

CASSETTE

R32 50HZ 3D INVERTER CONTROL

2019 ENGINEER DATABOOK

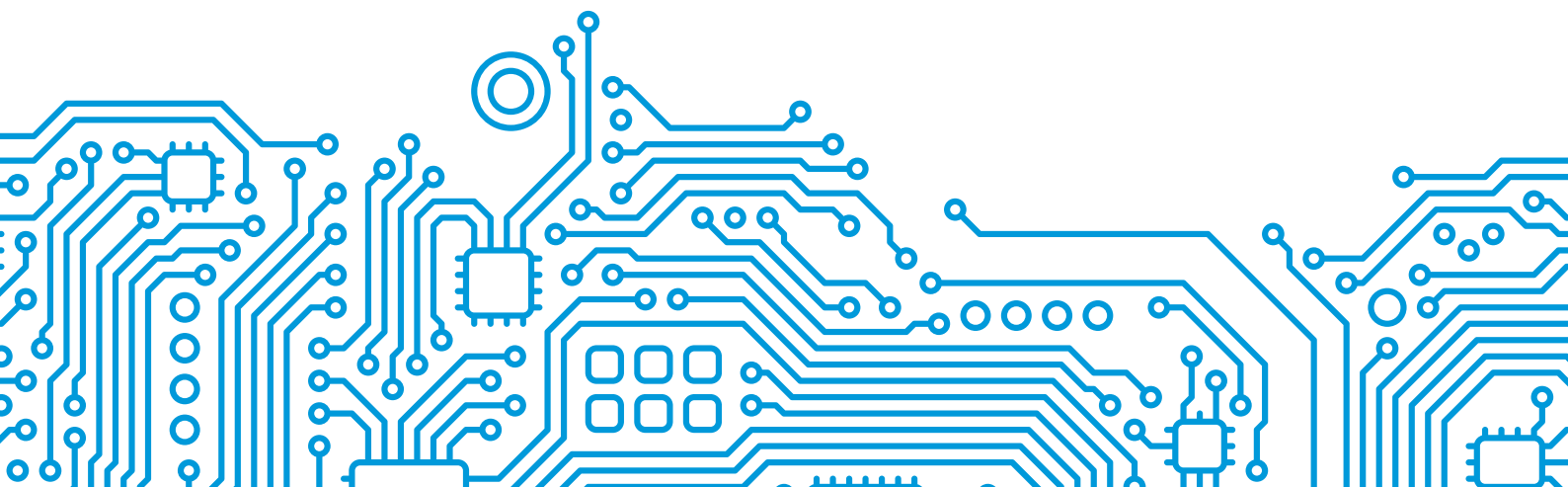


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Specifications

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1. Model Reference

Refer to the following table to determine the specific indoor and outdoor unit model number of your purchased equipment.

Outdoor Unit Model	indoor Unit Model	Capacity (Btu/h)	Power Supply
42QTD012D8S	38QUS012D8S	12k	1 ϕ , 220~240V~, 50Hz
42QTD018D8S-1	38QUS018D8S	18k	
42QTD024R8S	38QUS024R8S	24k	
42QTD036R8S	38QUS036R8S	36k	
42QTD036R8S	38QUS036R8T	36k	3 ϕ , 380~415V~, 50Hz
42QTD048R8S	38QUS048R8T	48k	
42QTD060R8S	38QUS060R8T	60k	

2. General Specifications

Indoor Model			42QTD012D8S	42QTD018D8S-1	42QTD024R8S	42QTD036R8S
Outdoor Model			38QUS012D8S	38QUS018D8S	38QUS024R8S	38QUS036R8S
Power supply (Indoor)	V- Ph-Hz		220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Power supply (Outdoor)	V- Ph-Hz		220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Max. Input consumption	W		2350	2950	2950	4700
Max. Current	A		10	13.5	13.5	21.5
Indoor fan motor	Model	/	ZKFP-46-8-1	ZKFP-46-8-1	ZKFP-124-8-2	ZKFP-124-8-2
	Qty	/	1	1	1	1
	Input	W	45.0	45.0	141.0	141.0
	Capacitor	μF	/	/	/	/
	Speed(Hi/Mi/Lo)	r/min	700/580/500	752/664/576	570/500/450	730/670/600
Indoor coil	Number of rows	/	2.0	2.0	2.0	3.0
	Tube pitch(a)x row pitch(b)	mm	21x13.37	21x13.37	21x13.37	21x13.37
	Fin spacing	mm	1.3	1.3	1.4	1.4
	Fin type (code)	/	Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia. and type	mm	φ7,Inner groove tube	φ7,Inner groove tube	φ7,Inner groove tube	φ7,Inner groove tube
	Coil length x height x width	mm	1300x210x26.74+1360x210x26.74	1360x210x26.74	2010x210x26.74	2010x210x40.11
	Number of circuits	/	4	4	10	10
Indoor air flow	m ³ /h		560/430/390	680/550/400	1380/1200/1030	1770/1620/1440
Indoor sound pressure level	dB(A)		42/39/36	45/42/36	46/43/40	51/49/46
Indoor sound power level	dB(A)		59	60	61	62
Indoor unit	Dimension (W x Dx H)(body)	mm	570x570x260	570x570x260	840x840x245	840x840x245
	Packing (W x Dx H)(body)	mm	662x662x317	662x662x317	900x900x257	900x900x257
	Dimension (W x Dx H)(panel)	mm	647x647x50	647x647x50	950x950x55	950x950x55
	Packing (W x Dx H)(panel)	mm	715x715x123	715x715x123	1035x1035x90	1035x1035x90
	Net/Gross weight(body)	kg	16.2/21.4	16.2/21.4	24.1/27.9	27.5/31
	Net/Gross weight(panel)	kg	2.5/4.5	2.5/4.5	5/8	5/8
Drainage water pipe dia	mm		ODφ25mm	ODφ25mm	ODφ32mm	ODφ32mm
Refrigerant piping	Liquid side/ Gas side	mm	φ6.35/φ9.52(1/4"/3/8")	φ6.35/ φ12.7(1/4"/1/2")	φ9.52/ φ15.9(3/8"/5/8")	φ9.52/φ15.9(3/8"/5/8")
Controller		Standard	Remote control	Remote control	Remote control	Remote control
Operation temperature		C	17-30	17-30	17-30	17-30
Room temperature	Cooling	C	17~32	17~32	17~32	17~32
	Heating	C	0~30	0~30	0~30	0~30
Qty'per 20' /40' /40'HQ	Indoor unit		186/375/429	186/375/429	148/312/342	128/268/294
Compressor	Model	/	KTN110D42UFZ	KSN140D21UFZ	KTF235D22UMT	KTF310D43UMT
	Type	/	ROTARY	ROTARY	ROTARY	ROTARY
	Brand	/	GMCC	GMCC	GMCC	GMCC
	Capacity	W	3465	4385	7650	10010
	Input	W	885	1140	2065	2765
	Rated current	A	5.95	7.5	9.4	5.38
	Refrigerant oil/oil charge	mL	VG74/350	VG74/440	RB74A F/670	VG74/1000
Outdoor Fan motor	Model	/	ZKFN-40-8-1L-5	ZKFN-34-8-1-3	ZKFN-50-8-2	ZKFN-120-8-2
	Qty	/	1	1	1	1
	Input	W	40.0	58.0	115.0	150.0
	Capacitor	μF	/	/	/	/
	Speed(Hi)	r/min	850/650/450	850	850	1050

Condenser	Number of rows	/	2.0	2.0	2.0	2.0
	Tube pitch(a)x row pitch(b)	mm	21x22	21x22	25.4x22	25.4x22
	Fin spacing	mm	1.2	1.3	1.4	1.3
	Fin type (code)	/	Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia. and type	mm	Φ7,Inner groove tube	Φ7.,Inner groove tube	Φ9.52,Inner groove tube	Φ9.52,Inner groove tube
	Coil length x height x width	mm	860x504x44	860x508x44	730x660x44	995x762x44
	Number of circuits	/	4	2	4	4
Outdoor side air flow(Hi)		m ³ /h	2000	2000	2700	4000
Outdoor sound pressure level		dB(A)	56	57	61	64
Outdoor sound power level		dB(A)	63	64	67	69
Throttle type	Throttle type	/	EXV+Capillary	EXV+Capillary	EXV+Capillary	EXV+Capillary
Outdoor unit	Dimension(WxDxH)	mm	800x333x554	800x333x554	845x363x702	946x410x810
	Packing(WxDxH)	mm	920x390x625	920x390x615	965x395x765	1090x500x875
	Net/Gross weight	kg	34.7/37.5	33.7/36.6	49.5/53.0	67.0/73.5
Refrigerant	Refrigerant type	/	R32	R32	R32	R32
	GWP	/	675	675	675	675
	Refrigerant charge	kg	0.87	1.35	1.5	2.4
Design pressure		MPa	4.3/1.7	4.3/1.7	4.3/1.7	4.3/1.7
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ9.52(1/4"/3/8")	Φ6.35/ Φ12.7(1/4"/1/2")	Φ9.52/ Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")
	Max. pipe length	m	25	30	50	65
	Max. difference in level	m	10	20	25	30
Ambient temperature	Cooling	°C	-15~50	-15~50	-15~50	-15~50
	Heating	°C	-15~24	-15~24	-15~24	-15~24
Qty/per 20' /40' /40'HQ		Outdoor unit	108/219/292	108/219/292	102/215/216	44/96/144

Notes:

1) Capacities are based on the following conditions:

Cooling(T1): - Indoor Temperature 27°C(80.6°F) DB /19 °C(66.2°F) WB Heating: - Indoor Temperature 20°C(68°F) DB / 15°C(59°F) WB
 -Outdoor Temperature 35 °C(95°F) DB /24 °C(75.2°F) WB -Outdoor Temperature 7°C(44.6°F) DB / 6°C(42.8°F) WB
 -Interconnecting Piping Length 5m - Interconnecting Piping Length 5 m
 - Level Difference of Zero. - Level Difference of Zero.

2) Capacities are Net Capacities.

3) Due to our policy of innovation some specifications may be changed without notification.

Indoor Model			42QTD036R8S	42QTD048R8S	42QTD060R8S
Outdoor Model			38QUS036R8T	38QUS048R8T	38QUS060R8T
Power supply (Indoor)	V- Ph-Hz		220~240-1-50	220~240-1-50	220~240-1-50
Power supply (Outdoor)	V- Ph-Hz		380~415-3-50	380~415-3-50	380~415-3-50
Max. Input consumption	W		5600	6200	7500
Max. Current	A		10.0	11.2	14
Indoor fan motor	Model	/	ZKFP-124-8-2	ZKFP-124-8-2	ZKFN-170-8-1
	Qty	/	1	1	1
	Input	W	141.0	141.0	232.0
	Capacitor	μF	/	/	/
	Speed(Hi/Mi/Lo)	r/min	730/670/600	730/670/600	750/670/600
Indoor coil	Number of rows	/	3.0	3.0	3.0
	Tube pitch(a)x row pitch(b)	mm	21x13.37	21x13.37	21x13.37
	Fin spacing	mm	1.4	1.4	1.4
	Fin type (code)	/	Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia. and type	mm	φ7,Inner groove tube	φ7,Inner groove tube	φ7,Inner groove tube
	Coil length x height x width	mm	2010x210x40.11	1940x252x40.11+2010x252x40.11+2080x252x40.11	965x252x40.11+965x252x40.11
	Number of circuits	/	10	12	10
Indoor air flow	m ³ /h		1770/1620/1440	1870/1700/1500	1970/1740/1540
Indoor sound pressure level	dB(A)		51/49/46	52/50/48	53/50/48
Indoor sound power level	dB(A)		62	65	65
Indoor unit	Dimension (W x Dx H)(body)	mm	840x840x245	840x840x287	840x840x287
	Packing (W x Dx H)(body)	mm	900x900x257	900x900x292	900x900x292
	Dimension (W x Dx H)(panel)	mm	950x950x55	950x950x55	950x950x55
	Packing (W x Dx H)(panel)	mm	1035x1035x90	1035x1035x90	1035x1035x90
	Net/Gross weight(body)	kg	27.5/31	29/33	29/33
	Net/Gross weight	kg	6/9	6/9	6/9
Drainage water pipe dia	mm		ODφ32mm	ODφ32mm	ODφ32mm
Refrigerant piping	Liquid side/ Gas side	mm	φ9.52/φ15.9(3/8"/5/8")	φ9.52/φ15.9(3/8"/5/8")	φ9.52/φ15.9(3/8"/5/8")
Controller	Standard		Remote control	Remote control	Remote control
Operation temperature	°C		17-30	17-30	17-30
Room temperature	Cooling	°C	17~32	17~32	17~32
	Heating	°C	0~30	0~30	0~30
Qty'per 20' /40' /40'HQ	Indoor unit		128/268/294	100/212/238	100/212/238
Compressor	Model	/	KTF310D43UMT	KTQ420D1UMU	KTQ420D1UMU
	Type	/	ROTARY	ROTARY	ROTARY
	Brand	/	GMCC	GMCC	GMCC
	Capacity	W	10010	13700	13700
	Input	W	2765	3700	3700
	Rated current	A	5.38	7.02	7.02
	Refrigerant oil/oil charge	mL	VG74/1000	VG74/1400	VG74/1400
Outdoor Fan motor	Model	/	ZKFN-120-8-2	ZKFN-85-8-22	ZKFN-85-8-22-2
	Qty	/	1	2	2
	Input	W	150.0	126.0	126.0
	Capacitor	μF	/	/	/
	Speed(Hi)	r/min	1050	850	850
Condenser	Number of rows	/	2.0	1.6	2.0
	Tube pitch(a)x row pitch(b)	mm	25.4x22	25.4x22	25.4x22
	Fin spacing	mm	1.3	1.4	1.4
	Fin type (code)	/	Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia. and type	mm	φ9.52,Inner groove tube	φ9.52,Inner groove tube	φ9.52,Inner groove tube
	Coil length x height x width	mm	995x762x44	990x1270x22+500x1270x22	990x1270x44
Number of circuits	/	4	8	8	

Outdoor side air flow(Hi)		m ³ /h	4000	7500	7500
Outdoor sound pressure level		dB(A)	64	66	66
Outdoor sound power level		dB(A)	69	75	77
Throttle type	Throttle type	/	EXV+Capillary	EXV+Capillary	EXV+Capillary
Outdoor unit	Dimension(WxDxH)	mm	946x410x810	952x415x1333	952x415x1333
	Packing(WxDxH)	mm	1090x500x875	1095x495x1480	1095x495x1480
	Net/Gross weight	kg	81.5/87.0	107/120	112/125
Refrigerant	Refrigerant type	/	R32	R32	R32
	GWP	/	675	675	675
	Refrigerant charge	kg	2.4	2.8	2.95
Design pressure		MPa	4.3/1.7	4.3/1.7	4.3/1.7
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")	Φ9.52/Φ15.9(3/8"/5/8")
	Max. pipe length	m	65	65	65
	Max. difference in level	m	30	30	30
Ambient temperature	Cooling	C	-15~50	-15~50	-15~50
	Heating	C	-15~24	-15~24	-15~24
Qty'per 20' /40' /40'HQ		Outdoor unit	44/96/144	22/48/48	22/48/48

Notes:

1) Capacities are based on the following conditions:

Cooling(T1): - Indoor Temperature 27°C(80.6°F) DB /19 °C(66.2°F) WB Heating: - Indoor Temperature 20°C(68°F) DB / 15°C(59°F) WB
 -Outdoor Temperature 35 °C(95°F) DB /24 °C(75.2°F) WB -Outdoor Temperature 7°C(44.6°F) DB / 6°C(42.8°F) WB
 -Interconnecting Piping Length 5m - Interconnecting Piping Length 5 m
 - Level Difference of Zero. - Level Difference of Zero.

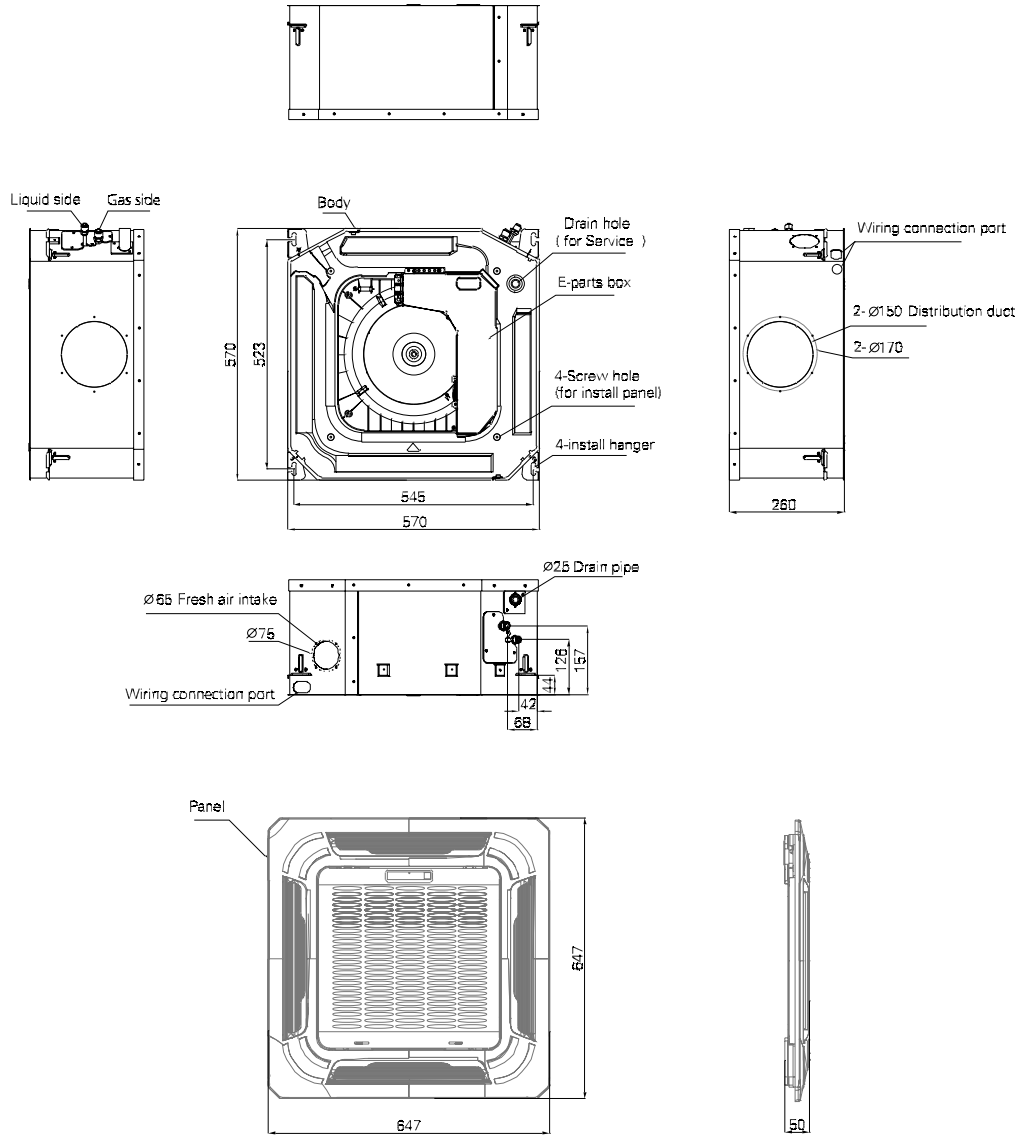
2) Capacities are Net Capacities.

3) Due to our policy of innovation some specifications may be changed without notification.

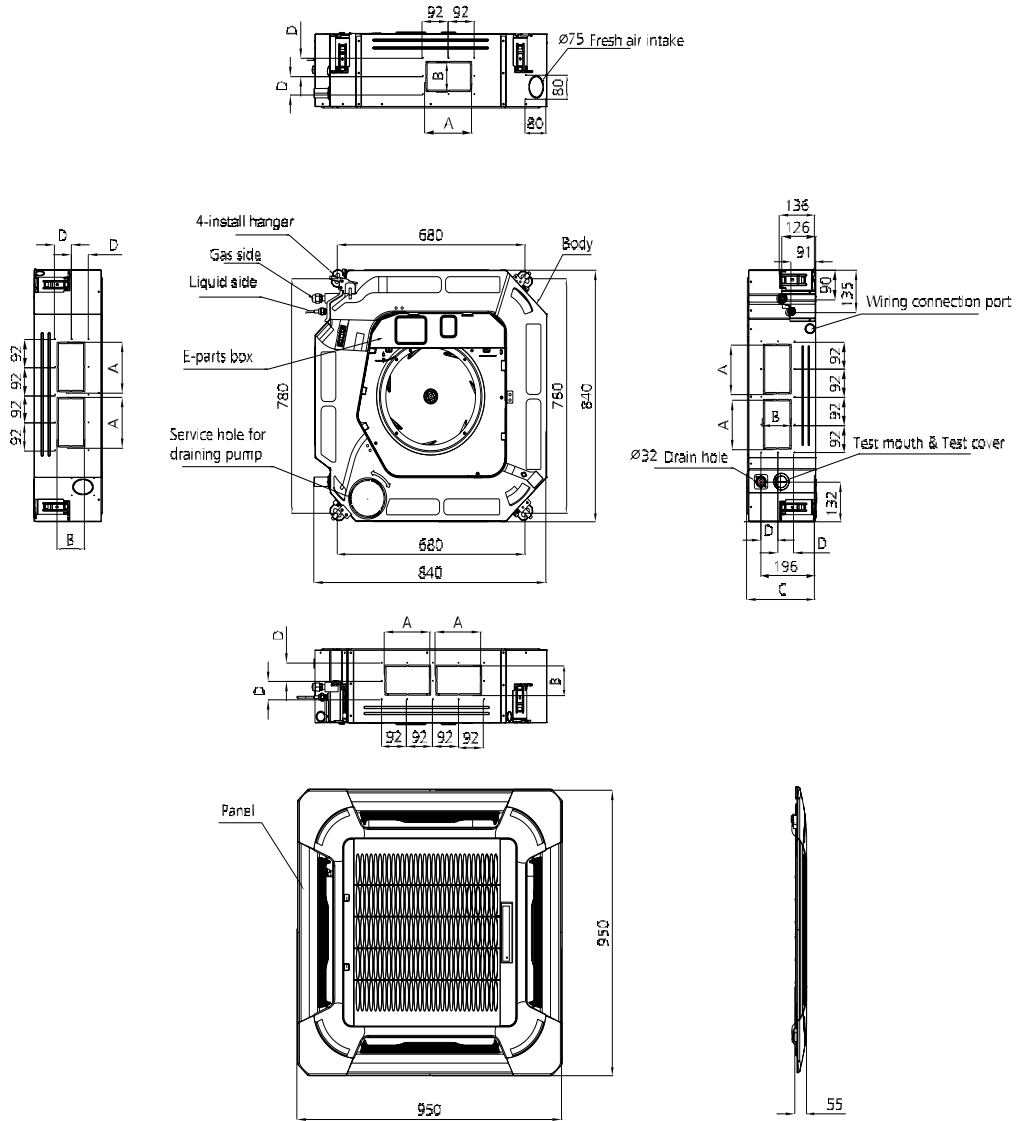
3. Dimensional Drawings

Indoor Unit

Compact Cassette(12&18k)

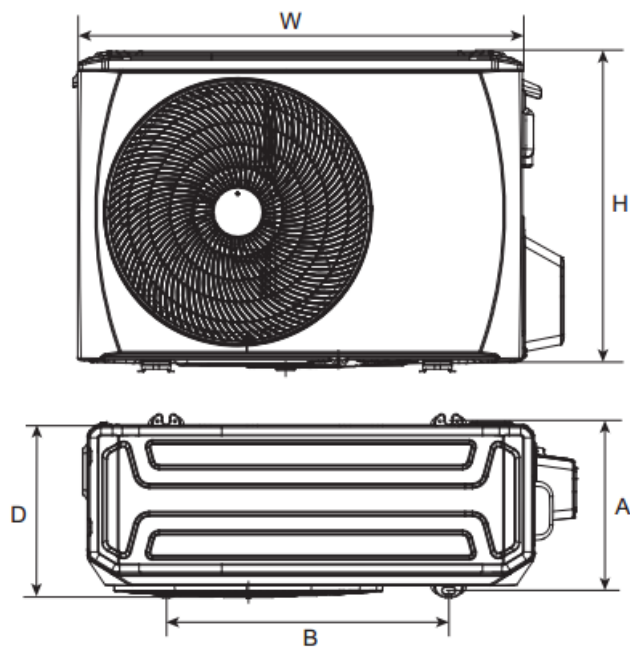


Super Slim Cassette



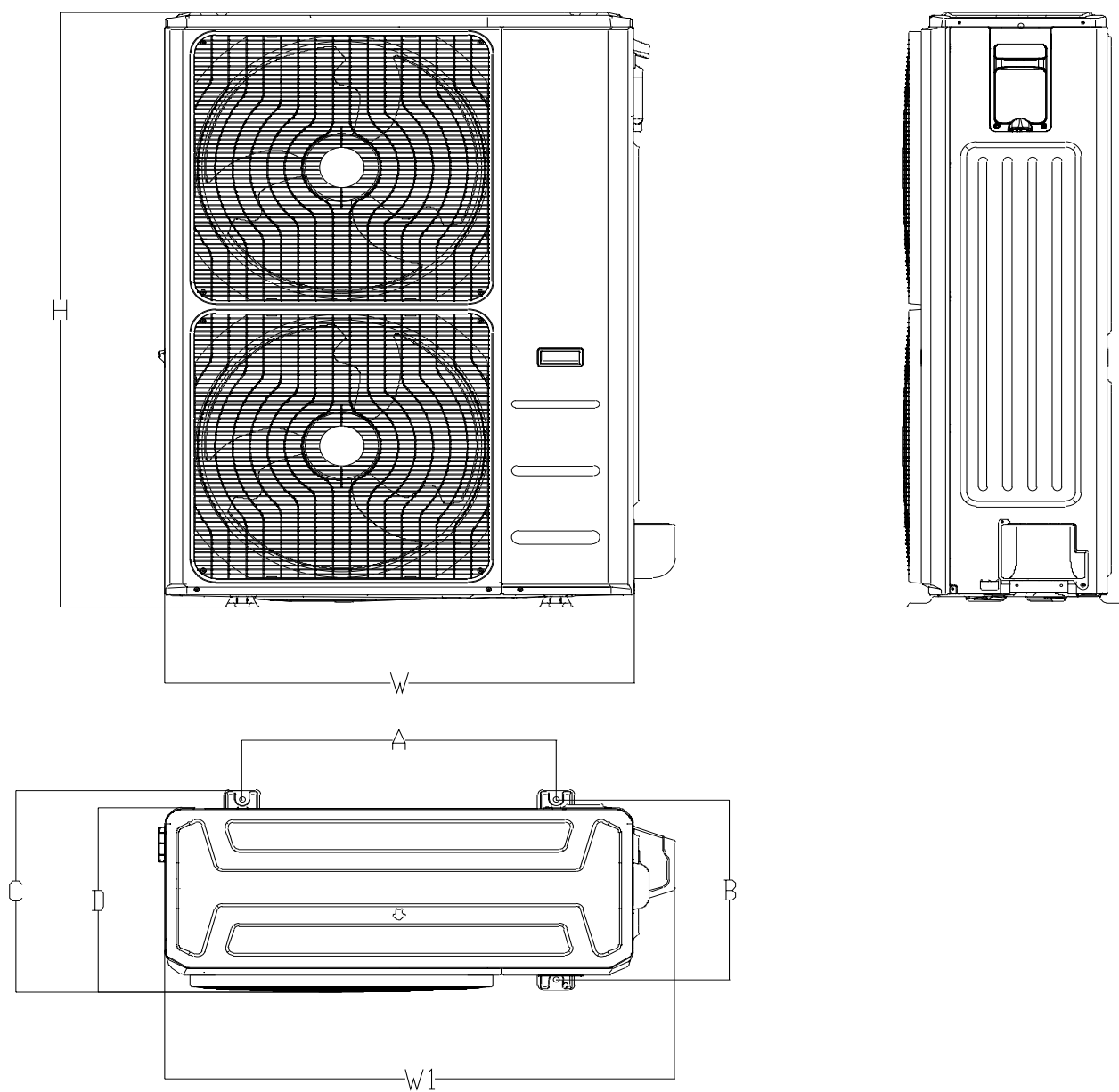
Model (KBtu/h)	Unit	A	B	C	D
24~36	mm	160	90	245	60
	inch	6.3	3.54	9.65	2.35
48~60	mm	160	95	287	60
	inch	6.3	3.74	11.3	2.35

Outdoor Unit
Single Fan Outdoor Unit



Model	Unit	W	D	H	W1	A	B
38QUS012D8S 38QUS018D8S	mm	800	333	554	870	514	340
	inch	31.49	13.11	21.81	34.25	20.23	13.39
38QUS024R8S	mm	845	363	702	914	540	350
	inch	33.27	14.29	27.64	35.98	21.26	13.78
38QUS036R8S 38QUS036R8T	mm	946	410	810	1030	673	403
	inch	37.24	16.14	31.89	40.55	26.50	15.87

Double Fan Outdoor Unit



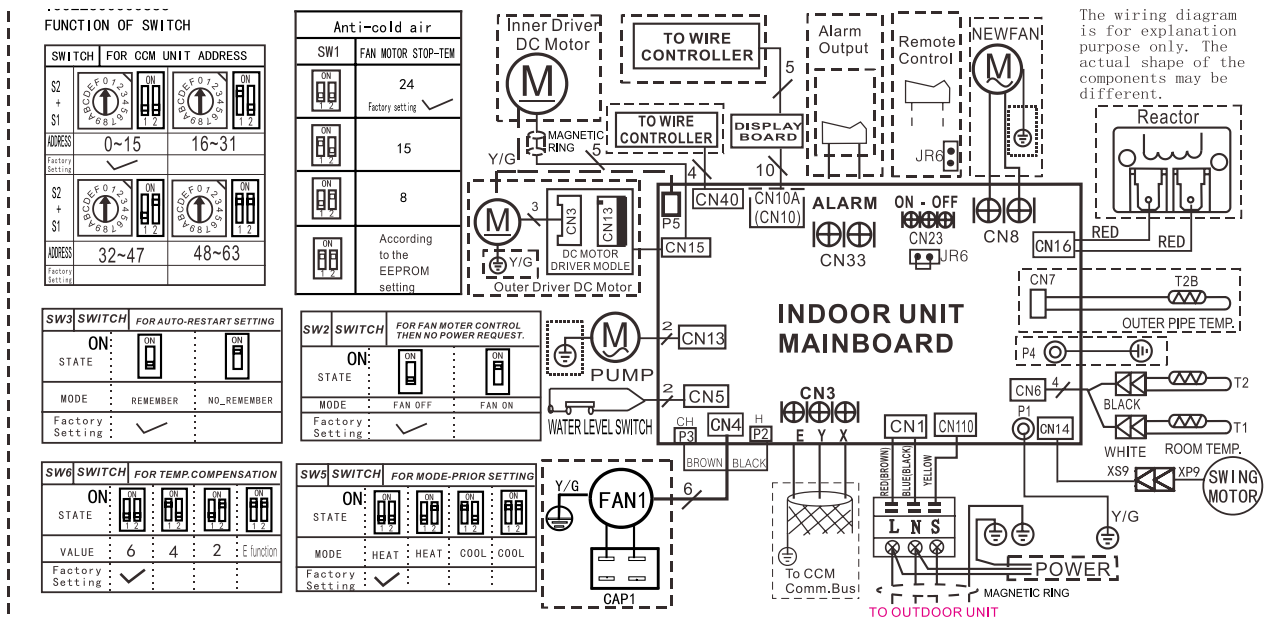
Model	Unit	W	D	H	W1	A	B	C
38QUS048R8T	mm	952	415	1333	1045	634	404	457
38QUS060R8T	inch	37.48	16.34	52.48	41.14	24.96	15.9	17.99

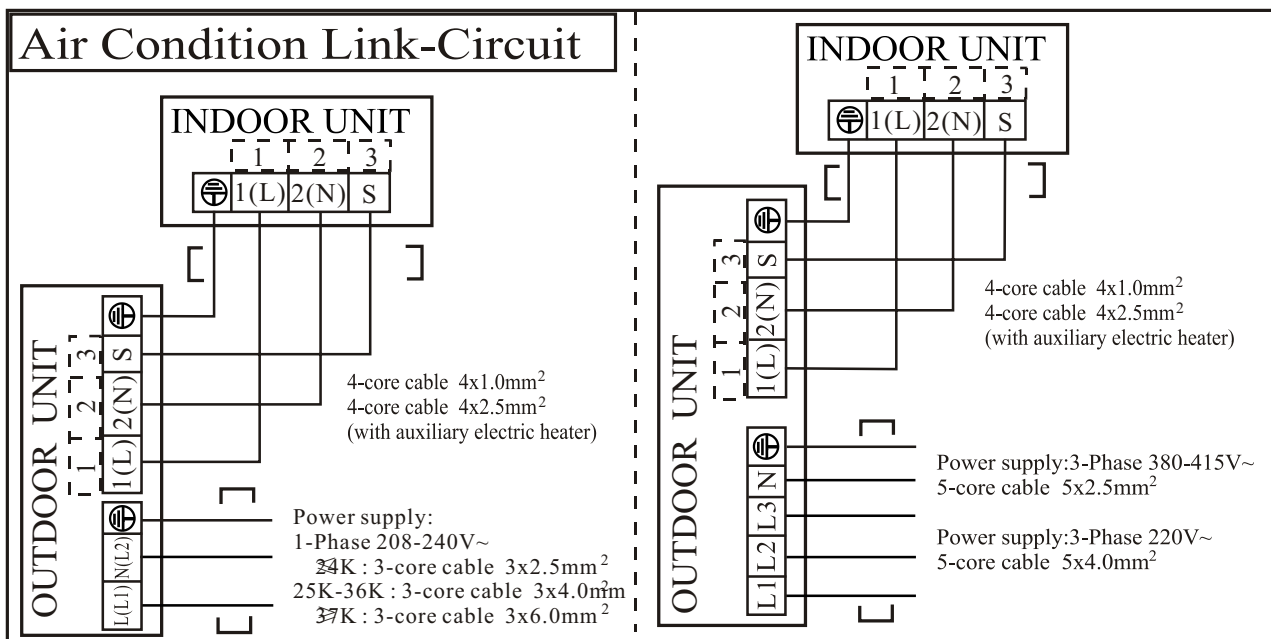
5. Electrical Wiring Diagrams

5.1 Indoor unit

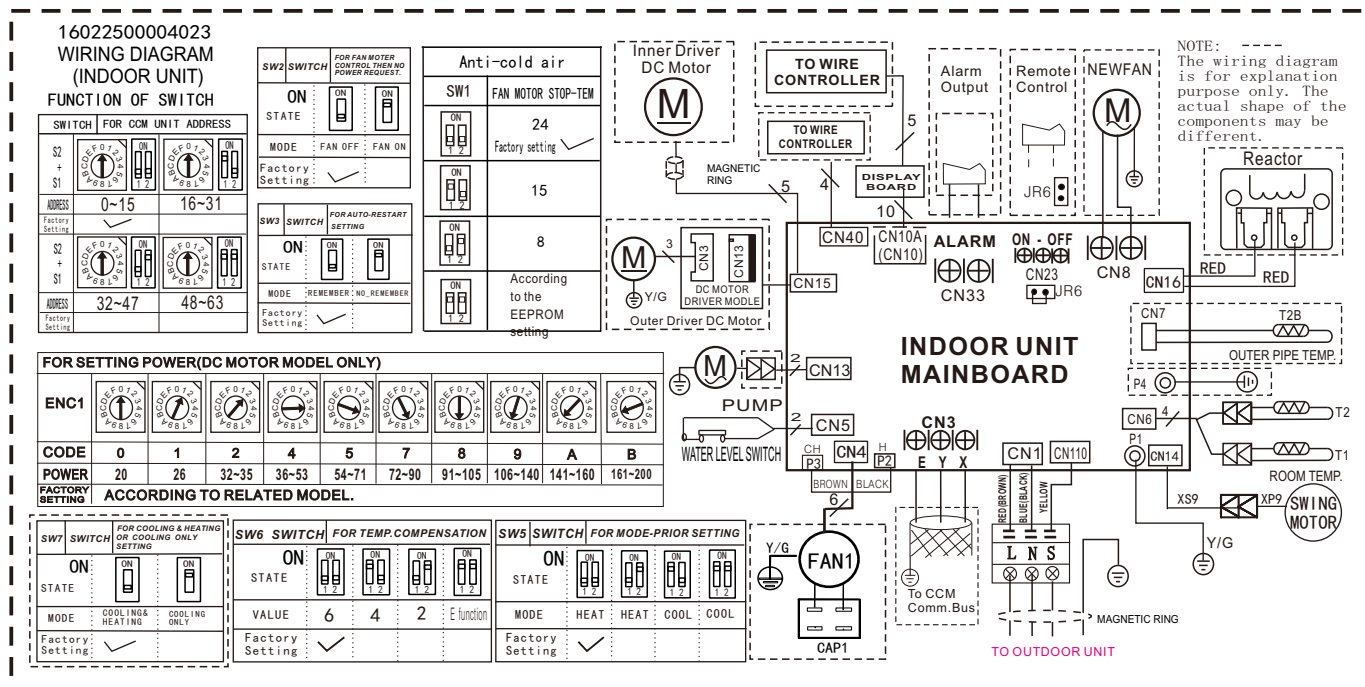
Abbreviation	Paraphrase
Y/G	Yellow-Green Conductor
CAP1	Indoor Fan Capacitor
FAN1	Indoor Fan
L	LIVE
N	NEUTRAL
TO CCM Comm.Bus	Central Controller
T1	Indoor Room Temperature
T2	Coil Temperature of Indoor Heat Exchanger
P3	Super High Speed
P2	High Speed

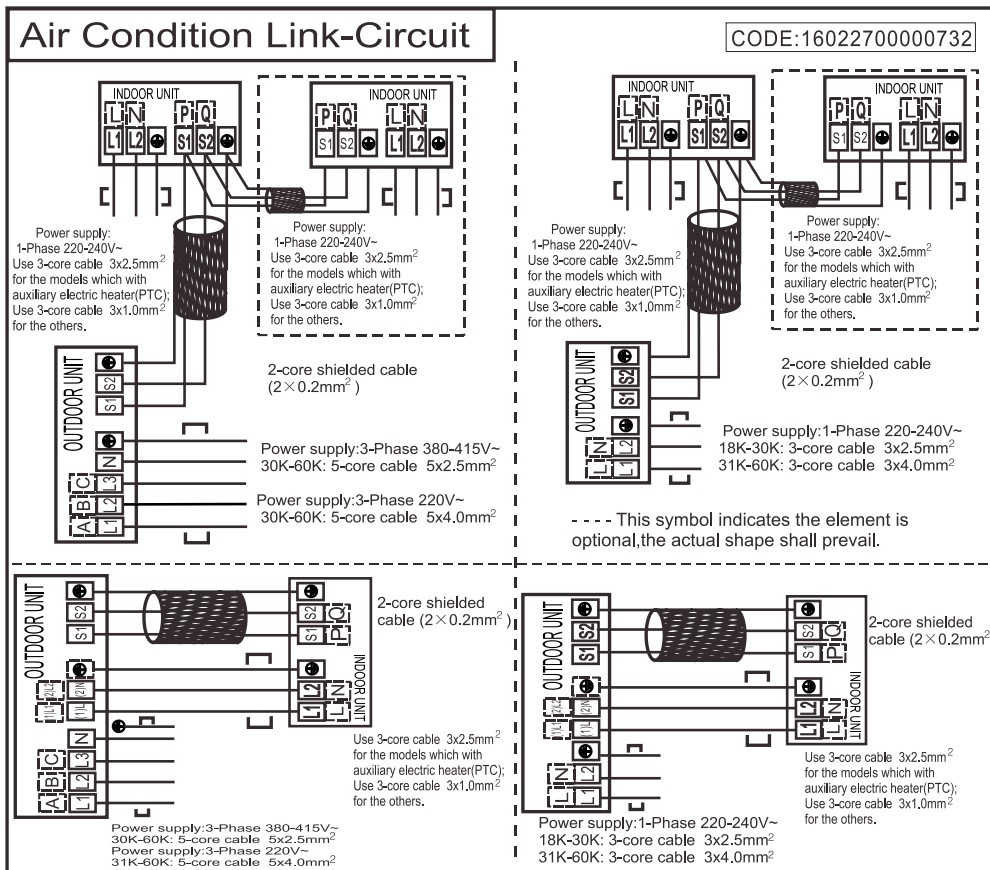
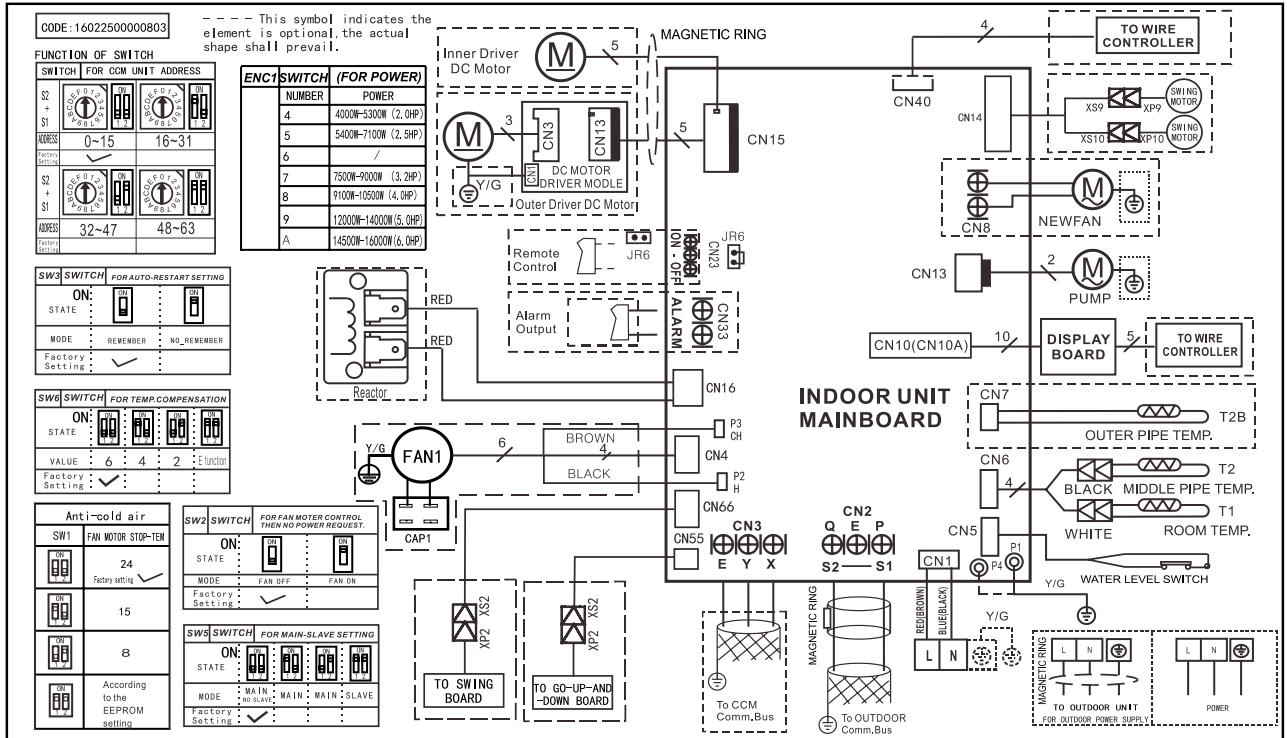
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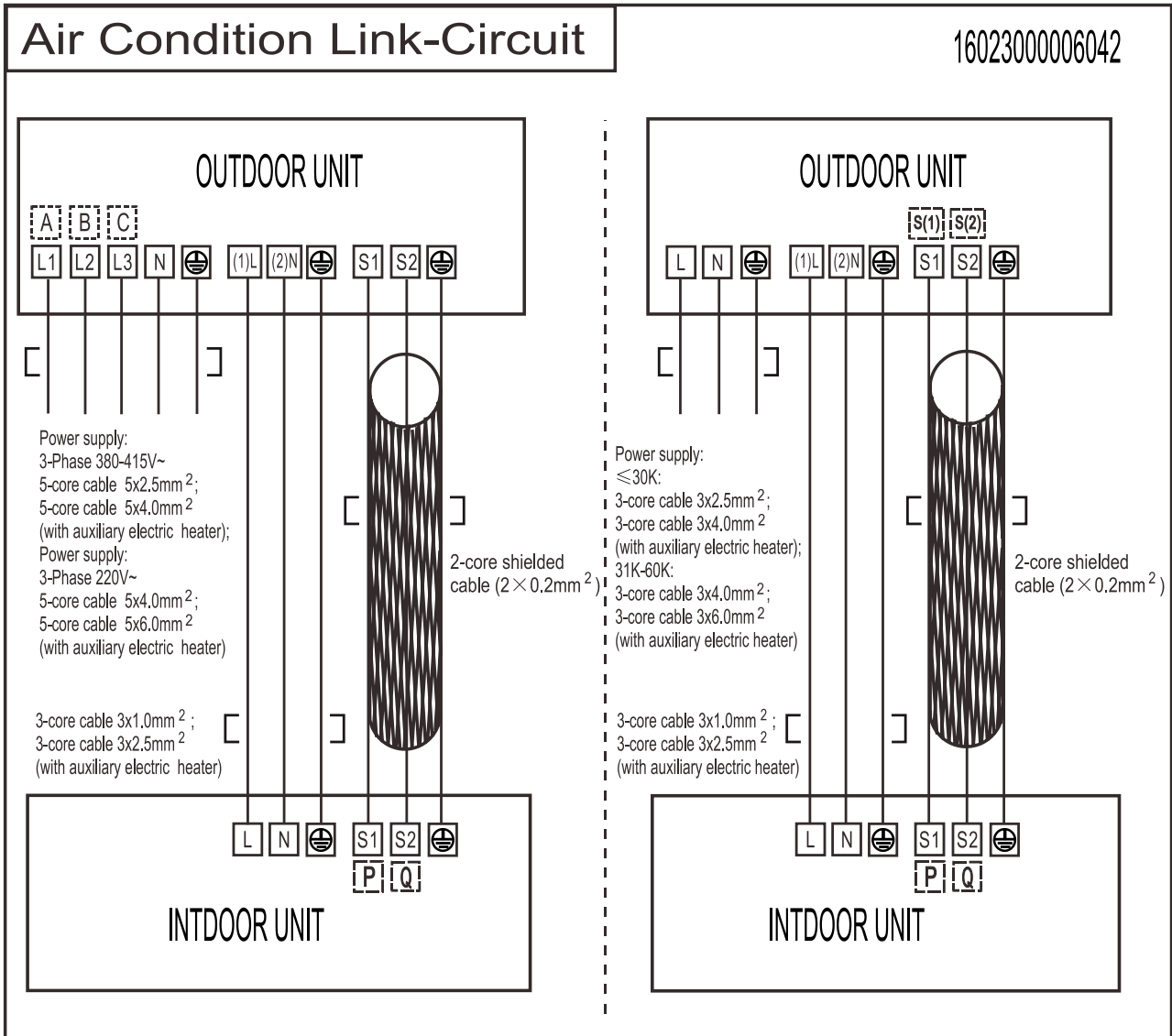




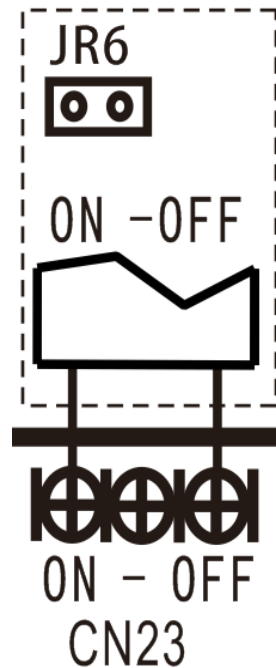
42QTD018D8S-1





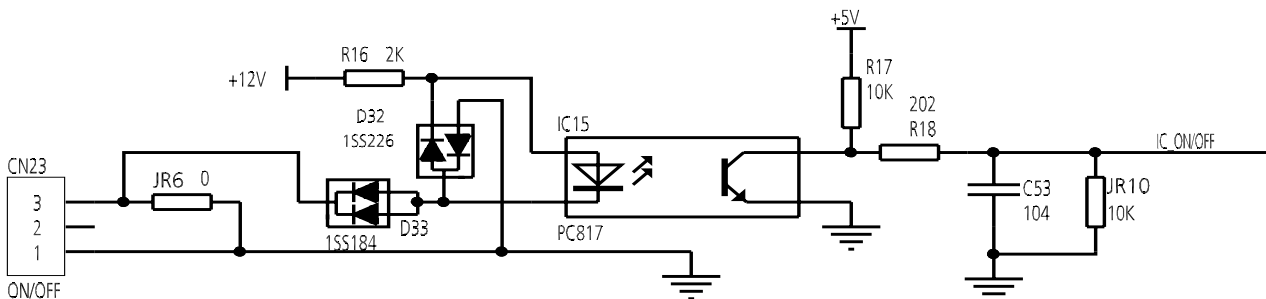


5.2 Some connectors introduce:



A For remote control (ON-OFF) terminal port CN23 and short connector of JR6

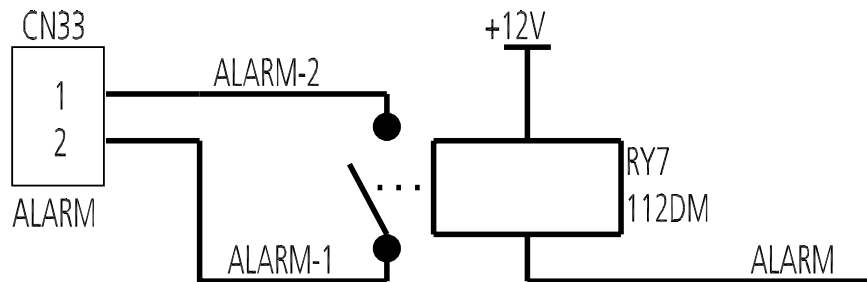
1. Remove the short connector of JR6 when you use ON-OFF function;
2. When remote switch off (OPEN) ;the unit would be off;
3. When remote switch on (CLOSE) ;the unit would be on;
4. When close/open the remote switch, the unit would be responded the demand within 2 seconds;
5. When the remote switch on. you can use remote controller/ wire controller to select the mode what you want ;when the remote switch off , the unit would not respond the demand from remote controller/wire controller.
when the remote switch off , but the remote controller / wire controller are on, CP code would be shown on the display board.
6. The voltage of the port is 12V DC , design Max.current is 5mA.

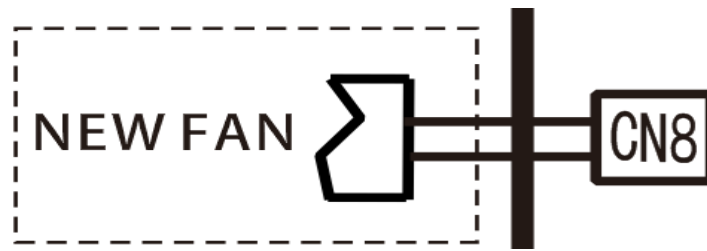




B For ALARM terminal port CN33

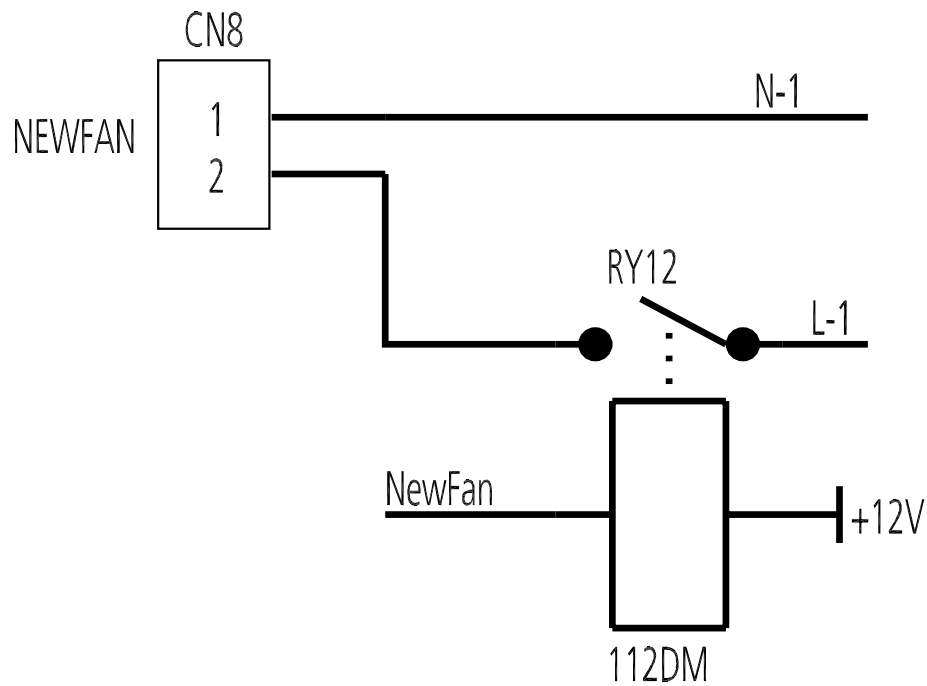
1. Provide the terminal port to connect ALARM ,but no voltage of the terminal port , the power from the ALARM system (not from the unit)
2. Although design voltage can support higher voltage ,but we strongly ask you connect the power less than 24V, current less than 0.5A
3. When the unit occurs the problem , the relay would be closed , then ALARM works





C. For new fresh motor terminal port CN8

1. Connect the fan motor to the port , no need care L/N of the motor ;
2. The output voltage is the power supply;
3. The fresh motor can not exceed 200W or 1A , follow the smaller one ;
4. The new fresh motor will be worked when the indoor fan motor work ;when the indoor fan motor stops , the new fresh motor would be stopped ;
5. When the unit enter force cooling mode or capacity testing mode , the fresh motor isn't work .

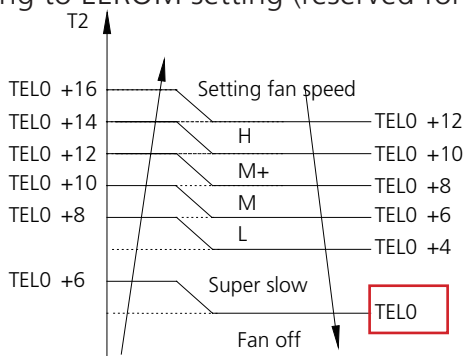


5.3 Micro-Switch introduce:

Anti-cold air	
SW1	FAN MOTOR STOP-TEM
	24 Factory setting ✓
	15
	8
	According to the EEPROM setting

A. Micro-switch SW1 is for selection of indoor fan stop temperature (TELO) when it is in anti-cold wind action in heating mode.

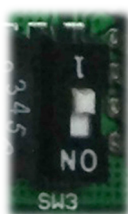
Range: 24°C, 15°C, 8°C, According to EEROM setting (reserved for special customizing).



SW2	SWITCH	FOR FAN MOTER CONTROL THEN NO POWER REQUEST.	
ON:			
STATE
MODE	FAN OFF	FAN ON	
Factory Setting	✓		

B. Micro-switch SW2 is for selection of indoor FAN ACTION if room temperature reaches the setpoint and the compressor stops.

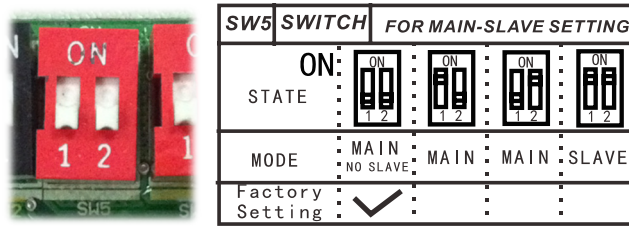
Range: OFF (anti-cold wind is available in heating mode), Keep running (No anti-cold wind function).



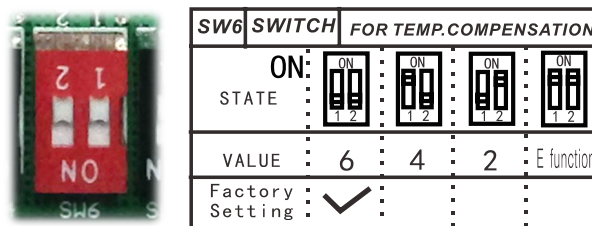
SW3	SWITCH	FOR AUTO-RESTART SETTING	
ON:			
STATE
MODE	REMEMBER	NO_REMEMBER	
Factory Setting	✓		

C. Micro-switch SW3 is for selection of auto-restart function.

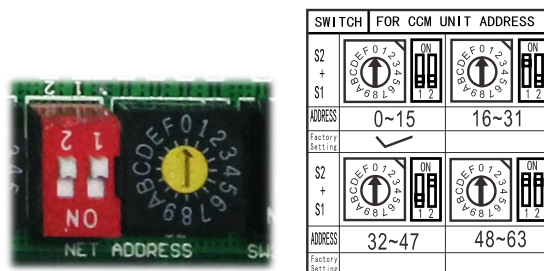
Range: Active, inactive



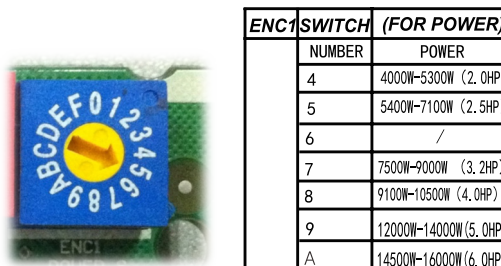
D. Micro-switch SW5 is for setting the master or slave unit when the unit is in twin connection.
 Range: Master no slave (Normal 1 drive 1 connection), Master (2 positions without difference), Slave



E. Micro-switch SW6 is for selection of temperature compensation in heating mode. This helps to reduce the real temperature difference between ceiling and floor so that the unit could run properly.
 If the height of installation is lower, smaller value could be chosen.
 Range: 6°C, 4°C, 2°C, E function (reserved for special customizing)



F. Micro-switch S1 and dial-switch S2 are for address setting when you want to control this unit by a central controller.
 Range: 00-63

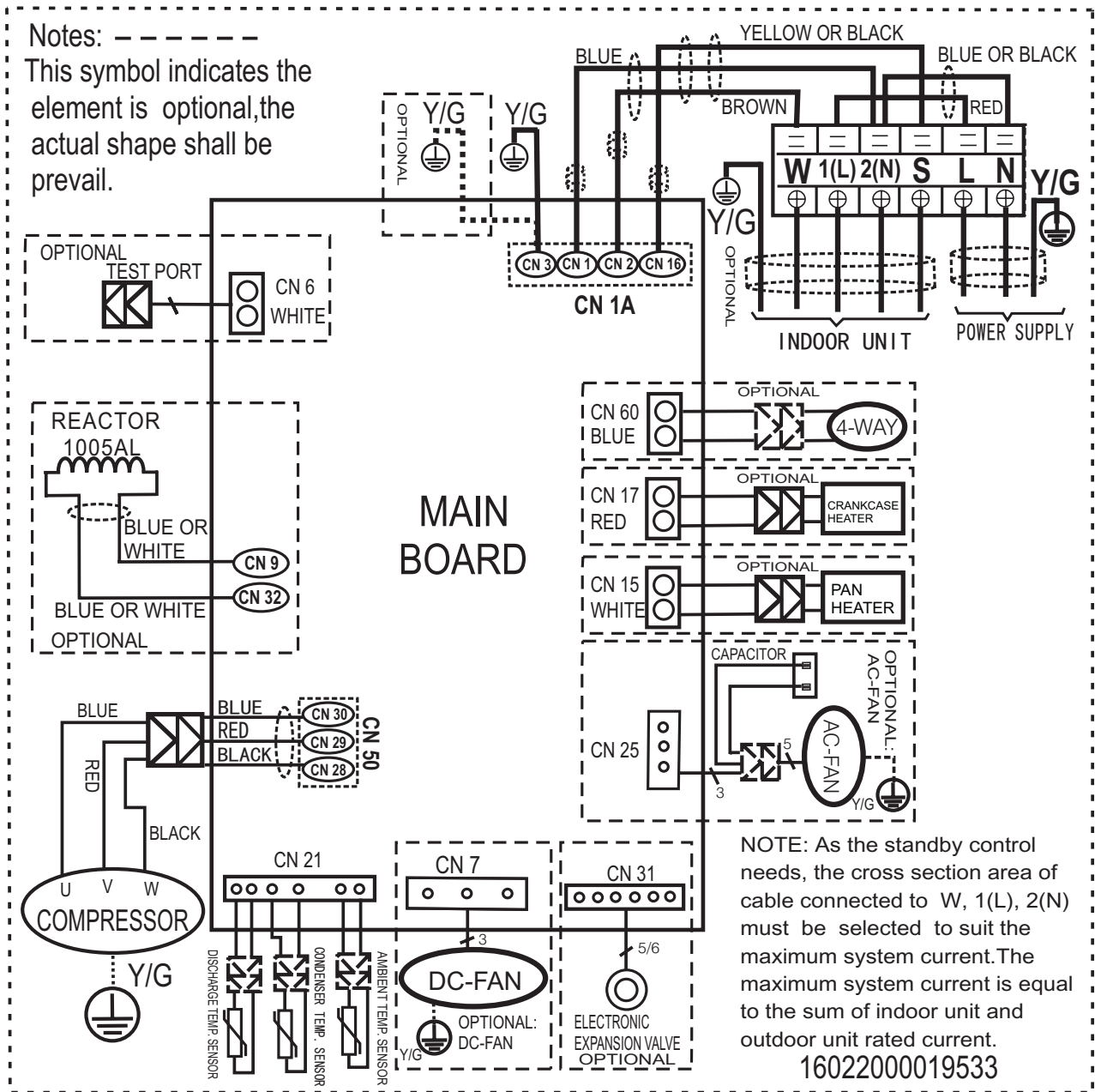


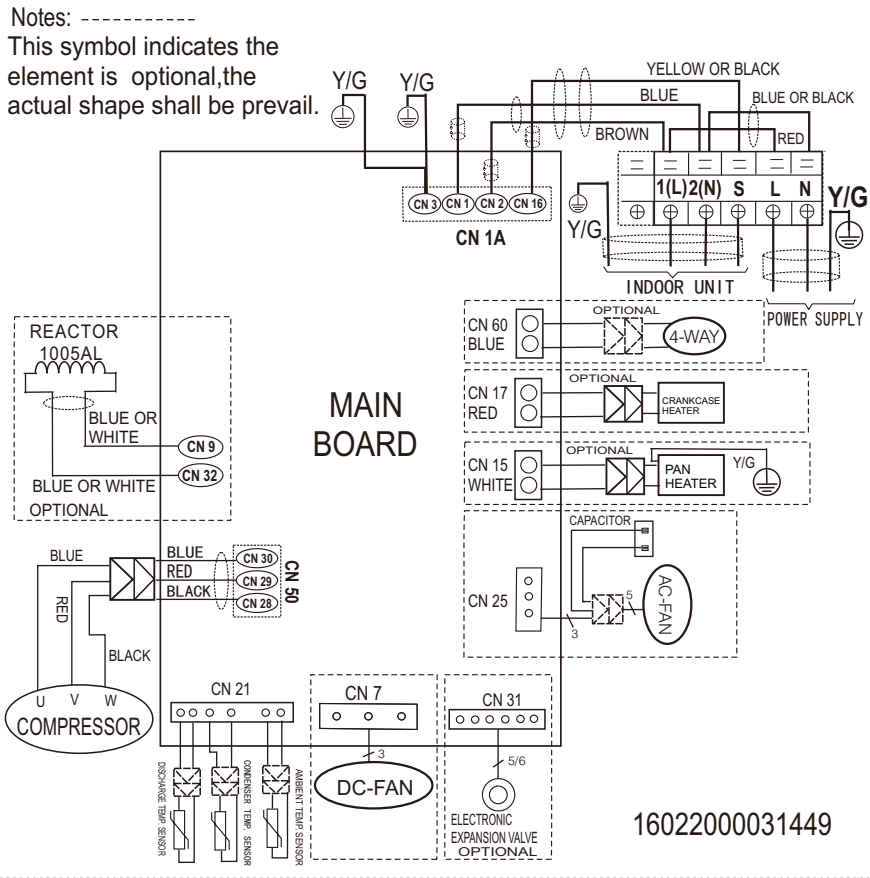
G. Dial-switch ENC1: The indoor PCB is universal designed for whole series units from 18K to 55K. This ENC1 setting will tell the main program what size the unit is.

NOTE: Usually there is glue on it because the switch position cannot be changed at random unless you want to use this PCB as a spare part to use in another cassette unit. Then you have to select the right position to match the size of the unit.

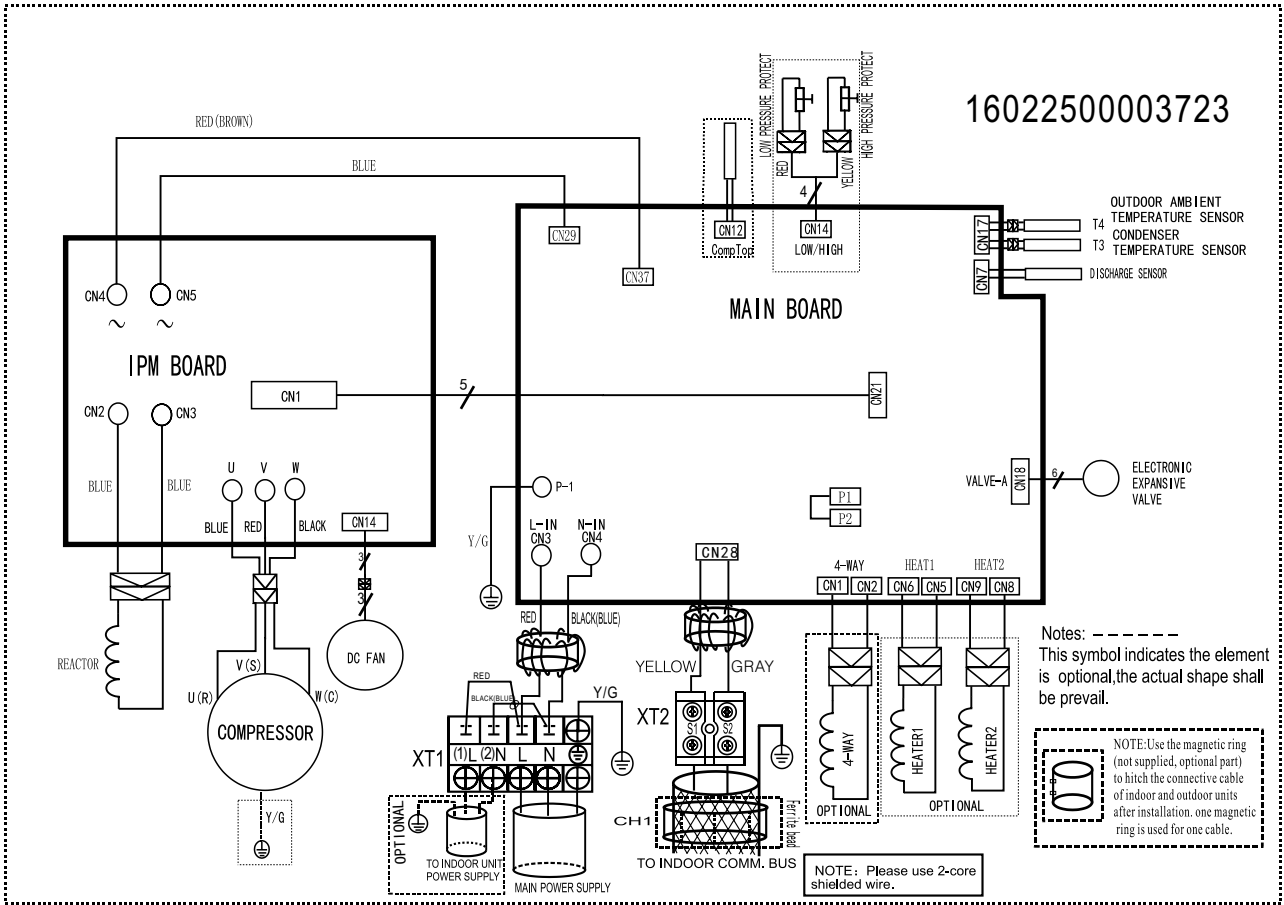
5.4 Outdoor Unit

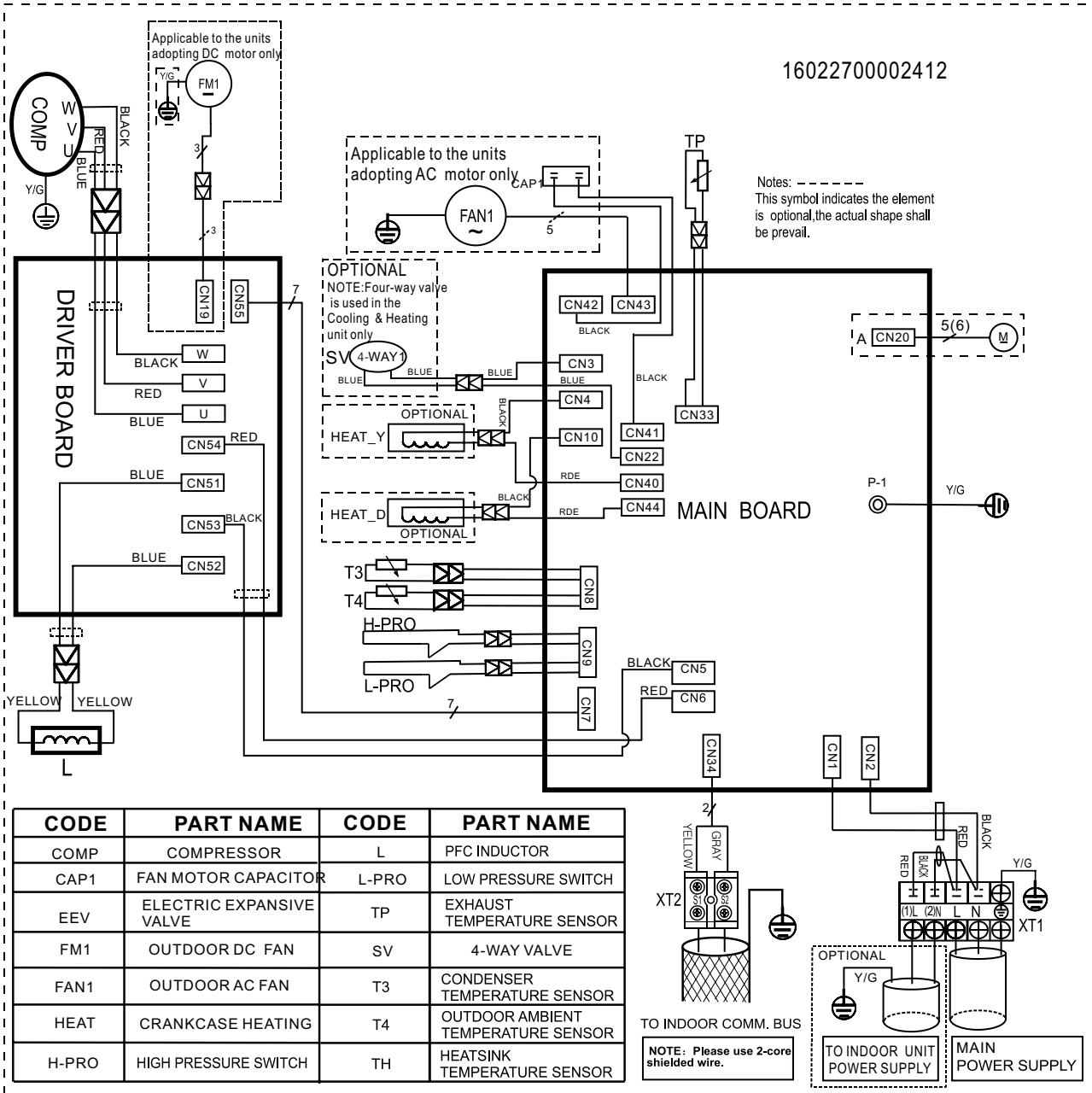
Abbreviation	Paraphrase
CAP1, CAP2, CAP3,CAP4	Fan Motor Capacitor
FM1,FM2	Outdoor DC Fan
FAN1, FAN2	Outdoor AC Fan
HEAT, HEAT_Y,HEAT_D	CRANKCASE HEATING
CT1, CT2	AC Current Detector
COMP	Compressor
L-PRO	Low Pressure Switch
H-PRO	High Pressure Switch
L	PFC Inductor
SV	4-Way Valve
TRANS	Power Transformer
TP	Exhaust Temperature Sensor
T4	Outdoor Ambient Temperature Sensor
T3	Condenser Temperature Sensor
TH	Heatsink Temperature Sensor
XT1	2-Way Terminal/4-Way Terminal
XT2	3-Way Terminal
XT4	Terminal
EEV	Electronic Expansion Valve
D	Diode Module





16022500003723

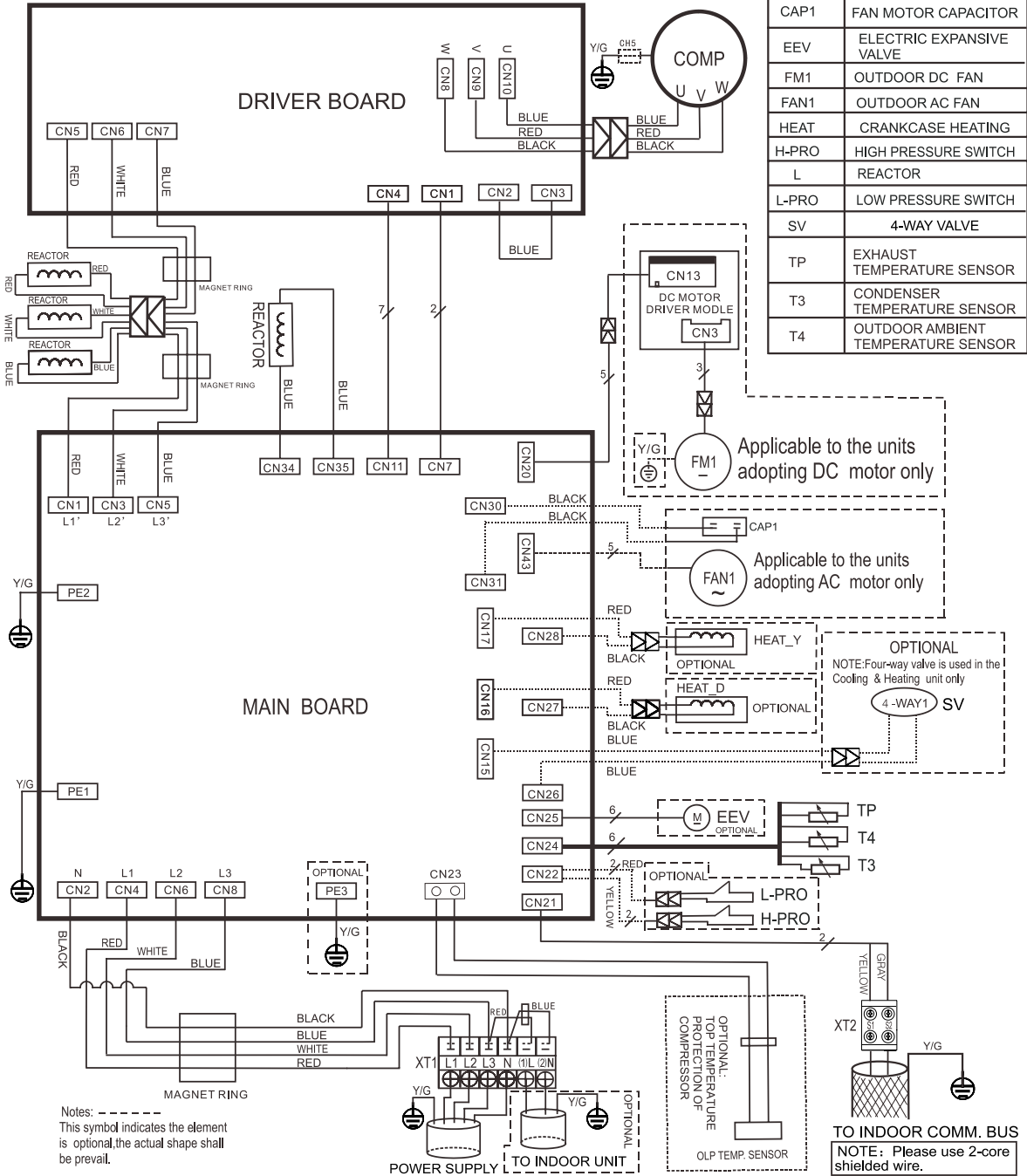




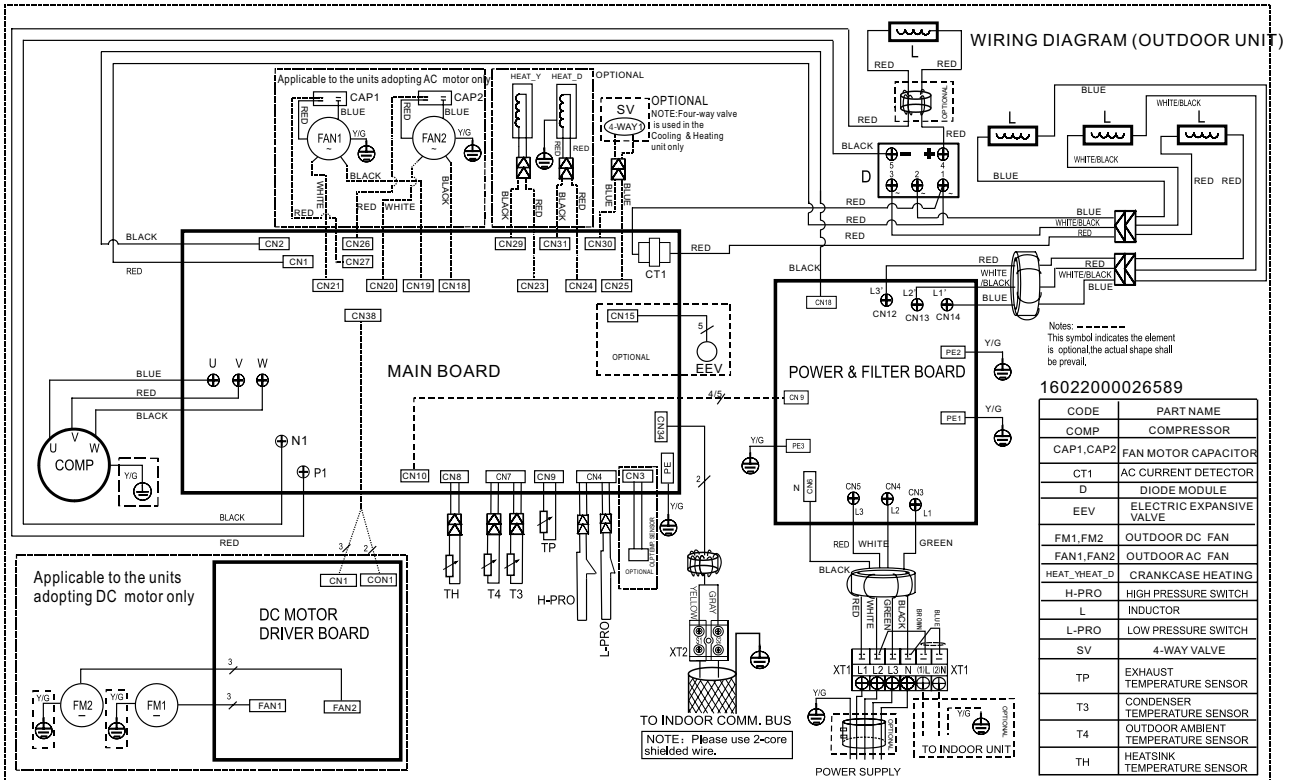
CODE	PART NAME	CODE	PART NAME
COMP	COMPRESSOR	L	PFC INDUCTOR
CAP1	FAN MOTOR CAPACITOR	L-PRO	LOW PRESSURE SWITCH
EEV	ELECTRIC EXPANSIVE VALVE	TP	EXHAUST TEMPERATURE SENSOR
FM1	OUTDOOR DC FAN	SV	4-WAY VALVE
FAN1	OUTDOOR AC FAN	T3	CONDENSER TEMPERATURE SENSOR
HEAT	CRANKCASE HEATING	T4	OUTDOOR AMBIENT TEMPERATURE SENSOR
H-PRO	HIGH PRESSURE SWITCH	TH	HEATSINK TEMPERATURE SENSOR

WIRING DIAGRAM (OUTDOOR UNIT)

16022500002224

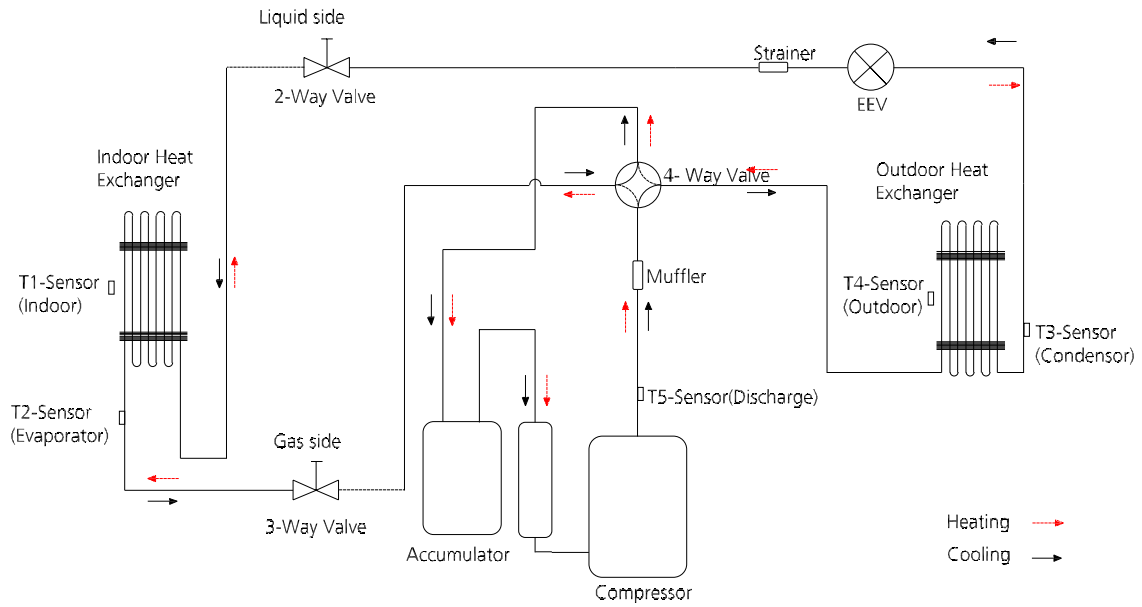


38QUS048R8T, 38QUS060R8T

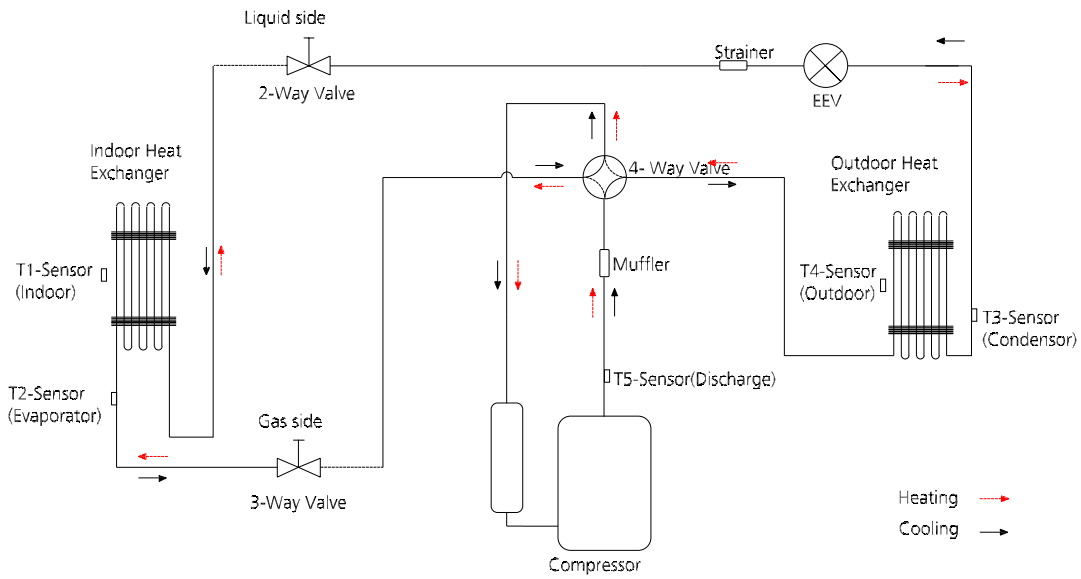


Specifications

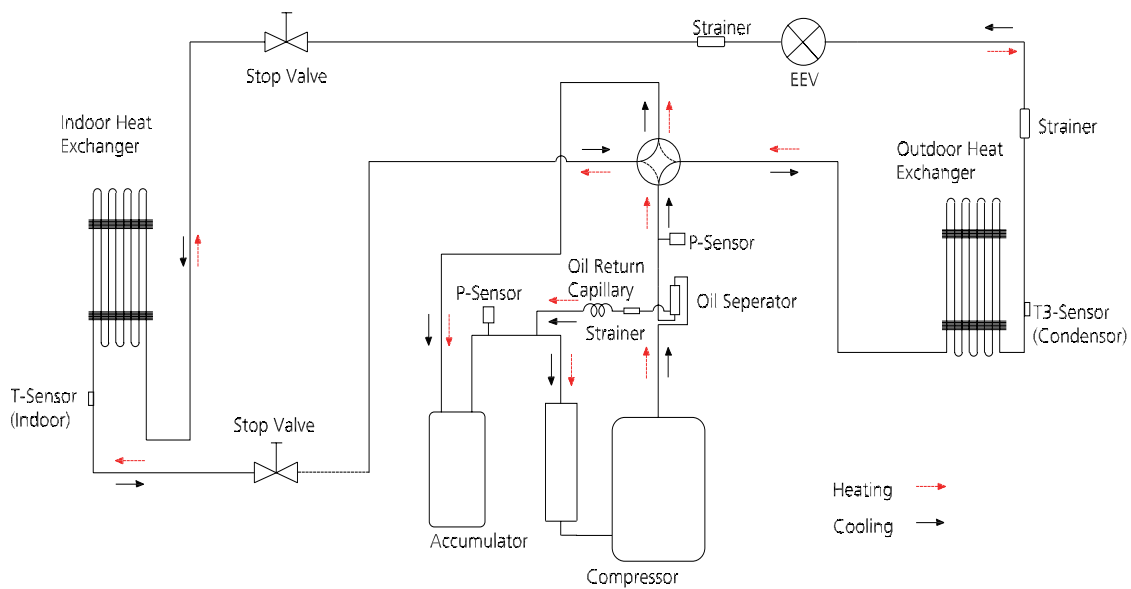
6. Refrigerant Cycle Diagrams



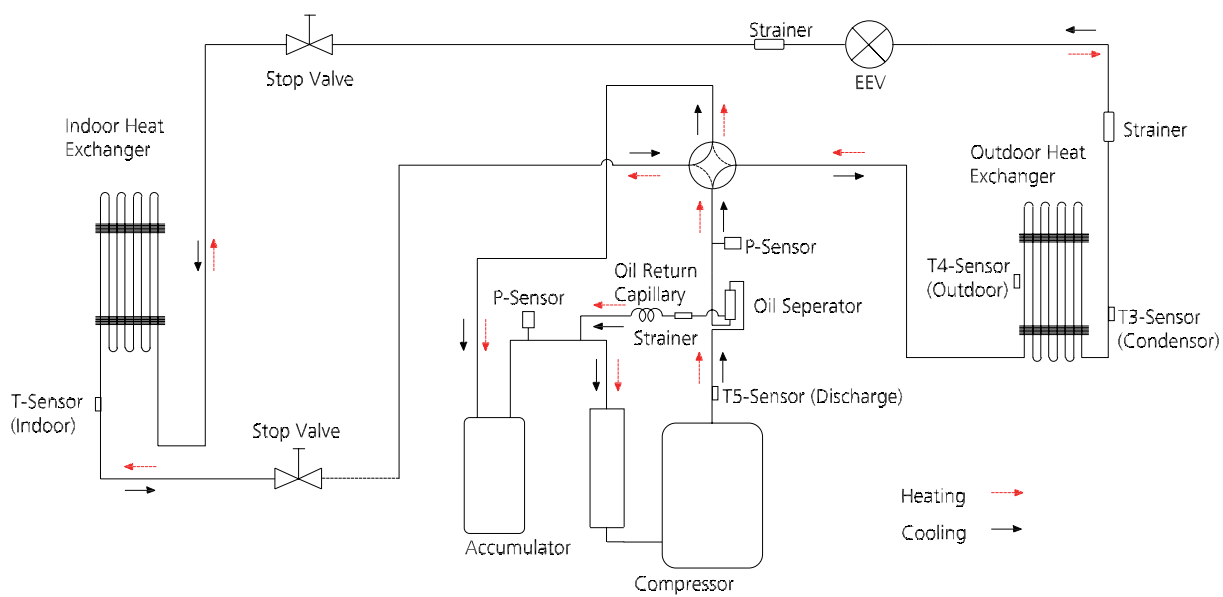
Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
38QUS012D8S	9.52(3/8)	6.35(1/4)	5/16.4	25/82	0	10/32.8	12g/m (0.13oz/ft)
38QUS018D8S	12.7(1/2)	6.35(1/4)	5/16.4	30/98.4	0	20/65.6	12g/m (0.13oz/ft)



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
38QUS024R8S	15.9(5/8)	9.52(3/8)	5/16.4	50/164.0	0	25/82	24g/m (0.26oz/ft)



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
38QUS036R8S	15.9(5/8)	9.52(3/8)	5/16.4	65/213.3	0	30/98.4	24g/m (0.26oz/ft)



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
38QUS036R8T	15.9(5/8)	9.52(3/8)	5/16.4	65/213.3	0	30/98.4	24g/m (0.26oz/ft)
38QUS048R8T	15.9(5/8)	9.52(3/8)	5/16.4	65/213.3	0	30/98.4	24g/m (0.26oz/ft)
38QUS060R8T	15.9(5/8)	9.52(3/8)	5/16.4	65/213.3	0	30/98.4	24g/m (0.26oz/ft)

7. Capacity Tables

Cooling

42QTD012D8S+38QUS012D8S																		
INDOOR AIRFLOW (CMH)	OUTDOOR DB(C)	ID WB (C)	16.0				18.0				19.0				22.0			
		ID DB (C)	23.0	25.0	27.0	30.0	23.0	25.0	27.0	30.0	23.0	25.0	27.0	30.0	23.0	25.0	27.0	30.0
416	-15	TC	3.71	3.72	3.72	3.75	3.90	3.96	3.96	3.96	4.00	4.00	4.00	4.00	4.25	4.25	4.25	4.25
		S/T	0.69	0.75	0.83	0.91	0.55	0.63	0.70	0.77	0.49	0.56	0.64	0.70	0.36	0.42	0.48	0.55
		PI	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	-10	TC	3.68	3.70	3.70	3.73	3.87	3.93	3.93	3.93	3.98	3.98	3.98	3.98	4.23	4.23	4.23	4.23
		S/T	0.69	0.76	0.83	0.91	0.55	0.63	0.70	0.78	0.49	0.56	0.64	0.71	0.36	0.43	0.49	0.55
		PI	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	-5	TC	3.66	3.67	3.67	3.70	3.86	3.92	3.92	3.92	3.96	3.96	3.96	3.96	4.22	4.22	4.22	4.22
		S/T	0.69	0.76	0.84	0.92	0.56	0.63	0.70	0.78	0.50	0.57	0.64	0.71	0.36	0.43	0.49	0.56
		PI	0.56	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	0	TC	3.64	3.66	3.66	3.68	3.85	3.91	3.91	3.91	3.95	3.95	3.95	3.95	4.22	4.22	4.22	4.22
		S/T	0.70	0.76	0.84	0.92	0.56	0.64	0.71	0.78	0.50	0.57	0.65	0.72	0.36	0.43	0.49	0.56
		PI	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	5	TC	3.62	3.64	3.64	3.67	3.83	3.89	3.89	3.89	3.94	3.94	3.94	3.94	4.21	4.21	4.21	4.21
		S/T	0.70	0.77	0.85	0.93	0.56	0.64	0.71	0.79	0.50	0.57	0.65	0.72	0.36	0.43	0.49	0.56
		PI	0.57	0.56	0.56	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.57	0.57	0.57
	10	TC	3.60	3.61	3.61	3.64	3.81	3.87	3.87	3.87	3.92	3.92	3.92	3.92	4.20	4.20	4.20	4.20
		S/T	0.70	0.77	0.85	0.93	0.56	0.64	0.71	0.79	0.50	0.57	0.65	0.72	0.37	0.44	0.50	0.56
		PI	0.58	0.57	0.57	0.58	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.58	0.58	0.58	0.58
	15	TC	3.57	3.59	3.59	3.61	3.79	3.85	3.85	3.85	3.90	3.90	3.90	3.90	4.19	4.19	4.19	4.19
		S/T	0.71	0.78	0.86	0.94	0.57	0.65	0.72	0.80	0.51	0.58	0.66	0.73	0.37	0.44	0.50	0.57
		PI	0.59	0.58	0.58	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
	20	TC	3.53	3.54	3.54	3.57	3.75	3.75	3.75	3.75	3.86	3.86	3.86	3.86	4.15	4.15	4.15	4.15
		S/T	0.71	0.78	0.86	0.94	0.57	0.65	0.72	0.80	0.51	0.58	0.66	0.73	0.37	0.44	0.50	0.57
		PI	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	25	TC	3.37	3.37	3.37	3.40	3.57	3.57	3.57	3.57	3.69	3.69	3.69	3.69	3.98	3.98	3.98	3.98
		S/T	0.71	0.80	0.88	0.96	0.58	0.66	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58
		PI	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
	30	TC	3.20	3.20	3.23	3.26	3.43	3.43	3.43	3.43	3.52	3.52	3.52	3.52	3.80	3.80	3.80	3.80
		S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.82	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58
		PI	0.73	0.73	0.73	0.73	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
	35	TC	3.05	3.05	3.08	3.11	3.26	3.26	3.26	3.26	3.34	3.34	3.34	3.34	3.60	3.60	3.60	3.60
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59
		PI	0.80	0.80	0.80	0.80	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
	40	TC	2.89	2.89	2.92	2.95	3.09	3.09	3.09	3.11	3.18	3.18	3.21	3.18	3.43	3.43	3.43	3.43
		S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.80	0.35	0.44	0.52	0.61
		PI	0.89	0.89	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
	46	TC	2.67	2.67	2.70	2.73	2.87	2.87	2.87	2.90	2.96	2.96	2.96	2.96	3.19	3.19	3.19	3.19
		S/T	0.76	0.87	0.97	1.00	0.60	0.70	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.61
		PI	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01
	50	TC	2.53	2.55	2.58	2.61	2.70	2.70	2.70	2.73	2.79	2.79	2.79	2.79	3.02	3.02	3.02	3.02
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63
		PI	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.09	1.09	1.09	1.09

42QTD018D85-1+38QUS018D85

INDOOR AIRFLOW (CMH)	OUTDOOR DB(C)	ID WB (C)	16.0				18.0				19.0				22.0			
			ID DB (C)				ID DB (C)				ID DB (C)				ID DB (C)			
			23.0	25.0	27.0	29.0	23.0	25.0	27.0	29.0	23.0	25.0	27.0	29.0	23.0	25.0	27.0	29.0
540	-15	TC	5.50	5.50	5.50	5.56	5.78	5.90	5.90	5.90	5.93	5.93	5.93	5.93	6.28	6.28	6.28	6.28
		S/T	0.67	0.73	0.80	0.86	0.55	0.61	0.68	0.73	0.49	0.56	0.62	0.68	0.37	0.42	0.48	0.54
		PI	1.09	1.08	1.08	1.09	1.08	1.08	1.08	1.08	1.09	1.09	1.09	1.09	1.08	1.08	1.08	1.08
	-10	TC	5.46	5.47	5.47	5.53	5.75	5.87	5.87	5.87	5.90	5.90	5.90	5.90	6.25	6.25	6.25	6.25
		S/T	0.67	0.74	0.81	0.86	0.55	0.62	0.68	0.74	0.49	0.56	0.62	0.68	0.37	0.43	0.49	0.54
		PI	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
	-5	TC	5.43	5.43	5.43	5.49	5.73	5.85	5.85	5.85	5.88	5.88	5.88	5.88	6.24	6.24	6.24	6.24
		S/T	0.67	0.74	0.81	0.87	0.56	0.62	0.68	0.74	0.50	0.57	0.62	0.68	0.37	0.43	0.49	0.55
		PI	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
	0	TC	5.40	5.41	5.41	5.47	5.71	5.83	5.83	5.83	5.87	5.87	5.87	5.87	6.23	6.23	6.23	6.23
		S/T	0.68	0.74	0.81	0.87	0.56	0.62	0.69	0.74	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		PI	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
	5	TC	5.38	5.38	5.38	5.44	5.68	5.80	5.80	5.80	5.85	5.85	5.85	5.85	6.23	6.23	6.23	6.23
		S/T	0.68	0.75	0.82	0.88	0.56	0.62	0.69	0.75	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		PI	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.10	1.10	1.10	1.10	1.09	1.09	1.09	1.09
	10	TC	5.34	5.35	5.35	5.41	5.66	5.78	5.78	5.78	5.82	5.82	5.82	5.82	6.21	6.21	6.21	6.21
		S/T	0.68	0.75	0.82	0.88	0.56	0.63	0.69	0.75	0.50	0.57	0.63	0.69	0.38	0.44	0.50	0.55
		PI	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
	15	TC	5.30	5.30	5.30	5.36	5.62	5.74	5.74	5.74	5.79	5.79	5.79	5.79	6.19	6.19	6.19	6.19
		S/T	0.69	0.76	0.83	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		PI	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.13	1.13	1.13	1.13
	20	TC	5.24	5.24	5.24	5.30	5.56	5.56	5.56	5.56	5.73	5.73	5.73	5.73	6.13	6.13	6.13	6.13
		S/T	0.69	0.76	0.83	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		PI	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.17	1.17	1.17	1.17
	25	TC	4.99	4.99	4.99	5.04	5.30	5.30	5.30	5.30	5.47	5.47	5.47	5.47	5.87	5.87	5.87	5.87
		S/T	0.69	0.77	0.84	0.91	0.57	0.64	0.71	0.77	0.51	0.58	0.64	0.71	0.38	0.44	0.50	0.56
		PI	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
	30	TC	4.76	4.76	4.76	4.81	5.07	5.07	5.07	5.07	5.22	5.22	5.22	5.22	5.62	5.62	5.62	5.62
		S/T	0.70	0.78	0.85	0.92	0.57	0.64	0.71	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57
		PI	1.42	1.42	1.42	1.42	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
	35	TC	4.53	4.53	4.53	4.59	4.81	4.81	4.81	4.81	4.96	4.96	4.96	4.96	5.36	5.36	5.36	5.36
		S/T	0.71	0.79	0.87	0.94	0.57	0.65	0.72	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.50	0.57
		PI	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.57	1.57	1.57	1.57	1.58	1.58	1.58	1.58
	40	TC	4.28	4.28	4.29	4.34	4.55	4.55	4.55	4.55	4.70	4.70	4.74	4.70	5.07	5.07	5.07	5.07
		S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.75	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58
		PI	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.73	1.73	1.73	1.73	1.74	1.74	1.74	1.74
	46	TC	3.97	3.97	4.00	4.02	4.22	4.22	4.22	4.22	4.37	4.37	4.37	4.37	4.71	4.71	4.71	4.71
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.94	1.94	1.94	1.94
	50	TC	3.71	3.71	3.74	3.77	3.97	3.97	3.97	3.97	4.11	4.11	4.11	4.11	4.45	4.45	4.45	4.45
		S/T	0.74	0.84	0.94	1.00	0.59	0.68	0.77	0.86	0.52	0.61	0.69	0.78	0.36	0.44	0.52	0.60
		PI	2.07	2.07	2.07	2.07	2.08	2.08	2.08	2.08	2.09	2.09	2.09	2.09	2.10	2.10	2.10	2.10

Specifications

1378	-15	TC	7.68	7.77	7.86	7.95	8.06	8.06	8.06	8.15	8.26	8.26	8.26	8.35	8.79	8.79	8.79	8.79
		S/T	0.79	0.91	1.00	1.00	0.61	0.72	0.84	0.98	0.52	0.63	0.74	0.85	0.33	0.42	0.53	0.64
		PI	1.52	1.52	1.52	1.52	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
	-10	TC	7.63	7.72	7.81	7.90	8.02	8.02	8.02	8.10	8.22	8.22	8.22	8.31	8.76	8.76	8.76	8.76
		S/T	0.80	0.91	1.00	1.00	0.61	0.73	0.84	0.98	0.52	0.63	0.75	0.85	0.33	0.43	0.53	0.64
		PI	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
	-5	TC	7.59	7.68	7.77	7.85	7.99	7.99	7.99	8.07	8.19	8.19	8.19	8.28	8.73	8.73	8.73	8.73
		S/T	0.80	0.92	1.00	1.00	0.61	0.73	0.85	0.99	0.53	0.63	0.75	0.86	0.33	0.43	0.54	0.64
		PI	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
	0	TC	7.55	7.64	7.73	7.82	7.96	7.96	7.96	8.04	8.17	8.17	8.17	8.26	8.73	8.73	8.73	8.73
		S/T	0.80	0.92	1.00	1.00	0.62	0.74	0.85	0.99	0.53	0.64	0.75	0.86	0.33	0.43	0.54	0.65
		PI	1.52	1.52	1.52	1.52	1.51	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
	5	TC	7.51	7.60	7.69	7.78	7.93	7.93	7.93	8.01	8.14	8.14	8.14	8.23	8.72	8.72	8.72	8.72
		S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.64	0.76	0.87	0.33	0.43	0.54	0.65
		PI	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
	10	TC	7.47	7.55	7.64	7.73	7.89	7.89	7.89	7.98	8.11	8.11	8.11	8.20	8.70	8.70	8.70	8.70
		S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65
		PI	1.56	1.56	1.56	1.56	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
15	TC	7.40	7.49	7.58	7.67	7.83	7.83	7.83	7.92	8.06	8.06	8.06	8.15	8.66	8.66	8.66	8.66	
	S/T	0.82	0.94	1.00	1.00	0.63	0.75	0.87	0.98	0.54	0.65	0.77	0.88	0.34	0.44	0.55	0.66	
	PI	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.58	1.58	1.58	1.58	
20	TC	7.32	7.41	7.49	7.58	7.75	7.75	7.75	7.84	7.98	7.98	7.98	8.07	8.58	8.58	8.58	8.58	
	S/T	0.82	0.94	1.00	1.00	0.63	0.75	0.87	0.98	0.54	0.65	0.77	0.88	0.34	0.44	0.55	0.66	
	PI	1.65	1.65	1.65	1.65	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.63	1.63	1.63	1.63	
25	TC	6.98	7.03	7.09	7.15	7.41	7.41	7.41	7.49	7.64	7.64	7.64	7.72	8.21	8.21	8.21	8.21	
	S/T	0.83	0.96	1.00	1.00	0.63	0.76	0.88	1.00	0.54	0.66	0.79	0.90	0.33	0.45	0.56	0.67	
	PI	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	
30	TC	6.63	6.69	6.75	6.80	7.06	7.06	7.12	7.18	7.29	7.29	7.29	7.38	7.84	7.84	7.84	7.84	
	S/T	0.85	0.98	1.00	1.00	0.64	0.77	0.90	1.00	0.55	0.68	0.80	0.92	0.33	0.45	0.57	0.69	
	PI	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.00	2.00	
35	TC	6.32	6.37	6.43	6.49	6.72	6.72	6.78	6.83	6.92	6.92	6.92	7.03	7.09	7.46	7.46	7.46	
	S/T	0.87	1.00	1.00	1.00	0.65	0.79	0.93	1.00	0.56	0.69	0.82	0.94	0.33	0.45	0.58	0.70	
	PI	2.17	2.17	2.17	2.17	2.18	2.18	2.18	2.18	2.19	2.19	2.19	2.19	2.20	2.20	2.20	2.20	
40	TC	5.96	6.02	6.08	6.13	6.35	6.35	6.41	6.47	6.54	6.54	6.60	6.66	7.07	7.07	7.07	7.07	
	S/T	0.91	1.00	1.00	1.00	0.68	0.83	0.97	1.00	0.57	0.71	0.86	1.00	0.32	0.46	0.59	0.90	
	PI	2.40	2.40	2.40	2.40	2.41	2.41	2.41	2.41	2.42	2.42	2.42	2.42	2.43	2.43	2.43	2.43	
46	TC	5.52	5.58	5.64	5.69	5.90	5.90	5.95	6.01	6.07	6.07	6.07	6.13	6.59	6.59	6.59	6.59	
	S/T	0.93	1.00	1.00	1.00	0.68	0.84	0.99	1.00	0.57	0.73	0.88	1.00	0.32	0.46	0.60	0.92	
	PI	2.67	2.67	2.67	2.67	2.68	2.68	2.68	2.68	2.69	2.69	2.69	2.69	2.71	2.71	2.71	2.71	
50	TC	5.18	5.23	5.29	5.35	5.52	5.52	5.58	5.64	5.72	5.72	5.78	5.84	6.18	6.18	6.18	6.18	
	S/T	0.96	1.00	1.00	1.00	0.70	0.87	1.00	1.00	0.58	0.75	0.90	1.00	0.32	0.47	0.62	0.97	
	PI	2.89	2.89	2.89	2.89	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.94	2.94	2.94	

TC: Total Cooling Capacity (kW)

S/T: Sensible Cooling Capacity Ratio

PI: Power Input(kW)

Note: The table shows the case where the operation frequency of a compressor is fixed.

1775	-15	TC	11.49	11.49	11.61	11.73	12.08	12.08	12.08	12.20	12.38	12.38	12.38	12.38	13.15	13.15	13.15	13.15
		S/T	0.74	0.85	1.00	1.00	0.58	0.69	0.78	0.98	0.51	0.61	0.70	0.79	0.34	0.42	0.51	0.60
		PI	2.60	2.60	2.60	2.60	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.58	2.58	2.58	2.58
	-10	TC	11.42	11.42	11.54	11.66	12.01	12.01	12.01	12.13	12.32	12.32	12.32	12.32	13.11	13.11	13.11	13.11
		S/T	0.75	0.85	1.00	1.00	0.58	0.69	0.79	0.98	0.51	0.61	0.70	0.80	0.34	0.43	0.51	0.60
		PI	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.58	2.58	2.58	2.58	2.59	2.59	2.59	2.59
	-5	TC	11.35	11.35	11.47	11.59	11.97	11.97	11.97	12.08	12.28	12.28	12.28	12.28	13.07	13.07	13.07	13.07
		S/T	0.75	0.86	1.00	1.00	0.59	0.69	0.79	0.99	0.52	0.61	0.70	0.80	0.34	0.43	0.52	0.60
		PI	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.59	2.59	2.59	2.59
	0	TC	11.29	11.29	11.41	11.53	11.92	11.92	11.92	12.04	12.24	12.24	12.24	12.24	13.06	13.06	13.06	13.06
		S/T	0.75	0.86	1.00	1.00	0.59	0.70	0.79	0.99	0.52	0.62	0.71	0.80	0.34	0.43	0.52	0.61
		PI	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.60	2.60	2.60	2.60
	5	TC	11.24	11.24	11.36	11.47	11.87	11.87	11.87	11.99	12.20	12.20	12.20	12.20	13.05	13.05	13.05	13.05
		S/T	0.76	0.87	1.00	1.00	0.59	0.70	0.80	1.00	0.52	0.62	0.71	0.81	0.34	0.43	0.52	0.61
		PI	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.61	2.61	2.61	2.61	2.62	2.62	2.62	2.62
	10	TC	11.17	11.17	11.29	11.40	11.82	11.82	11.82	11.94	12.15	12.15	12.15	12.15	13.02	13.02	13.02	13.02
		S/T	0.76	0.87	1.00	1.00	0.59	0.70	0.80	1.00	0.52	0.62	0.71	0.81	0.35	0.44	0.52	0.61
		PI	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
15	TC	11.08	11.08	11.19	11.31	11.74	11.74	11.74	11.86	12.08	12.08	12.08	12.08	12.96	12.96	12.96	12.96	
	S/T	0.77	0.88	0.98	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.72	0.82	0.35	0.44	0.53	0.62	
	PI	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	
20	TC	10.95	10.95	11.07	11.18	11.61	11.61	11.61	11.73	11.96	11.96	11.96	11.96	12.85	12.85	12.85	12.85	
	S/T	0.77	0.88	0.98	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.72	0.82	0.35	0.44	0.53	0.62	
	PI	2.82	2.82	2.82	2.82	2.81	2.81	2.81	2.81	2.80	2.80	2.80	2.80	2.79	2.79	2.79	2.79	
25	TC	10.46	10.58	10.69	10.81	11.10	11.10	11.10	11.21	11.44	11.44	11.44	11.44	12.30	12.30	12.30	12.30	
	S/T	0.78	0.89	1.00	1.00	0.61	0.72	0.82	0.93	0.53	0.63	0.74	0.84	0.34	0.44	0.54	0.63	
	PI	3.11	3.11	3.11	3.11	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.11	3.11	3.11	3.11	
30	TC	9.98	10.06	10.18	10.29	10.61	10.61	10.61	10.72	10.92	10.92	10.92	10.92	11.76	11.76	11.76	11.76	
	S/T	0.80	0.91	1.00	1.00	0.62	0.73	0.84	0.95	0.53	0.64	0.75	0.86	0.34	0.44	0.54	0.64	
	PI	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.42	3.42	3.42	3.42	3.43	3.43	3.43	3.43	
35	TC	9.46	9.54	9.63	9.72	10.06	10.06	10.06	10.18	10.38	10.38	10.55	10.38	11.21	11.21	11.21	11.21	
	S/T	0.81	0.94	1.00	1.00	0.63	0.74	0.86	0.98	0.54	0.65	0.76	0.88	0.34	0.44	0.55	0.66	
	PI	3.72	3.72	3.72	3.72	3.74	3.74	3.74	3.74	3.74	3.74	3.75	3.74	3.77	3.77	3.77	3.77	
40	TC	8.91	9.00	9.08	9.17	9.49	9.49	9.53	9.63	9.79	9.79	9.89	9.83	10.60	10.60	10.60	10.60	
	S/T	0.85	0.98	1.00	1.00	0.64	0.77	0.90	1.00	0.55	0.67	0.80	0.92	0.33	0.45	0.56	0.90	
	PI	4.11	4.11	4.11	4.11	4.13	4.13	4.13	4.13	4.13	4.13	4.14	4.13	4.16	4.16	4.16	4.16	
46	TC	8.25	8.34	8.43	8.51	8.80	8.80	8.89	8.97	9.09	9.09	9.17	9.17	9.86	9.86	9.86	9.86	
	S/T	0.86	1.00	1.00	1.00	0.65	0.79	0.92	1.00	0.55	0.68	0.82	0.94	0.33	0.45	0.57	0.92	
	PI	4.57	4.57	4.57	4.57	4.59	4.59	4.59	4.59	4.60	4.60	4.60	4.60	4.64	4.64	4.64	4.64	
50	TC	7.74	7.82	7.91	7.99	8.28	8.28	8.37	8.45	8.57	8.57	8.57	8.66	9.29	9.29	9.29	9.29	
	S/T	0.89	1.00	1.00	1.00	0.66	0.81	0.95	1.00	0.56	0.70	0.84	0.97	0.33	0.45	0.58	0.97	
	PI	4.95	4.95	4.95	4.95	4.97	4.97	4.97	4.97	4.98	4.98	4.98	4.98	5.02	5.02	5.02	5.02	

TC:Total Cooling Capacity (kW)
S/T:Sensible Cooling Capacity Ratio
PI:Power Input(kW)
Note: The table shows the case where the operation frequency of a compressor is fixed.

1970	-15	TC	16.92	16.92	16.92	17.10	17.80	17.80	17.80	17.80	18.25	18.25	18.25	18.25	19.36	19.36	19.36	19.36
		S/T	0.69	0.76	1.00	1.00	0.56	0.63	0.70	0.98	0.49	0.57	0.64	0.71	0.36	0.42	0.49	0.56
		PI	4.13	4.13	4.13	4.13	4.12	4.12	4.12	4.12	4.11	4.11	4.11	4.11	4.10	4.10	4.10	4.10
	-10	TC	16.82	16.82	16.82	17.00	17.70	17.70	17.70	17.70	18.16	18.16	18.16	18.16	19.30	19.30	19.30	19.30
		S/T	0.69	0.77	1.00	1.00	0.56	0.63	0.71	0.98	0.49	0.57	0.64	0.72	0.36	0.43	0.49	0.56
		PI	4.11	4.11	4.11	4.11	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.11	4.11	4.11	4.11
	-5	TC	16.72	16.72	16.72	16.90	17.63	17.63	17.63	17.63	18.10	18.10	18.10	18.10	19.25	19.25	19.25	19.25
		S/T	0.69	0.77	1.00	1.00	0.57	0.63	0.71	0.99	0.50	0.58	0.64	0.72	0.36	0.43	0.50	0.57
		PI	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.11	4.11	4.11	4.11
	0	TC	16.64	16.64	16.64	16.82	17.56	17.56	17.56	17.56	18.05	18.05	18.05	18.05	19.23	19.23	19.23	19.23
		S/T	0.70	0.77	1.00	1.00	0.57	0.64	0.72	0.99	0.50	0.58	0.65	0.73	0.36	0.43	0.50	0.57
		PI	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.13	4.13	4.13	4.13
	5	TC	16.55	16.55	16.55	16.73	17.50	17.50	17.50	17.50	17.99	17.99	17.99	17.99	19.22	19.22	19.22	19.22
		S/T	0.70	0.78	1.00	1.00	0.57	0.64	0.72	1.00	0.50	0.58	0.65	0.73	0.36	0.43	0.50	0.57
		PI	4.16	4.16	4.16	4.16	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.16	4.16	4.16	4.16
	10	TC	16.45	16.45	16.45	16.63	17.41	17.41	17.41	17.41	17.91	17.91	17.91	17.91	19.17	19.17	19.17	19.17
		S/T	0.70	0.78	1.00	1.00	0.57	0.64	0.72	1.00	0.50	0.58	0.65	0.73	0.37	0.44	0.50	0.57
		PI	4.23	4.23	4.23	4.23	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21
15	TC	16.32	16.32	16.32	16.49	17.30	17.30	17.30	17.30	17.80	17.80	17.80	17.80	19.09	19.09	19.09	19.09	
	S/T	0.71	0.79	0.87	0.95	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
	PI	4.33	4.33	4.33	4.33	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.30	4.30	4.30	4.30	
20	TC	16.14	16.14	16.14	16.31	17.11	17.11	17.11	17.11	17.63	17.63	17.63	17.63	18.92	18.92	18.92	18.92	
	S/T	0.71	0.79	0.87	0.95	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
	PI	4.48	4.48	4.48	4.48	4.46	4.46	4.46	4.46	4.45	4.45	4.45	4.45	4.43	4.43	4.43	4.43	
25	TC	15.39	15.39	15.53	15.68	16.37	16.37	16.37	16.37	16.85	16.85	16.85	16.85	18.12	18.12	18.12	18.12	
	S/T	0.72	0.80	0.89	0.97	0.58	0.66	0.74	0.82	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
	PI	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	
30	TC	14.67	14.67	14.82	14.96	15.59	15.59	15.59	15.59	16.08	16.08	16.08	16.08	17.31	17.31	17.31	17.31	
	S/T	0.73	0.82	0.90	0.99	0.58	0.67	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59	
	PI	5.40	5.40	5.40	5.40	5.41	5.41	5.41	5.41	5.42	5.42	5.42	5.42	5.44	5.44	5.44	5.44	
35	TC	13.93	13.93	14.07	14.21	14.84	14.84	14.84	14.84	15.30	15.30	15.30	15.30	16.51	16.51	16.51	16.51	
	S/T	0.74	0.83	0.92	1.00	0.59	0.68	0.77	0.85	0.52	0.60	0.69	0.78	0.36	0.44	0.52	0.60	
	PI	5.91	5.91	5.91	5.91	5.93	5.93	5.93	5.93	5.94	5.94	5.94	5.94	5.98	5.98	5.98	5.98	
40	TC	13.13	13.13	13.26	13.39	14.01	14.01	14.01	14.08	14.44	14.44	14.57	14.44	15.61	15.61	15.61	15.61	
	S/T	0.76	0.86	0.96	1.00	0.60	0.70	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.52	0.90	
	PI	6.52	6.52	6.52	6.52	6.54	6.54	6.54	6.54	6.56	6.56	6.56	6.56	6.61	6.61	6.61	6.61	
46	TC	12.16	12.16	12.27	12.39	12.99	12.99	12.99	13.14	13.39	13.39	13.39	13.39	14.51	14.51	14.51	14.51	
	S/T	0.77	0.88	0.98	1.00	0.60	0.70	0.81	0.90	0.53	0.62	0.72	0.82	0.35	0.44	0.53	0.92	
	PI	7.25	7.25	7.25	7.25	7.28	7.28	7.28	7.28	7.30	7.30	7.30	7.30	7.36	7.36	7.36	7.36	
50	TC	11.41	11.53	11.64	11.76	12.22	12.22	12.22	12.33	12.62	12.62	12.62	12.62	13.68	13.68	13.68	13.68	
	S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.63	0.74	0.84	0.34	0.44	0.54	0.97	
	PI	7.85	7.85	7.85	7.85	7.89	7.89	7.89	7.89	7.91	7.91	7.91	7.91	7.97	7.97	7.97	7.97	

TC: Total Cooling Capacity (kW)
 S/T: Sensible Cooling Capacity Ratio
 PI: Power Input (kW)
 Note: The table shows the case where the operation frequency of a compressor is fixed.
Heating

42QTD012D85+38QU5012D85								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(C)	TC:TOTAL CAPACITY IN KILOWATTS				PI: TOTAL POWER IN KILOWATTS			
		Indoor Conditions (DB C)				Indoor Conditions (DB C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
416	-15.0	3.58	3.55	3.53	3.53	1.47	1.52	1.47	1.47
	-10.0	3.82	3.79	3.77	3.77	1.56	1.62	1.57	1.57
	-7.0	4.00	3.97	3.95	3.95	1.66	1.72	1.67	1.67
	-5.6	3.97	3.95	3.92	3.92	1.60	1.60	1.61	1.61
	-2.8	3.95	3.92	3.89	3.86	1.49	1.49	1.49	1.49
	0.0	3.89	3.83	3.80	3.80	1.38	1.38	1.38	1.38
	2.8	3.95	3.89	3.86	3.83	1.30	1.29	1.28	1.28
	5.6	4.12	4.06	4.03	4.00	1.20	1.19	1.18	1.17
	7.0	4.31	4.25	4.22	4.19	1.15	1.08	1.13	1.12
	11.1	4.37	4.31	4.28	4.25	1.00	0.98	0.97	0.95
	13.9	4.43	4.37	4.34	4.31	0.90	0.87	0.86	0.84
	16.7	4.48	4.43	4.37	4.34	0.80	0.76	0.75	0.73
18.0	4.51	4.43	4.40	4.37	0.75	0.71	0.70	0.68	
504	-15.0	3.65	3.62	3.59	3.57	1.48	1.54	1.49	1.49
	-10.0	3.89	3.87	3.84	3.81	1.58	1.64	1.59	1.59
	-7.0	4.08	4.05	4.02	3.99	1.68	1.74	1.69	1.69
	-5.6	4.06	4.03	4.00	3.97	1.62	1.62	1.63	1.63
	-2.8	4.03	3.97	3.97	3.95	1.51	1.51	1.51	1.51
	0.0	3.95	3.92	3.89	3.86	1.40	1.39	1.39	1.39
	2.8	4.00	3.97	3.95	3.92	1.31	1.30	1.30	1.29
	5.6	4.21	4.15	4.12	4.09	1.21	1.20	1.19	1.18
	7.0	4.40	4.34	4.31	4.28	1.16	1.09	1.14	1.13
	11.1	4.45	4.40	4.37	4.34	1.01	0.99	0.97	0.96
	13.9	4.51	4.45	4.43	4.40	0.91	0.88	0.86	0.85
	16.7	4.57	4.51	4.48	4.43	0.80	0.77	0.75	0.74
18.0	4.60	4.54	4.48	4.45	0.75	0.72	0.70	0.68	
617	-15.0	3.68	3.66	3.66	3.63	1.50	1.55	1.51	1.51
	-10.0	3.93	3.91	3.91	3.88	1.60	1.66	1.61	1.61
	-7.0	4.12	4.09	4.09	4.06	1.70	1.76	1.71	1.71
	-5.6	4.09	4.06	4.06	4.03	1.64	1.64	1.64	1.65
	-2.8	4.06	4.03	4.00	4.00	1.53	1.53	1.53	1.53
	0.0	4.00	3.95	3.95	3.92	1.41	1.41	1.41	1.40
	2.8	4.06	4.00	3.97	3.95	1.32	1.31	1.31	1.31
	5.6	4.24	4.21	4.18	4.15	1.23	1.21	1.20	1.20
	7.0	4.43	4.40	4.37	4.34	1.18	1.10	1.15	1.14
	11.1	4.54	4.45	4.43	4.40	1.02	1.00	0.98	0.97
	13.9	4.60	4.51	4.48	4.45	0.91	0.88	0.87	0.86
	16.7	4.66	4.57	4.54	4.51	0.81	0.77	0.76	0.74
18.0	4.69	4.60	4.57	4.54	0.76	0.72	0.70	0.68	

42QTD018D8S-1+38QUS018D8S								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(°C)	TC:TOTAL CAPACITY IN KILOWATTS (KW)				PI:TOTAL POWER IN KILOWATTS (KW)			
		Indoor Conditions (DB °C)				Indoor Conditions (DB °C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
540	-15.0	4.07	4.02	4.00	4.00	1.61	1.67	1.64	1.65
	-10.0	4.35	4.29	4.27	4.27	1.72	1.78	1.75	1.76
	-7.0	4.56	4.50	4.47	4.47	1.83	1.89	1.86	1.87
	-5.6	4.59	4.53	4.50	4.50	1.78	1.80	1.81	1.82
	-2.8	4.61	4.56	4.53	4.50	1.70	1.72	1.73	1.73
	0.0	4.59	4.53	4.50	4.47	1.62	1.63	1.64	1.65
	2.8	4.70	4.64	4.61	4.59	1.56	1.57	1.57	1.58
	5.6	4.99	4.93	4.91	4.88	1.49	1.50	1.50	1.50
	7.0	5.31	5.25	5.16	5.13	1.47	1.44	1.48	1.48
	11.1	5.48	5.39	5.36	5.31	1.36	1.36	1.36	1.36
	13.9	5.60	5.51	5.48	5.45	1.29	1.29	1.29	1.28
	16.7	5.74	5.65	5.60	5.57	1.22	1.21	1.21	1.20
18.0	5.80	5.71	5.65	5.63	1.18	1.18	1.17	1.17	
625	-15.0	4.14	4.11	4.09	4.06	1.62	1.68	1.65	1.67
	-10.0	4.42	4.39	4.36	4.34	1.73	1.79	1.76	1.78
	-7.0	4.63	4.60	4.57	4.54	1.84	1.90	1.87	1.89
	-5.6	4.67	4.64	4.61	4.59	1.80	1.82	1.83	1.84
	-2.8	4.70	4.64	4.64	4.61	1.72	1.73	1.74	1.75
	0.0	4.67	4.61	4.59	4.56	1.64	1.65	1.65	1.66
	2.8	4.82	4.76	4.73	4.70	1.57	1.58	1.58	1.59
	5.6	5.11	5.05	5.02	4.99	1.50	1.51	1.51	1.51
	7.0	5.43	5.36	5.28	5.25	1.48	1.45	1.49	1.49
	11.1	5.60	5.51	5.48	5.45	1.37	1.37	1.37	1.37
	13.9	5.71	5.65	5.60	5.57	1.30	1.30	1.29	1.29
	16.7	5.86	5.77	5.74	5.68	1.23	1.22	1.21	1.21
18.0	5.91	5.83	5.80	5.74	1.19	1.18	1.18	1.17	
720	-15.0	4.20	4.15	4.13	4.13	1.64	1.70	1.67	1.68
	-10.0	4.49	4.43	4.41	4.41	1.75	1.81	1.79	1.80
	-7.0	4.70	4.64	4.62	4.62	1.86	1.93	1.90	1.91
	-5.6	4.73	4.67	4.64	4.64	1.82	1.84	1.85	1.86
	-2.8	4.76	4.70	4.67	4.64	1.73	1.75	1.76	1.77
	0.0	4.73	4.67	4.64	4.61	1.65	1.66	1.67	1.68
	2.8	4.88	4.82	4.76	4.73	1.58	1.59	1.60	1.60
	5.6	5.17	5.11	5.08	5.02	1.52	1.52	1.52	1.53
	7.0	5.48	5.42	5.34	5.31	1.49	1.46	1.50	1.50
	11.1	5.65	5.57	5.54	5.51	1.38	1.38	1.38	1.38
	13.9	5.80	5.71	5.65	5.63	1.31	1.30	1.30	1.30
	16.7	5.91	5.83	5.80	5.74	1.23	1.22	1.22	1.21
18.0	6.00	5.91	5.86	5.80	1.19	1.18	1.18	1.17	

42QTD024R8S+38QU5024R8S								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(C)	TC:TOTAL CAPACITY IN KILOWATTS				PI: TOTAL POWER IN KILOWATTS			
		Indoor Conditions (DB C)				Indoor Conditions (DB C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
1032	-15.0	5.48	5.40	5.37	5.35	2.23	2.31	2.27	2.28
	-10.0	5.85	5.77	5.74	5.71	2.38	2.46	2.42	2.43
	-7.0	6.13	6.04	6.01	5.98	2.52	2.61	2.57	2.58
	-5.6	6.22	6.13	6.10	6.07	2.46	2.49	2.50	2.52
	-2.8	6.30	6.22	6.19	6.16	2.37	2.38	2.39	2.40
	0.0	6.30	6.22	6.19	6.16	2.26	2.28	2.29	2.30
	2.8	6.53	6.45	6.42	6.36	2.17	2.19	2.20	2.20
	5.6	7.00	6.91	6.85	6.82	2.09	2.10	2.10	2.11
	7.0	7.48	7.39	7.27	7.21	2.05	2.01	2.06	2.06
	11.1	7.74	7.65	7.59	7.53	1.91	1.91	1.91	1.91
	13.9	8.00	7.88	7.82	7.77	1.81	1.81	1.81	1.80
	16.7	8.23	8.11	8.05	8.00	1.71	1.71	1.70	1.70
18.0	8.34	8.20	8.14	8.08	1.67	1.66	1.65	1.65	
1200	-15.0	5.58	5.51	5.48	5.45	2.24	2.32	2.29	2.31
	-10.0	5.96	5.88	5.85	5.82	2.39	2.48	2.44	2.46
	-7.0	6.24	6.16	6.13	6.10	2.54	2.63	2.59	2.61
	-5.6	6.33	6.24	6.22	6.19	2.48	2.51	2.53	2.54
	-2.8	6.42	6.33	6.30	6.27	2.38	2.40	2.41	2.43
	0.0	6.42	6.36	6.30	6.27	2.28	2.30	2.31	2.32
	2.8	6.68	6.59	6.53	6.51	2.19	2.21	2.22	2.22
	5.6	7.14	7.03	7.00	6.94	2.11	2.12	2.12	2.13
	7.0	7.66	7.53	7.39	7.36	2.07	2.03	2.08	2.09
	11.1	7.91	7.79	7.74	7.68	1.93	1.93	1.93	1.93
	13.9	8.14	8.03	7.97	7.91	1.83	1.83	1.83	1.82
	16.7	8.37	8.26	8.20	8.14	1.73	1.73	1.72	1.72
18.0	8.49	8.37	8.32	8.26	1.69	1.68	1.67	1.67	
1378	-15.0	5.61	5.56	5.50	5.48	2.27	2.35	2.31	2.32
	-10.0	5.99	5.93	5.88	5.85	2.42	2.51	2.47	2.48
	-7.0	6.27	6.22	6.16	6.13	2.57	2.66	2.62	2.63
	-5.6	6.39	6.33	6.27	6.24	2.51	2.54	2.55	2.57
	-2.8	6.48	6.42	6.36	6.33	2.40	2.43	2.44	2.45
	0.0	6.51	6.42	6.36	6.33	2.30	2.32	2.33	2.34
	2.8	6.74	6.65	6.62	6.56	2.22	2.23	2.24	2.25
	5.6	7.20	7.12	7.09	7.03	2.13	2.14	2.15	2.15
	7.0	7.71	7.62	7.48	7.45	2.09	2.05	2.10	2.11
	11.1	8.00	7.88	7.82	7.77	1.94	1.95	1.95	1.95
	13.9	8.23	8.11	8.05	8.00	1.85	1.84	1.84	1.84
	16.7	8.49	8.37	8.32	8.23	1.75	1.74	1.74	1.73
18.0	8.61	8.49	8.40	8.34	1.70	1.69	1.69	1.68	

42QTD036R8S+38QUS036R8S								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(C)	TC:TOTAL CAPACITY IN KILOWATTS				PI: TOTAL POWER IN KILOWATTS			
		Indoor Conditions (DB C)				Indoor Conditions (DB C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
1438	-15.0	8.38	8.27	8.25	8.20	3.59	3.72	3.63	3.65
	-10.0	8.94	8.83	8.81	8.75	3.83	3.97	3.88	3.89
	-7.0	9.37	9.25	9.23	9.17	4.07	4.22	4.12	4.14
	-5.6	9.43	9.31	9.28	9.22	3.95	3.98	3.99	4.01
	-2.8	9.46	9.37	9.31	9.25	3.73	3.75	3.76	3.77
	0.0	9.40	9.31	9.25	9.20	3.51	3.52	3.53	3.53
	2.8	9.69	9.54	9.49	9.43	3.33	3.33	3.33	3.33
	5.6	10.27	10.15	10.07	10.01	3.14	3.13	3.13	3.12
	7.0	10.91	10.79	10.64	10.56	3.05	2.93	3.03	3.02
	11.1	11.25	11.08	11.02	10.93	2.76	2.73	2.72	2.70
	13.9	11.51	11.34	11.25	11.20	2.56	2.52	2.50	2.48
	16.7	11.78	11.60	11.51	11.43	2.35	2.30	2.28	2.26
18.0	11.92	11.72	11.63	11.54	2.25	2.20	2.17	2.15	
1620	-15.0	8.52	8.44	8.39	8.37	3.63	3.76	3.68	3.69
	-10.0	9.10	9.02	8.96	8.93	3.88	4.01	3.92	3.94
	-7.0	9.53	9.45	9.39	9.36	4.12	4.26	4.17	4.19
	-5.6	9.60	9.51	9.46	9.43	4.00	4.02	4.04	4.05
	-2.8	9.66	9.57	9.51	9.46	3.77	3.79	3.80	3.81
	0.0	9.60	9.49	9.43	9.37	3.55	3.56	3.57	3.57
	2.8	9.89	9.75	9.69	9.63	3.37	3.37	3.37	3.37
	5.6	10.50	10.36	10.30	10.21	3.18	3.17	3.16	3.16
	7.0	11.18	11.02	10.88	10.79	3.09	2.97	3.06	3.06
	11.1	11.49	11.34	11.25	11.17	2.78	2.76	2.75	2.73
	13.9	11.75	11.60	11.51	11.43	2.58	2.55	2.53	2.51
	16.7	12.04	11.86	11.78	11.69	2.38	2.33	2.31	2.28
18.0	12.18	11.98	11.89	11.80	2.28	2.23	2.20	2.17	
1775	-15.0	8.63	8.53	8.51	8.45	3.67	3.80	3.71	3.73
	-10.0	9.22	9.11	9.08	9.03	3.91	4.05	3.96	3.98
	-7.0	9.66	9.54	9.52	9.46	4.16	4.31	4.21	4.23
	-5.6	9.72	9.60	9.57	9.51	4.04	4.07	4.08	4.09
	-2.8	9.78	9.66	9.60	9.54	3.81	3.83	3.84	3.85
	0.0	9.72	9.60	9.54	9.49	3.59	3.60	3.60	3.61
	2.8	9.98	9.86	9.81	9.75	3.40	3.40	3.40	3.40
	5.6	10.62	10.47	10.39	10.33	3.21	3.20	3.19	3.19
	7.0	11.29	11.14	10.99	10.91	3.12	2.99	3.09	3.09
	11.1	11.60	11.46	11.37	11.28	2.81	2.78	2.77	2.76
	13.9	11.89	11.72	11.63	11.54	2.61	2.57	2.55	2.53
	16.7	12.15	11.98	11.89	11.80	2.40	2.35	2.32	2.30
18.0	12.30	12.12	12.01	11.92	2.30	2.24	2.22	2.19	

42QTD036R8S+38QUS036R8T								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(C)	TC:TOTAL CAPACITY IN KILOWATTS				PI: TOTAL POWER IN KILOWATTS			
		Indoor Conditions (DB C)				Indoor Conditions (DB C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
1438	-15.0	9.04	8.96	8.91	8.89	3.63	3.76	3.68	3.70
	-10.0	9.66	9.57	9.52	9.49	3.88	4.02	3.92	3.94
	-7.0	10.12	10.03	9.97	9.94	4.12	4.27	4.17	4.19
	-5.6	10.06	9.97	9.91	9.88	4.00	4.02	4.04	4.05
	-2.8	9.97	9.88	9.83	9.77	3.77	3.79	3.80	3.81
	0.0	9.80	9.68	9.62	9.56	3.55	3.55	3.56	3.56
	2.8	9.94	9.80	9.74	9.68	3.36	3.36	3.36	3.36
	5.6	10.40	10.26	10.20	10.12	3.16	3.15	3.15	3.14
	7.0	10.94	10.79	10.70	10.62	3.07	2.94	3.04	3.03
	11.1	11.11	10.96	10.88	10.82	2.76	2.73	2.71	2.69
	13.9	11.25	11.08	10.99	10.93	2.55	2.50	2.49	2.47
	16.7	11.40	11.22	11.14	11.05	2.35	2.29	2.27	2.24
18.0	11.46	11.28	11.20	11.11	2.24	2.19	2.16	2.13	
1620	-15.0	9.23	9.15	9.09	9.07	3.68	3.81	3.71	3.73
	-10.0	9.85	9.77	9.71	9.68	3.92	4.06	3.96	3.98
	-7.0	10.32	10.23	10.17	10.14	4.17	4.31	4.21	4.23
	-5.6	10.26	10.17	10.12	10.09	4.04	4.07	4.08	4.09
	-2.8	10.17	10.09	10.03	9.97	3.81	3.83	3.84	3.85
	0.0	10.00	9.88	9.83	9.77	3.58	3.59	3.59	3.60
	2.8	10.14	10.03	9.94	9.88	3.39	3.39	3.39	3.39
	5.6	10.61	10.49	10.40	10.35	3.20	3.18	3.18	3.17
	7.0	11.14	11.02	10.93	10.85	3.10	2.97	3.07	3.07
	11.1	11.34	11.20	11.11	11.05	2.78	2.75	2.74	2.72
	13.9	11.49	11.34	11.25	11.17	2.57	2.53	2.51	2.50
	16.7	11.63	11.46	11.37	11.28	2.37	2.32	2.29	2.26
18.0	11.72	11.51	11.43	11.34	2.27	2.21	2.18	2.15	
1775	-15.0	9.33	9.25	9.20	9.15	3.71	3.84	3.76	3.76
	-10.0	9.96	9.88	9.82	9.77	3.96	4.10	4.01	4.02
	-7.0	10.43	10.35	10.29	10.23	4.21	4.36	4.26	4.27
	-5.6	10.38	10.29	10.23	10.17	4.08	4.11	4.12	4.14
	-2.8	10.29	10.20	10.14	10.09	3.85	3.87	3.88	3.89
	0.0	10.12	10.00	9.94	9.88	3.62	3.63	3.63	3.64
	2.8	10.26	10.12	10.06	10.00	3.43	3.43	3.43	3.42
	5.6	10.72	10.58	10.52	10.46	3.23	3.22	3.21	3.20
	7.0	11.29	11.14	11.05	10.96	3.13	3.00	3.11	3.10
	11.1	11.46	11.31	11.22	11.17	2.81	2.78	2.76	2.75
	13.9	11.60	11.46	11.37	11.28	2.60	2.56	2.53	2.51
	16.7	11.75	11.57	11.49	11.40	2.39	2.34	2.31	2.29
18.0	11.83	11.63	11.54	11.46	2.29	2.23	2.20	2.17	

42QTD048R8S+38QU5048R8T								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(C)	TC:TOTAL CAPACITY IN KILOWATTS				PI: TOTAL POWER IN KILOWATTS			
		Indoor Conditions (DB C)				Indoor Conditions (DB C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
1381	-15.0	10.43	10.30	10.25	10.20	4.62	4.77	4.76	4.81
	-10.0	11.13	11.00	10.94	10.89	4.93	5.09	5.08	5.13
	-7.0	11.66	11.52	11.47	11.41	5.24	5.41	5.40	5.45
	-5.6	12.07	11.93	11.87	11.81	5.18	5.28	5.33	5.38
	-2.8	12.45	12.31	12.25	12.16	5.08	5.18	5.23	5.28
	0.0	12.68	12.54	12.45	12.36	4.98	5.08	5.13	5.18
	2.8	13.41	13.23	13.15	13.03	4.93	5.03	5.07	5.12
	5.6	14.57	14.39	14.28	14.19	4.89	4.98	5.02	5.07
	7.0	15.82	15.63	15.25	15.16	4.87	4.95	5.01	5.05
	11.1	16.58	16.38	16.26	16.15	4.77	4.85	4.89	4.93
	13.9	17.31	17.08	16.96	16.82	4.69	4.77	4.81	4.85
	16.7	18.00	17.74	17.63	17.51	4.62	4.70	4.74	4.78
18.0	18.35	18.09	17.95	17.83	4.59	4.66	4.70	4.74	
1568	-15.0	10.63	10.51	10.46	10.41	4.67	4.82	4.81	4.85
	-10.0	11.35	11.22	11.17	11.11	4.98	5.14	5.13	5.17
	-7.0	11.89	11.75	11.70	11.64	5.29	5.46	5.45	5.50
	-5.6	12.31	12.16	12.10	12.04	5.23	5.33	5.39	5.44
	-2.8	12.71	12.57	12.48	12.42	5.13	5.23	5.28	5.33
	0.0	12.94	12.80	12.71	12.62	5.03	5.13	5.18	5.23
	2.8	13.67	13.50	13.41	13.32	4.98	5.08	5.13	5.17
	5.6	14.86	14.69	14.57	14.48	4.94	5.03	5.07	5.12
	7.0	16.13	15.95	15.57	15.45	4.92	5.00	5.06	5.10
	11.1	16.93	16.70	16.58	16.50	4.81	4.90	4.94	4.98
	13.9	17.66	17.42	17.28	17.16	4.74	4.82	4.86	4.90
	16.7	18.38	18.12	18.00	17.86	4.67	4.75	4.78	4.82
18.0	18.73	18.47	18.32	18.21	4.63	4.71	4.75	4.79	
1715	-15.0	10.74	10.61	10.54	10.49	4.71	4.87	4.86	4.90
	-10.0	11.46	11.33	11.25	11.20	5.02	5.19	5.18	5.23
	-7.0	12.01	11.87	11.79	11.73	5.34	5.52	5.51	5.55
	-5.6	12.45	12.31	12.22	12.16	5.28	5.39	5.44	5.49
	-2.8	12.86	12.68	12.62	12.54	5.18	5.28	5.34	5.39
	0.0	13.09	12.91	12.83	12.74	5.08	5.18	5.23	5.28
	2.8	13.81	13.64	13.55	13.47	5.03	5.13	5.18	5.22
	5.6	15.03	14.83	14.74	14.63	4.98	5.08	5.12	5.17
	7.0	16.34	16.12	15.74	15.63	4.97	5.05	5.11	5.15
	11.1	17.13	16.90	16.79	16.67	4.86	4.95	4.99	5.03
	13.9	17.86	17.60	17.48	17.37	4.79	4.87	4.91	4.95
	16.7	18.58	18.32	18.21	18.06	4.71	4.79	4.83	4.87
18.0	18.93	18.67	18.53	18.41	4.68	4.76	4.79	4.83	

42QTD060R8S+38QUS060R8T								[SI_Unit]	
INDOOR AIRFLOW (CMH)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE								
	OUTDOOR DB(C)	TC:TOTAL CAPACITY IN KILOWATTS				PI: TOTAL POWER IN KILOWATTS			
		Indoor Conditions (DB C)				Indoor Conditions (DB C)			
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
1537	-15.0	12.26	12.14	12.06	11.98	4.97	5.12	5.16	5.22
	-10.0	13.09	12.96	12.88	12.80	5.30	5.46	5.50	5.57
	-7.0	13.72	13.58	13.49	13.41	5.63	5.81	5.85	5.92
	-5.6	14.10	13.95	13.87	13.78	5.61	5.76	5.83	5.91
	-2.8	14.45	14.27	14.19	14.10	5.60	5.75	5.82	5.90
	0.0	14.62	14.42	14.33	14.24	5.59	5.74	5.81	5.89
	2.8	15.32	15.11	15.00	14.91	5.64	5.79	5.86	5.93
	5.6	16.53	16.30	16.22	16.10	5.69	5.84	5.91	5.98
	7.0	17.90	17.65	17.27	17.16	5.72	5.92	5.94	6.02
	11.1	18.64	18.40	18.26	18.14	5.75	5.90	5.97	6.05
	13.9	19.33	19.07	18.95	18.81	5.77	5.92	5.99	6.07
	16.7	20.03	19.77	19.62	19.48	5.78	5.94	6.01	6.09
18.0	20.38	20.09	19.94	19.80	5.79	5.95	6.02	6.10	
1737	-15.0	12.50	12.37	12.30	12.24	5.02	5.17	5.21	5.27
	-10.0	13.34	13.21	13.13	13.08	5.35	5.52	5.56	5.62
	-7.0	13.98	13.84	13.75	13.70	5.69	5.86	5.91	5.97
	-5.6	14.36	14.21	14.13	14.07	5.67	5.81	5.89	5.95
	-2.8	14.71	14.56	14.48	14.39	5.66	5.80	5.88	5.94
	0.0	14.88	14.71	14.62	14.50	5.64	5.79	5.87	5.93
	2.8	15.61	15.40	15.29	15.20	5.69	5.84	5.92	5.98
	5.6	16.85	16.62	16.53	16.42	5.74	5.89	5.96	6.03
	7.0	18.25	18.00	17.62	17.50	5.77	5.97	6.00	6.08
	11.1	19.01	18.75	18.64	18.49	5.80	5.95	6.03	6.11
	13.9	19.74	19.45	19.33	19.19	5.82	5.97	6.05	6.13
	16.7	20.44	20.15	20.00	19.85	5.84	5.99	6.07	6.14
18.0	20.78	20.49	20.35	20.20	5.85	6.00	6.08	6.15	
1970	-15.0	12.63	12.50	12.42	12.37	5.06	5.22	5.25	5.32
	-10.0	13.48	13.35	13.27	13.21	5.40	5.57	5.60	5.68
	-7.0	14.12	13.98	13.90	13.84	5.74	5.92	5.95	6.03
	-5.6	14.50	14.36	14.27	14.21	5.72	5.87	5.93	6.01
	-2.8	14.88	14.71	14.62	14.53	5.71	5.86	5.93	6.00
	0.0	15.06	14.85	14.77	14.65	5.70	5.85	5.92	5.99
	2.8	15.75	15.55	15.46	15.35	5.75	5.90	5.97	6.05
	5.6	17.03	16.80	16.68	16.56	5.80	5.95	6.02	6.10
	7.0	18.42	18.17	17.79	17.68	5.83	6.04	6.06	6.13
	11.1	19.19	18.93	18.81	18.69	5.86	6.02	6.10	6.16
	13.9	19.91	19.65	19.51	19.36	5.88	6.04	6.12	6.19
	16.7	20.64	20.35	20.20	20.06	5.90	6.06	6.13	6.21
18.0	20.99	20.67	20.52	20.38	5.91	6.07	6.14	6.22	

8. Capacity Correction Factor for Height Difference

Model		12k		Pipe Length (m)			
		Cooling		5	10	20	25
Height difference H (m)	Indoor Upper than Outdoor	10			0.973	0.948	0.936
		5	0.995		0.983	0.958	0.945
		0	1.000		0.988	0.963	0.950
	Outdoor Upper than Indoor	-5	1.000		0.988	0.963	0.950
		-10			0.988	0.963	0.950
		Heating		5	10	15	20
Height difference H (m)	Indoor Upper than Outdoor	10			0.993	0.978	0.970
		5	1.000		0.993	0.978	0.970
		0	1.000		0.993	0.978	0.970
	Outdoor Upper than Indoor	-5	0.992		0.985	0.970	0.962
		-10			0.977	0.962	0.955

Model		18k		Pipe Length (m)			
		Cooling		5	10	20	30
Height difference H (m)	Indoor Upper than Outdoor	20				0.928	0.912
		10			0.969	0.937	0.921
		5	0.995		0.979	0.946	0.930
		0	1.000		0.984	0.951	0.935
	Outdoor Upper than Indoor	-5	1.000		0.984	0.951	0.935
		-10			0.984	0.951	0.935
		-20				0.951	0.935
		Heating		5	10	20	30
Height difference H (m)	Indoor Upper than Outdoor	20				0.982	0.976
		10			0.994	0.982	0.976
		5	1.000		0.994	0.982	0.976
		0	1.000		0.994	0.982	0.976
	Outdoor Upper than Indoor	-5	0.992		0.986	0.974	0.968
		-10			0.978	0.966	0.960
		-20				0.959	0.953

Model	24k		Pipe Length (m)					
Cooling			5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.914	0.894	0.874
		20			0.944	0.924	0.903	0.883
		10		0.975	0.954	0.933	0.912	0.891
		5	0.995	0.984	0.963	0.942	0.921	0.900
		0	1.000	0.989	0.968	0.947	0.926	0.905
	Outdoor Upper than Indoor	-5	1.000	0.989	0.968	0.947	0.926	0.905
		-10		0.989	0.968	0.947	0.926	0.905
		-20			0.968	0.947	0.926	0.905
-25					0.947	0.926	0.905	
Heating			5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.983	0.977	0.970
		20			0.990	0.983	0.977	0.970
		10		0.997	0.990	0.983	0.977	0.970
		5	1.000	0.997	0.990	0.983	0.977	0.970
		0	1.000	0.997	0.990	0.983	0.977	0.970
	Outdoor Upper than Indoor	-5	0.992	0.989	0.982	0.975	0.969	0.962
		-10		0.981	0.974	0.968	0.961	0.955
		-20			0.966	0.960	0.953	0.947
-25					0.952	0.946	0.939	

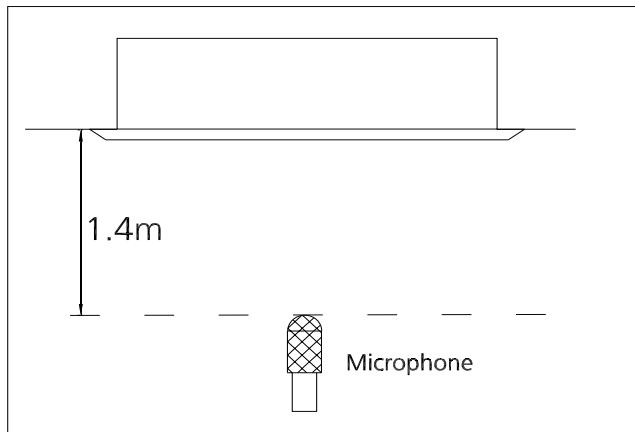
Model	36k		Pipe Length (m)					
Cooling			5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.885	0.845	0.805
		20			0.921	0.894	0.854	0.813
		10		0.958	0.931	0.903	0.862	0.822
		5	0.995	0.967	0.940	0.912	0.871	0.830
		0	1.000	0.972	0.945	0.917	0.876	0.834
	Outdoor Upper than Indoor	-5	1.000	0.972	0.945	0.917	0.876	0.834
		-10		0.972	0.945	0.917	0.876	0.834
		-20			0.945	0.917	0.876	0.834
-30					0.917	0.876	0.834	
Heating			5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.962	0.943	0.924
		20			0.975	0.962	0.943	0.924
		10		0.987	0.975	0.962	0.943	0.924
		5	1.000	0.987	0.975	0.962	0.943	0.924
		0	1.000	0.987	0.975	0.962	0.943	0.924
	Outdoor Upper than Indoor	-5	0.992	0.979	0.967	0.954	0.935	0.917
		-10		0.972	0.959	0.947	0.928	0.909
		-20			0.951	0.939	0.921	0.902
-30					0.932	0.913	0.895	

Model	48k		Pipe Length (m)					
Cooling			5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.880	0.838	0.796
		20			0.918	0.889	0.846	0.804
		10		0.956	0.927	0.898	0.855	0.812
		5	0.995	0.966	0.937	0.907	0.864	0.820
	Outdoor Upper than Indoor	0	1.000	0.971	0.941	0.912	0.868	0.824
		-5	1.000	0.971	0.941	0.912	0.868	0.824
		-10		0.971	0.941	0.912	0.868	0.824
		-20			0.941	0.912	0.868	0.824
		-30				0.912	0.868	0.824
Heating			5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.956	0.933	0.911
		20			0.970	0.956	0.933	0.911
		10		0.985	0.970	0.956	0.933	0.911
		5	1.000	0.985	0.970	0.956	0.933	0.911
	Outdoor Upper than Indoor	0	1.000	0.985	0.970	0.956	0.933	0.911
		-5	0.992	0.977	0.963	0.948	0.926	0.904
		-10		0.969	0.955	0.940	0.918	0.896
		-20			0.947	0.933	0.911	0.889
		-30				0.925	0.904	0.882

Model	60k		Pipe Length (m)					
Cooling			5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.866	0.816	0.767
		20			0.908	0.875	0.825	0.774
		10		0.951	0.917	0.884	0.833	0.782
		5	0.995	0.961	0.927	0.893	0.841	0.790
		0	1.000	0.966	0.931	0.897	0.846	0.794
	Outdoor Upper than Indoor	-5	1.000	0.966	0.931	0.897	0.846	0.794
		-10		0.966	0.931	0.897	0.846	0.794
		-20			0.931	0.897	0.846	0.794
-30					0.897	0.846	0.794	
Heating			5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30				0.953	0.929	0.905
		20			0.968	0.953	0.929	0.905
		10		0.984	0.968	0.953	0.929	0.905
		5	1.000	0.984	0.968	0.953	0.929	0.905
		0	1.000	0.984	0.968	0.953	0.929	0.905
	Outdoor Upper than Indoor	-5	0.992	0.976	0.961	0.945	0.921	0.898
		-10		0.968	0.953	0.937	0.914	0.891
		-20			0.945	0.930	0.907	0.883
-30					0.922	0.899	0.876	

9. Noise Criterion Curves

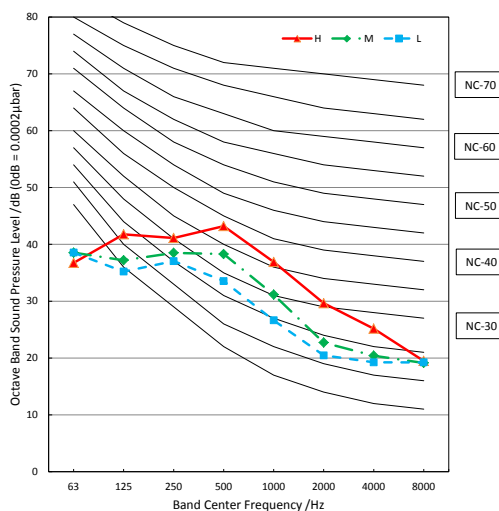
Indoor Unit



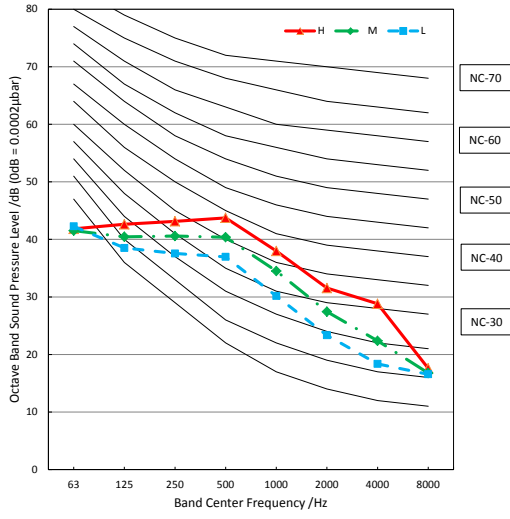
Notes:

- Sound measured at 1.4m away from the noisiest location of the unit.
- Data is valid at free field condition
- Data is valid at nominal operation condition
- Reference acoustic pressure $OdB = 20\mu Pa$
- Sound level will vary depending on a range of factors such as the construction -(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

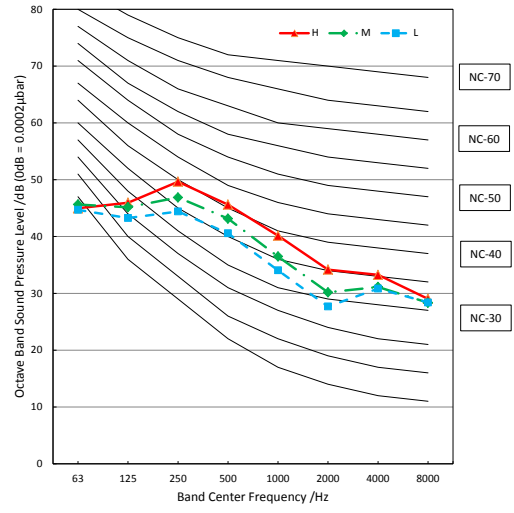
42QTD012D8S



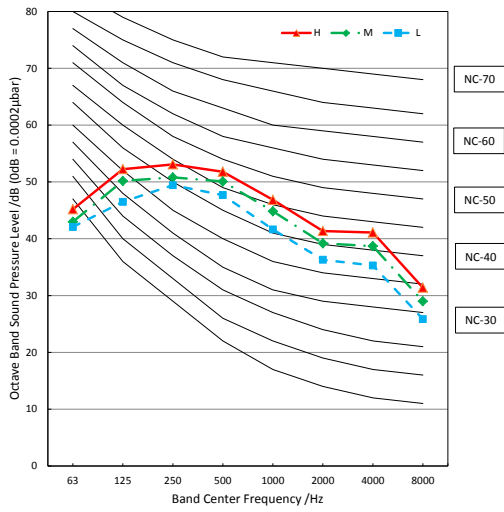
42QTD018D8S-1



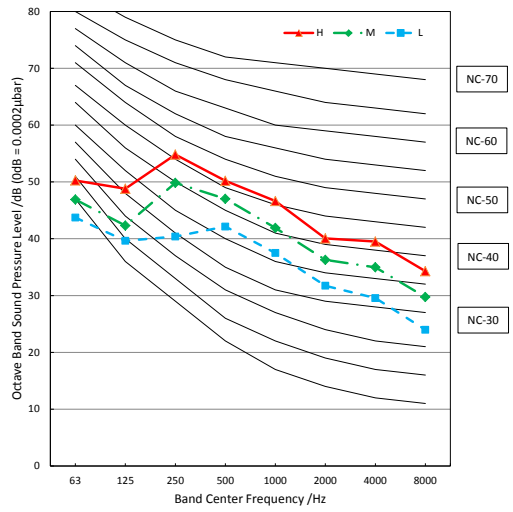
42QTD024R8S



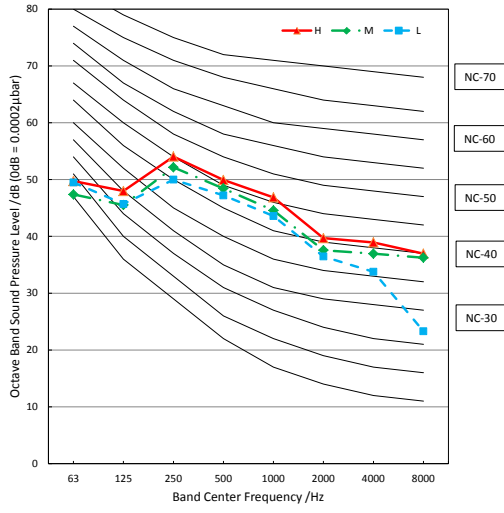
42QTD036R8S(with 38QU036R8S)



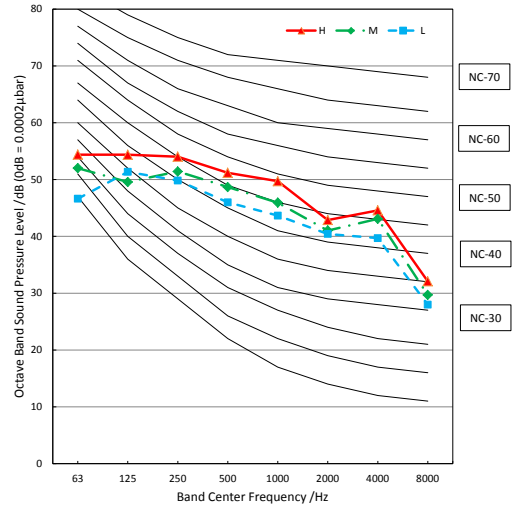
42QTD036R8S(with 38QU036R8T)



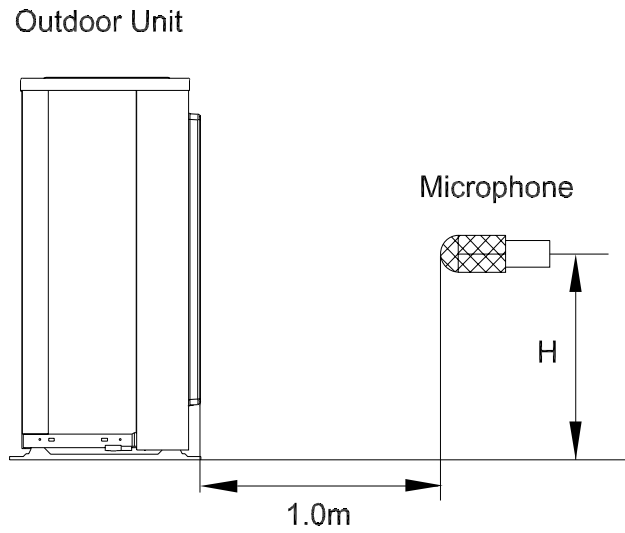
42QTD048R8S



42QTD060R8S



Outdoor Unit

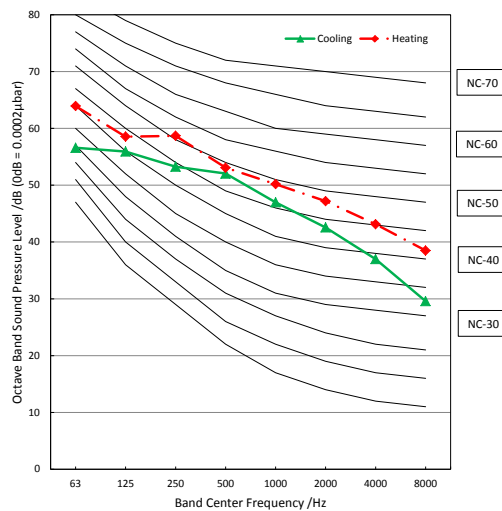


Note: $H = 0.5 \times$ height of outdoor unit

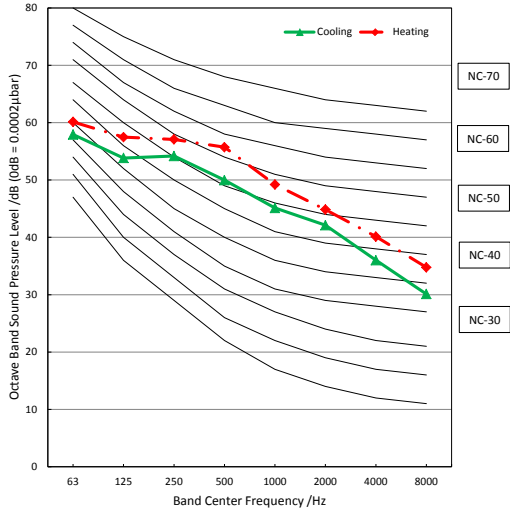
Notes:

- Sound measured at 1.0m away from the center of the unit.
- Data is valid at free field condition
- Data is valid at nominal operation condition
- Reference acoustic pressure $OdB=20\mu Pa$
- Sound level will vary depending on arrange off actors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

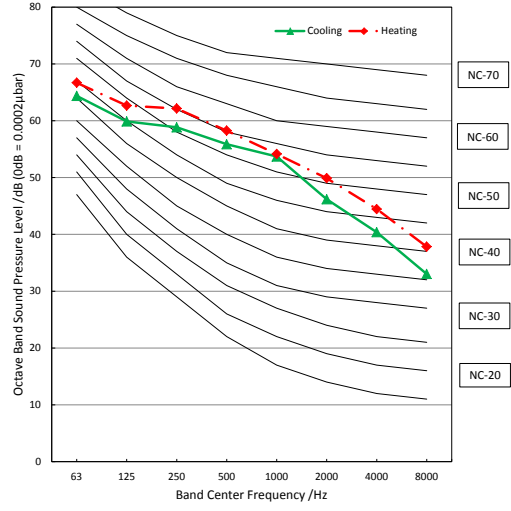
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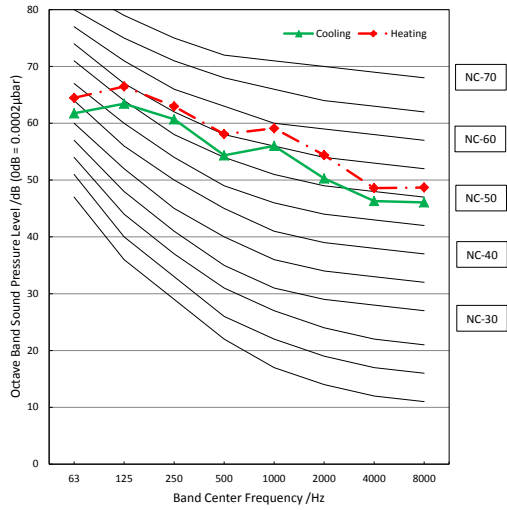
38QUS018D8S



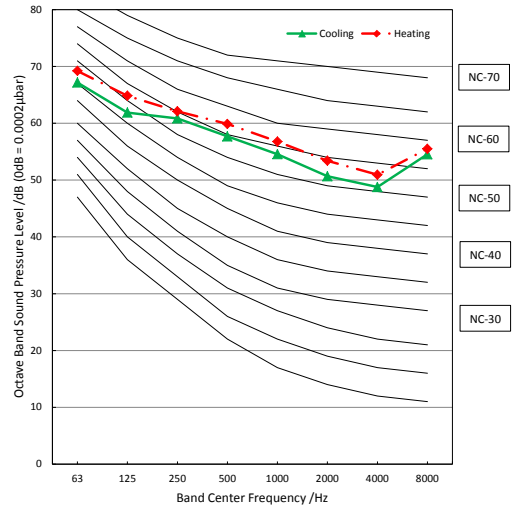
38QUS024R8S



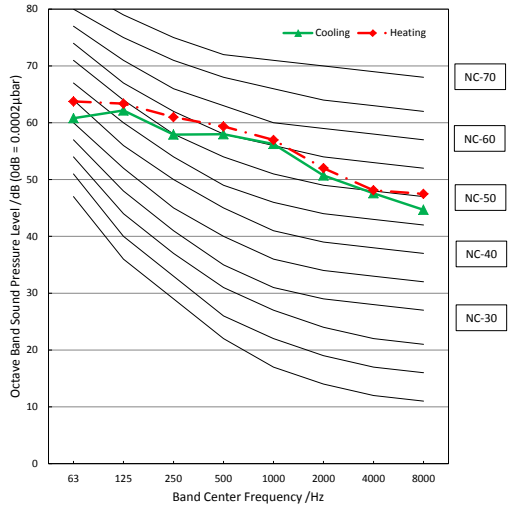
38QUS036R8S



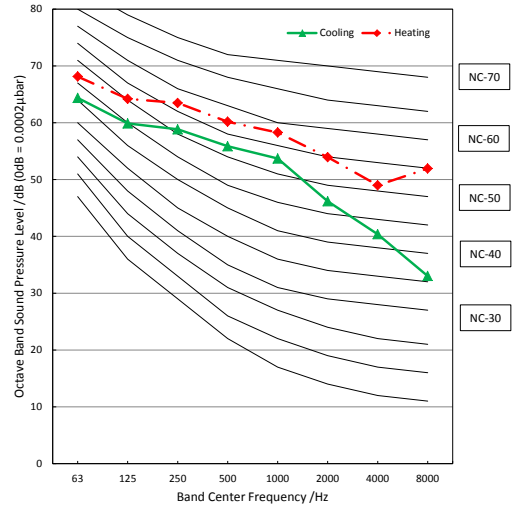
38QUS036R8T



38QUS048R8T



38QUS060R8T



10. Electrical Characteristics

Type		12000 Btu/h	18000 Btu/h	24000 Btu/h
Phase		1-phase	1-phase	1-phase
Frequency and Voltage		220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
Circuit Breaker/ Fuse (A)		25/20	25/20	32/25
Indoor Unit Power Wiring (mm ²)		/		
Outdoor Unit Power Wiring (mm ²)		3×2.5	3×2.5	3×2.5
Indoor/Outdoor Connecting Wiring (mm ²)	Ground Wiring	2.5	2.5	2.5
	Strong Electric Signal	4×1.0(4×2.5 with auxiliary electric heater)	3×1.0(3×2.5 with auxiliary electric heater)	3×1.0(3×2.5 with auxiliary electric heater)
	Weak Electric Signal	/		2×0.2

Type		36000 Btu/h	36000 Btu/h
Phase		1-phase	3-phase
Frequency and Voltage		220-240V, 50Hz	380-450V, 50Hz
Circuit Breaker/ Fuse (A)		50/40	25/20
Indoor Unit Power Wiring (mm ²)		/	
Outdoor Unit Power Wiring (mm ²)		3×4.0	5×2.5
Indoor/Outdoor Connecting Wiring (mm ²)	Ground Wiring	4.0	2.5
	Strong Electric Signal	3×1.0(3×2.5 with auxiliary electric heater)	3×1.0(3×2.5 with auxiliary electric heater)
	Weak Electric Signal	2×0.2	2×0.2

Type		48000 Btu/h	55000 Btu/h
Phase		3-phase	3-phase
Frequency and Voltage		380-450V, 50Hz	380-450V, 50Hz
Circuit Breaker/ Fuse (A)		32/25	32/25
Indoor Unit Power Wiring (mm ²)		/	
Outdoor Unit Power Wiring (mm ²)		5×2.5	5×2.5
Indoor/Outdoor Connecting Wiring (mm ²)	Ground Wiring	2.5	2.5
	Strong Electric Signal	3×1.0(3×2.5 with auxiliary electric heater)	3×1.0(3×2.5 with auxiliary electric heater)
	Weak Electric Signal	2×0.2	2×0.2

Product Features

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1. Operation Modes and Functions

1.1 Abbreviation

Unit element abbreviations

Abbreviation	Element
T1	Indoor room temperature
T2	Coil temperature of evaporator
T3	Coil temperature of condenser
T4	Outdoor ambient temperature
T5	Compressor discharge temperature

1.2 Safety Features

Compressor three-minute delay at restart

Compressor functions are delayed for up to one minute upon the first startup of the unit, and are delayed for up to three minutes upon subsequent unit restarts.

Inverter module protection

The inverter module has an automatic shutoff mechanism based on the unit's current, voltage, and temperature. If automatic shutoff is initiated, the corresponding error code is displayed on the indoor unit and the unit ceases operation.

Open Circuit/Disconnection Sensor Protection

Automatic shutoff based on fan speed

If the indoor fan speed registers below 300RPM for 50 seconds or more, it shuts off and restarts in 30 seconds. If this happens 3 times, the unit ceases operation and the corresponding error code is displayed on the indoor unit.

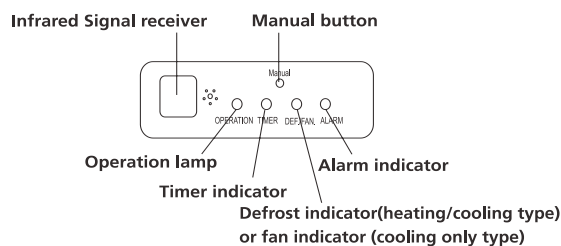
Indoor fan delayed operation

- When the unit starts, the louver is automatically activated and the indoor fan will operate after a period of 7 seconds.
- If the unit is in heating mode, the indoor fan is regulated by the anti-cold wind function.

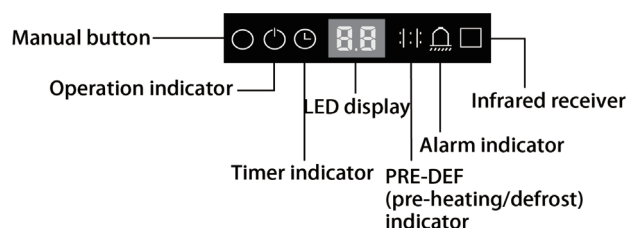
1.3 Display Function

Unit display functions

Compact Cassette



Super-slim Cassette



1.4 Fan

When fan mode is activated:

- The outdoor fan and compressor cease operation.
- Temperature control is disabled and no temperature setting is displayed.
- The indoor fan speed can be set to high, medium, low, or auto.
- The louver operations are identical to those in cooling mode.
- Auto fan:
 - When it fan-only mode, operates the same as auto fan in cooling mode with the temperature set at 24°C.

1.5 Cooling Mode

1.5.1 Indoor Fan Control

- In cooling mode, the indoor fan operates continuously. The fan speed can be set to high, medium, low or auto.
- The auto fan acts according to the value of T1-Td.

1.5.2 Outdoor Fan Control

- For 12k: The outdoor fan is controlled by T4 and compressor frequency.
- For other models: The outdoor fan is controlled by T4.

1.5.3 Evaporator Temperature Protection

---T2<0°C, the compressor stops and restarts only when T2≥5°C.

--- $0^{\circ}\text{C} \leq T_2 < 4^{\circ}\text{C}$, the compressor frequency is limited and decreases to a lower level

--- $4^{\circ}\text{C} \leq T_2 < 7^{\circ}\text{C}$, the compressor maintains its current frequency.

--- $T_2 > 7^{\circ}\text{C}$, the compressor frequency is not limited.

1.5.4 Condenser Temperature Protection

When condenser temperature is more than setting value, the compressor ceases operation.

1.6 Heating Mode(Heat pump models)

1.6.1 Indoor Fan Control:

- When the compressor is on, the fan speed can be set to high, medium, low, or auto. And the anti-cold wind function has the priority.
- The auto fan acts according to the value of $T_1 - T_d$.

1.6.2 Outdoor Fan Control:

- For 12k: The outdoor fan is controlled by T_4 and compressor frequency.
- For other models: The outdoor fan is controlled by T_4 .

1.6.3 Defrosting mode

- The unit enters defrosting mode according to the value of temperature of T_3 & T_4 and also the compressor running time.
- If any one of the following items is satisfied, the defrosting will finish and the machine will turn to normal heating mode.
 - T_3 rises to be higher than $TCDE1$.
 - T_3 keeps to be higher than $TCDE2$ for 80 seconds.
 - The machine has run for 10 minutes in defrosting mode.

1.6.4 Evaporator Temperature Protection

When the evaporator temperature exceeds a preset protection value, the compressor ceases operation, the outdoor fan motor ceases operation 30 seconds later.

1.7 Auto Mode

- This mode can be selected with the remote controller and the setting temperature can be changed between $17^{\circ}\text{C} \sim 30^{\circ}\text{C}$.
- In auto mode, the machine selects cooling, heating, or fan-only mode on the basis of ΔT ($\Delta T = T_1 - T_s$).

ΔT	Running mode
$\Delta T > 2^{\circ}\text{C}$	Cooling
$-2^{\circ}\text{C} \leq \Delta T \leq 2^{\circ}\text{C}$	Fan-only

$\Delta T < -2^{\circ}\text{C}$	Heating*
---------------------------------	----------

Heating*: In auto mode, cooling only models run the fan.

- Indoor fans run at the auto fan speed of the relevant mode.
- The louver operates the same as in relevant mode.
- If the machine switches mode between heating and cooling, the compressor pauses for a certain period of time intermittently and then selects a mode based on ΔT .
- If the setting temperature is modified, the machine selects a new running function.

1.8 Drying Mode

- Indoor fan speed is fixed at breeze and can't be changed. The louver angle is the same as in cooling mode.
- All protections are active and the same as that in cooling mode.

1.9 Timer Function

- The timing range is 24 hours.
- Timer On. The machine turns on automatically at the preset time.
- Timer Off. The machine turns off automatically at the preset time.
- Timer On/Off. The machine turns on automatically at the preset On Time, and then turns off automatically at the preset Off Time.
- Timer Off/On. The machine turns on automatically at the preset Off Time and then turns off automatically at the preset On Time.
- The timer does not change the unit operation mode. If the unit is off now, it does not start up immediately after the "timer off" function is set. When the setting time is reached, the timer LED switches ioff and the unit running mode remains unchanged.
- The timer uses relative time, not clock time

1.10 Sleep Function

- The sleep function is available in cooling, heating, or auto mode.
- The operational process for sleep mode is as follows:
 - When cooling, the temperature rises 1°C (to not higher than 30°C) every hour. After 2 hours, the temperature stops rising and the indoor fan is fixed at low speed.
 - When heating, the temperature decreases 1°C (to

not lower than 17°C) every hour. After 2 hours, the temperature stops decreasing and the indoor fan is fixed at low speed. Anti-cold wind function takes priority.

unit goes back into its last mode. Otherwise, the entire system (including the pump) stops and the LED displays an alarm again after 3 minutes.

1.11 Auto-Restart

- The indoor unit has an auto-restart module that allows the unit to restart automatically. The module automatically stores the current settings (not including the swing setting) and, in the case of a sudden power failure, will restore those settings automatically within 3 minutes after power returns.
- If the unit was in forced cooling mode, it will run in this mode for 30 minutes and turn to auto mode with temperature set to 24°C.
- If there is a power failure while the unit is running, the compressor starts 3 minutes after the unit restarts. If the unit was already off before the power failure, the compressor starts 1 minute after the unit restarts.

1.12 Follow me(Optional)

- If you press "Follow Me" on the remote, the indoor unit will beep. This indicates the follow me function is active.
- Once active, the remote control will send a signal every 3 minutes, with no beeps. The unit automatically sets the temperature according to the measurements from the remote control.
- The unit will only change modes if the information from the remote control makes it necessary, not from the unit's temperature setting.
- If the unit does not receive a signal for 7 minutes, the function turns off. The unit regulates temperature based on its own sensor and settings.
- Wired remote controller is prior to wireless remote controller.

1.13 Drain Pump Control

- Use the water-level switch to control drain pump.
- The system checks the water level every 5 seconds.
 - When the A/C operates in cooling (including auto cooling) or forced cooling mode, the pump begins running immediately and continuously until cooling stops.
 - If the water level increases up to the control point, the LED displays an alarm code and the drain pump opens and continually monitors the water level. If the water level falls and LED alarm code is no longer displayed (drain pump close delay is 1 minute), the

2. Remote Controller Functions

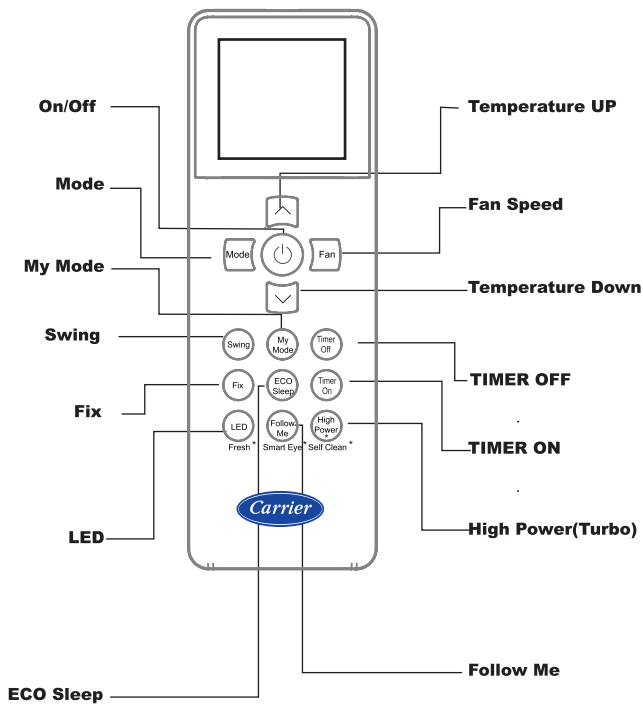
2.1 Infrared Wireless Remote Controller

2.1.1. RG67N/BGEF

Remote Controller Specifications

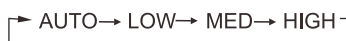
Model	RG67N/BGEF
Rated Voltage	3.0V (Dry batteries R03/LR03x2)
Reaching Distance	8m((when using 3.0 voltage, it Gets 11m))
Environment Temperature Range	-5℃ ~60℃ (23℉ ~140℉)

Buttons and Functions



1. TEMP UP ▲ : Push this button to increase the indoor temperature setting in 1℃ increments to 30℃

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



3. TEMP DOWN ▼ : Push this button to decrease the indoor temperature setting in 1℃ increments to 17℃.

4. TIME OFF: For time OFF setting. Press this button to activate the Auto-off time setting. Each press will increase the time setting in 30 minutes increments, up to 10 hours, then at 1 hour increments up to 24 hours. To cancel the Auto-off time setting, just press the button until the time setting is 0.0.

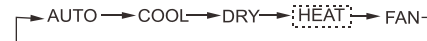
5. TIME ON: For time ON setting. Press this button to activate the Auto-on time setting. Each press will increase the time setting in 30 minutes increments, up to 10 hours, then at 1 hour increments up to 24 hours. To cancel the Auto-on time setting, just press the button until the time setting is 0.0.

6. HIGH POWER(TURBO): Press to activate/disable the High power function. Keep pressing 2 more seconds to active/disable Self Clean function.

7. FOLLOW ME: Press to activate or clear the Follow me function, Keep pressing 2 more seconds to activate or disable Smart eye function.

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

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



NOTE: No heating mode for cool only type unit.

10. MY MODE: Press to memorize or resume your favorite pre-settings.

11. SWING: Used to stop or start horizontal louver movement. The louver will swing up and down automatically if push this button.

12. FIX: Used to set the desired up/down air flow direction. The louver changes 6 degree in angle for each press.

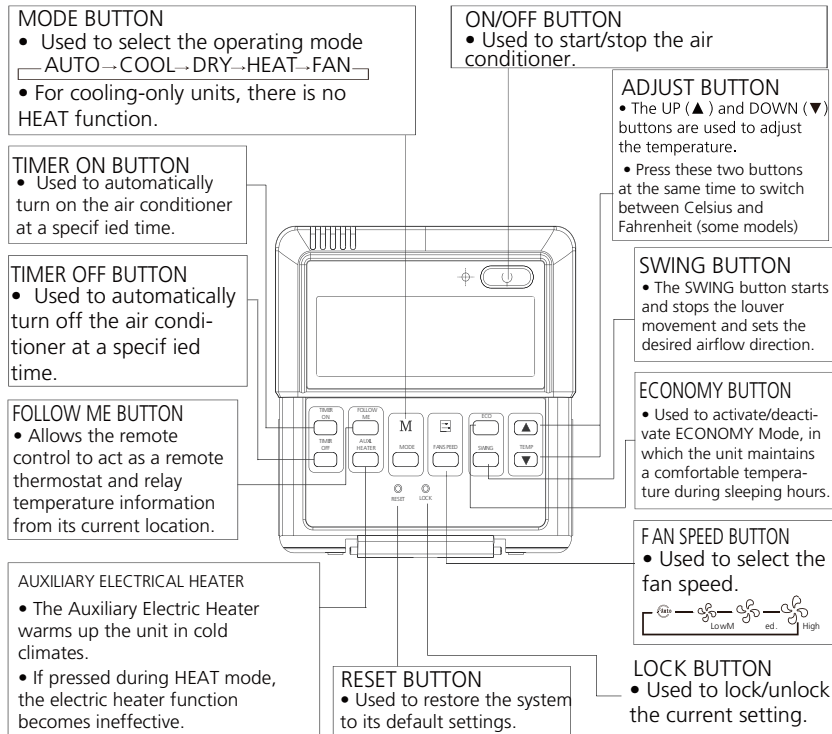
13. LED: Press to turn on/off the LED display. Keep pressing 2 more seconds to activate or disable Fresh function.

14. ECO SLEEP: Press to enter Sleep Mode.

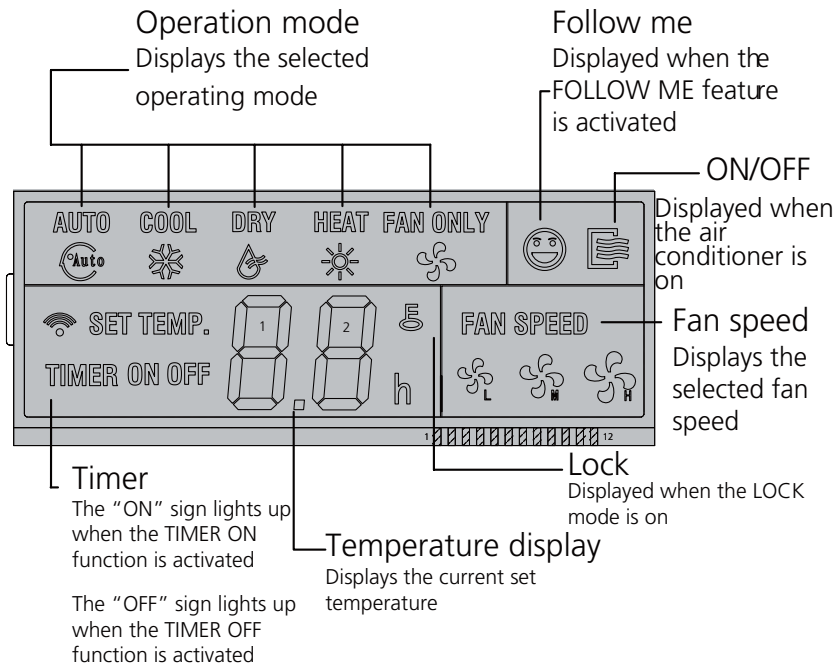
2.2 LCD Wired Remote Controller KJR-12B/DP(T)(Optional)

The KJR-12B/DP(T) wired remote controller is standard for Duct type and is optional for other types.

i) Buttons and Functions

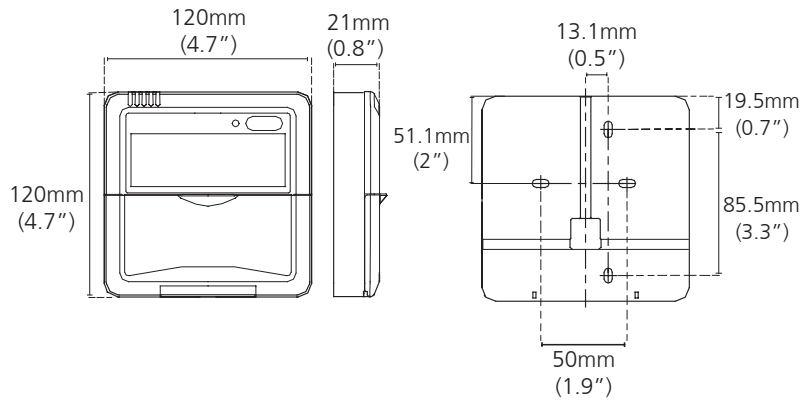


ii) LCD Screen



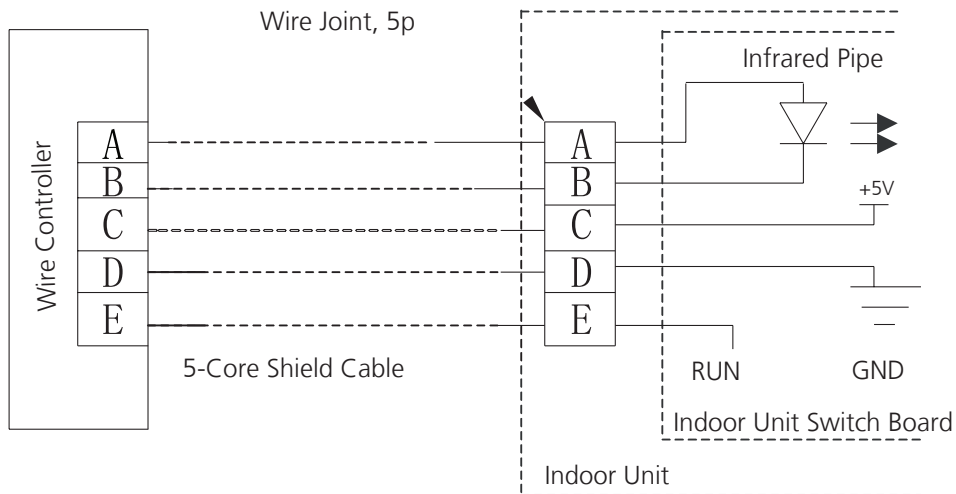
iii) Installation

- Dimensions



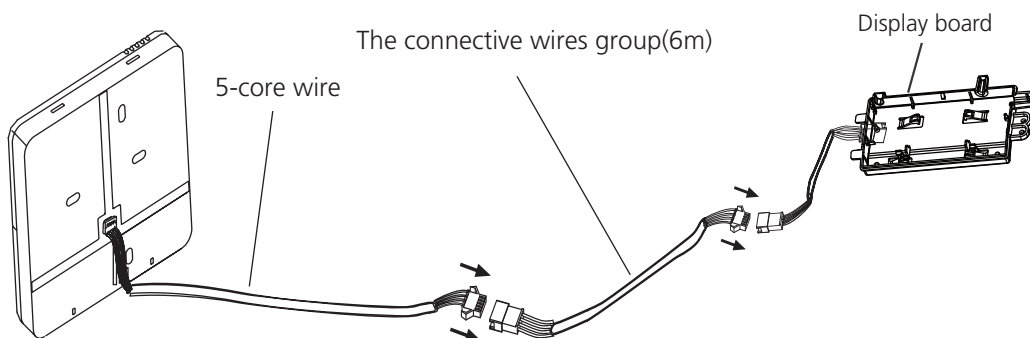
- Wiring diagram

Refer to the following diagram to wire the wall-mounted remote control to the indoor unit.

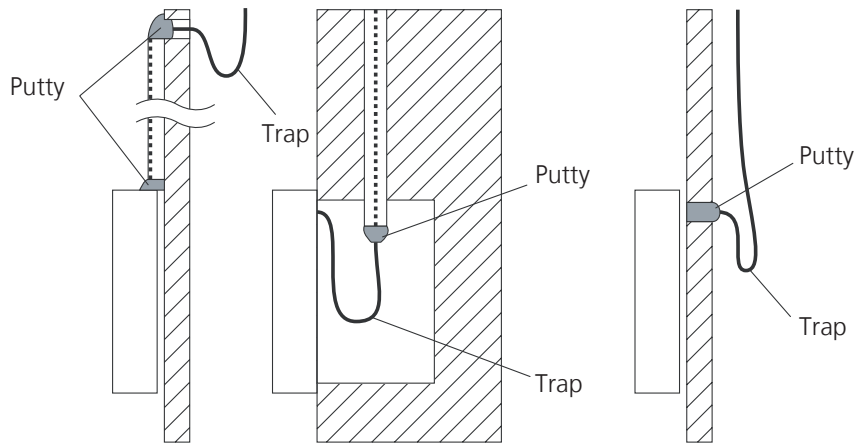


- Installation Diagram

Connect the wire from the display panel of the indoor unit to a connecting cable. Then connect the other side of the connecting cable to the remote control.

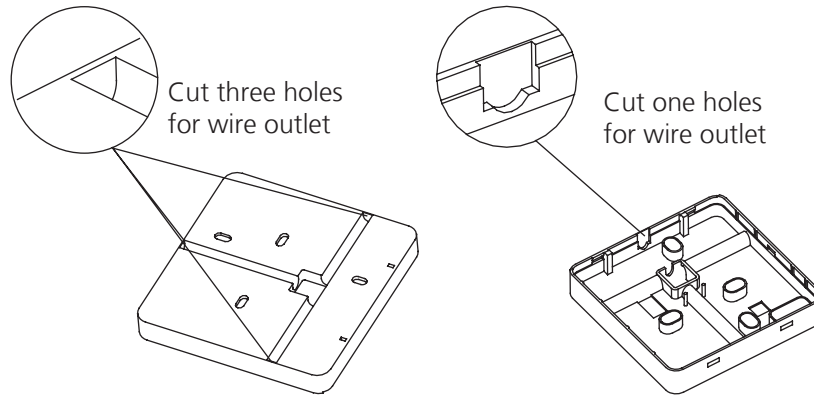


Note: Be sure to reserve a length of the connecting wire for periodic maintenance.



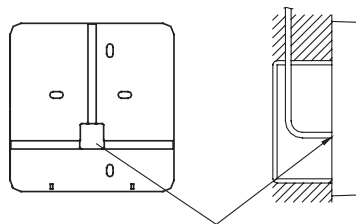
Note: DO NOT allow water to enter the remote control. Use the trap and putty to seal the wires.

- For exposed mounting, cut holes on four of the sides according to the picture below.



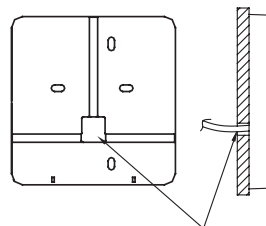
- For shielded wiring, please refer to the picture below.

Embedded switch box wiring



Wiring hole

Wiring through the wall

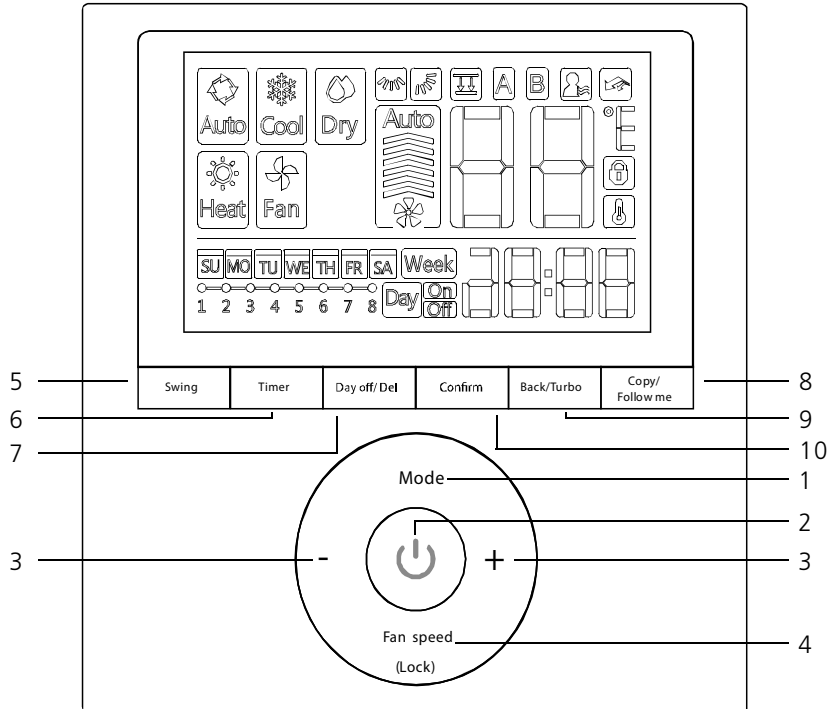


Wall hole and wiring hole
Diameter of wall hole: Φ 2cm

2.3 LCD Wired Remote Controller KJR-120G/TF-E(Optional)

The KJR-120G/TF-E wired remote controller is optional for all types.

i) Buttons and Functions



1 MODE button

Used to select the operation mode: Auto / Cooling / Drying / Heating / Fan;

Hold to active the operation of auto-lifting panel when off

2. POWER button

Turn on of turn off the unit.

3. Adjust button

To set temperature, time and timer; set up or down the auto-lifting panel

4. FAN SPEED button

Used to select the fan speed.

5. Swing Button

Press to active vertical swing, hold for horizontal swing

6. TIMER button

To set timer on and timer off time of one day

7. DELAY/DAY OFF button

To set 1 to 2 hours delay off for each day or a whole day off in a weekly timer schedule

8. COPY/FOLLOW ME button

To copy timer setting of one day to another in weekly schedule setting;

To active the follow me function while in normal operation.

9. BACK/TURBO button

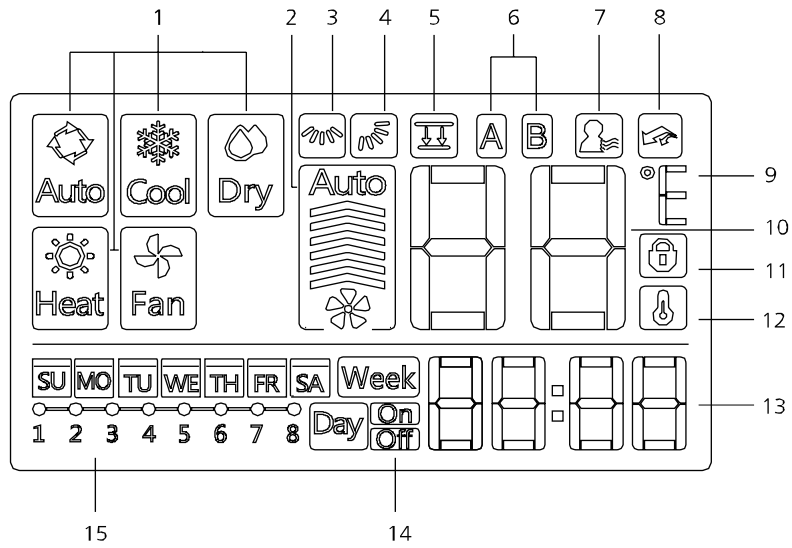
Back to previous operation or superior menu

To active turbo mode while in normal operation

10. CONFIRM button

To confirm an setting or call up the superior menu

ii) LCD Screen



1 Operation mode indication

2 Fan speed indication

3 Left-right swing indication

4 Up-down swing indication

5 Faceplate function indication

6 Main unit and secondary unit indication

7 Follow me function indication

8 Turbo/PTC function indication

9 C° / F° indication

10 Temperature display

11 Lock indication

12 Room temperature indication

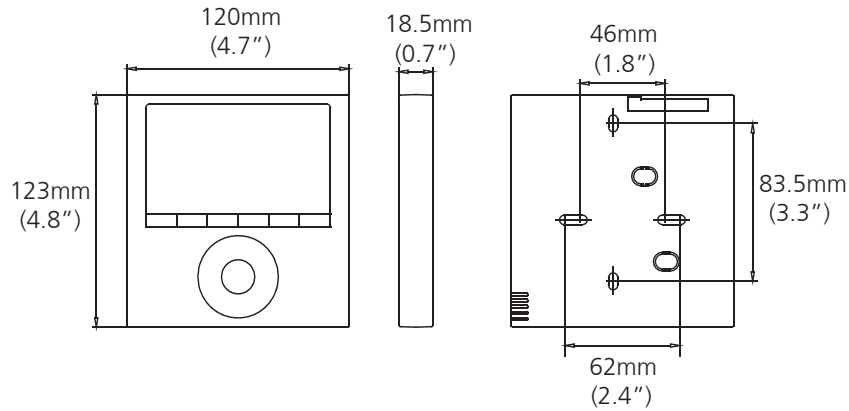
13 Clock display

14 On/Off timer

15 Timer display

iii) Installation

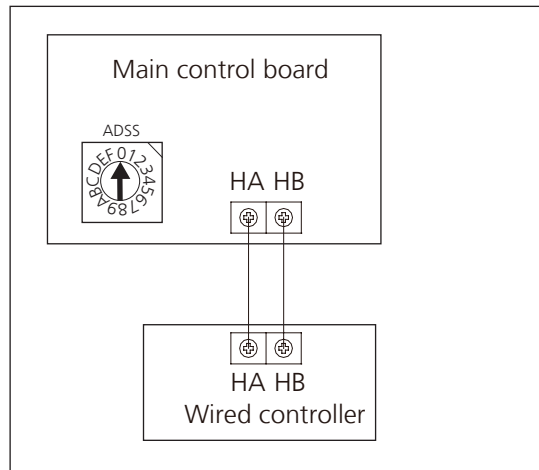
• Dimensions



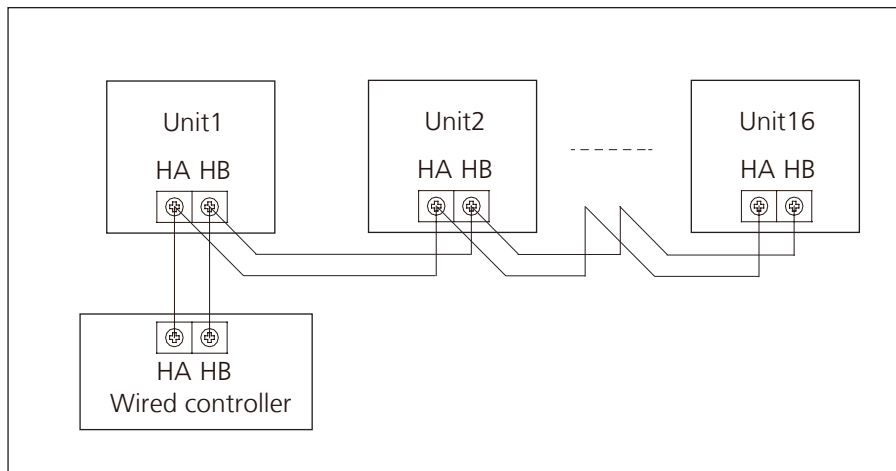
• Wiring diagram

1) Connection

For Cassette: The wired controller connects to main control board directly.

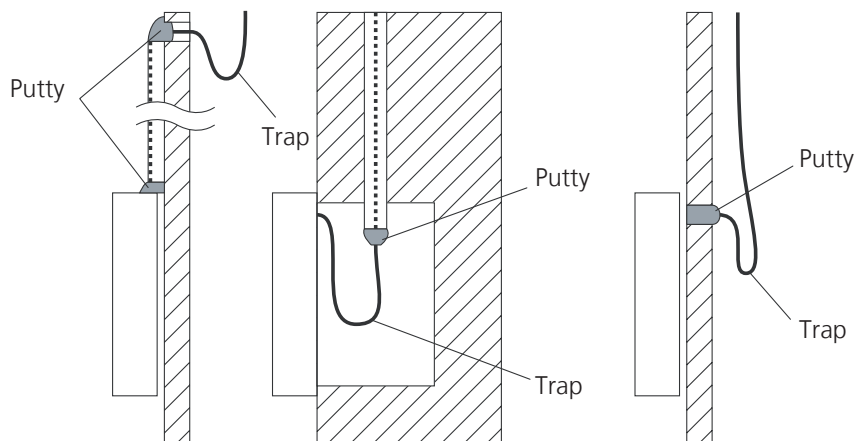


2) Address setting



- One non-polarity controller can control up to 16 indoor units.
- When the non-polarity controller is connected to several units, every air-conditioner in network has only one network address to distinguish each other.

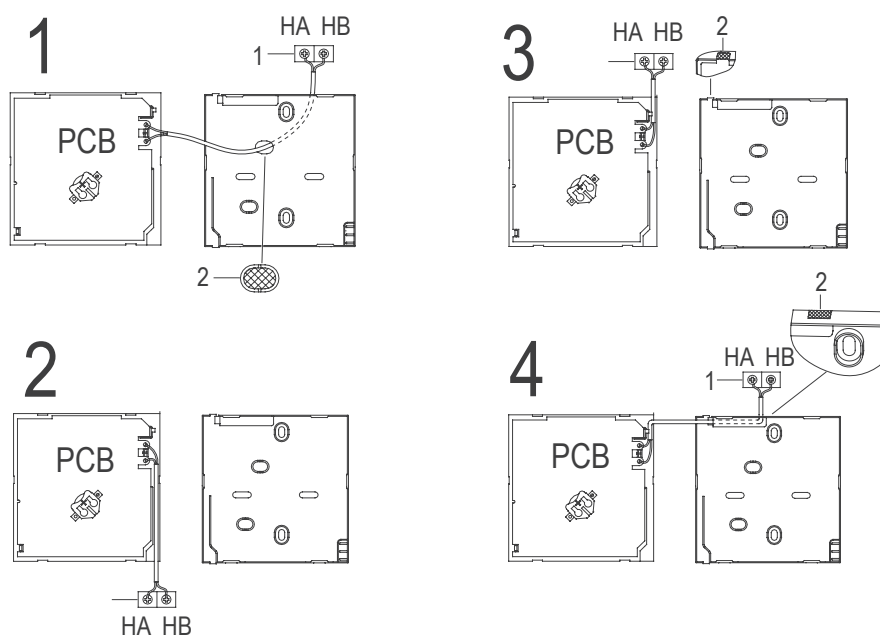
- c. Address code of air-conditioner in LAN is set by code switch ENC1(Duct and Ceiling& Floor) or ADSS(Cassette) of the indoor unit, and the set range is 0-15.
- d. Note: The indoor units are controlled at the same time, not independently. The purpose of setting network address is identify the unit when error occurs.



Note: DO NOT allow water to enter the remote control. Use the trap and putty to seal the wires.

• **For wiring the indoor unit, there are three methods:**

- From the rear;
- From the bottom;
- From the top;
- From the top center.

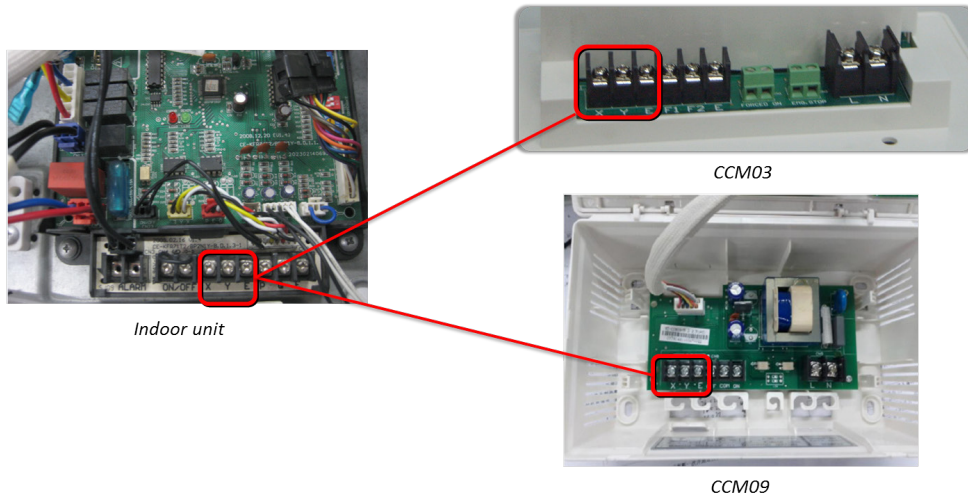


- 1: Indoor Unit.
- 2: Notch the part for the wiring to pass through with a nipper tool.
- Connect the terminals on the remote controller (HA ,HB), and the terminals of the indoor unit. (HA ,HB). (HA and HB do not have polarity.)

2.4 Centralized Controller

1) Connection

For Light commercial air conditioner with XYE port, it can be directly connected to Centralized Controller (CCM03, CCM09).



2) Address setting

When setting the address, please make sure the unit is powered off. The address can be set from 0 to 63 by the switch. Turn on the unit, then the address will be effective.

SWITCH		FOR CCM UNIT ADDRESS	
S2 + S1			
ADDRESS	0~15	16~31	
Factory Setting	✓		
S2 + S1			
ADDRESS	32~47	48~63	
Factory Setting			

Note: For light commercial air conditioner with XYE port, it can be also connected to BMS (Building Management System).

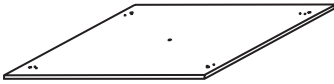





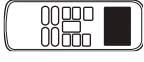



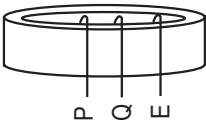
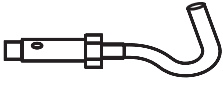

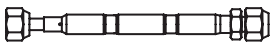
If there is any CAC (central air conditioner) connecting with the central controller at the same time, please set the address from largest (63,62,61...), since the CAC units could obtain address automatically from the smallest (00,01,02...)

Installation

Contents

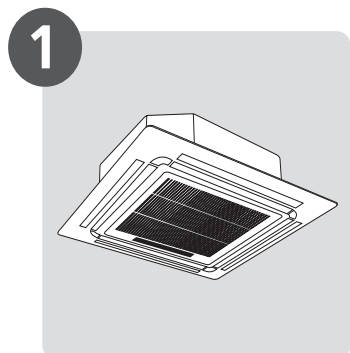
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Accessories

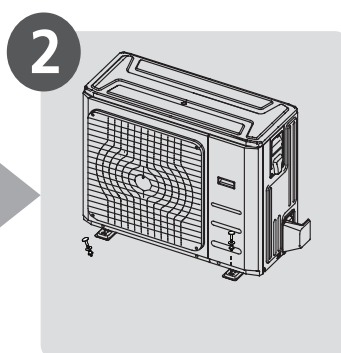
	Name	Shape	Quantity
Indoor unit installation	Installation paper template (some models)		1
Refrigeration Fittings	Soundproof/insulation sheath (some models)		1
Drainpipe Fittings	Outlet pipe sheath(some models)		1
	Outlet pipe clasp(some models)		1
	Drain joint (some models)		1
	Seal ring (some models)		1
Remote controller & Its Frame (some models)	Remote controller		1
	Fixing screw for remote controller holder ST2.9 x 10		2
	Remote controller holder		1
	Dry battery AAA		2
	Remote controller illustration		1
EMC Magnetic Ring (some models)	Magnetic ring (wrap the electric wires S1 & S2 (P & Q & E) around the magnetic ring twice)		1
Installation Accessory (some models)	Ceiling hook		4
	Suspension bolt		4
	Orifice tube (some units)		1
	Owner's manual		1
	Installation manual		1

1. Installation Overview

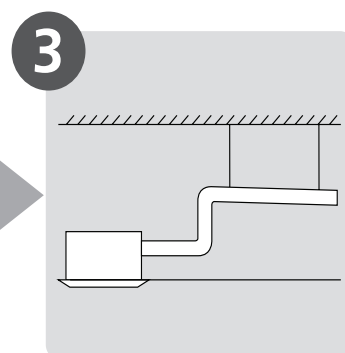
Installation Order



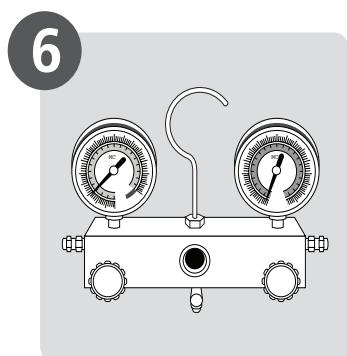
Install the indoor unit



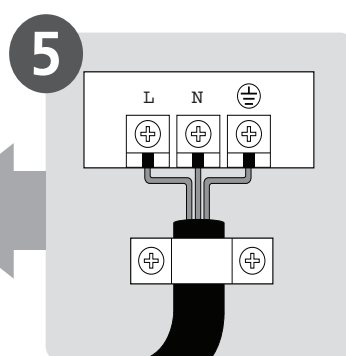
Install the outdoor unit



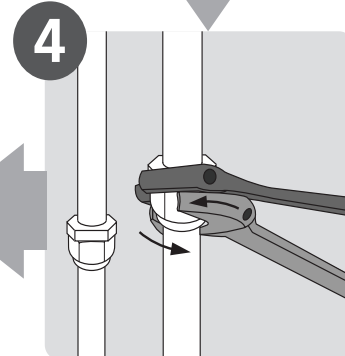
Install the drainpipe



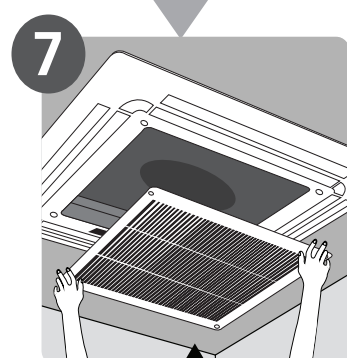
Evacuate the refrigeration system



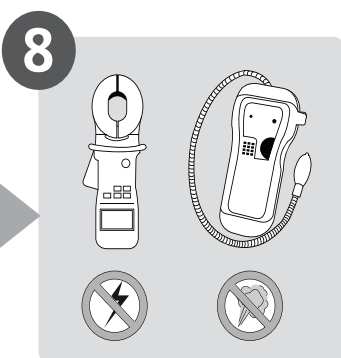
Connect the wires



Connect the refrigerant pipes



Install the front panel



Perform a test run

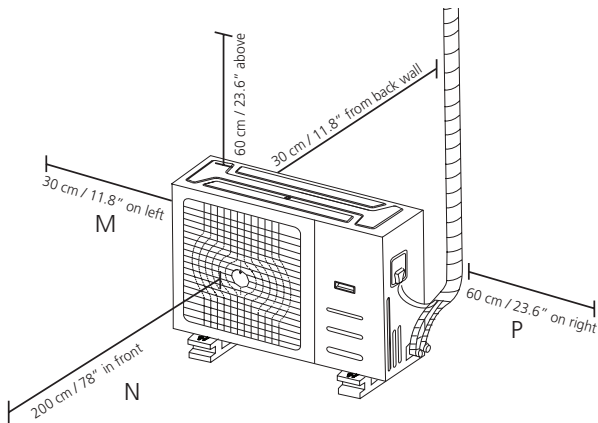
2. Location selection

2.1 Unit location selection can refer to installation manual.

2.2 DO NOT install the unit in the following locations:

- Where oil drilling or fracking is taking place.
- Coastal areas with high salt content in the air.
- Areas with caustic gases in the air, such as near hot springs.
- Areas with power fluctuations, such as factories.
- Enclosed spaces, such as cabinets.
- Areas with strong electromagnetic waves.
- Areas that store flammable materials or gas.
- Rooms with high humidity, such as bathrooms or laundry rooms.
- If possible, DO NOT install the unit where it is exposed to direct sunlight.

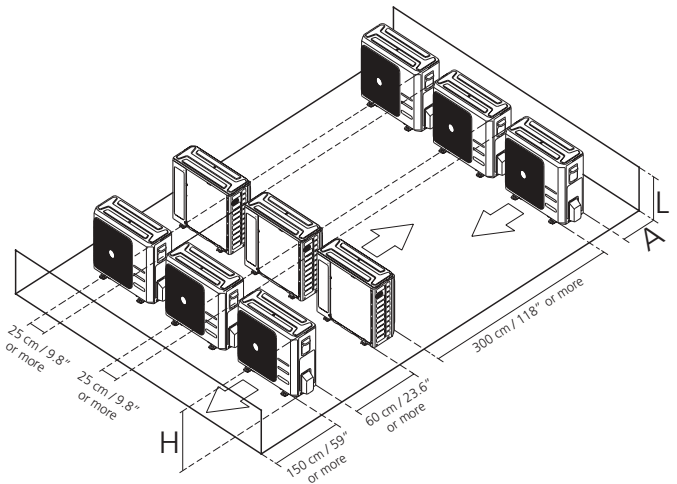
2.3 The minimum distance between the outdoor unit and walls described in the installation guide does not apply to airtight rooms. Be sure to keep the unit unobstructed in at least two of the three directions (M, N, P)



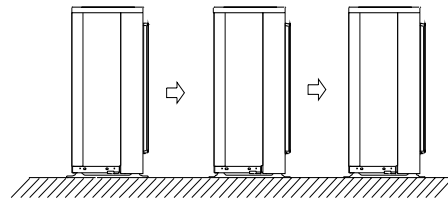
2.4 Rows of series installation

The relations between H, A and L are as follows.

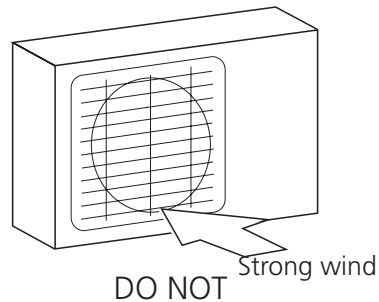
	L	A
L ≤ H	$L \leq 1/2H$	25 cm / 9.8" or more
	$1/2H < L \leq H$	30 cm / 11.8" or more
L > H	Can not be installed	



DO NOT install the rows of series like following figure.



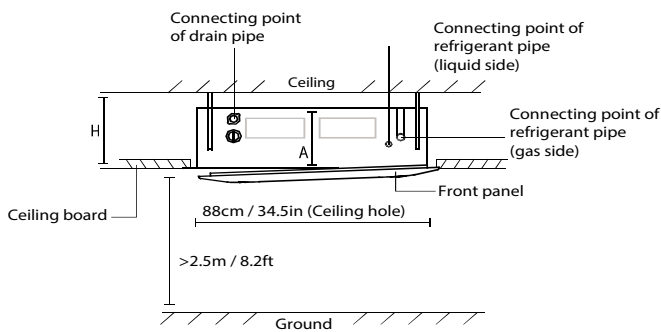
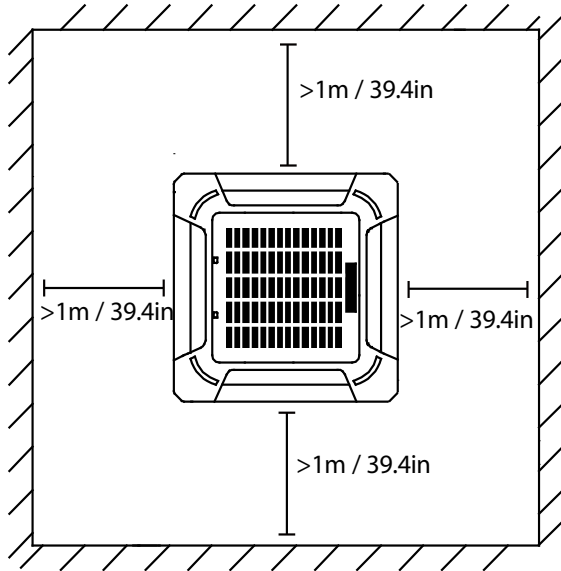
2.5. If the location is exposed to strong winds (for example: near a seaside), the unit must be placed against the wall to shelter it from the wind. If necessary, use an awning.



3. Indoor Unit Installation

3.1 Service space for indoor unit

For Super-slim Cassette,



Capacity(kBtu/h)	A(mm/inch)	H(mm/inch)
18	205/8.1	>235/9.3
24~36	245/9.6	>275/10.8
48~60	287/11.3	>317/12.5

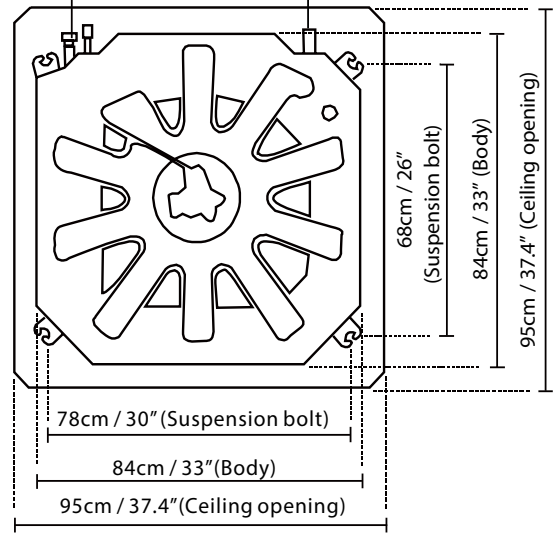
3.2 Hang Indoor Unit

1. Use the included paper template to cut a rectangular hole in the ceiling, leaving at least 1m (39.4") on all sides. The cut hole size should be 4cm(1.6") larger than the body size.

Be sure to mark the areas where ceiling hook holes will be drilled.

For Super-slim Cassette,

Refrigerant piping side Drain hose side



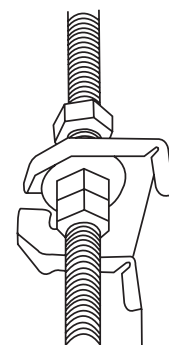
2. Drill 4 holes 5cm (2") deep at the ceiling hook positions in the internal ceiling. Be sure to hold the drill at a 90° angle to the ceiling.

3. Using a hammer, insert the ceiling hooks into the pre-drilled holes. Secure the bolt using the included washers and nuts.

4. Install the four suspension bolts

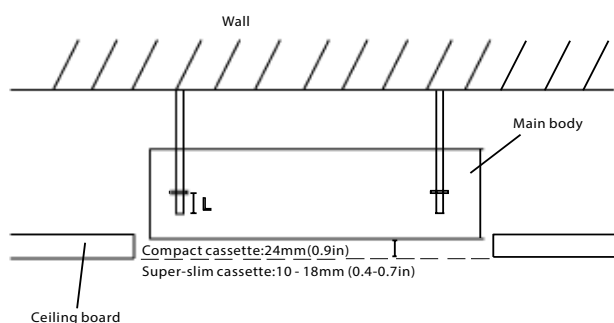


5. Mount the indoor unit. You will need two people to lift and secure it. Insert suspension bolts into the unit's hanging holes. Fasten them using the included washers and nuts



Adjust the position to ensure the gaps between the indoor unit and the four sides of false ceiling are even. The bottom of the unit should be 24mm / 0.9in(compact cassette) / 10 - 18mm (0.4-0.7") (super-slim cassette) higher than ceiling board.

Generally, L should be half the length of the suspension bolt or long enough to prevent the nuts from coming off

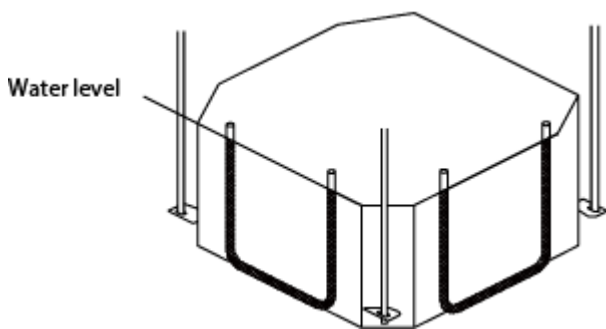


CAUTION:

Ensure that the unit is completely level.

The unit is equipped with a built-in drain pump and float switch. If the unit is tilted against the direction of condensate flows (the drainpipe side is raised), the float switch may malfunction and cause water to leak.

Installation

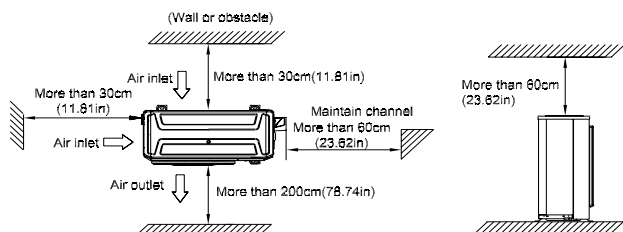


NOTE FOR NEW HOME INSTALLATION

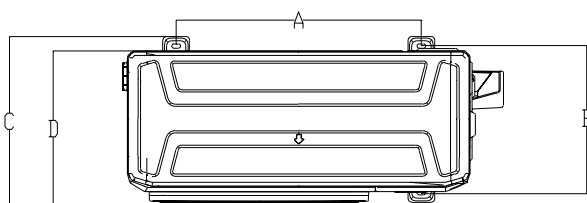
When installing the unit in a new home, the ceiling hooks can be embedded in advance. Make sure that the hooks do not come loose due to concrete shrinkage. After installing the indoor unit, fasten the installation paper template onto the unit with bolts (M6X12) to determine in advance the dimension and position of the opening on the ceiling. Follow the instructions above for the remainder of the installation.

4. Outdoor unit installation

4.1 Service space for outdoor unit



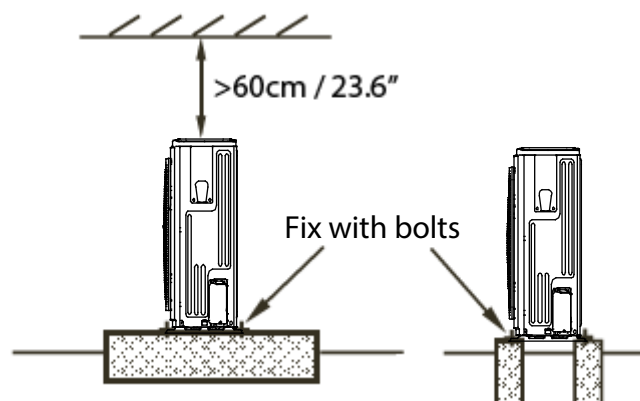
4.2 Bolt pitch



Capacity (kBtu/h)	Unit	D	A	B	C
18	mm	333	514	340	365
	inch	13.11	20.23	13.39	14.37
24	mm	363	540	350	375
	inch	14.29	21.26	13.78	14.8
36	mm	410	673	403	455
	inch	16.14	26.50	15.87	17.9
48/60	mm	415	634	404	457
	inch	16.34	24.96	15.9	17.99

4.2 Install Outdoor Unit

Fix the outdoor unit with anchor bolts(M10)



Caution

Since the gravity center of the unit is not at its physical center, so please be careful when lifting it with a sling.

Never hold the inlet of the outdoor unit to prevent it from deforming.

Do not touch the fan with hands or other objects.

Do not lean it more than 45, and do not lay it sidelong.

Make concrete foundation according to the specifications of the outdoor units.

Fasten the feet of this unit with bolts firmly to prevent it from collapsing in case of earthquake or strong wind.

5. Drainage Pipe Installation

Install the drainage pipe as shown below and take measures against condensation. Improperly installation could lead to leakage and eventually wet furniture and belongings.

5.1 Installation principle

- Ensure at least 1/100 slope of the drainage pipe
- Adopt suitable pipe diameter
- Adopt nearby condensate water discharge

5.2 Key points of drainage water pipe installation

1. Considering the pipeline route and elevation.
 - Before installing condensate water pipeline, determine its route and elevation to avoid intersection with other pipelines and ensure slope is straight.
2. Drainage pipe selection
 - The drainage pipe diameter shall not small than the drain hose of indoor unit
 - According to the water flowrate and drainage pipe slope to choose the suitable pipe, the water flowrate is decided by the capacity of indoor unit.

Relationship between water flowrate and capacity of indoor unit

Capacity (kBtu/h)	Water flowrate (l/h)
12	2.4
18	4
24	6
30	7
36	8
42	10
48	12
60	14

According to the above table to calculate the total water flowrate for the confluence pipe selection.

For horizontal drainage pipe (The following table is for reference)

PVC pipe	Reference value of inner diameter of pipe (mm)	Allowable maximum water flowrate (l/h)		Remark
		Slope 1/50	Slope 1/100	
PVC25	20	39	27	For branch pipe
PVC32	25	70	50	
PVC40	31	125	88	Could be used for confluence pipe
PVC50	40	247	175	
PVC63	51	473	334	

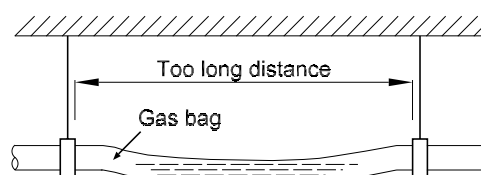
Attention: Adopt PVC40 or bigger pipe to be the main pipe.

For Vertical drainage pipe (The following table is for reference)

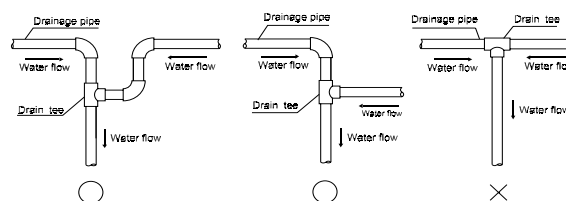
PVC pipe	Reference value of inner diameter of pipe (mm)	Allowable maximum water flowrate (l/h)	Remark
PVC25	20	220	For branch pipe
PVC32	25	410	
PVC40	31	730	Could be used for confluence pipe
PVC50	40	1440	
PVC63	51	2760	
PVC75	67	5710	
PVC90	77	8280	

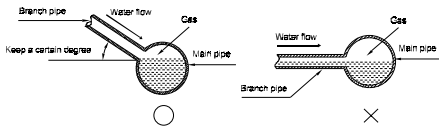
Attention: Adopt PVC40 or bigger pipe to be the main pipe.

3. Individual design of drainage pipe system
 - The drainage pipe of air conditioner shall be installed separately with other sewage pipe, rainwater pipe and drainage pipe in building.
 - The drainage pipe of the indoor unit with water pump should be apart from the one without water pump.
4. Supporter gap of drainage pipe
 - In general, the supporter gap of the drainage pipe horizontal pipe and vertical pipe is respectively 1m~1.5m and 1.5m~2.0m.
 - Each vertical pipe shall be equipped with not less than two hangers.
 - Overlarge hanger gap for horizontal pipe shall create bending, thus leading to air block.



5. The horizontal pipe layout should avoid converse flow or bad flow

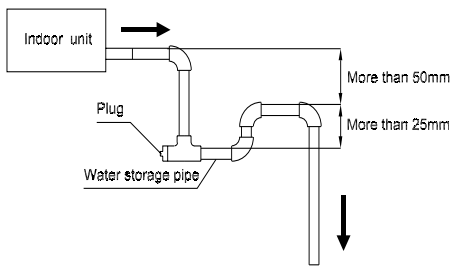




- The correct installation will not cause converse water flow and the slope of the branch pipes can be adjusted freely
- The false installation will cause converse water flow and the slope of the branch pipe can not be adjusted.

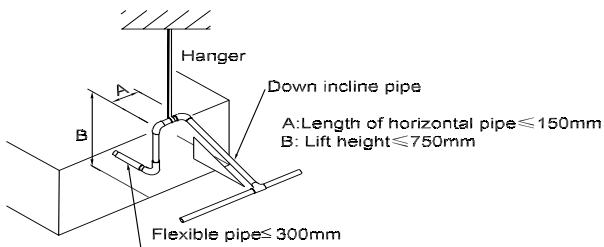
6. Water storage pipe setting

- If the indoor unit has high extra static pressure and without water pump to elevate the condensate water, such as high extra static pressure duct unit, the water storage pipe should be set to avoid converse flow or blow water phenomena.



7. Lifting pipe setting of indoor unit with water pump

- The length of lifting pipe should not exceed 750mm/29.5in.
- The drainage pipe should be set down inclined after the lifting pipe immediately to avoid wrong operation of water level switch.
- Refer the following picture for installation reference.

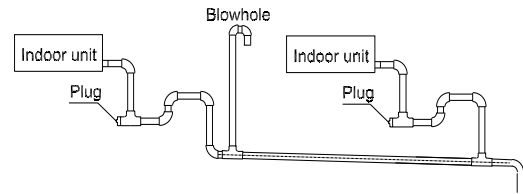


8. Blowhole setting

- For the concentrated drainage pipe system, there should design a blowhole at the highest point of main pipe to ensure the condensate water discharge smoothly.
- The air outlet shall face down to prevent dirt enter-

ing pipe.

- Each indoor unit of the system should be installed it.
- The installation should be considering the convenience for future cleaning.



9. The end of drainage pipe shall not contact with ground directly.

5.3 Insulation work of drainage pipe

Refer the introduction to the insulation engineering parts.

6. Refrigerant Pipe Installation

6.1 Maximum length and drop height

Ensure that the length of the refrigerant pipe, the number of bends, and the drop height between the indoor and outdoor units meets the requirements shown in the following table.

Capacity(kBtu/h)	Max. Length (m/ft)	Max. Elevation (m/ft)
18	30/98.4	20/65.6
24~30	50/164	25/82
36~60	65/213.3	30/98.4

Caution:

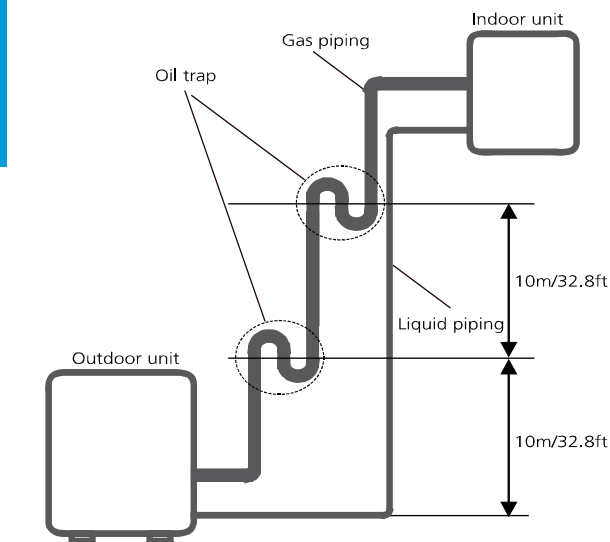
1. The capacity test is based on the standard length and the maximum permissible length is based on the system reliability.

2. Oil traps

If the indoor unit is installed higher than the outdoor unit:

-If oil flows back into the outdoor unit's compressor, this might cause liquid compression or deterioration of oil return. Oil traps in the rising gas piping can prevent this.

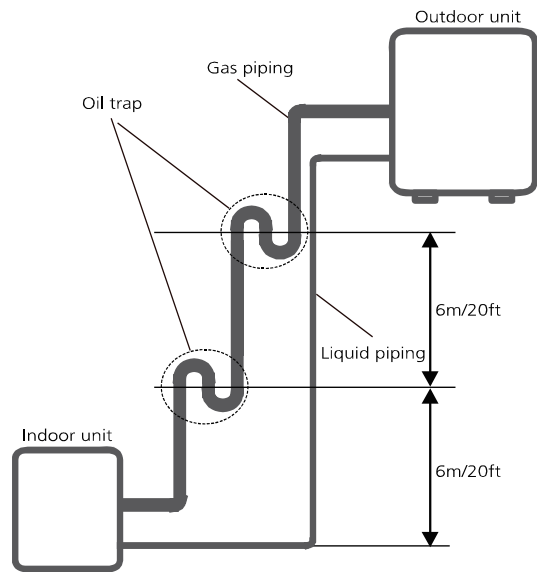
An oil trap should be installed every 10m(32.8ft) of vertical suction line riser.



The indoor unit is installed higher than the outdoor unit

If the outdoor unit is installed higher than the indoor unit:

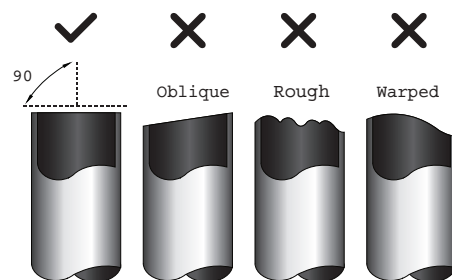
-It is recommended that vertical suction risers not be upsized. Proper oil return to the compressor should be maintained with suction gas velocity. If velocities drop below 7.62m/s(1500fpm (feet per minute)), oil return will be decreased. An oil trap should be installed every 6m(20ft) of vertical suction line riser.



The outdoor unit is installed higher than the indoor unit

6.2 The procedure of connecting pipes

1. Choose the pipe size according to the specification table.
2. Confirm the cross way of the pipes.
3. Measure the necessary pipe length.
4. Cut the selected pipe with pipe cutter
 - Make the section flat and smooth.

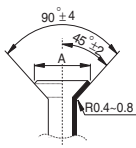


5. Insulate the copper pipe

- Before test operation, the joint parts should not be heat insulated.

6. Flare the pipe

- Insert a flare nut into the pipe before flaring the pipe
- According to the following table to flare the pipe.

Pipe diameter (inch(mm))	Flare dimension A (mm/inch)		Flare shape
	Min	Max	
1/4" (6.35)	8.4/0.33	8.7/0.34	
3/8" (9.52)	13.2/0.52	13.5/0.53	
1/2" (12.7)	16.2/0.64	16.5/0.65	
5/8" (15.9)	19.2/0.76	19.7/0.78	
3/4" (19)	23.2/0.91	23.7/0.93	
7/8" (22)	26.4/1.04	26.9/1.06	

- After flared the pipe, the opening part must be seal by end cover or adhesive tape to avoid duct or exogenous impurity come into the pipe.

7. Drill holes if the pipes need to pass the wall.

8. According to the field condition to bend the pipes so that it can pass the wall smoothly.

9. Bind and wrap the wire together with the insulated pipe if necessary.

10. Set the wall conduit

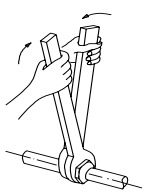
11. Set the supporter for the pipe.

12. Locate the pipe and fix it by supporter

- For horizontal refrigerant pipe, the distance between supporters should not be exceed 1m.
- For vertical refrigerant pipe, the distance between supporters should not be exceed 1.5m.

13. Connect the pipe to indoor unit and outdoor unit by using two spanners.

- Be sure to use two spanners and proper torque to fasten the nut, too large torque will damage the bellmouthing, and too small torque may cause leakage. Refer the following table for different pipe connection.

Pipe Diameter	Torque	Sketch map
	N.m(lb.ft)	
1/4" (6.35)	15~16 (11~11.8)	
3/8" (9.52)	25~26 (18.4~19.18)	
1/2" (12.7)	35~36 (25.8~26.55)	
5/8" (15.9)	45~47 (33.19~34.67)	
3/4" (19)	65~67 (47.94~49.42)	
7/8" (22)	75~85 (55.3~62.7)	

7. Vacuum Drying and Leakage Checking

7.1 Purpose of vacuum drying

- Eliminating moisture in system to prevent the phenomena of ice-blockage and copper oxidation. Ice-blockage shall cause abnormal operation of system, while copper oxide shall damage compressor.
- Eliminating the non-condensable gas (air) in system to prevent the components oxidizing, pressure fluctuation and bad heat exchange during the operation of system.

7.2 Selection of vacuum pump

- The ultimate vacuum degree of vacuum pump shall be -756mmHg or above.
- Precision of vacuum pump shall reach 0.02mmHg or above.

7.3 Operation procedure for vacuum drying

Due to different construction environment, two kinds of vacuum drying ways could be chosen, namely ordinary vacuum drying and special vacuum drying.

7.3.1 Ordinary vacuum drying

- When conduct first vacuum drying, connect pressure gauge to the infusing mouth of gas pipe and liquid pipe, and keep vacuum pump running for 1hour (vacuum degree of vacuum pump shall be reached -755mmHg).
- If the vacuum degree of vacuum pump could not reach -755mmHg after 1 hour of drying, it indicates that there is moisture or leakage in pipeline system and need to go on with drying for half an hour.
- If the vacuum degree of vacuum pump still could not reach -755mmHg after 1.5 hours of drying, check whether there is leakage source.
- Leakage test: After the vacuum degree reaches -755mmHg, stop vacuum drying and keep the pressure for 1 hour. If the indicator of vacuum gauge does not go up, it is qualified. If going up, it indicates that there is moisture or leak source.

7.3.2 Special vacuum drying

The special vacuum drying method shall be adopted when:

- Finding moisture during flushing refrigerant pipe.
- Conducting construction on rainy day, because rain water might penetrated into pipeline.
- Construction period is long, and rain water might penetrated into pipeline.

4. Rain water might penetrate into pipeline during construction.

Procedures of special vacuum drying are as follows:

1. Vacuum drying for 1 hour.
2. Vacuum damage, filling nitrogen to reach 0.5Kgf/cm² .

Because nitrogen is dry gas, vacuum damage could achieve the effect of vacuum drying, but this method could not achieve drying thoroughly when there is too much moisture. Therefore, special attention shall be drawn to prevent the entering of water and the formation of condensate water.

3. Vacuum drying again for half an hour.

If the pressure reached -755mmHg, start to pressure leakage test. If it cannot reached the value, repeat vacuum damage and vacuum drying again for 1 hour.

4. Leakage test: After the vacuum degree reaches -755mmHg, stop vacuum drying and keep the pressure for 1 hour. If the indicator of vacuum gauge does not go up, it is qualified. If going up, it indicates that there is moisture or leak source.

8. Additional Refrigerant Charge

- After the vacuum drying process is carried out, the additional refrigerant charge process need to be performed.
- The outdoor unit is factory charged with refrigerant. The additional refrigerant charge volume is decided by the diameter and length of the liquid pipe between indoor and outdoor unit. Refer the following formula to calculate the charge volume.

Diameter of liquid pipe (mm)	Formula
6.35	$V=12g/m \times (L-5)$
9.52	$V=24g/m \times (L-5)$

V: Additional refrigerant charge volume (g).

L : The length of the liquid pipe (m).

Note:

- Refrigerant may only be charged after performed the vacuum drying process.
- Always use gloves and glasses to protect your hands and eyes during the charge work.
- Use electronic scale or fluid infusion apparatus to weight refrigerant to be recharged. Be sure to avoid extra refrigerant charged, it may cause liquid hammer of the compressor or protections.
- Use supplementing flexible pipe to connect refrigerant cylinder, pressure gauge and outdoor unit. And The refrigerant should be charged in liquid state. Before recharging, The air in the flexible pipe and manifold gauge should be exhausted.
- After finished refrigerant recharge process, check whether there is refrigerant leakage at the connection joint part.(Using gas leakage detector or soap water to detect).

9. Engineering of Insulation

9.1 Insulation of refrigerant pipe

1. Operational procedure of refrigerant pipe insulation

Cut the suitable pipe → insulation (except joint section) → flare the pipe → piping layout and connection → vacuum drying → insulate the joint parts

2. Purpose of refrigerant pipe insulation

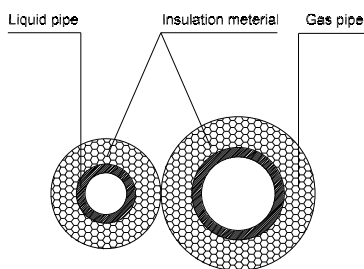
- During operation, temperature of gas pipe and liquid pipe shall be over-heating or over-cooling extremely. Therefore, it is necessary to carry out insulation; otherwise it shall debase the performance of unit and burn compressor.
- Gas pipe temperature is very low during cooling. If insulation is not enough, it shall form dew and cause leakage.
- Temperature of gas pipe is very high (generally 50-100 °C) during heating. Insulation work must be carried out to prevent hurt by carelessness touching.

3. Insulation material selection for refrigerant pipe

- The burning performance should over 120 °C
- According to the local law to choose insulation materials
- The thickness of insulation layer shall be above 10mm. If in hot or wet environment place, the layer of insulation should be thicker accordingly.

4. Installation highlights of insulation construction

- Gas pipe and liquid pipe shall be insulated separately, if the gas pipe and liquid pipe were insulated together; it will decrease the performance of air conditioner.



- The insulation material at the joint pipe shall be 5~10cm longer than the gap of the insulation material.
- The insulation material at the joint pipe shall be inserted into the gap of the insulation material.
- The insulation material at the joint pipe shall be banded to the gap pipe and liquid pipe tightly.
- The linking part should be use glue to paste together
- Be sure not bind the insulation material over-tight, it may extrude out the air in the material to cause bad

insulation and cause easy aging of the material.

9.2 Insulation of drainage pipe

1. Operational procedure of refrigerant pipe insulation

Select the suitable pipe → insulation (except joint section) → piping layout and connection → drainage test → insulate the joint parts

2. Purpose of drainage pipe insulation

The temperature of condensate drainage water is very low. If insulation is not enough, it shall form dew and cause leakage to damage the house decoration.

3. Insulation material selection for drainage pipe

- The insulation material should be flame retardant material, the flame retardancy of the material should be selected according to the local law.
- Thickness of insulation layer is usually above 10mm.
- Use specific glue to paste the seam of insulation material, and then bind with adhesive tape. The width of tape shall not be less than 5cm. Make sure it is firm and avoid dew.

4. Installation and highlights of insulation construction

- The single pipe should be insulated before connecting to another pipe, the joint part should be insulated after the drainage test.
- There should be no insulation gap between the insulation material.

10. Engineering of Electrical Wiring

1. Highlights of electrical wiring installation

- All field wiring construction should be finished by qualified electrician.
- Air conditioning equipment should be grounded according to the local electrical regulations.
- Current leakage protection switch should be installed.
- Do not connect the power wire to the terminal of signal wire.
- When power wire is parallel with signal wire, put wires to their own wire tube and remain at least 300mm gap.
- According to table in indoor part named "the specification of the power" to choose the wiring, make sure the selected wiring not small than the date showing in the table.
- Select different colors for different wire according to relevant regulations.
- Do not use metal wire tube at the place with acid or alkali corrosion, adopt plastic wire tube to replace it.
- There must be not wire connect joint in the wire tube If joint is a must, set a connection box at the place.
- The wiring with different voltage should not be in one wire tube.
- Ensure that the color of the wires of outdoor and the terminal No. are same as those of indoor unit respectively.

Table: Minimum Cross-Sectional Area able of Power and Signal Cables

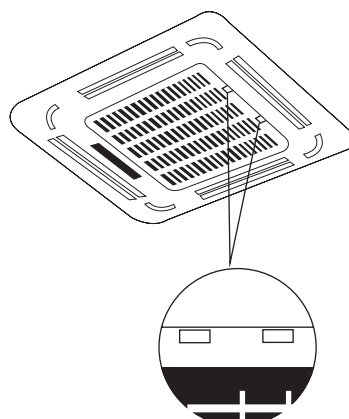
Rated Current of Appliance (A)	Nominal Cross-Sectional Area(mm ²)
≤ 6	0.75
6 - 10	1
10 - 16	1.5
16 - 25	2.5
25 - 32	4
32 - 45	6

11. Panel Installation

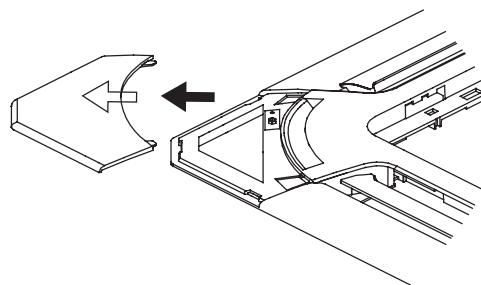
11.1 Common Panel Installation of Super-slim Cassette

11.1.1 Remove the front grille

1. Push both of the tabs towards the middle simultaneously to unlock the hook on the grille.
2. Hold the grille at a 45° angle, lift it up slightly and detach it from the main body



11.1.2 Remove the installation covers at the four corners by sliding them outwards.

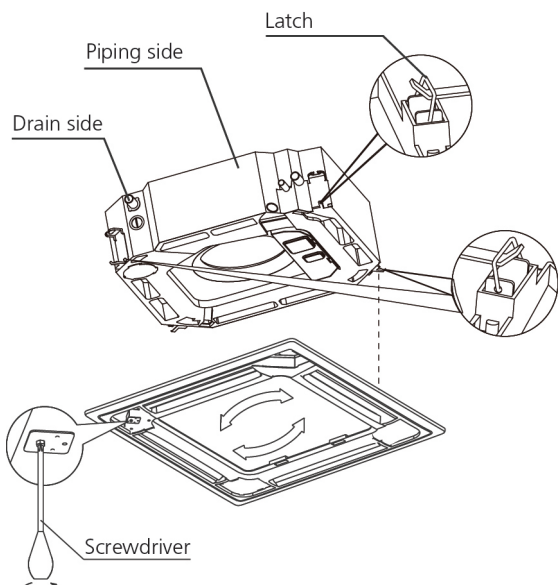


11.1.3 Install the panel

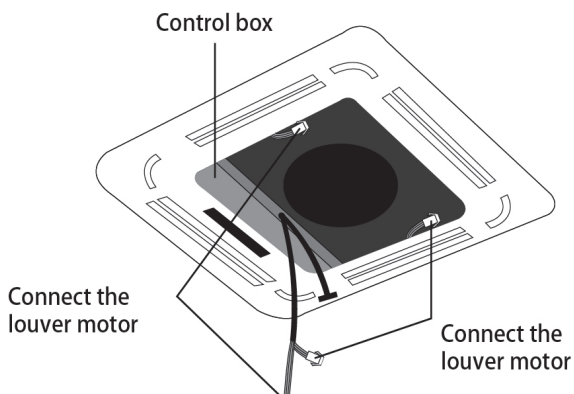
1. Align the front panel to the main body, taking into account the position of the piping and drain sides. Hang the four latches of the decorative panel to the hooks of the indoor unit. Tighten the panel hook screws evenly at the four corners.

Note: Tighten the screws until the thickness of the sponge between the main body and the panel reduces to 4-6mm (0.2-0.3"). The edge of the panel should be in contact with the ceiling well.

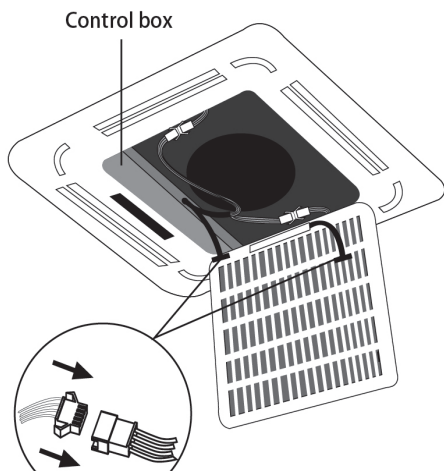
2. Adjust the panel by turning it to the arrowed direction shown in figure below so that the ceiling opening is completely covered.



3. Connect the two louver motor connectors to the corresponding wires in the control box.

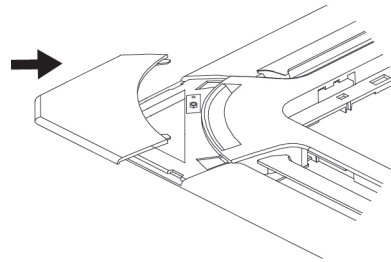


4. Remove foam stops from inside the fan.
5. Attach the side of the front grille to the panel.
6. Connect the display panel cable to the corresponding wire on the main body.



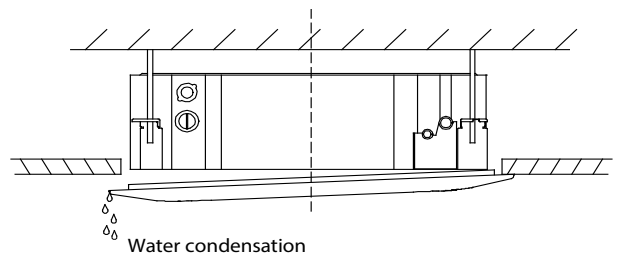
7. Close the front grille.
8. Fasten the installation covers at all four corners by

pushing them inwards.

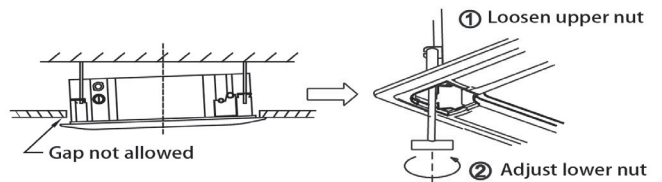


NOTE: If the height of the indoor unit needs to be adjusted, you can do so through the openings at the panel's four corners. Make sure that the internal wiring and drainpipe are not affected by this adjustment.

CAUTION: Failure to tighten screws can cause water leakage.



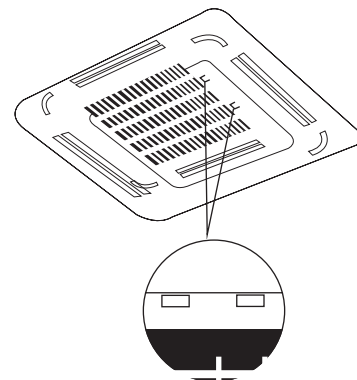
CAUTION: If the unit is not hung correctly and a gap exists, the unit's height must be adjusted to ensure proper function. The unit's height can be adjusted by loosening the upper nut, and adjusting the lower nut.



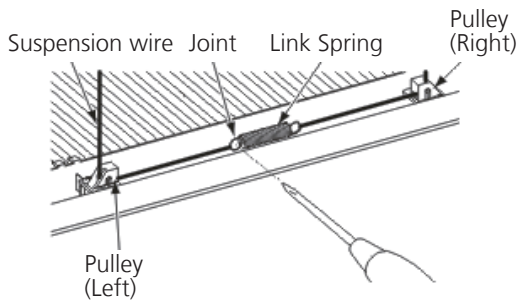
11.2 Auto-lifting Panel Installation

11.2.1 Remove the front grille

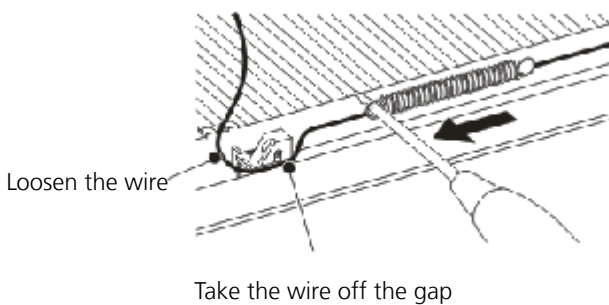
1. Push both of the tabs towards the middle simultaneously to unlock the hook on the grille.



2. Insert the screwdriver into the joint. Pull the link spring up at the left side and loosen the suspension wire.

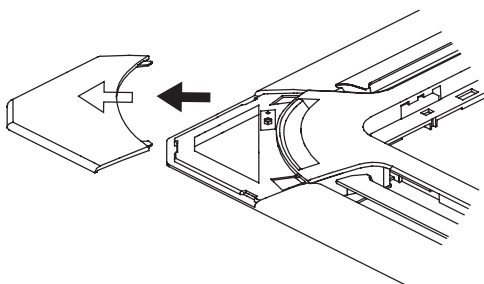


3. Take the suspension wire off the pulley at the left side



4. Take off the suspension wire at the right side same as the left side.
5. Take off the suspension wire at the other side same as the above four steps.

11.2.2 Remove the installation covers at the four corners by sliding them outwards.

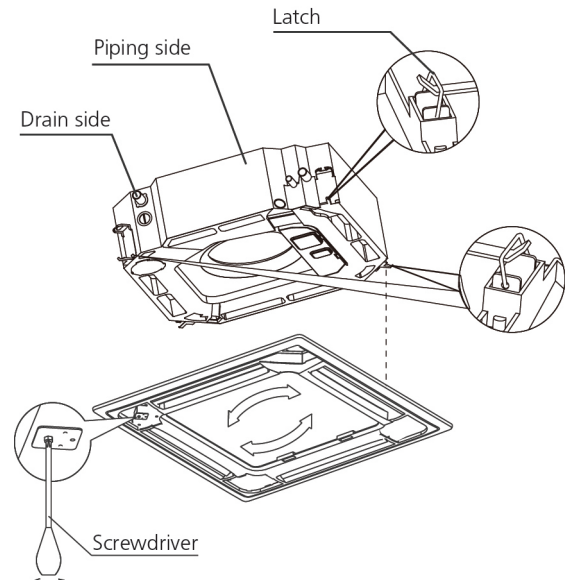


11.2.3 Install the panel

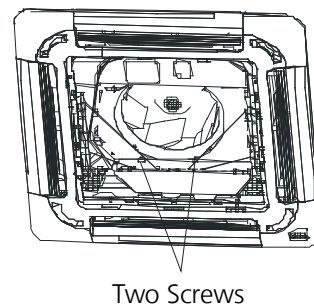
1. Align the front panel to the main body, taking into account the position of the piping and drain sides. Hang the four latches of the decorative panel to the hooks of the indoor unit. Tighten the panel hook screws evenly at the four corners.

Note: Tighten the screws until the thickness of the sponge between the main body and the panel reduces to 4-6mm (0.2-0.3"). The edge of the panel should be in contact with the ceiling well.

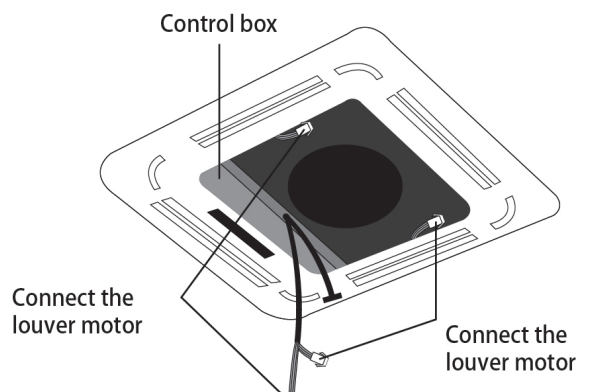
2. Adjust the panel by turning it to the arrowed direction shown in follow figure so that the ceiling opening is completely covered.



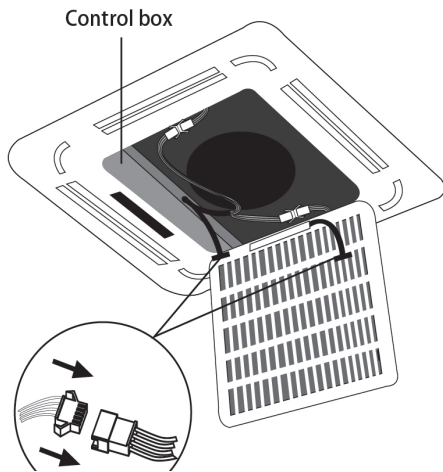
3. Use 2 screws to screw in the panel into the indoor unit.



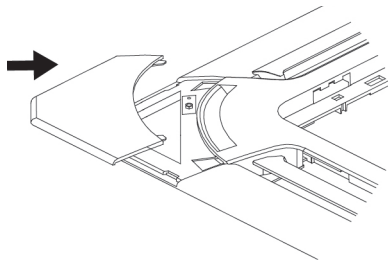
4. Remove styrofoam stops from inside the fan.
5. Connect the two louvre motor connections to the corresponding wires in the control box.



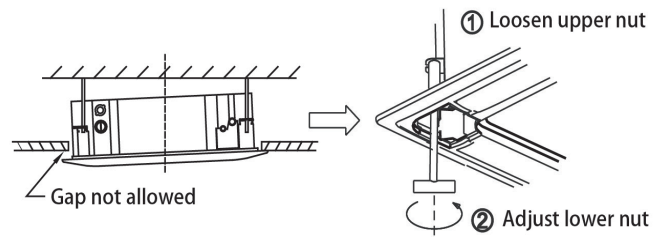
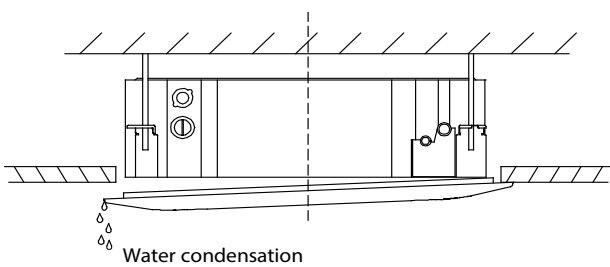
6. Connect the display panel cable to the corresponding wire on the main body.



7. Fasten the installation covers at all four corners by pushing them inwards.

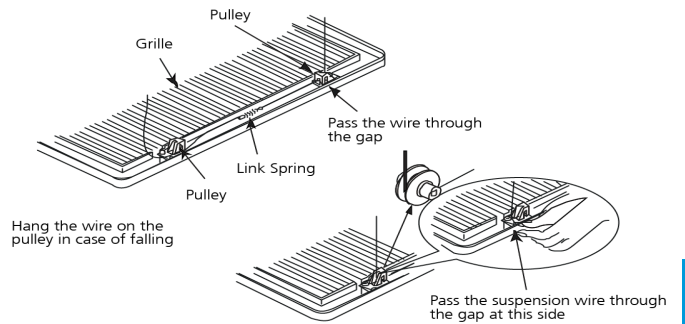


NOTE: If the height of the indoor unit needs to be adjusted, you can do so through the openings at the panel's four corners. Make sure that the internal wiring and drainpipe are not affected by this adjustment.



11.2.4 Install the panel

1. Make sure the suspension wire can be hung correctly on the pulley. Pass through the suspension wire to the side of pulley and hang it on the pulley. Make sure the link spring



12. Test Operation

1. The test operation must be carried out after the entire installation has been completed.

2. Please confirm the following points before the test operation.

- The indoor unit and outdoor unit are installed properly.
- Piping and wiring are properly connected.
- Ensure that there are no obstacles near the inlet and outlet of the unit that might cause poor performance or product malfunction.
- The refrigeration system does not leak.
- The drainage system is unimpeded and draining to a safe location.
- The heating insulation is properly installed.
- The grounding wires are properly connected
- The length of the piping and the added refrigerant stow capacity have been recorded.
- The power voltage is the correct voltage for the air conditioner.

CAUTION: Failure to perform the test run may result in unit damage, property damage or personal injury.

3. Test Run Instructions

1. Open both the liquid and gas stop valves.
2. Turn on the main power switch and allow the unit to warm up.
3. Set the air conditioner to COOL mode, and check the following points.

Indoor unit

- Whether the switch on the remote controller works well.
- Whether the buttons on the remote controller works well.
- Whether the air flow louver moves normally.
- Whether the room temperature is adjusted well.
- Whether the indicator lights normally.
- Whether the temporary buttons works well.
- Whether the drainage is normal.
- Whether there is vibration or abnormal noise during operation.

Outdoor unit

- Whether there is vibration or abnormal noise during operation.
- Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
- Whether any of the refrigerant is leaked.

3. Drainage Test

- a. Ensure the drainpipe flow smoothly. New buildings should perform this test before finishing the ceiling.
- b. Remove the test cover. Add 2000ml of water to the tank through the attached tube.
- c. Turn on the main power switch and run the air conditioner in COOL mode.
- d. Listen to the sound of the drain pump to see if it makes any unusual noises.
- e. Check to see that the water is discharged. It may take up to one minute before the unit begins to drain depending on the drainpipe.
- f. Make sure that there are no leaks in any of the piping.
- g. Stop the air conditioner. Turn off the main power switch and reinstall the test cover.