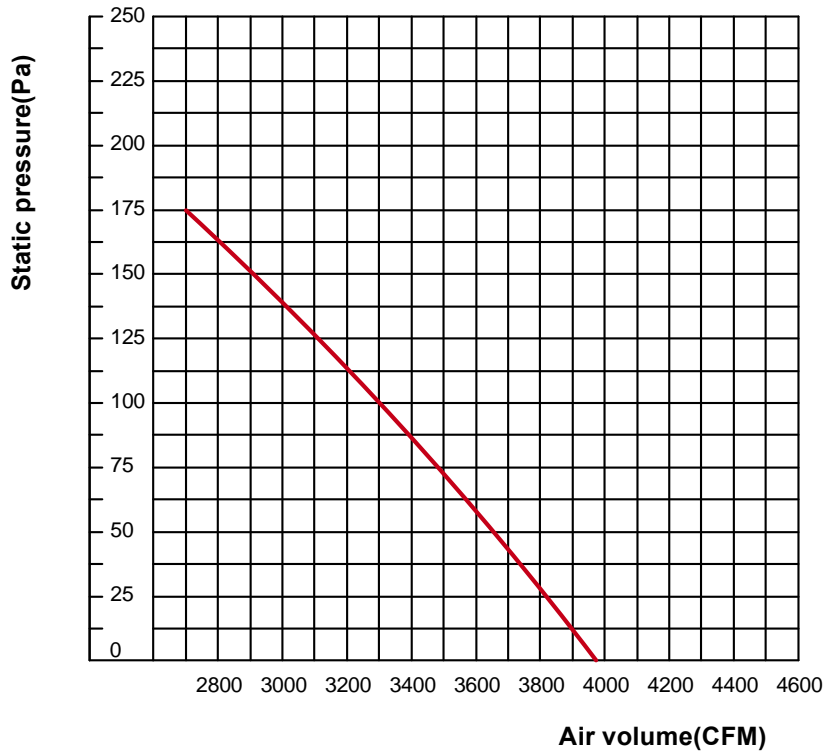
Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
7.5Ton	0	5880	0.78	900
	10	5647	0.79	889
	20	5411	0.80	875

11.4 Model: 8.5Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	25	50	75	100	125	150	175
Air flow (CFM)	3940	3785	3612	3451	3302	3130	2955	2759
Brake power (kW)	1.88	1.81	1.73	1.66	1.59	1.51	1.43	1.35
Fan speed (rpm)	933	937	939	944	946	949	952	953

Curve diagram of static pressure, air flow volume:



Parameter table for outdoor unit air volume:

Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
8.5Ton	0	7060	0.78	935
	10	6765	0.79	926
	20	6471	0.80	918

11.5 Model: 10Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	25	50	75	100	125	150	175
Air flow (CFM)	4298	4156	3929	3756	3579	3382	3218	3020
Brake power (kW)	2.18	2.1	2.02	1.96	1.86	1.79	1.71	1.62
Fan speed (rpm)	1000	1004	1006	1011	1014	1016	1020	1021

Curve diagram of static pressure, air flow volume:

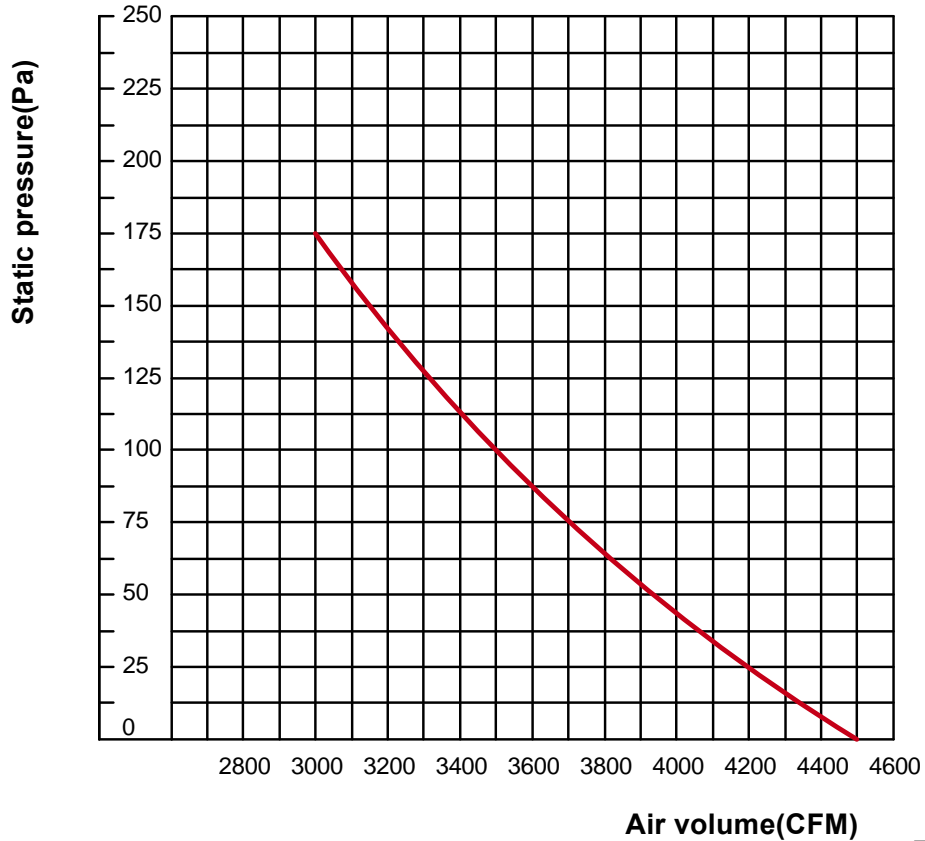


Fig.7-4

Parameter table for outdoor unit air volume:

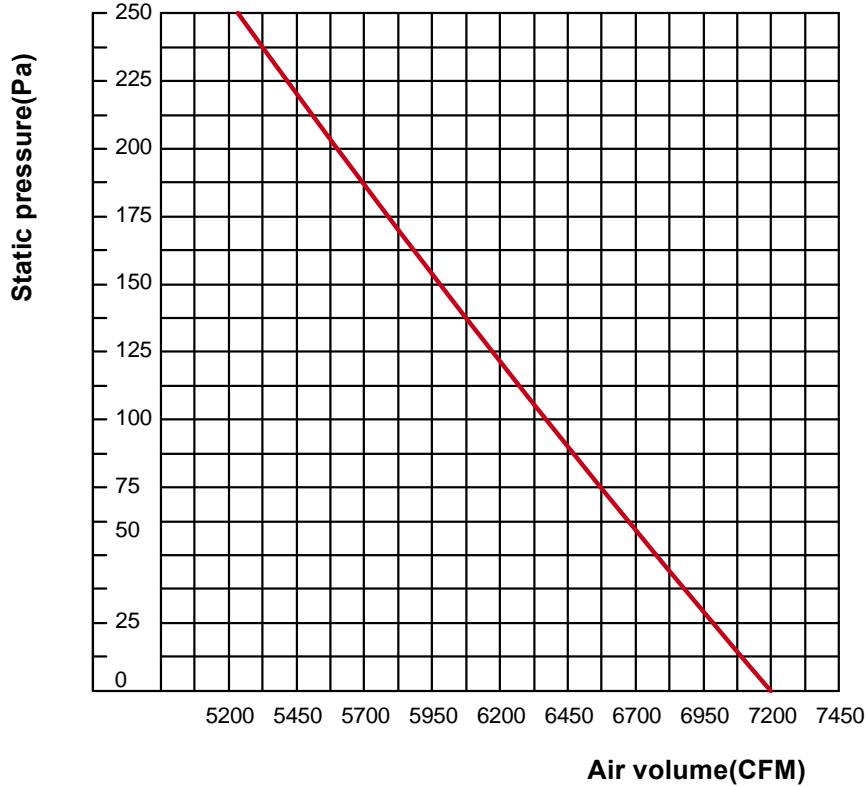
Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
10Ton	0	7060	0.78	935
	10	6765	0.79	926
	20	6471	0.80	918

11.6 Model: 15Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	50	75	90	125	150	200	250
Air flow (CFM)	7209	6675	6575	6400	6150	6044	5639	5227
Brake power (kW)	5.11	4.85	4.71	4.65	4.45	4.32	4.08	3.82
Fan speed (rpm)	1029	1029	1030	1031	1031	1032	1033	1034

Curve diagram of static pressure, air flow volume:



Parameter table for outdoor unit air volume:

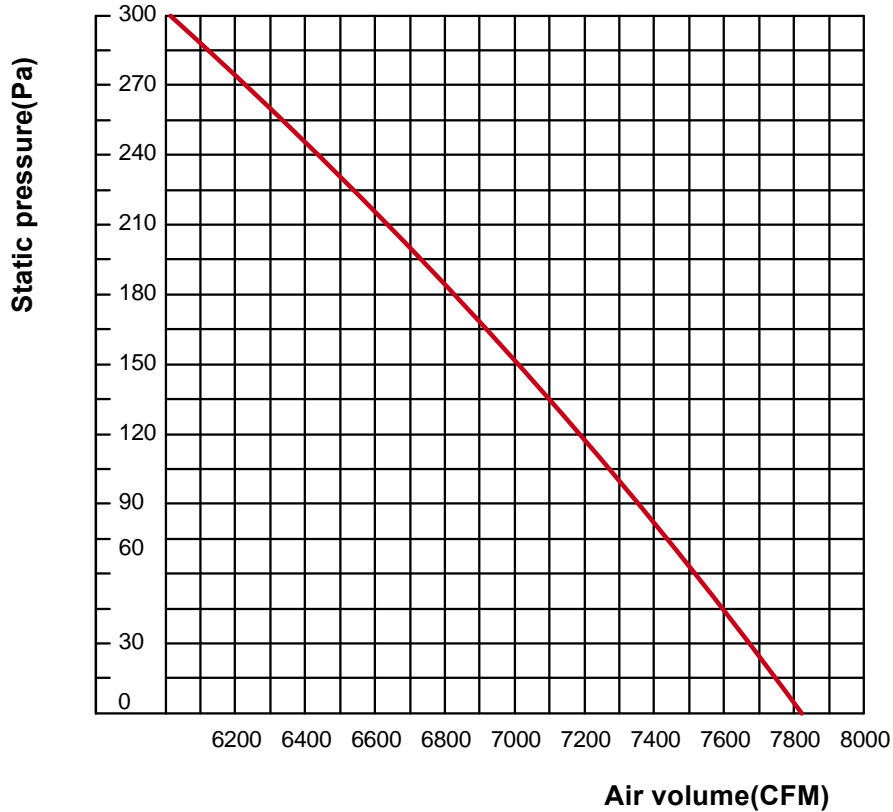
Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
15Ton	0	11000	0.78x2	935
	10	9800	0.79x2	926
	20	9600	0.80x2	918

11.7 Model: 17.5Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	0	25	50	75	100	125	150	175	200	225	250	275	300
Air flow (CFM)	7858	7712	7546	7392	7271	7091	6977	6836	6680	6534	6354	6178	6020
Brake power (kW)	5.76	5.66	5.57	5.36	5.3	5.14	5.05	4.88	4.78	4.67	4.55	4.37	4.12
Fan speed (rpm)	1019	1020	1020	1021	1022	1022	1023	1024	1025	1025	1026	1027	1030

Curve diagram of static pressure, air flow volume:



Parameter table for outdoor unit air volume:

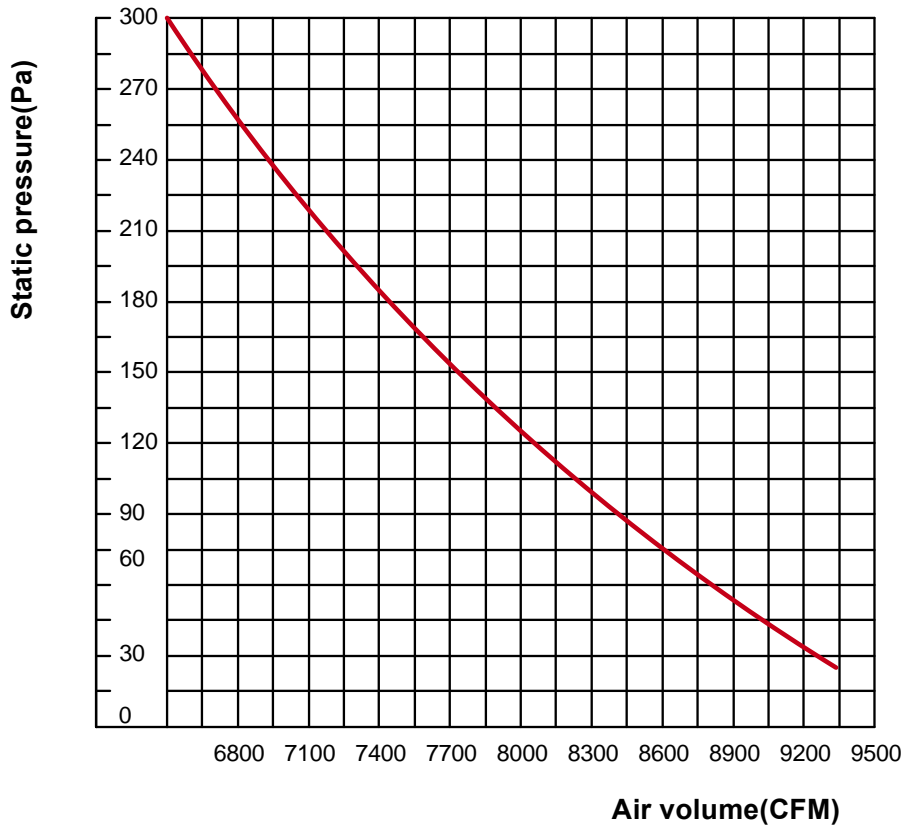
Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
17.5Ton	0	11000	0.78×2	935
	10	9800	0.79×2	926
	20	9600	0.80×2	918

11.8 Model: 20Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	25	50	75	100	125	150	200	250	300
Air flow (CFM)	9296	8782	8452	8289	8179	7826	7388	6955	6555
Brake power (kW)	5.86	5.73	5.59	5.44	5.50	5.27	4.98	4.66	4.32
Fan speed (rpm)	818	819	819	820	820	821	822	823	825

Curve diagram of static pressure, air flow volume:



Parameter table for outdoor unit air volume:

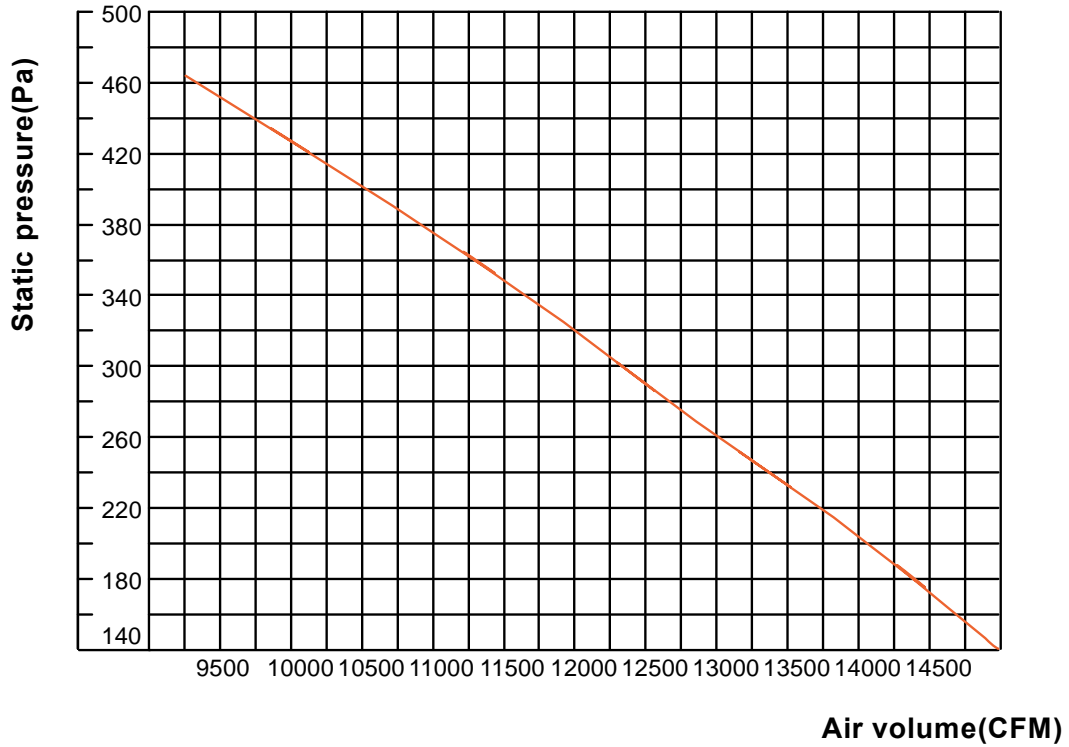
Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
20Ton	0	14000	1.3x2	940
	10	13500	1.4x2	938
	20	13100	1.5x2	930

11.9 Model: 30Ton

Parameter table for indoor unit air volume:

Static pressure (Pa)	150	175	200	225	250	275	300	325	350
Air flow (CFM)	14664	14464	14119	13743	13230	12729	12365	11957	11489
Brake power (kW)	8.91	8.59	8.30	8.01	7.71	7.40	7.07	6.74	6.39
Fan speed (rpm)	775	775	776	777	778	779	780	782	782

Curve diagram of static pressure, air flow volume:



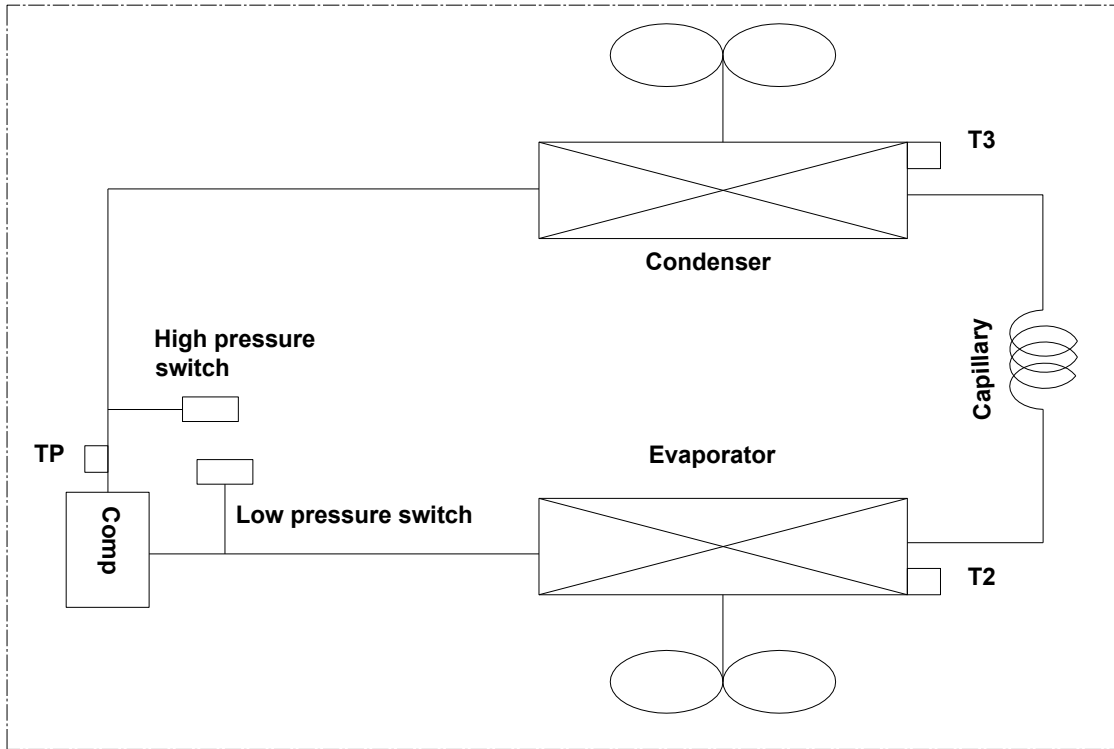
Parameter table for outdoor unit air volume:

Model	Static pressure (Pa)	Air flow (CFM)	Brake power (kW)	Fan speed (rpm)
30Ton	0	14000	1.3x2	940
	10	13500	1.4x2	938
	20	13100	1.5x2	930

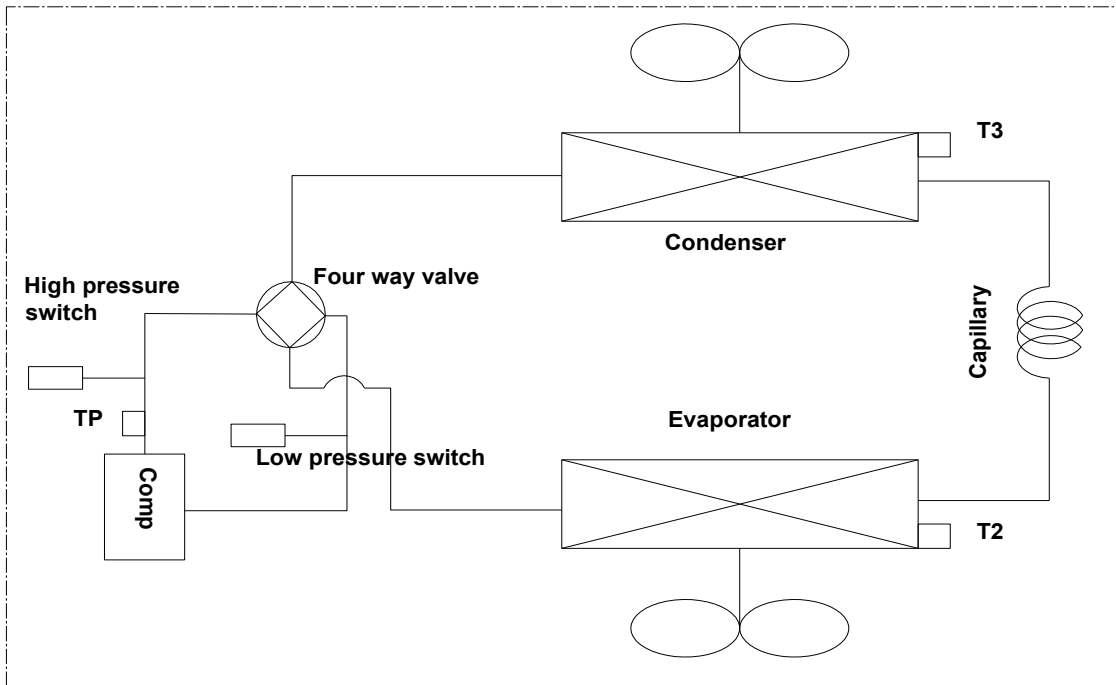
12. Refrigerant Cycle Diagram

12.1 5,6.2,7.5,8.5,10 ton:

Cooling, Cooling+EAH type



Cooling and Heating type:



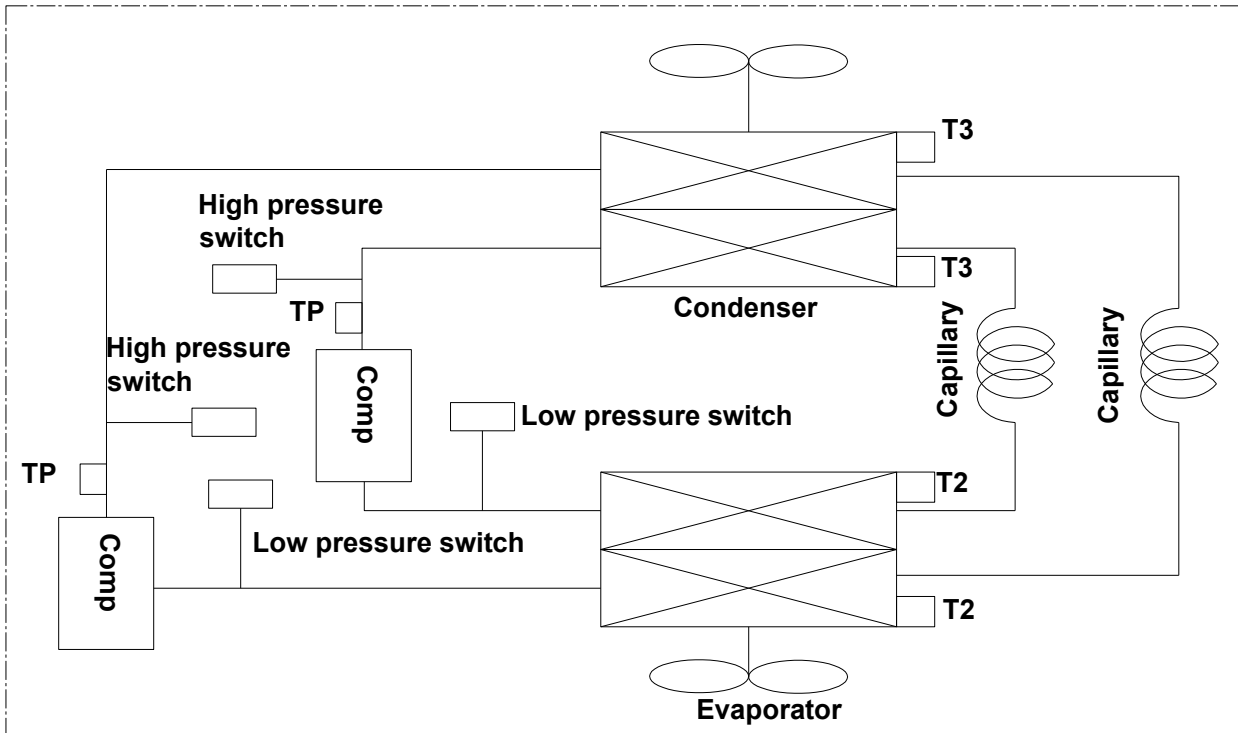
TP: Compressor discharge temperature sensor in system

T2: Indoor coil temperature sensor in system

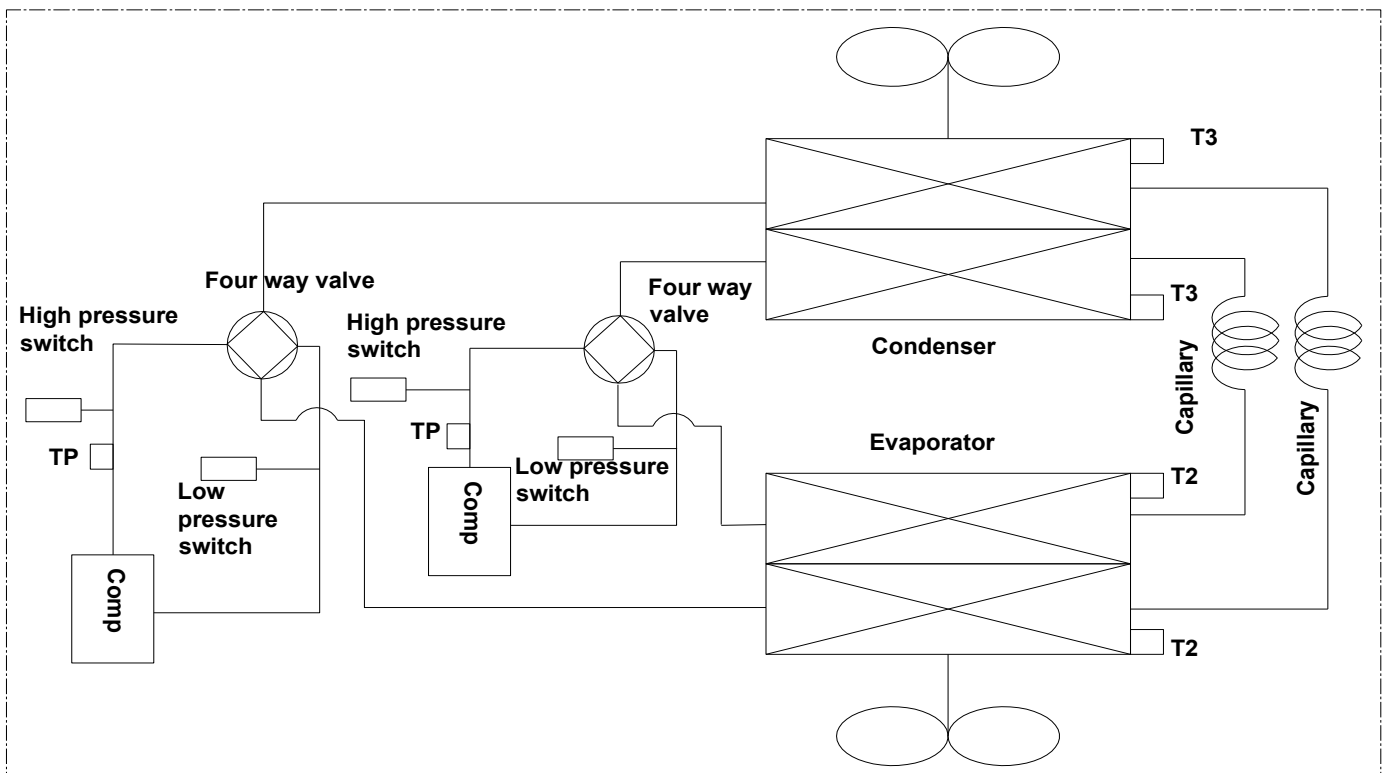
T3: Outdoor coil temperature sensor in system

12.2 15,17.5,20,30 ton:

Cooling, Cooling+EAH type



Cooling and Heating type:



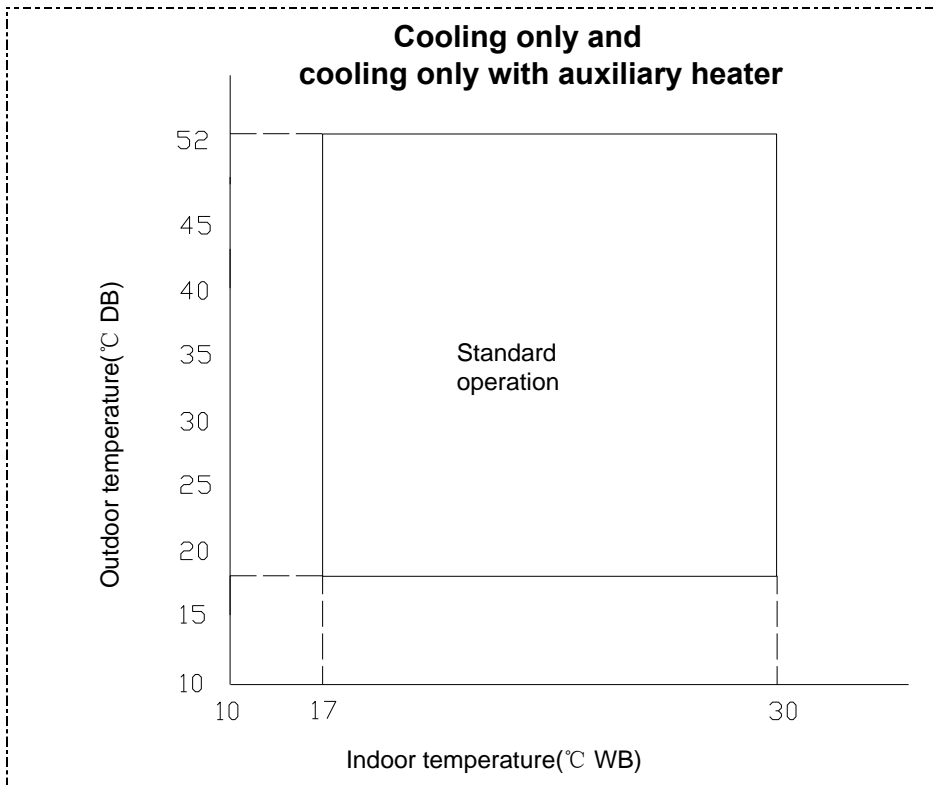
TP: Compressor discharge temperature sensor in system A and B

T2: Indoor coil temperature sensor in system A and B

T3: Outdoor coil temperature sensor in system A and B

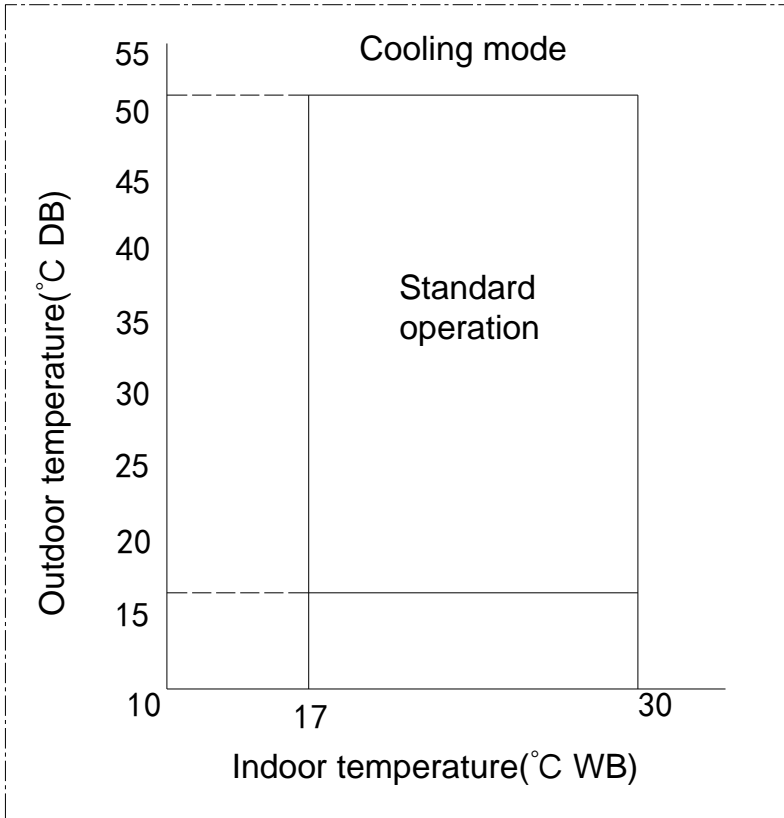
13. Operation Limit

13.1 Cooling only and cooling with auxiliary heater

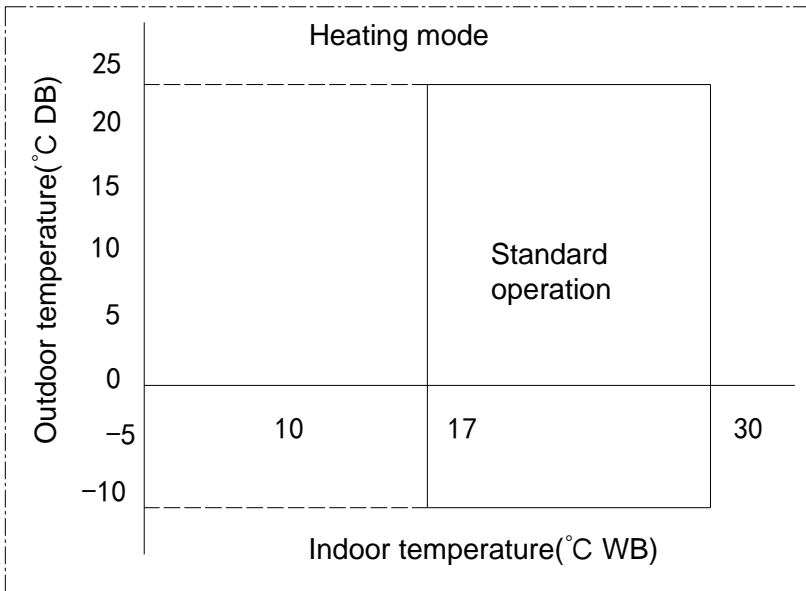


Temperature	Outdoor temperature	Indoor temperature
Model		
Cooling mode	18°C ~ 52°C	17°C ~ 30°C
With auxiliary electric heater models	--	17°C ~ 30°C

13.2 Cooling and heating



Mode	Temperature	Outdoor temperature	Indoor temperature
Cooling mode		18°C ~ 52°C	17°C ~ 30°C



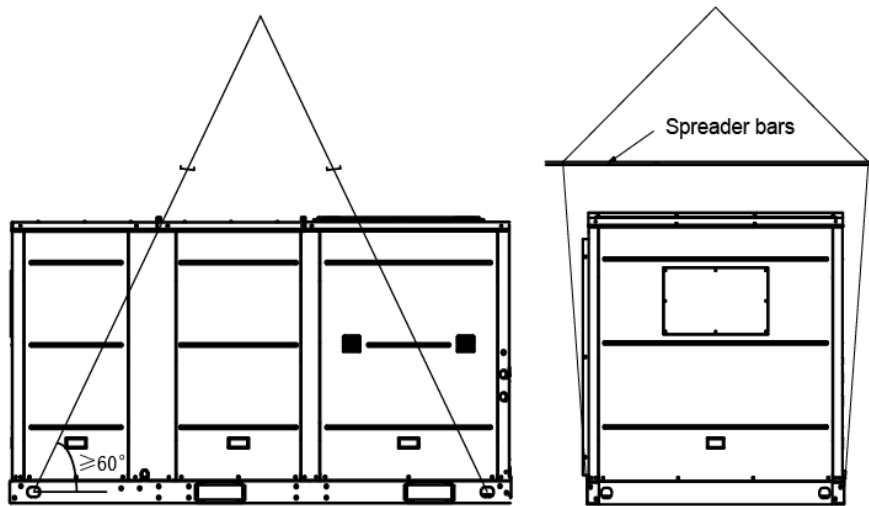
Mode	Temperature	Outdoor temperature	Indoor temperature
Heating mode		-10°C ~ 24°C	17°C ~ 30°C

14. Installation

14.1 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°.

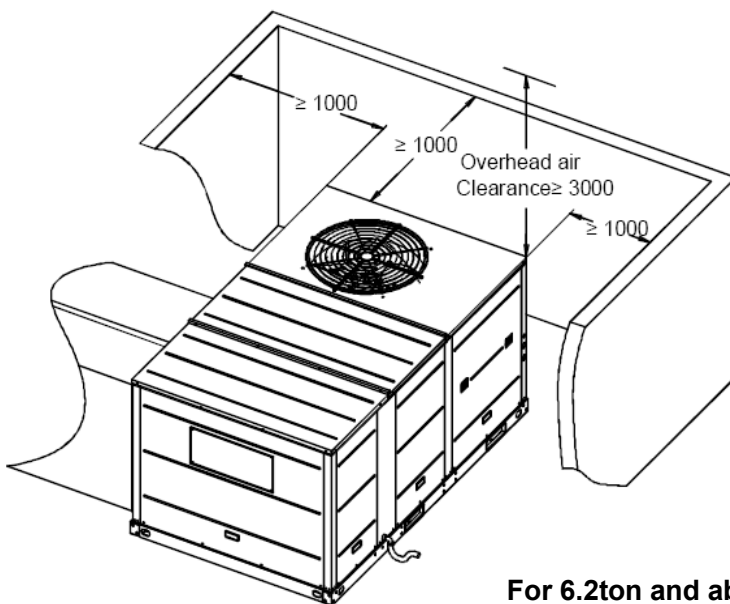
Cloth material or hard-paper should be padded in the contact place between unit and rigging cable. Rigging cable should be entwined a round at the hook for prevent danger by cable slip because of weight unbalance. During lifting, anyone forbidden lingering under the lifting unit.



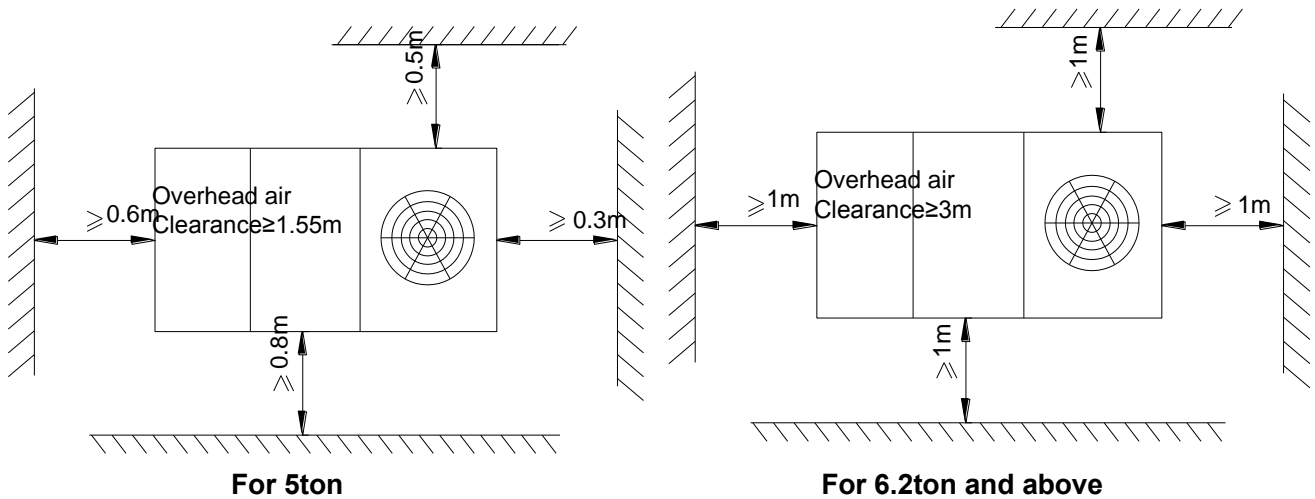
15.2 Service Space

1. The recommended clearances for single-unit installations are illustrated in following *Fig.*

These minimum 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. 2. Any reduction of the unit clearances indicated in these illustrations may result in condenser coil starvation or the recirculation of warm condenser air. Actual clearances which appear to be inadequate should be reviewed with a local engineer.



For 6.2ton and above

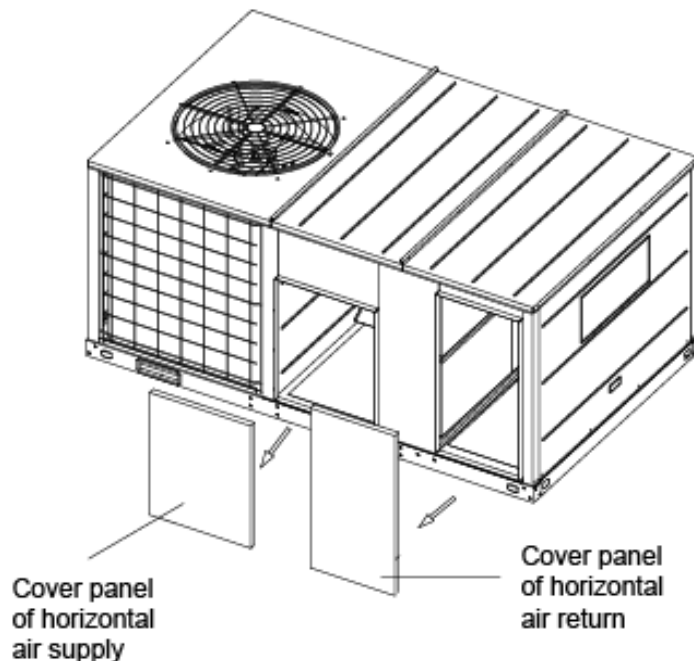


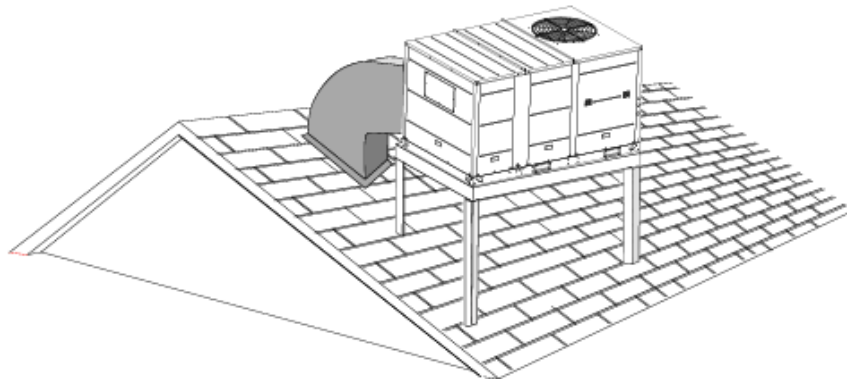
15.3 Rooftop -- units

For roof top applications using a field fabricated frame and ducts, according to the following procedure:

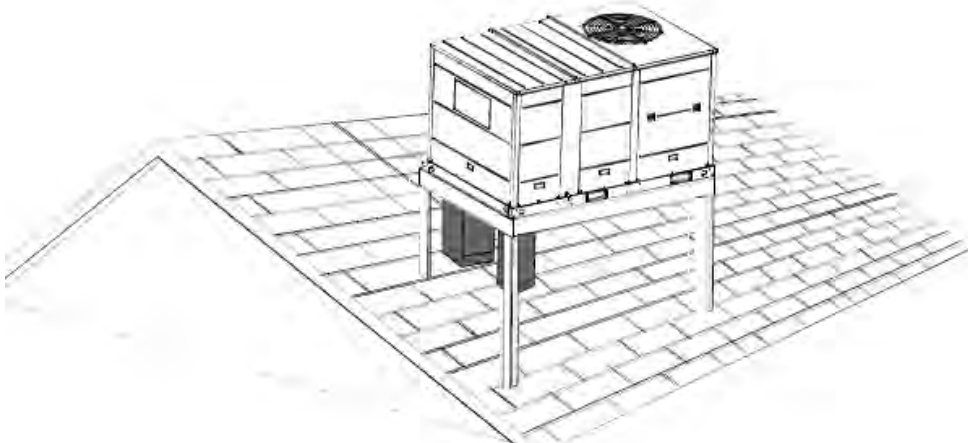
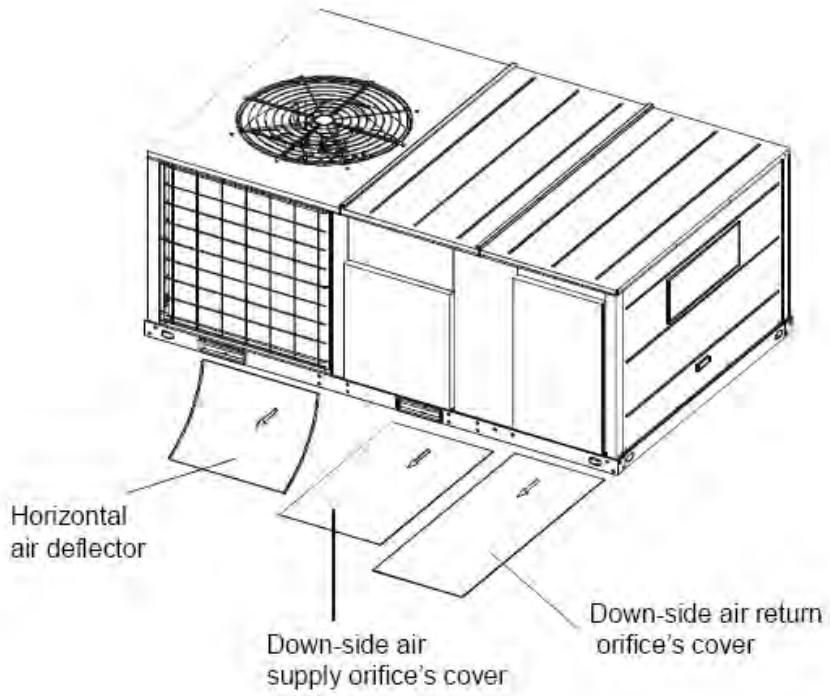
- 1) The frame must be located and secured by bolting or welding to the roof. Flashing is required.
- 2) The hole in the roof must be prepared in advance of installing the unit.
- 3) Secure the ducts to the roof.
- 4) Place the unit on the frame or roof curb.
- 5) Secure the unit to the frame or roof curb.
- 6) Insulate any ductwork outside of the structure with at least two (2) inches of insulation and then weatherproof. There must be a weatherproof seal where the duct enters the structure.
- 7) Complete the installation according to the instructions.

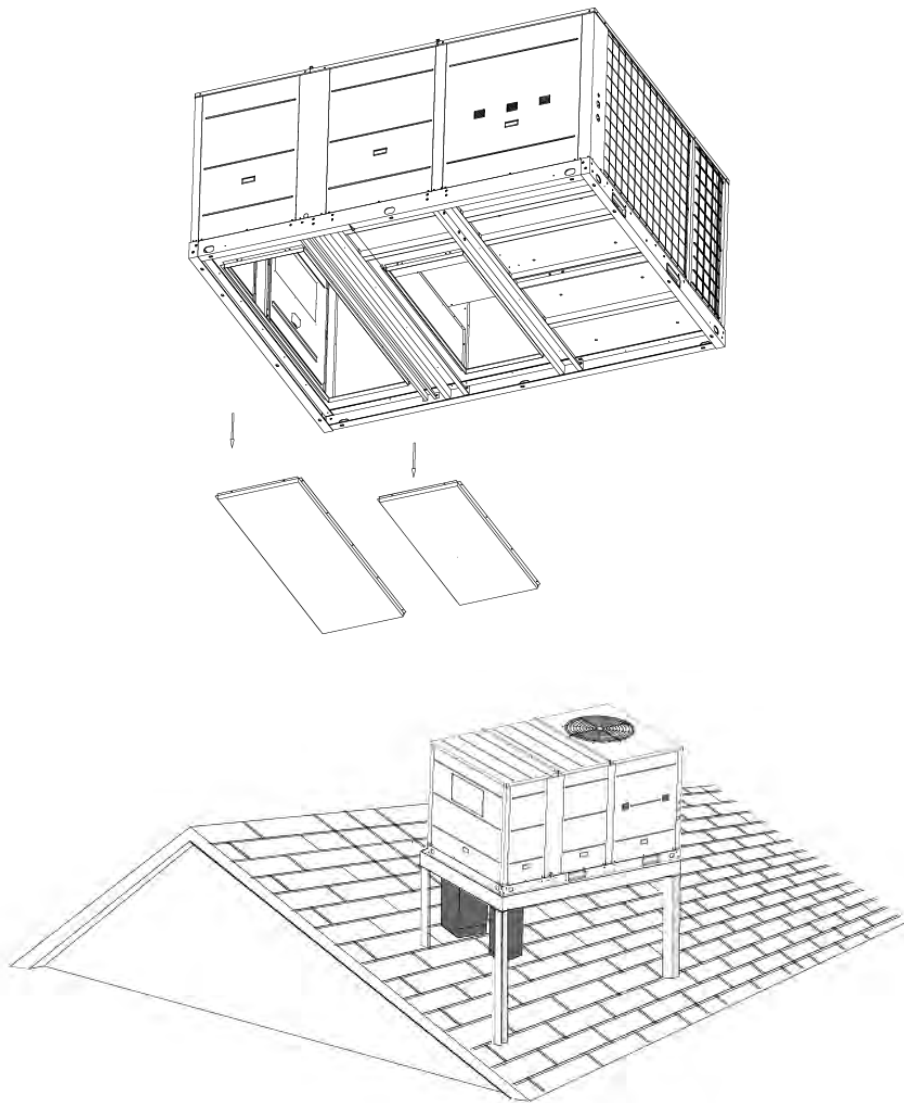
Typical rooftop application with frame:





Typical rooftop application with frame:





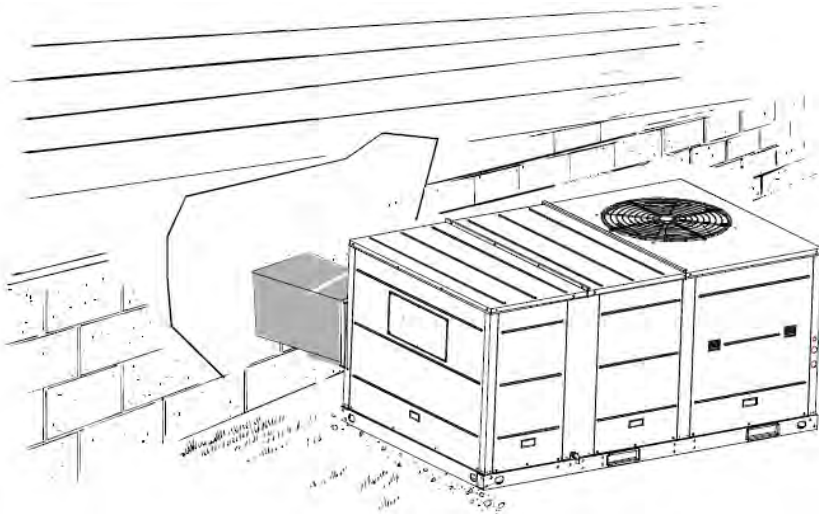
14.4 Ground Level -- Horizontal Units

For ground level installations, the unit should be positioned on a pad 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.

Installation according to the following procedure:

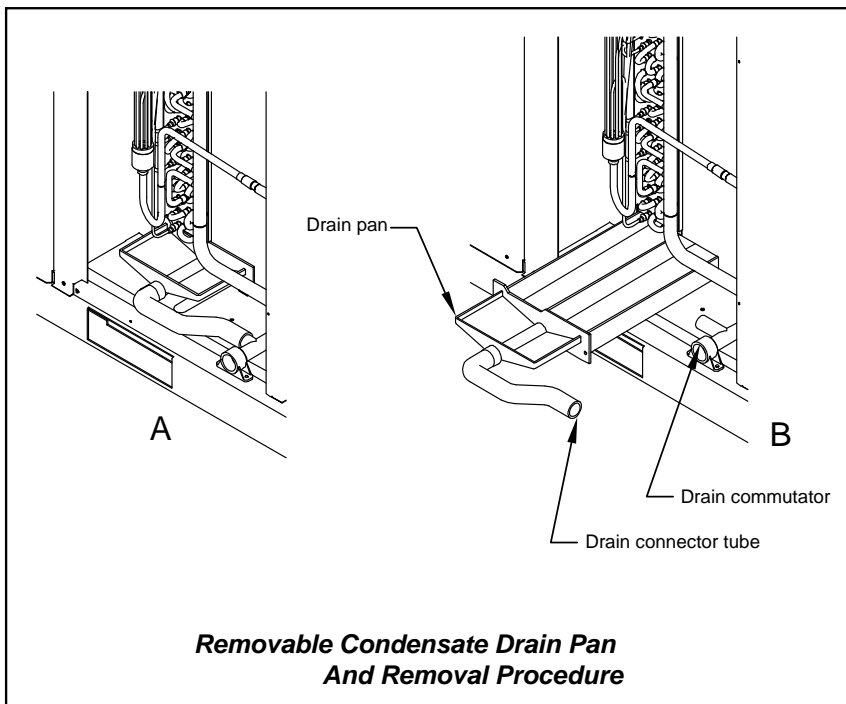
- 1) Place the unit on the pad.
- 2) Attach the supply and return air ducts to the unit.
- 3) Insulate any ductwork outside of the structure with at least 2 inches of insulation and weatherproof. There must be a weatherproof seal where the duct enters the structure.
- 4) Complete the installation according to the instructions.

Typical ground level application:

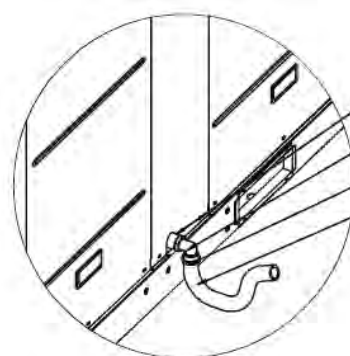
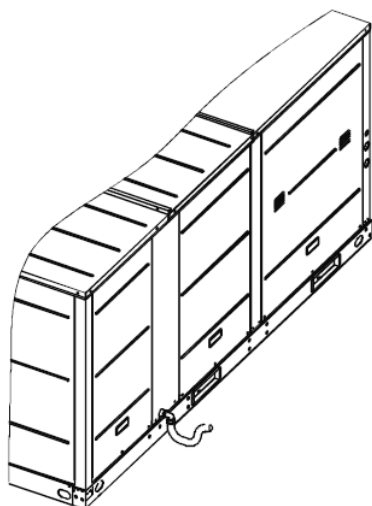


14.5 Installation of condensate drain piping

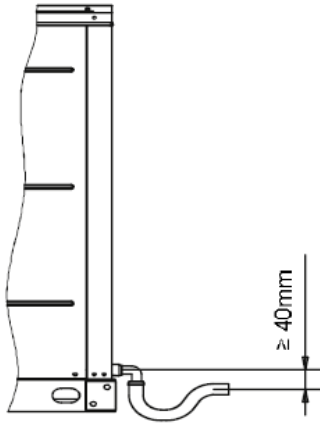
5ton:



6.2&7.5&8.5&10&15&17.5&20ton:



- Drain connection hole
 - Drain outlet
 - Snap ring
 - Drain pipe
- Outer diameter:28 mm/1.1 inch**
Inner diameter:21 mm/0.83 inch



14.6 Ductwork

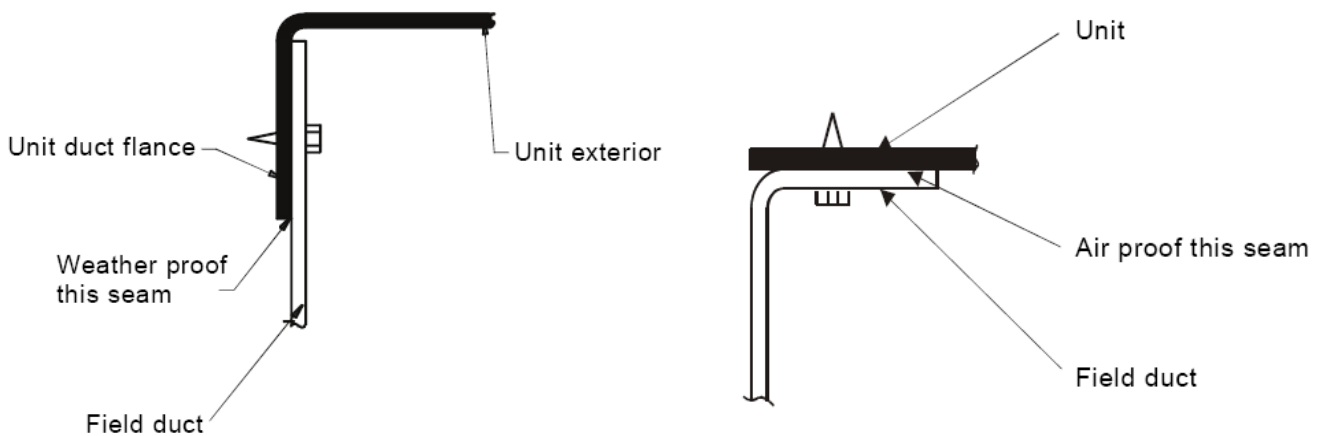
1. Attaching horizontal ductwork to unit

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

2) 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.

Note:

Do not draw the canvas taut between the solid ducts.



2. Attaching down flow ductwork to roof curb

Supply and return air flanges are provided on the roof curb for easy duct installation. All ductwork must be run and attached to the curb before the unit is set into place.

Follow these guidelines for ductwork construction:

- 1) Connections to the unit should be made with three-inch canvas connectors to minimize noise and vibration transmission.
- 2) Elbows with turning vanes or splitters are recommended to minimize air noise and resistance.
- 3) The first elbow in the ductwork leaving the unit should be no closer than two feet from the unit, to minimize noise and resistance.

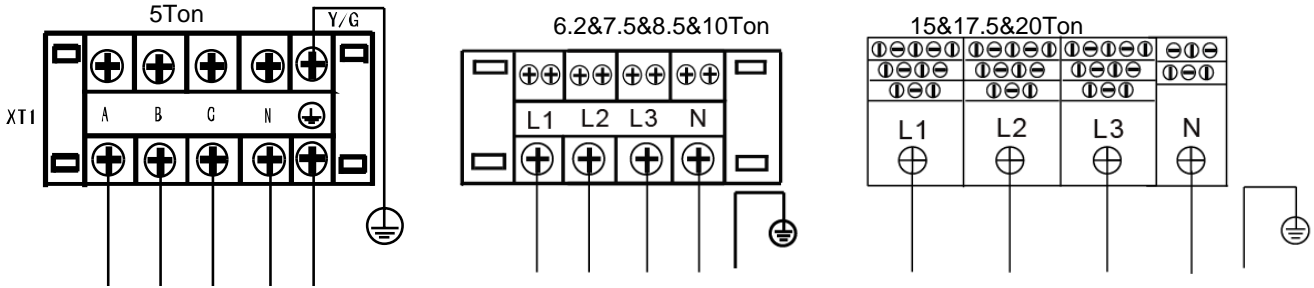
14.7 Wiring provision

Field wiring

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

Required field wiring

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



Required components

The following components are required: main power fuse, conduit coupling, and field supplied room thermostat.

Wire and fuse size selection for main power source.

Wire and fuse size should be selected in accordance with national standard, taking the designed maximum current shall be the total of the compressor maximum current, condenser fan motor current and evaporator fan motor current (refer to “electrical data”).

Wire size between room thermostat and unit.

The wire size between the room thermostat 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 room thermostat and unit(one way)				
	10m	15m	20m	30m	40m
Minimum wire size(mm ²)	0.5	0.5	0.75	0.75	1.0

15 Wired Controller

15.1 Standard wired controller: KJR-12B/DP (T)-E



KJR-12B/DP (T)-E

1. SAFETY PRECAUTIONS

The following contents are stated on the product and the operation manual, including usage, precautions against personal harm and property loss, and the methods of using the product correctly and safely. After fully understanding the following contents (identifiers and icons), read the text body and observe the following rules.

Identifier description

Identifier	Meaning
Warning	Means improper handling may lead to personal death or severe injury.
Caution	Means improper handling may lead to personal injury or property loss.
[Note]: 1. "Harm" means injury, burn and electric shock which need long-term treatment but need no hospitalization 2. "Property loss" means loss of properties and materials.	

■ Icon description

Icon	Meaning
	It indicates forbidding. The forbidden subject-matter is indicated in the icon or by images or characters aside.
	It indicates compulsory implementation. The compulsory subject-matter is indicated in the icon or by images or characters aside.

Warning

	Delegate installation	Please entrust the distributor or professionals to install the unit. The installers must have the relevant know-how. Improper installation performed by the user without permission may cause fire, electric shock, personal injury or water leakage.
	Forbid	Do not spray flammable aerosol to the wire controller directly. Otherwise, fire may occur.
	Forbid	Do not operate with wet hands or let water enter the wire controller. Otherwise, electric shock may occur.

2. SUMMARIZE

Usage condition:

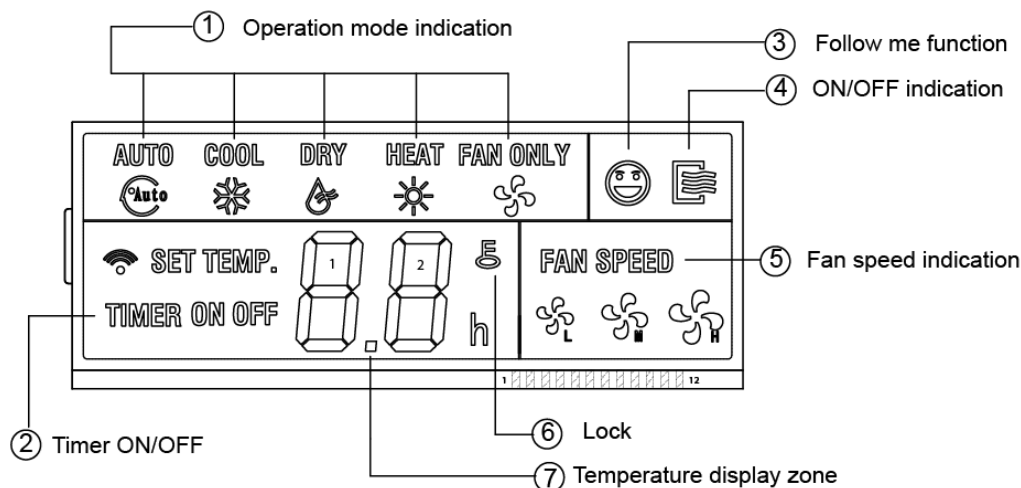
- ①. Power supply: 5V DC.
- ②. Operation temperature: -15℃-+43℃.
- ③. Operation humidity: 40%-90%, RH.

3. FUNCTION SUMMARY

Main function:

- ①. Connecting to indoor unit by A, B, C, D, E terminal;
- ②. Button setting action mode.
- ③. LCD display.
- ④. Timer for rest time.

4. NAME AND FUCTION OF INDICATORS ON THE CONTROLLER



① Operation mode indication:

When press " MODE " button, the following mode can be selected in circle. Auto→Cool →Dry→Heat→ Fan only→Auto. For cooling only model,heat mode is skipped.

② Timer :

When adjust setting on time or only on time is set, the "ON" is lighted.

When adjust setting off time or only off time is set, the "OFF" is lighted. If both 'on' and 'off' timer are set, both the "ON" and "OFF" are lighted.

③ Follow me function:

There is a temperature sensor inside the wire controller, after setting temperature, it will compare the two temperatures, and the space of wire controller will be the same as setting temperature. It is available under cooling, heating, auto mode.

④ ON/OFF indication :

When it is on, the icon display, otherwise it is extinguished.

⑤ Fan speed indication :

There are four fan modes : low, middle, high, auto. For some models, no middle fan then the middle fan is seen as high speed.

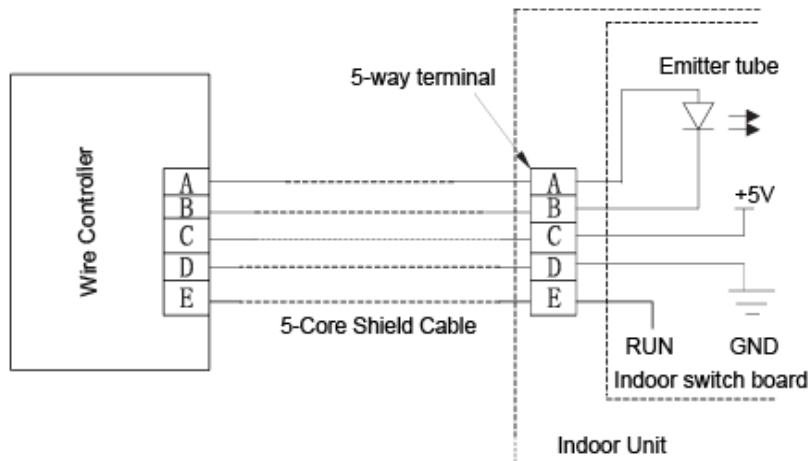
⑥ Lock:

When the " LOCK " button is pressed, the icon appear and other buttons is unable, press again, the icon disappear.

⑦ Temperature display zone:

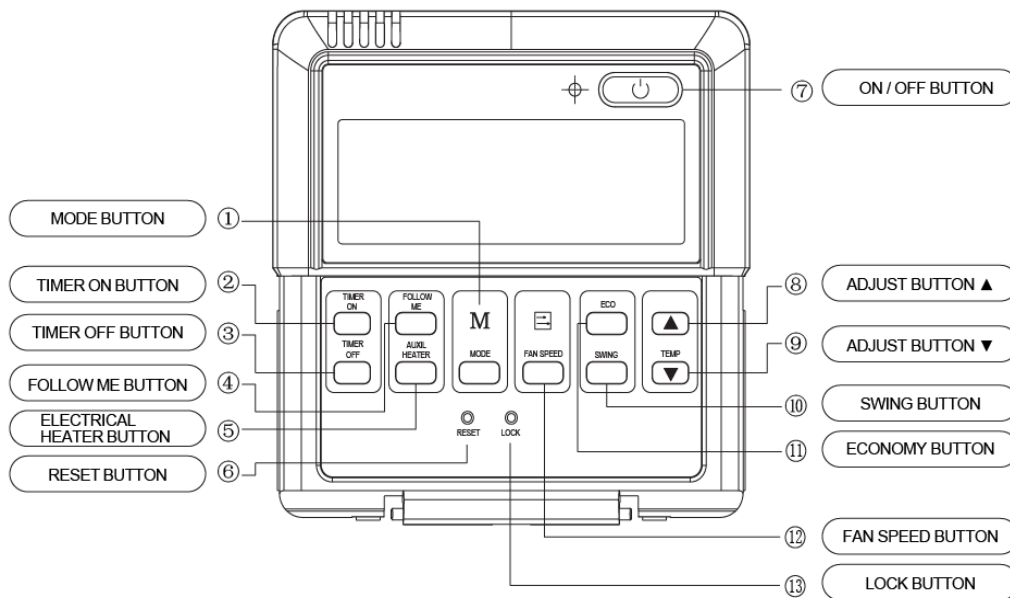
Generally it displays setting temperature, it can be adjusted by press temperature button ▲ and ▼. But in fan mode, no display here.

5. INSTALLATION METHOD



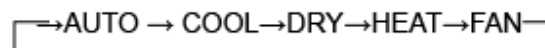
When a wired controller is needed, a small 5-way terminal should be added, fix an infrared emitter with gumwater near the receiver on the switch board. Connect its anode and cathode to A and B, and +5V, GND, RUN to C, D, E on the switch board.

6. NAME AND OPERATION OF THE BUTTON ON THE WIRE CONTROLLER



① Mode button:

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



Remark: 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 increase 0.5h, after 10h, 1h increase after 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 every press, the time increase 0.5h, after 10h, per 1h increase after each press. If cancel this function, just set it to "0.0".

④ Follow me button:

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

⑤ Electrical heater button :

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

⑥ Reset button(hidden):

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

⑦ ON/OFF button:

When in off state, press this button, the indicator is on, the wire controller enter into on state, and send setting information to in door PCB. When in on state, press this button, the indicator is off, and send instruction. If timer on or timer off has been set, it cancel this setting then send instruction to stop the machine.

⑧ Adjust button ▲:

Set indoor temperature up. If press and hold on, it will increase at 1 degree per 0.5 second.

⑨ Adjust button ▼ :

Set indoor temperature down. If press and hold on, it will decrease at 1degree per 0.5 second.

⑩ Swing button:

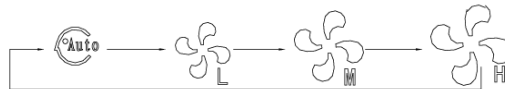
First pressing: start swing function; second pressing: stop swing. (Match to some model with swing function).

⑪ Economy operation button:

Press this button, the indoor unit operates in economy mode, press it again, exit this mode (it may be ineffective for some models)

⑫ Fan speed button:

Press this button consecutively, the fan speed will circle as follow:



⑬ Lock button (hidden):

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

7. USING METHOD

AUTOMATIC OPERATION

Connect to power, indoor operation lamp flash.

- ①. Press "MODE" button, select " AUTO " ;
- ②. Press the button "▲" and "▼", set temperature you want, generally it is among 17°C~30°C;
- ③. Press " ON/OFF" button, operation lamp is on, the air-conditioner work in auto mode, indoor fan is auto, and can not be changed. Auto is displayed on LCD. Press " ON/OFF" button again to stop.
- ④. Economy operation is valid in auto mode.

COOL/HEAT/FAN MODE OPERATION

- ①. Press "MODE" button, select "COOL", "HEAT" or "FAN ONLY" mode.
- ②. Press temperature adjust button to select setting temp..
- ③. Press "FAN SPEED" button to select high/mid/low/auto.
- ④. Press "ON/OFF" button, indoor unit operation lamp on, it works in selected mode. Press "ON/OFF" button again, it stops to work.

Remark: When in fan mode, no temperature can be set.

DRY OPERATION

- ①. Press " MODE " button, select " DRY " mode.
- ②. Press temperature adjust button to select setting temp.
- ③. Press " ON/OFF " button, indoor unit operation lamp on, it works in dry mode. Press ON/OFF button again, it stops to work.
- ④. In dry mode, economy operation and fan speed are ineffective.

TIMER SETTING

Timer on only:

- ①. Press " TIME ON " button, it display "SET" on LCD, and display " H " and "ON" , it is waiting for timer on setting.
- ②. Press " timer " on button repeatedly to adjust time setting.
- ③. If press this button and hold on, the time will increase at 0.5h, after 10h, it increases at 1h.
- ④. After setting 0.5 second, the wire controller send timer on information, it is finished.

Timer off only:

- ①. Press "TIME OFF " button, it display "SET" on LCD, and display " H " and ON, it is waiting for timer on setting.
- ②. Press "TIME OFF" button repeatedly to adjust time setting.
- ③. If press this button and hold on, the time will increase at 0.5h, after 10h, it increases at 1h.
- ④. After setting 0.5 second, the wire controller send timer off information, it is finished.

TIMER ON AND TIMER OFF BOTH

- ①. Set timer on time as the corresponding step1 and 2.
- ②. Set timer off time as the corresponding step1 and 2.
- ③. Timer off time must be longer than timer on time.
- ④. 0.5 second after setting, the wire controller send information, the setting is finished.

CHANGE TIMER

If there is a timer of changing time to be need, press corresponding button to revise it. If cancel timer, change time to 0.0.

NOTE: The timer time is relative time, that is delay after setting time (i, e: setting time is 8:05 A,M). So when timer is set, the standard time can not be adjusted.

8. TECHNICAL INDICATION AND REQUIREMENT

EMC and EMI comply with the CE certification requirements.

15.2 Optional wired controller:

KJR-23B: For cooling only and cooling with auxiliary heater

KJR-25B: For Cooling and heating



KJR-23B

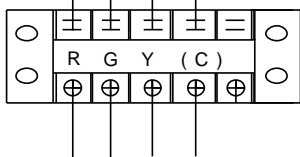


KJR-25B

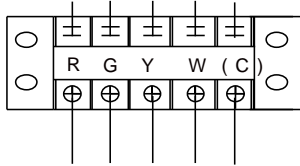
15.3 Field wiring

To connect wired controller

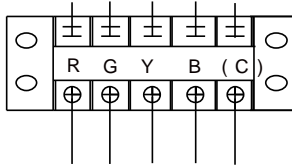
For Cooling Units



For Cooling+EAH



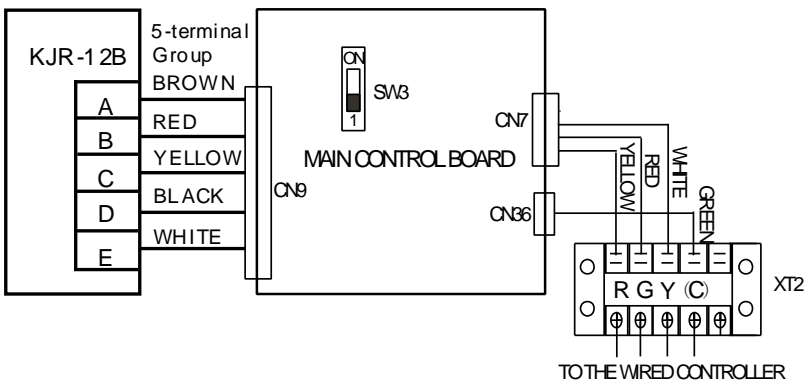
For Heating & cool



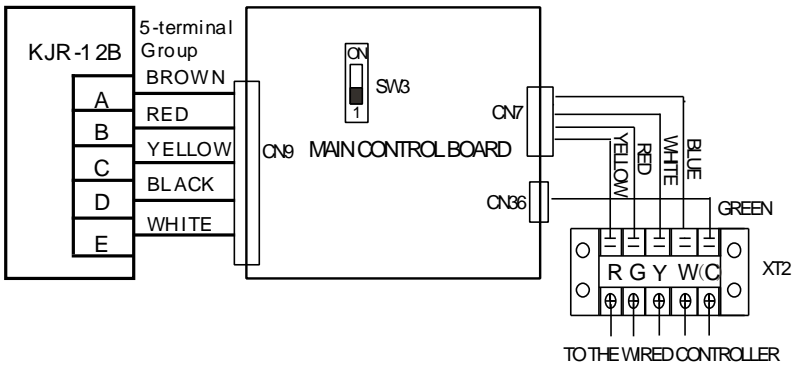
Dial code setting

The wired controller KJR-12B can be used when the SW3 is on "on", if the SW3 is on "1", the wired controller KJR-23B or KJR-25B can be used. After setting, please shut off the power supply and then power on it again, otherwise, the new settings function will be invalid.

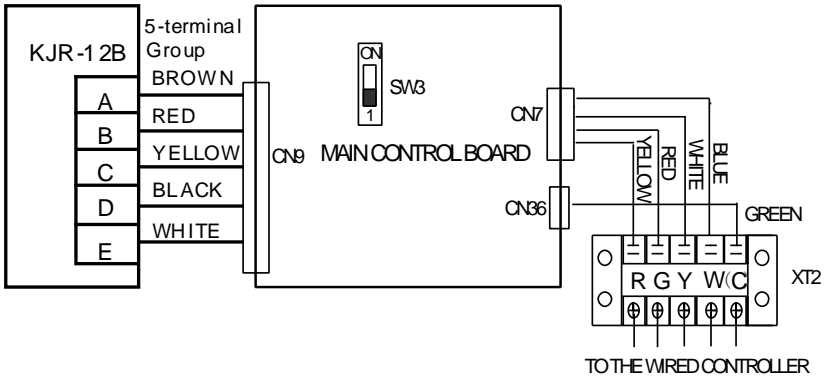
For Cooling Units



For Cooling+EAH Units



For Cooling+EAH Units



Remark:

Two stage capacity output controlling is optional.

16. Error Code

16.1 Error Code for 5ton

Type	Content	Code	Remarks
Normal	Standby	--	
Normal	Constraint cooling	On	
Normal	Run	10.	
Error	Compressor phase sequence error or phase default	E0	Manual reset
Error	Outdoor coil temp. sensor T3-1 default	E1	Manual reset
Error	Outdoor coil temp. sensor T3-2 default	E2	Manual reset
Error	Indoor coil temp. sensor T2-1 default	E5	Manual reset
Error	Indoor coil temp. sensor T2-2 default	E6	Manual reset
Error	Indoor temp. sensor T1 error	E9	Manual reset
Error	Outdoor ambient temp. sensor T4 error	EA	Manual reset
Error	Wired controller output error	Eb	Manual reset
Protection	Over current protection	P0	Auto reset
Protection	Comprehensive protection for outdoor fan	P3	Auto reset
Protection	Protection for Hi./Lo. Pressure or exhaust temp. (System 1)	P4	Auto reset
Protection	Protection for Hi./Lo. Pressure or exhaust temp. (System 1)	P5	Auto reset
Protection	Protection for High temperature of the outdoor condenser	P8	Auto reset

Error code for 6.2ton and above

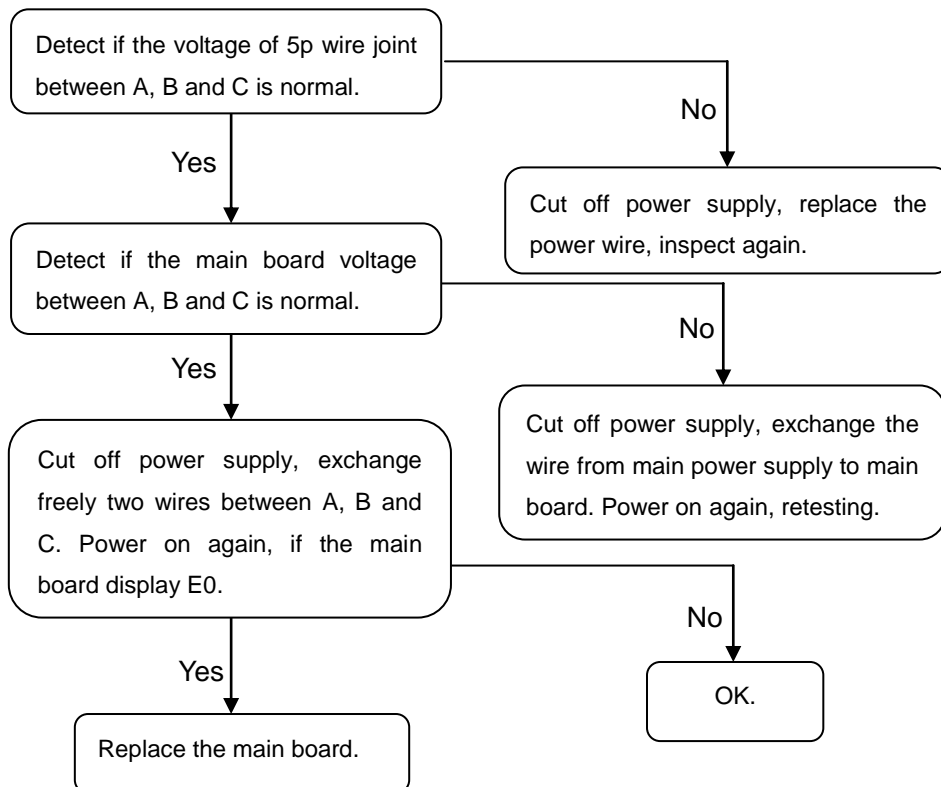
Type	Content	Code	Remarks
Normal	Standby	--	
Normal	Constraint cool	On	
Normal	Run	10.	
Error	Compressor phase sequence error or phase default	E0	Manual reset
Error	Outdoor coil temp. sensor in sys. A error	E1	Manual reset
Error	Outdoor coil temp. sensor in sys. B error	E2	Manual reset
Error	Indoor coil temp. sensor in sys. A error	E5	Manual reset
Error	Indoor coil temp. sensor in sys. B error	E6	Manual reset
Error	Indoor temp. sensor error	E9	Manual reset
Error	Outdoor ambient temp. sensor error	EA	Manual reset
Error	Wire controller output error	Eb	Manual reset
Protection	Overcurrent protection in sys. A	P0	Auto reset
Protection	Overcurrent protection in sys. B	P1	Auto reset
Protection	Overcurrent protection for indoor fan	P2	Auto reset
Protection	Comprehensive protection for outdoor fan	P3	Auto reset
Protection	Protection for Hi./Lo. Pressure or exhaust temp. in sys. A	P4	Comprehensive protection in sys. A
Protection	Protection for Hi./Lo. Pressure or exhaust temp. in sys. B	P5	Comprehensive protection in sys. B
Protection	T2 evaporator Hi-temperature protection stop outdoor unit fan	P6	Auto reset
Protection	T2 evaporator Hi- temperature protection then stop outdoor unit fan and compressor	P7	Auto reset
Protection	Protection for condenser Hi-temp. in sys. A	P8	Auto reset
Protection	Protection for condenser Hi-temp. in sys. B	P9	Auto reset
Protection	Anti-freezing protection for evaporator in sys. A	Pc	Auto reset
Protection	Anti-freezing protection for evaporator in sys. B	Pd	Auto reset
Protection	Defrosting	dF	Auto reset

16.2 Troubleshooting

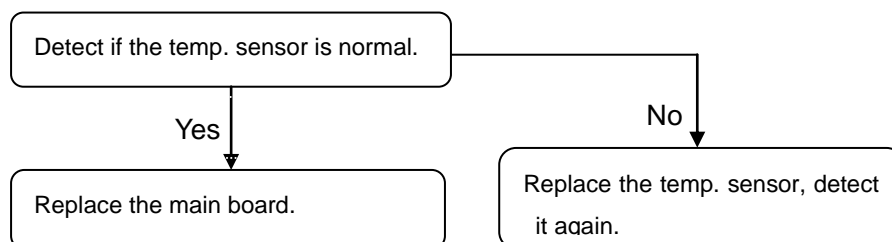
For 5ton

Item	Content	Error code
1	Compressor phase sequence error or phase default	E0
2	Outdoor coil temp. sensor T3-1 default	E1
3	Outdoor coil temp. sensor T3-2 default	E2
4	Indoor coil temp. sensor T2-1 default	E5
5	Indoor coil temp. sensor T2-2 default	E6
6	Indoor temp. sensor T1 error	E9
7	Outdoor ambient temp. sensor T4 error	EA
8	Wired controller output error	Eb
9	Over current protection	P0
10	Comprehensive protection for outdoor fan	P3
11	Protection for Hi./Lo. Pressure or exhaust temp.	P4

① E0: Compressor phase sequence error or phase default

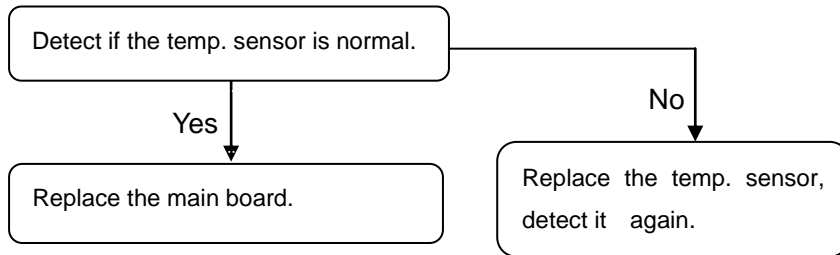


② E1: Outdoor coil temp. sensor T3 default.



③ E9: Indoor coil temp. sensor T2 default.

(Indoor temp. and Pipe Temp. Sensor Resistance Value Table, see **Appendix 2**)



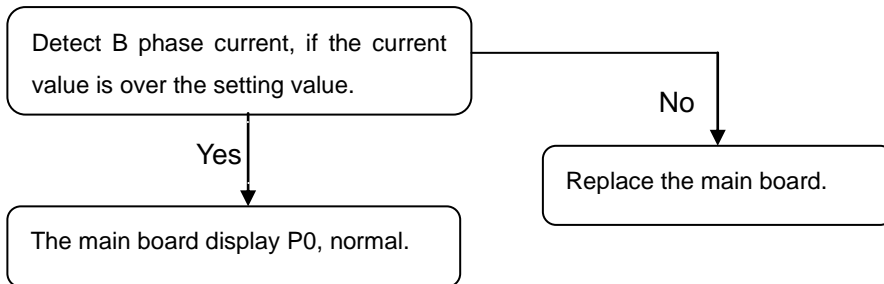
④ When E2,E5,E6 or EA displays, please check the wired nameplate, if the terminals of T2_1、 T2_2、 T3_2、 T4 are connected as short circuit. If no, please connect all as short circuit, unless replace main board.

⑤ Eb: Wired controller output error.(Only for KJR-23B or KJR-25B).

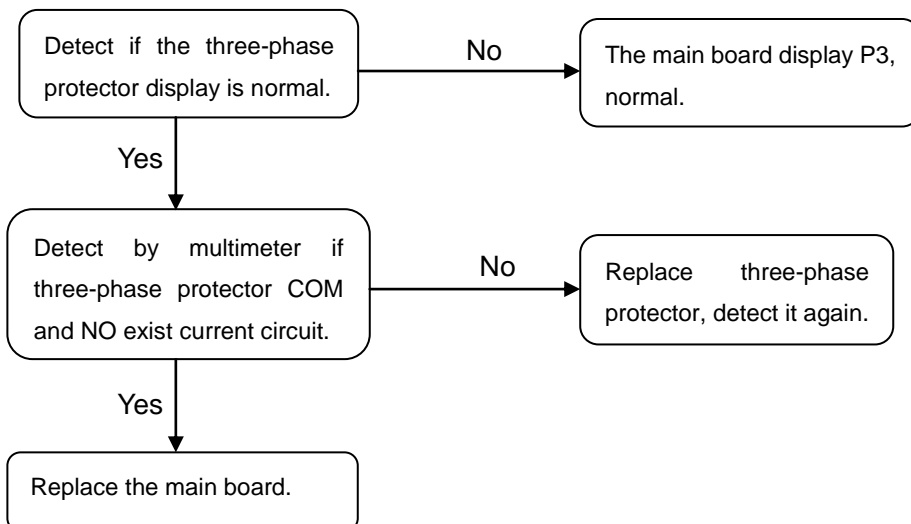
Avoid three conditions as following:

- 1) The wired controller output signal has Y, no G.
- 2) The wired controller output signal has W, no G.
- 3) The wired controller output signal has Y and W, no G.

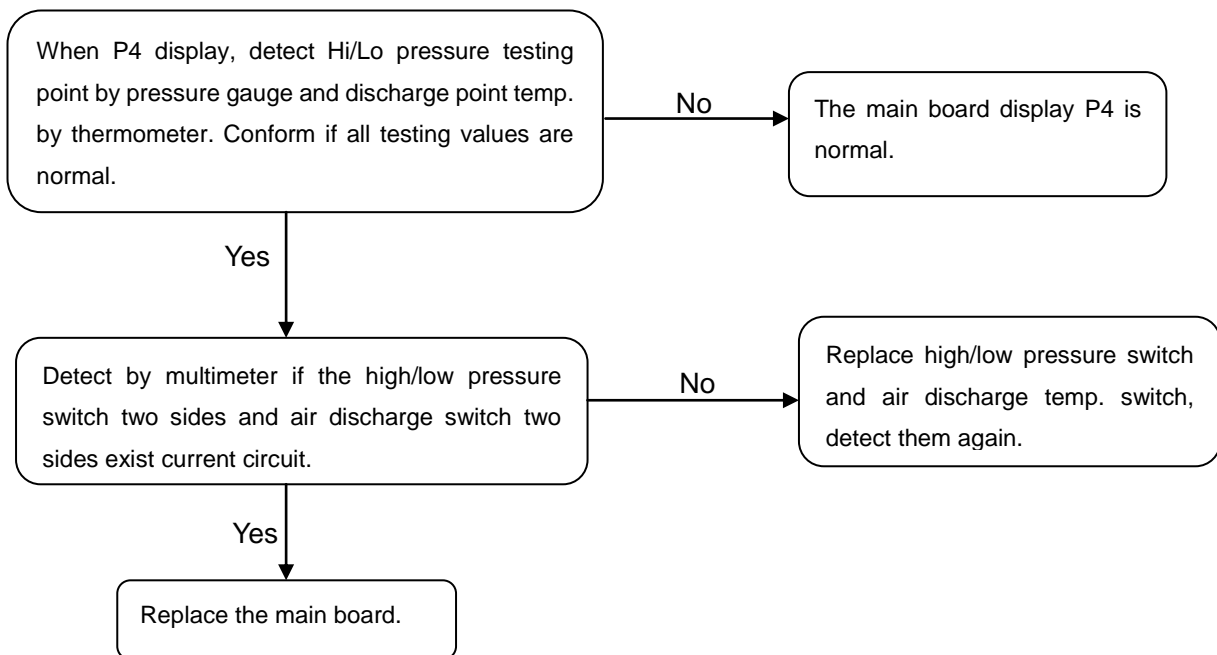
⑥ P0: Compressor over current protection.(The over current protection value is 16A)



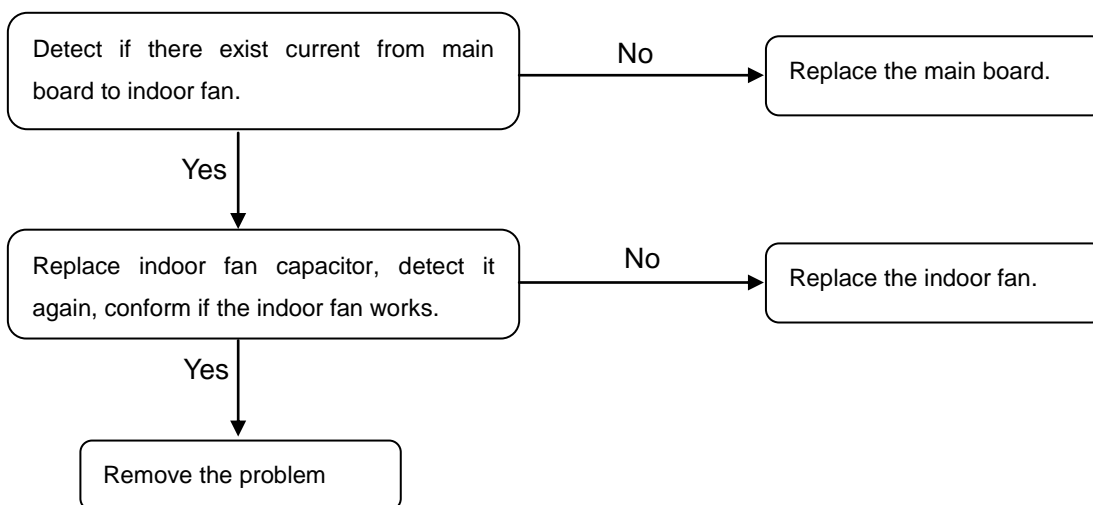
⑦ P3: Comprehensive protection for outdoor fan



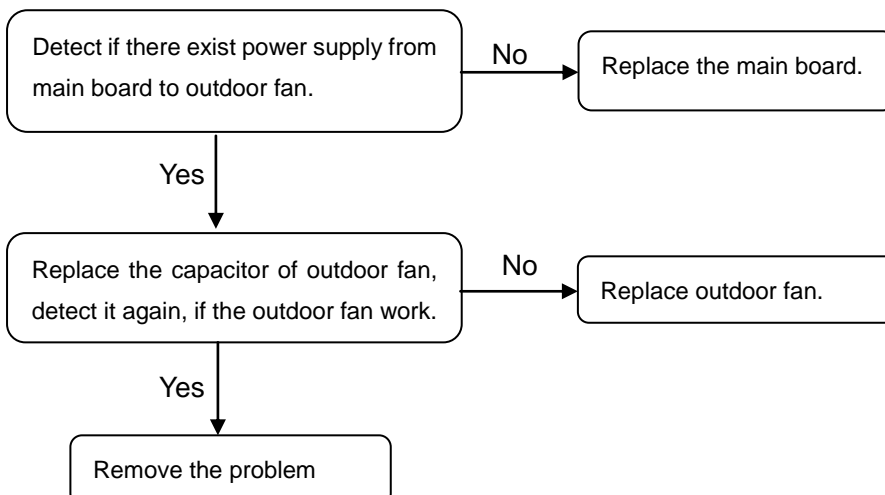
⑧ P4: Protection for Hi./Lo. Pressure or exhaust temp. (High pressure protection value: 4.4MPa, High pressure protection value: 0.14MPa; air discharge temp. protection value: 130°C above)



⑨ Indoor fan motor don't work.



⑩ Outdoor fan motor don't work.

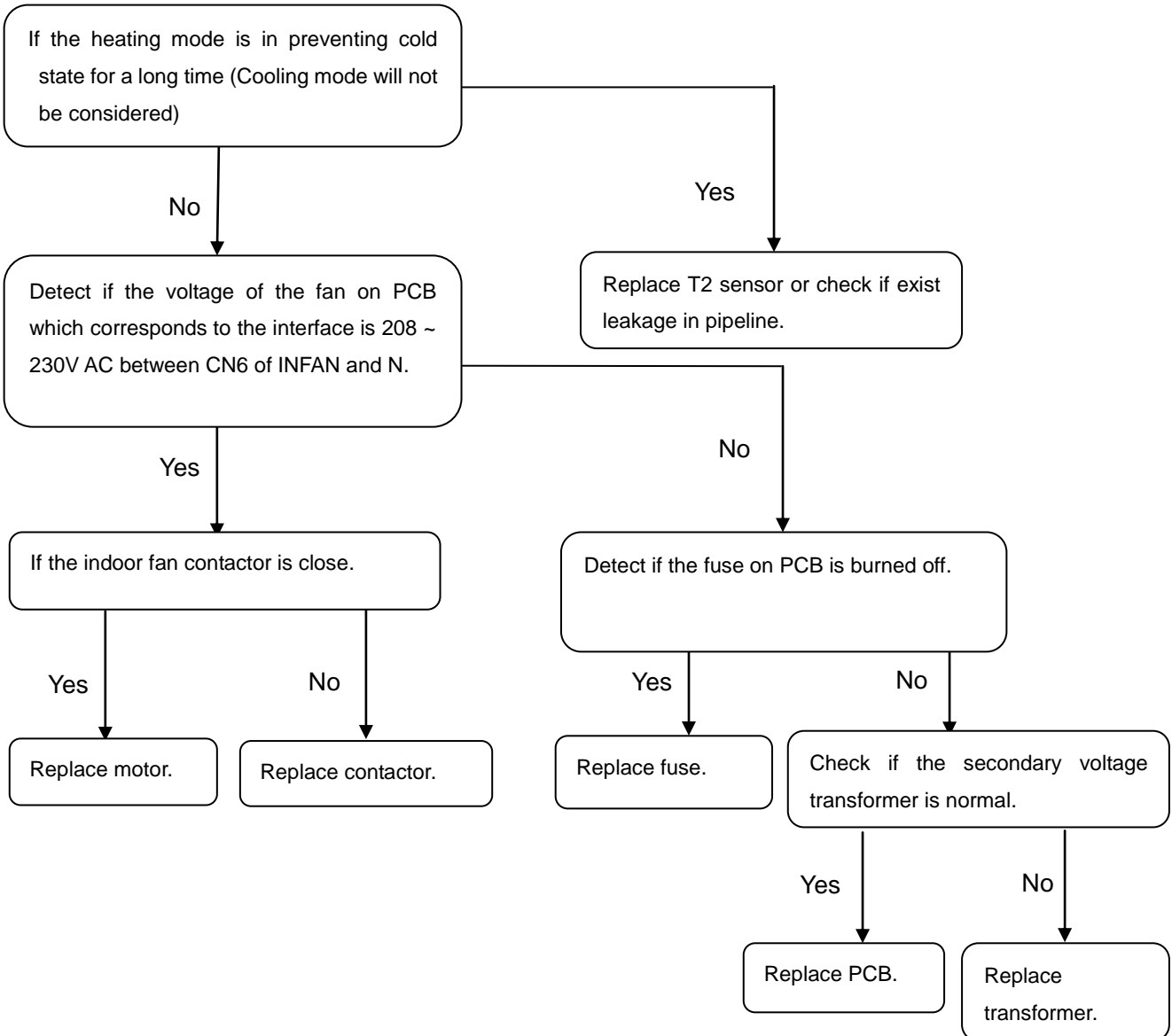


For 6.2ton and above

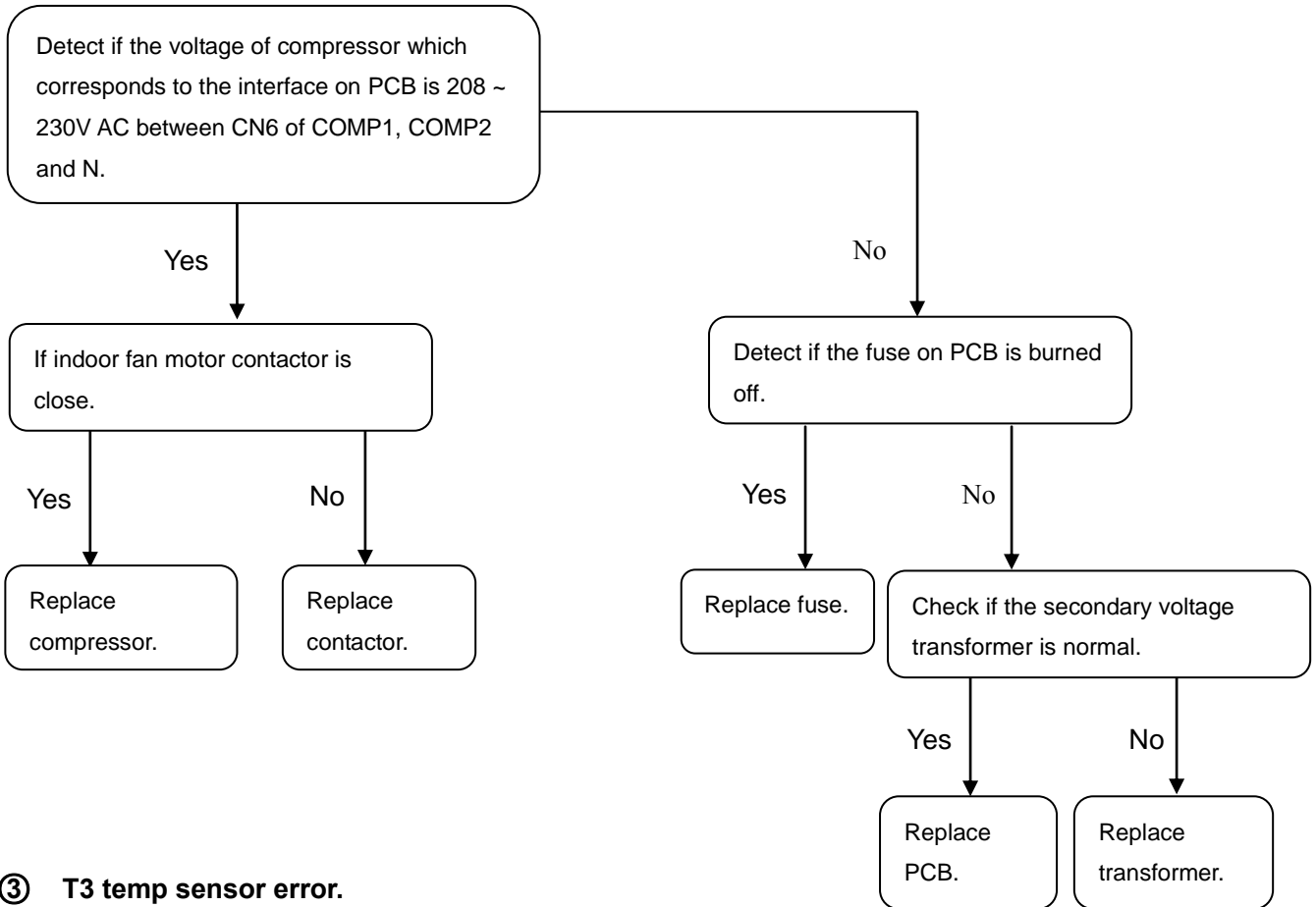
Item	Content	Error code
1	Indoor fan motor didn't run.	--
2	Compressor didn't run.	--
3	T3 temp sensor error.	EA
4	Check if the low pressure protection is normal.	--
5	Outdoor fan motor didn't run.	--
6	Four ways valve didn't work.	--
7	Condenser high temp protection.	P8,P9

① Indoor fan motor don't run.

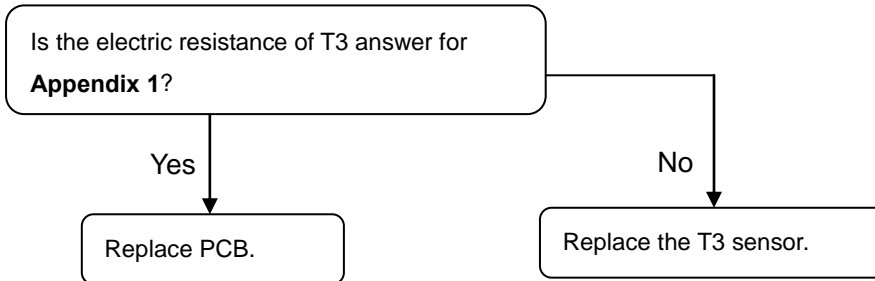
The first check if the power supplier is normal, if all wire connection terminal is loose, if the wired controller set and wire connection are correct, operating as flow process after confirm.



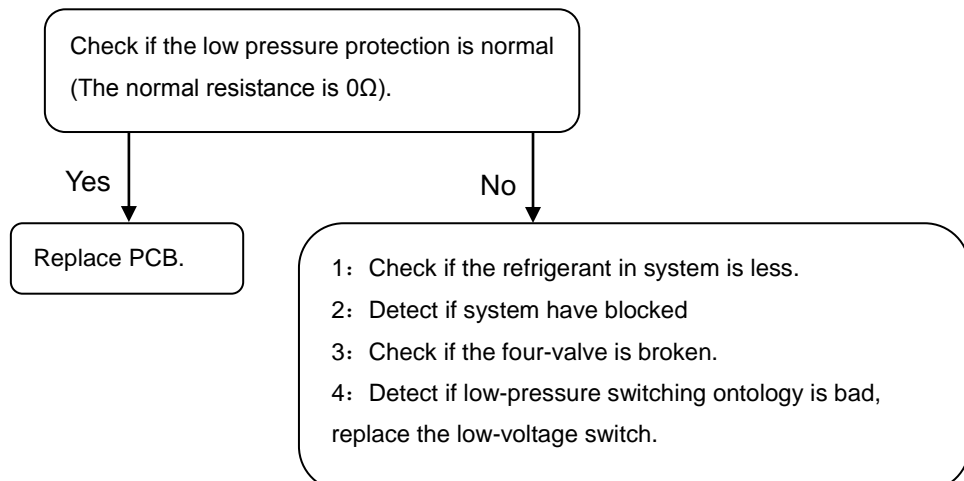
② Compressor don't run (All wires connection are correct and reliable, if power supplier is required range. If compressor don't run, you can analysis as flowing)



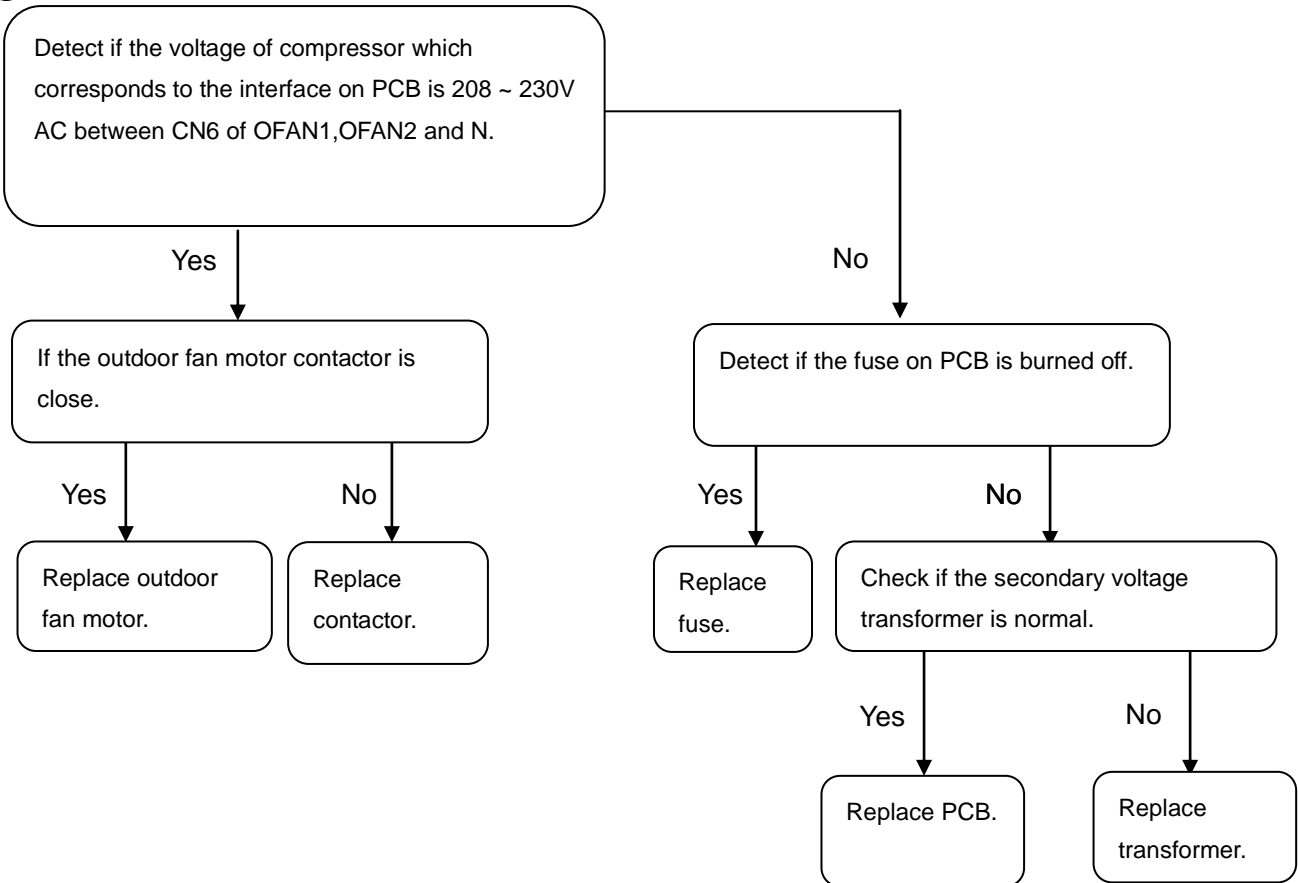
③ T3 temp sensor error.



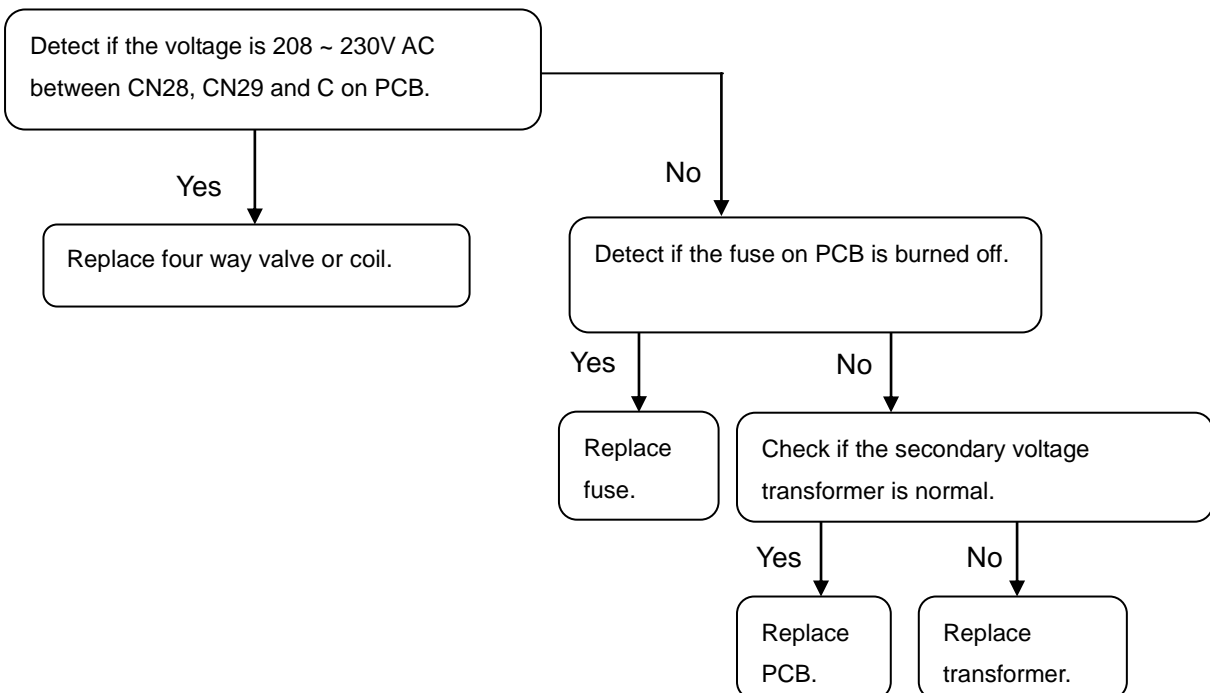
④ Check if the low pressure protection is normal.



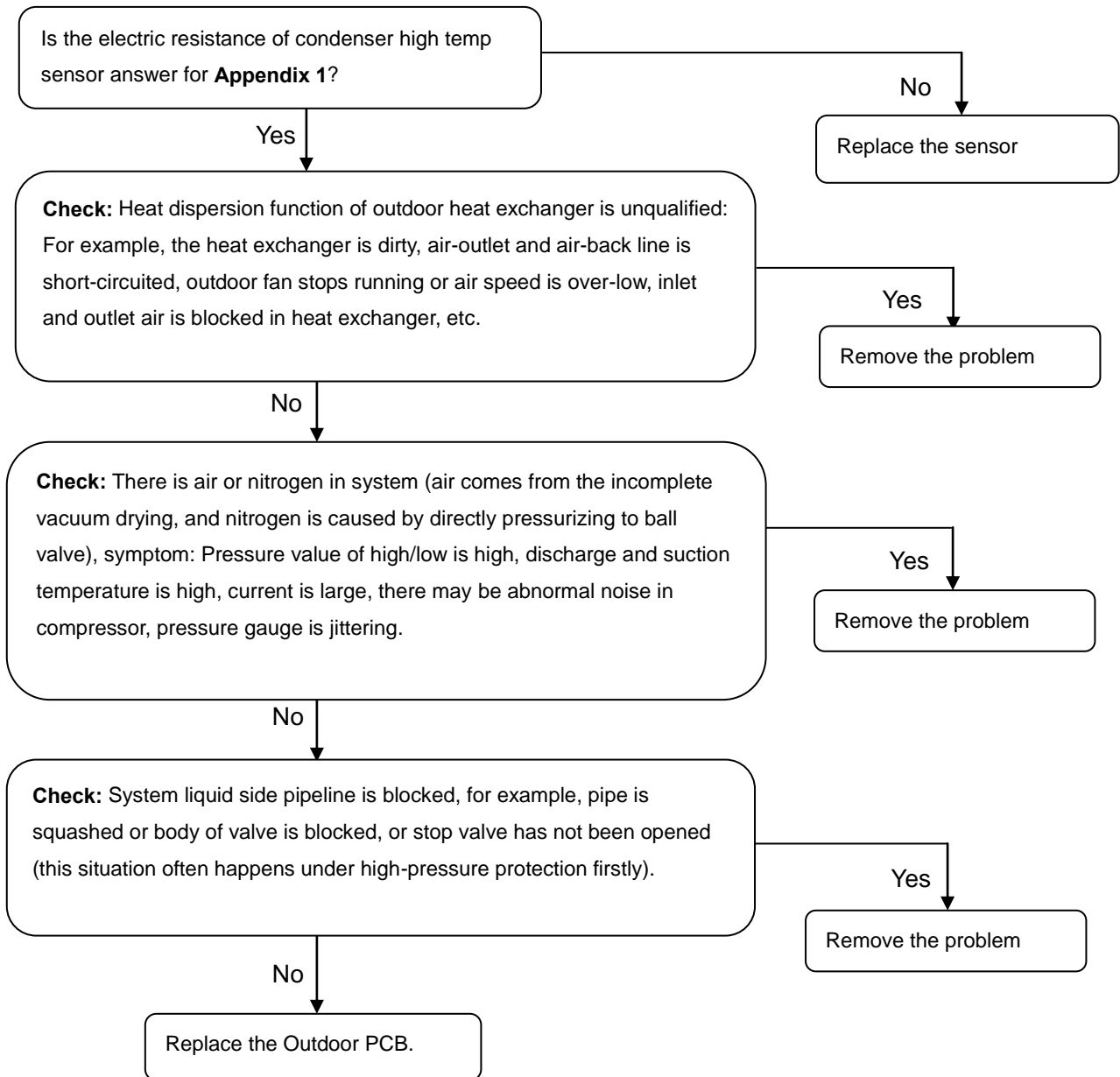
⑤ Outdoor fan motor don't run.








⑥ Four ways valve don't work.



⑦ Condenser high temperature protection



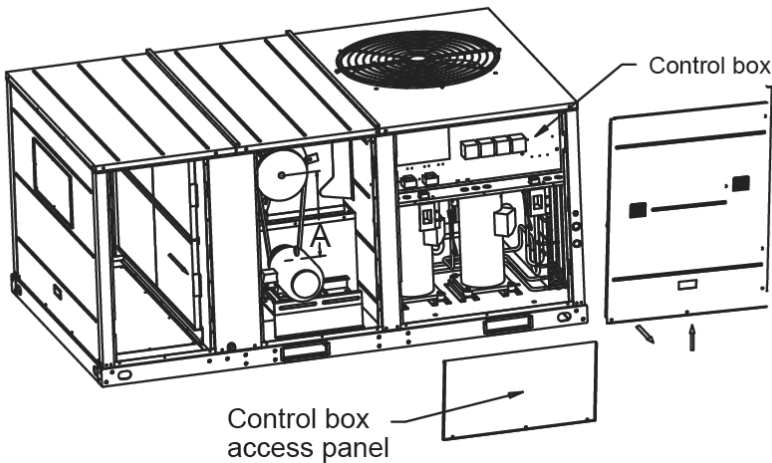
17. Accessories

Name of accessories	Qty	Shape
Manual	1	
Drain outlet	1	
Snap ring	1	
Drain pipe	1	
KJR-12B Wire controller	1	

18. Maintenance and Upkeep

Regular maintenance and upkeep

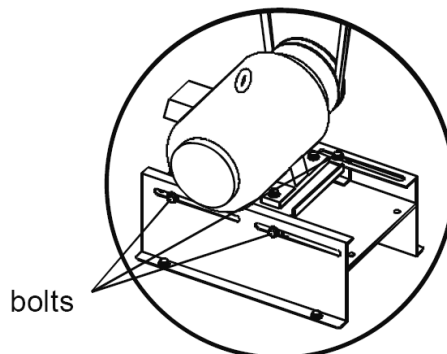
Some regular maintenance and upkeep have been carry on by user, includes: change the one-time dust filter, clean casing, wash condenser and replace a new belt, as well as do some test for the equipment.



Model	A
6.2 Ton	328mm
7.5 Ton	328mm
8.5Ton	395mm
10 Ton	395mm
15 Ton	576mm
17.5 Ton	576mm
20 Ton	525mm
30Ton	925mm

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

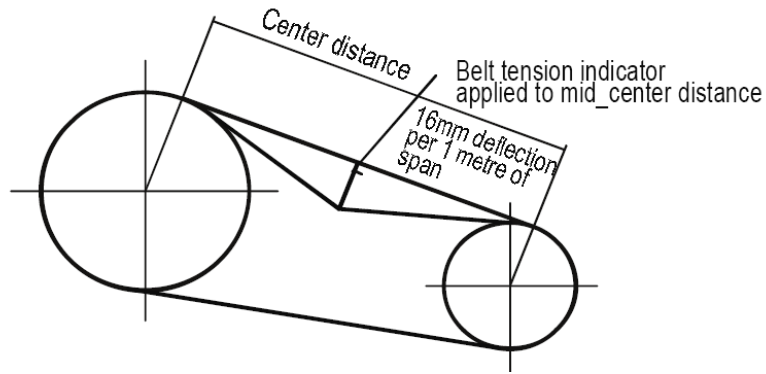
Regulating belt of rate of tension, inner fan Refer to the following *Fig.* fixed bolt of electric motor's supporting slide was loosened, following electric motor was droved, belt of rate of tension will begin change.



Method of belt tensioning using belt tension indicator

Calculate the deflection in mm on a basis of 16mm per meter of center distance

Center distance (m) ×16=deflection (mm).



Belt section	For required to deflection belt 16 mm per meter of span		
	Small pulley diameter (mm)	Newton (N)	Kilogram-force (kgf)
SPA	80 to 132	25 to 35	2.5 to 3.6
SPB	140 to 224	45 to 65	4.6 to 6.6

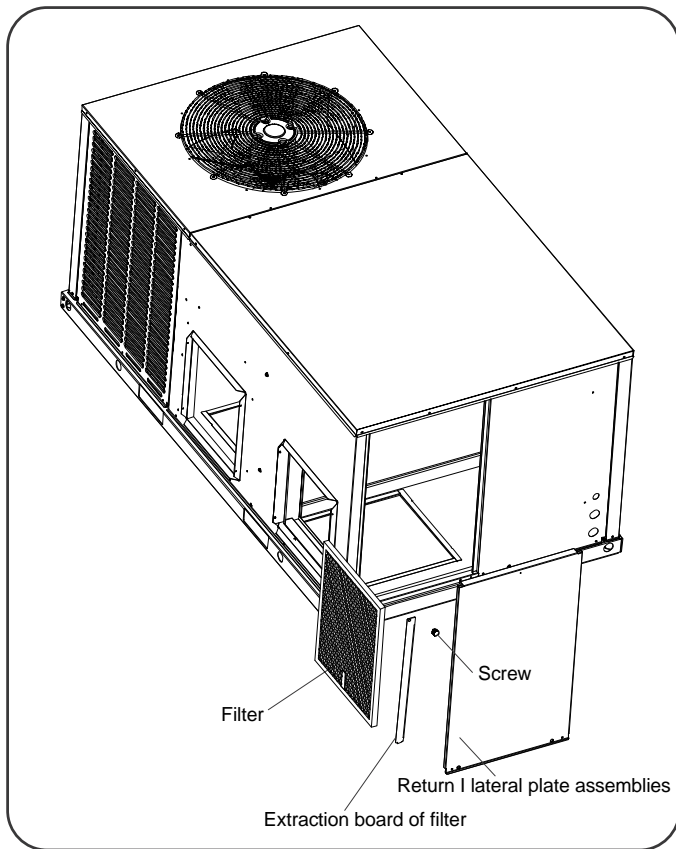
NOTE: The belt which is too tight or too loose may generate noise and be harmful to the unit.

Dismantle the air filter.

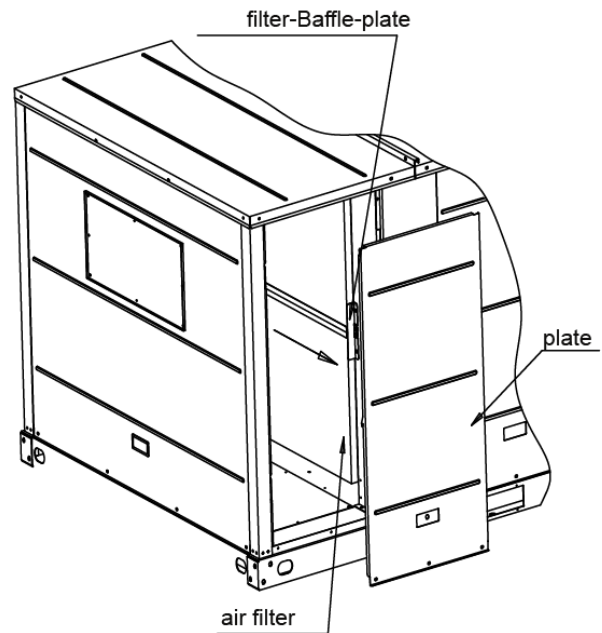
Twist of screws and up the plate that is gets out.

Upon loose the filter-baffle-plate, the filter could be pulled out along the supporting slot.

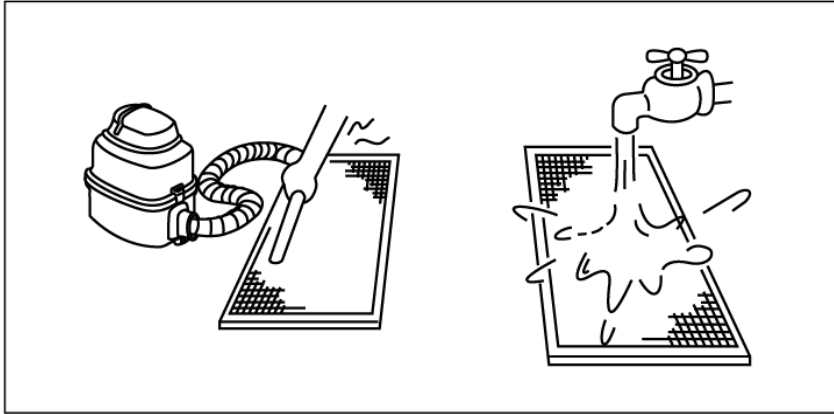
5ton



7.5&10&15&20ton



Clean the air filter (Vacuum cleaner or pure water may be used to clean the air filter. If the dust accumulation is too heavy, please use soft brush and mild detergent to clean it and dry out in cool place).



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

The air-in side should face down when using water.

CAUTION: Do not dry out the air filter under direct sunshine or with fire.

Re-install the air filter

Condenser coil

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

Maintenance performed by serviceman.

To keep your unit operating safely and efficiently, the manufacturer recommends that a qualified serviceman check the entire system at least once each year and any other time that you feel one is needed. Your serviceman should examine these areas of your unit:

Filters

Motors and drive system components

Economizer gaskets (for possible replacement)

Safety controls (for mechanical cleaning)

Electrical components and wiring (for possible replacement and connection tightness)

Condensate drain (for cleaning)

Unit duct connections (to see that they are physically sound and sealed to the unit casing)

Unit mounting support (for structural integrity)

The unit (for obvious unit deterioration)

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 or death.

Appendix :**1. Indoor Temp. and Pipe Temp. Sensor Resistance Value Table (6.2ton and above)**

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

2. Indoor Temp. and Pipe Temp. Sensor Resistance Value Table (5ton)

Temp (°C)	Resistance (KΩ)			Resist.tol (%)		Temp.tol(°C)	
	Rmax	R (t) Normal	Rmin	MAX(+)	MIN(-)	MAX(+)	MIN(-)
-20	116.539	106.732	96.920	9.19	9.19	1.59	1.59
-19	110.231	100.552	91.451	9.63	9.05	1.57	1.57
-18	103.743	94.769	86.328	9.47	8.91	1.56	1.55
-17	97.673	89.353	81.525	9.31	8.76	1.54	1.54
-16	91.990	84.278	77.017	9.15	8.62	1.53	1.52
-15	86.669	79.521	72.788	8.99	8.47	1.51	1.50
-14	81.684	75.059	68.815	8.83	8.32	1.49	1.48
-13	77.013	70.873	65.083	8.66	8.17	1.47	1.47
-12	72.632	66.943	61.574	8.50	8.02	1.45	1.45
-11	68.523	63.252	58.274	8.33	7.87	1.44	1.43
-10	64.668	59.784	55.169	8.17	7.72	1.42	1.41
-9	61.048	56.524	52.246	8.00	7.57	1.40	1.39
-8	57.649	53.458	49.492	7.84	7.42	1.38	1.37
-7	54.456	50.575	46.899	7.67	7.27	1.35	1.35
-6	51.456	47.862	44.455	7.51	7.12	1.33	1.32
-5	48.636	45.308	42.150	7.35	6.97	1.31	1.30
-4	45.984	42.903	39.977	7.18	6.82	1.29	1.28
-3	43.490	40.638	37.927	7.02	6.67	1.27	1.26
-2	41.144	38.504	35.992	6.86	6.52	1.25	1.24
-1	38.935	36.492	34.165	6.70	6.38	1.23	1.21
0	36.857	34.596	32.440	6.53	6.23	1.21	1.19
1	34.898	32.807	30.810	6.38	6.09	1.18	1.17
2	33.055	31.120	29.271	6.22	5.94	1.16	1.15
3	31.317	29.528	27.815	6.06	5.80	1.14	1.12
4	29.681	28.026	26.440	5.90	5.66	1.12	1.10
5	28.138	26.608	25.140	5.75	5.52	1.10	1.08
6	26.682	25.268	23.909	5.60	5.38	1.07	1.06
7	25.310	24.003	22.745	5.45	5.24	1.05	1.03
8	24.016	22.808	21.644	5.30	5.10	1.03	1.01
9	22.794	21.678	20.601	5.15	4.97	1.01	0.99
10	21.641	20.610	19.614	5.00	4.83	0.99	0.97
11	20.553	19.601	18.680	4.86	4.70	0.96	0.94
12	19.525	18.646	17.794	4.71	4.57	0.94	0.92
13	18.554	17.743	16.955	4.57	4.44	0.92	0.90
14	17.636	16.888	16.160	4.43	4.31	0.90	0.88
15	16.769	16.079	15.406	4.29	4.19	0.88	0.85
16	15.949	15.313	14.691	4.15	4.06	0.86	0.83
17	15.174	14.588	14.014	4.02	3.94	0.84	0.81
18	14.442	13.902	13.372	3.89	3.81	0.81	0.79
19	13.748	13.251	12.762	3.75	3.69	0.79	0.76
20	13.093	12.635	12.183	3.62	3.57	0.77	0.74
21	12.471	12.050	11.634	3.50	3.46	0.75	0.72
22	11.883	11.496	11.112	3.37	3.34	0.73	0.70
23	11.327	10.971	10.617	3.25	3.23	0.71	0.68
24	10.800	10.473	10.147	3.12	3.11	0.69	0.66
25	10.300	10.000	9.700	3.00	3.00	0.67	0.63
26	9.848	9.551	9.255	3.11	3.10	0.69	0.66
27	9.418	9.125	8.834	3.21	3.19	0.72	0.69
28	9.010	8.721	8.434	3.31	3.29	0.75	0.71

R410a Tropical Rooftop Package Unit 50Hz

29	8.621	8.337	8.055	3.41	3.38	0.77	0.74
30	8.252	7.972	7.695	3.51	3.47	0.80	0.77
31	7.900	7.625	7.353	3.61	3.57	0.83	0.79
32	7.566	7.296	7.029	3.70	3.66	0.85	0.82
33	7.247	6.982	6.721	3.80	3.74	0.88	0.84
34	6.944	6.684	6.428	3.89	3.83	0.91	0.87
35	6.656	6.401	6.150	3.98	3.92	0.93	0.90
36	6.381	6.131	5.886	4.08	4.00	0.96	0.93
37	6.119	5.874	5.634	4.17	4.09	0.98	0.95
38	5.870	5.630	5.395	4.26	4.17	1.01	0.98
39	5.631	5.397	5.167	4.34	4.26	1.03	1.01
40	5.404	5.175	4.951	4.43	4.34	1.06	1.03
41	5.188	4.964	4.745	4.52	4.42	1.09	1.06
42	4.982	4.763	4.549	4.60	4.50	1.12	1.09
43	4.785	4.571	4.362	4.69	4.58	1.14	1.12
44	4.596	4.387	4.183	4.77	4.66	1.17	1.14
45	4.417	4.213	4.014	4.85	4.74	1.19	1.17
46	4.246	4.046	3.851	4.93	4.81	1.22	1.20
47	4.082	3.887	3.697	5.02	4.89	1.25	1.23
48	3.925	3.735	3.550	5.10	4.97	1.28	1.25
49	3.776	3.590	3.409	5.18	5.04	1.30	1.28
50	3.632	3.451	3.274	5.25	5.12	1.33	1.30
51	3.495	3.318	3.146	5.33	5.19	1.35	1.33
52	3.363	3.191	3.023	5.41	5.26	1.41	1.36
53	3.237	3.069	2.905	5.49	5.34	1.43	1.38
54	3.116	2.952	2.793	5.56	5.41	1.46	1.41
55	3.001	2.841	2.685	5.64	5.48	1.48	1.44
56	2.890	2.734	2.582	5.71	5.55	1.51	1.46
57	2.784	2.632	2.484	5.79	5.62	1.54	1.49
58	2.682	2.534	2.390	5.86	5.69	1.56	1.52
59	2.585	2.440	2.299	5.93	5.76	1.59	1.54
60	2.491	2.350	2.213	6.01	5.83	1.62	1.57
61	2.401	2.264	2.130	6.08	5.90	1.64	1.60
62	2.315	2.181	2.051	6.15	5.96	1.67	1.62
63	2.233	2.102	1.975	6.22	6.03	1.70	1.65
64	2.154	2.026	1.903	6.29	6.10	1.72	1.68
65	2.077	1.953	1.833	6.36	6.16	1.75	1.70
66	2.004	1.883	1.766	6.42	6.23	1.77	1.73
67	1.934	1.816	1.702	6.49	6.29	1.80	1.76
68	1.867	1.752	1.641	6.56	6.35	1.83	1.78
69	1.802	1.690	1.582	6.62	6.41	1.85	1.81
70	1.740	1.631	1.525	6.69	6.48	1.88	1.84
71	1.680	1.574	1.471	6.75	6.54	1.91	1.86
72	1.622	1.519	1.419	6.82	6.60	1.93	1.89
73	1.567	1.466	1.369	6.88	6.66	1.96	1.92
74	1.514	1.416	1.321	6.94	6.71	1.98	1.94
75	1.463	1.367	1.275	7.00	6.77	2.01	1.97