



Turn to the experts

TM_A6 DUCT_R32_3D INV_EU_S_NB_2103

A6 DUCT

R32 50HZ 3D INVERTER CONTROL

Engineering Databook

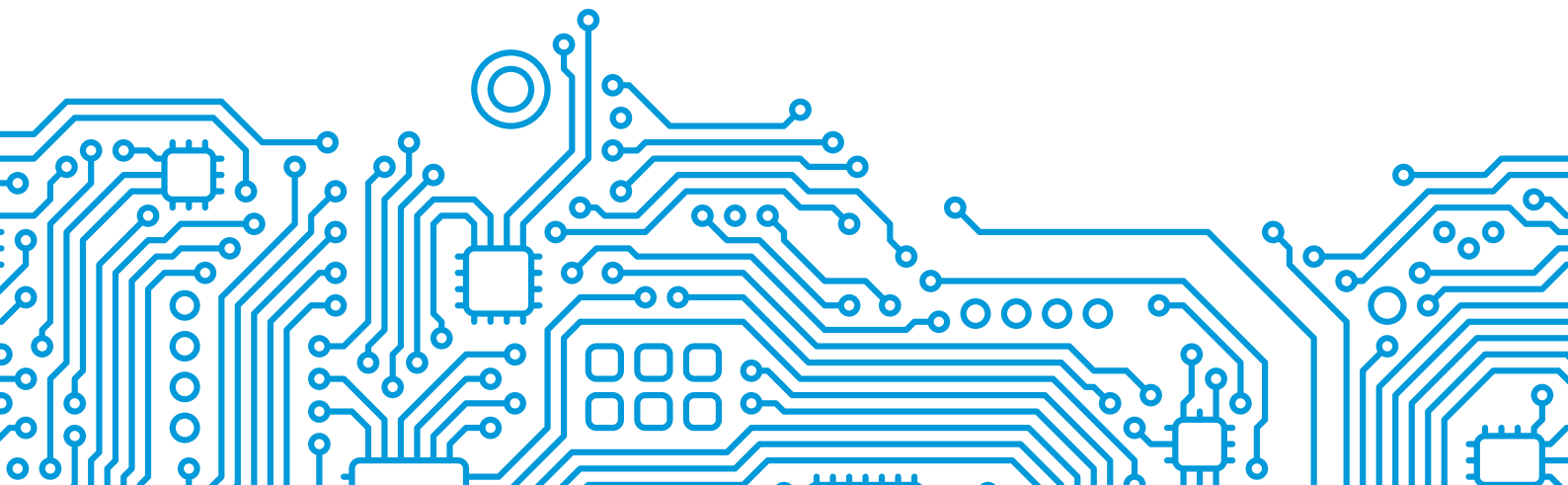
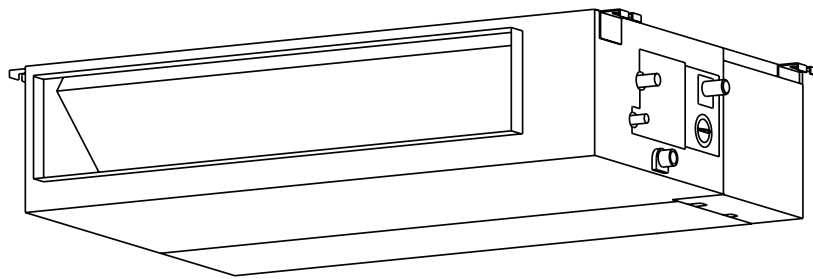


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Specifications

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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.

Indoor Unit Model	Outdoor Unit Model	Capacity (Btu/h)	Power Supply
42QSS012D8S-1	38QUS012D8S-1	12K	1 Φ , 220-240V~, 50Hz
42QSS018D8S-1	38QUS018D8S-1	18K	
42QSS024D8S	38QUS024D8S	24K	
42QSS030D8S	38QUS030D8S	30K	
42QSS036D8S	38QUS036D8S	36K	
42QSS042D8S	38QUS042D8S	42K	
42QSS036D8S	38QUS036D8ST	36K	3 Φ , 380-415V~, 50Hz
42QSS048D8S	38QUS048D8T	48K	
42QSS060D8S	38QUS060D8T	60K	

2. General Specifications

Indoor model			42QSS012D8S-1	42QSS018D8S-1	42QSS024D8S
Outdoor model			38QUS012D8S-1	38QUS018D8S-1	38QUS024D8S
Power supply (Indoor)		V- Ph-Hz	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
Max. input consumption		W	1850	2950	3700
Max. current		A	9	13.5	19
Indoor fan motor	Model		ZKFN-55-8-22	ZKFN-160-8-1-2	ZKFN-160-8-1-2
	Qty		1	1	1
	Insulation class		B	B	B
	IP rating		IPX0	IPX0	IPX0
	Output	W	55	160	160
	Capacitor	uF	-	/	/
	Speed(Hi/Mi/Lo)	r/min	1256/384	1650/1300/1000	1200/-/-
Indoor coil	Number of rows		3	3	3
	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	526x210x40.11	695x252x40.11	915x294x40.11
	Number of circuits		4	4	7
Indoor air flow (Hi/Mi/Lo)		m3/h	600/480/300	911/706.3/515.2	1229/1035/825.1
ESP	Rated	Pa	25	25	25
	Range	Pa	0-60	0-100	0-160
Indoor sound pressure level		dB(A)	34.5/32/30	42/39/35	49/46/41
Indoor sound power level		dB(A)	58	58	62
Indoor unit	Dimension(W*D*H)	mm	700x506x200	880x674x210	1100x774x249
	Packing (W*D*H)	mm	860x540x285	1070x725x280	1305x805x315
	Net/Gross weight	Kg	17.8/21.5	24.4/29.6	32.3/39.1
Drainage water pipe diameter		mm	ODΦ25mm	ODΦ25mm	ODΦ25mm
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")
Controller			Wired control	Wired control	Wired 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	214/461/519	120/264/297	77/161/198
Compressor	Model		KSN98D64UFZ3	KSN140D21UFZ	KTM240D43UKT
	Type		ROTARY	ROTARY	ROTARY
	Brand		GMCC	GMCC	GMCC
	Capacity	W	1930/3100	4385	7600
	Input	W	292/765	1140	2045
	Rated current(RLA)	A	2.15/4.65	7.50	9
	Refrigerant oil/oil charge	ml	VG74 300	VG74 440	VG74/620
Outdoor fan motor	Model		ZKFN-34-10-1-3	ZKFN-34-10-1-3	ZKFN-80-8-3
	Qty		1	1	1
	Insulation class		B	B	E
	IP rating		IPX4	IPX4	IPX4
	Output	W	34	34	80
	Capacitor	uF	/	/	/
	Speed	r/min	780/600	760/650	800/580

Outdoor coil	Number of rows		1	2.0	1.6
	Tube pitch(a)x row pitch(b)	mm	21x22	21x22	21x22
	Fin spacing	mm	1.3	1.3	1.3
	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	745*504*22	860*504*44	900*44*609
	Number of circuits		2	4	5
Outdoor air flow		m ³ /h	2200	2100	3500
Outdoor sound pressure level		dB(A)	54	59	60
Outdoor sound power level		dB(A)	62	67	69
Throttle type			EXV	EXV	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	765x303x555	805x330x554	890x342x673
	Packing (W*D*H)	mm	887x337x610	915x370x615	995x398x740
	Net/Gross weight	Kg	26.6/29	32.5/35.2	43.9/46.9
Refrigerant type	Type	-	R32	R32	R32
	GWP	-	675	675	675
	Charged quantity	Kg	0.72	1.15	1.5
Design pressure		MPa	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")
	Max. refrigerant pipe length	m	25	30	50
	Max. difference in level	m	10	20	25
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	132/264/352	114/234/312	99/198/198

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			42QSS030D8S	42QSS036D8S	42QSS036D8S	
Outdoor model			38QUS030D8S	38QUS036D8S	38QUS036D8T	
Power supply (Indoor)	V- Ph-Hz		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	380~415-3-50	
Max. input consumption	W		4500	5000	5000	
Max. current	A		20	22.5	10.0	
Indoor fan motor	Model		ZKFN-300-8-1	ZKFN-300-8-1	ZKFN-300-8-1	
	Qty		1	1	1	
	Insulation class		E	E	E	
	IP rating		IPX0	IPX0	IPX0	
	Output	W		300	300	300
	Capacitor	uF		/	/	/
	Speed(Hi/Mi/Lo)	r/min		1100/1000/900	1100/1000/900	1100/1000/900
Indoor coil	Number of rows		4	4	4	
	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	1175x294x53.48	1175x294x53.48	1175x294x53.48	
	Number of circuits		7	7	7	
Indoor air flow (Hi/Mi/Lo)	m ³ /h		2100/1800/1500	2100/1800/1500	2100/1800/1500	
ESP	Rated	Pa	37	37	37	
	Range	Pa	0-160	0-160	0-160	
Indoor sound pressure level	dB(A)		50.5/48/46	50/48/46	50.5/49/47	
Indoor sound power level	dB(A)		64	62	62	
Indoor unit	Dimension(W*D*H)	mm	1360x774x249	1360x774x249	1360x774x249	
	Packing (W*D*H)	mm	1570x805x330	1570x805x330	1570x805x330	
	Net/Gross weight	Kg	40.5/48.3	40.5/48.2	40.5/48.2	
Drainage water pipe diameter	mm		ODΦ25mm	ODΦ25mm	ODΦ25mm	
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")	
Controller			Wired control	Wired control	Wired 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		49/105/120	49/105/120	49/105/120	
Compressor	Model		KTM240D43UKT	KTF310D43UMT	KTF310D43UMT	
	Type		ROTARY	ROTARY	ROTARY	
	Brand		GMCC	GMCC	GMCC	
	Capacity	W		7600	10010	10010
	Input	W		2045	2765	2765
	Rated current(RLA)	A		9	5.38	5.38
	Refrigerant oil/oil charge	ml		VG74/620	VG74/1000	VG74/1000
Outdoor fan motor	Model		ZKFN-120-8-2	ZKFN-120-8-2	ZKFN-120-8-2	
	Qty		1	1	1	
	Insulation class		E	E	E	
	IP rating		IPX4	IPX4	IPX4	
	Output	W		120	120	120
	Capacitor	uF		/	/	/
	Speed	r/min		900/750/550	950/850/700	950/850/700

Outdoor coil	Number of rows		1.6	2	2
	Tube pitch(a)x row pitch(b)	mm	25.4x22	25.4x22	25.4x22
	Fin spacing	mm	1.3	1.3	1.3
	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	1005x762x22+580x762x22	995x762x44	995x762x44
	Number of circuits		4	4	4
Outdoor air flow		m ³ /h	3800	4000	4000
Outdoor sound pressure level		dB(A)	63	63	63
Outdoor sound power level		dB(A)	72	72	71
Throttle type			EXV+Throttle valve	EXV+Throttle valve	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	946x410x810	946x410x810	946x410x810
	Packing (W*D*H)	mm	1090x500x885	1090x500x885	1090x500x885
	Net/Gross weight	Kg	52.8/57.3	66.9/71.5	80.5/85
Refrigerant type	Type	-	R32	R32	R32
	GWP	-	675	675	675
	Charged quantity	Kg	2	2.4	2.4
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. refrigerant pipe length	m	50	65	65
	Max. difference in level	m	25	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	44/96/138	44/96/138	44/96/138

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			42QSS042D8S	42QSS048D8S	42QSS060D8S
Outdoor model			38QUS042D8T	38QUS048D8T	38QUS060D8T
Power supply (Indoor)	V- Ph-Hz		220~240-1-50	220~240-1-50	220~240-1-50
Power Supply (Outdoor)	V-Ph-Hz		220~240-1-50	380~415-3-50	380~415-3-50
Max. input consumption	W		5000	6900	7500
Max. current	A		22.5	13	14
Indoor fan motor	Model		ZKFN-560-8-1-1	ZKFN-560-8-1-1	ZKFN-560-8-1-1
	Qty		1	1	1
	Insulation class		E	E	E
	IP rating		IPX0	IPX0	IPX0
	Output	W	560.0	560.0	560.0
	Capacitor	uF	/	/	/
	Speed(Hi/Mi/Lo)	r/min	1020/800/600	1020/800/600	1060/970/905
Indoor coil	Number of rows		4.0	4.0	4.0
	Tube pitch(a)x row pitch(b)	mm	21x13.37	21x13.37	21x13.37
	Fin spacing	mm	1.5	1.5	1.5
	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	1030x378x53.48	1030x378x53.48	1030x378x53.48
	Number of circuits		8	8	8
Indoor air flow (Hi/Mi/Lo)	m ³ /h		2400/2040/1680	2400/2040/1680	2600/2210/1820
ESP	Rated	Pa	50	50	50
	Range	Pa	0-160	0-160	0-160
Indoor sound pressure level		dB(A)	52.5/50/47.5	51.5/49/47	52.5/49/47
Indoor sound power level		dB(A)	66	67	67
Indoor unit	Dimension(W*D*H)	mm	1200x874x300	1200x874x300	1200x874x300
	Packing (W*D*H)	mm	1405x915x365	1405x915x365	1405x915x365
	Net/Gross weight	Kg	47.6/55.8	47.6/55.8	47.4/56.1
Drainage water pipe diameter		mm	ODΦ25mm	ODΦ25mm	ODΦ25mm
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")
Controller			Wired control	Wired control	Wired 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		62/130/149	62/130/149	62/130/149
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(RLA)	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-85-8-22-5	ZKFN-85-8-22-5
	Qty		1	2	2
	Insulation class		E	E	E
	IP rating		IPX4	IPX4	IPX4
	Output	W	120	85	85
	Capacitor	uF	/	/	/
	Speed	r/min	950/750	830/650	830/650

Outdoor coil	Number of rows		2.6	2	2
	Tube pitch(a)x row pitch(b)	mm	25.4x22	25.4x22	25.4x22
	Fin spacing	mm	1.5	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	995x762x22+960x762x22+580 x762x22	990*1270*44	990x1270x44
	Number of circuits		6	8	8
Outdoor air flow		m ³ /h	4000	7500	7500
Outdoor sound pressure level		dB(A)	63	63.5	64
Outdoor sound power level		dB(A)	75	75	75
Throttle type			EXV+Throttle valve	EXV+Throttle valve	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	946x410x810	952x415x1333	952x415x1333
	Packing (W*D*H)	mm	1090x500x885	1095x495x1480	1095x495x1480
	Net/Gross weight	Kg	71.0/75.0	103.7/118.3	107.0/121.2
Refrigerant type	Type	-	R32	R32	R32
	GWP	-	675	675	675
	Charged quantity	Kg	2.8	2.9	3.0
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. refrigerant 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	44/96/138	22/48/48	22/48/48

Notes:

1) Capacities are based on the following conditions:

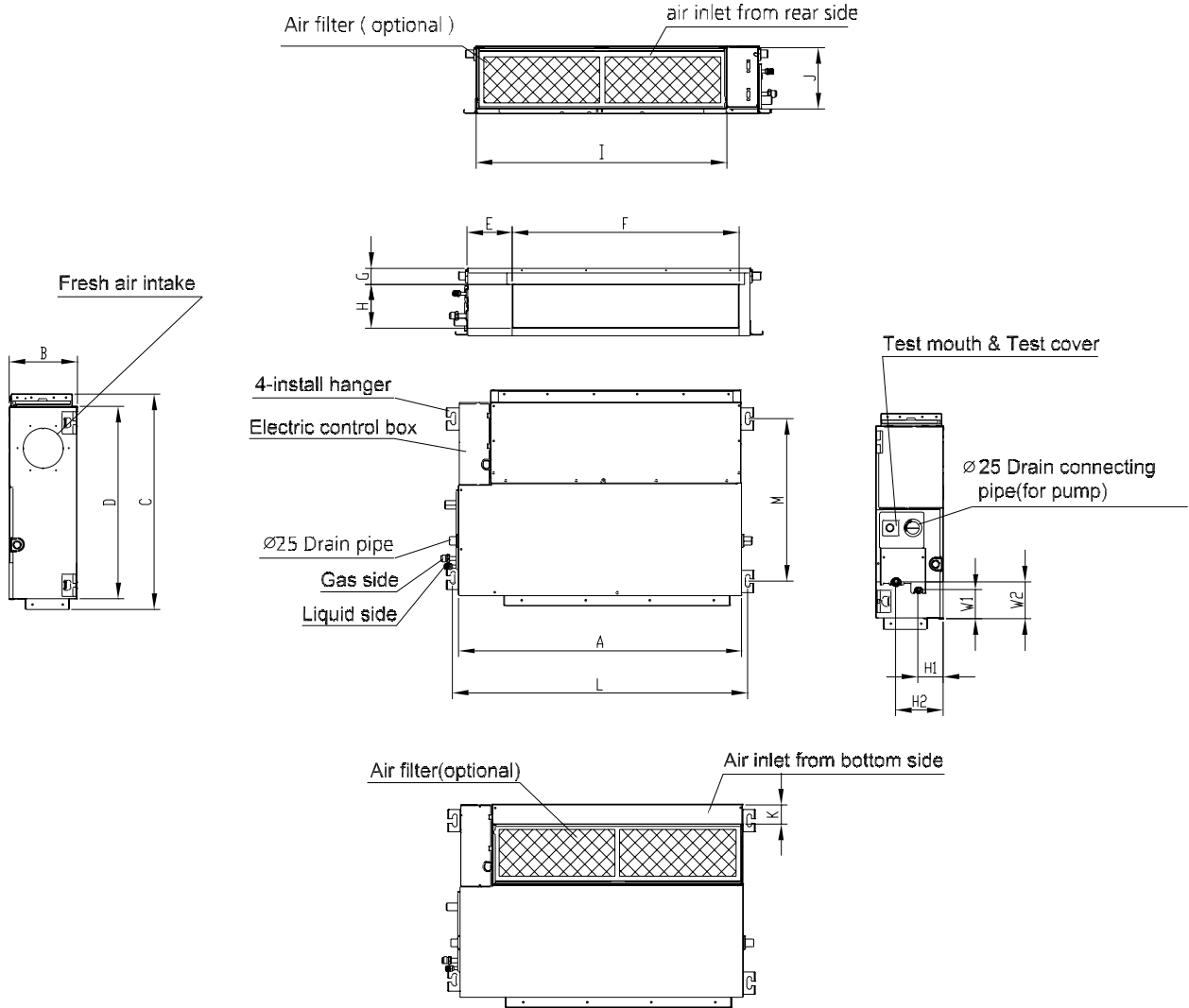
Cooling(T1): - Indoor Temperature 27°C(80.6°F) DB /19 °C(66.2°F) WB Heating: - Indoor Temperature 20°C(68°F) DB / 15°C(59°F) WB
 -Outdoor Temperature 35 °C(95°F) DB /24 °C(75.2°F) WB -Outdoor Temperature 7°C(44.6°F) DB / 6°C(42.8°F) WB
 -Interconnecting Piping Length 5m - Interconnecting Piping Length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

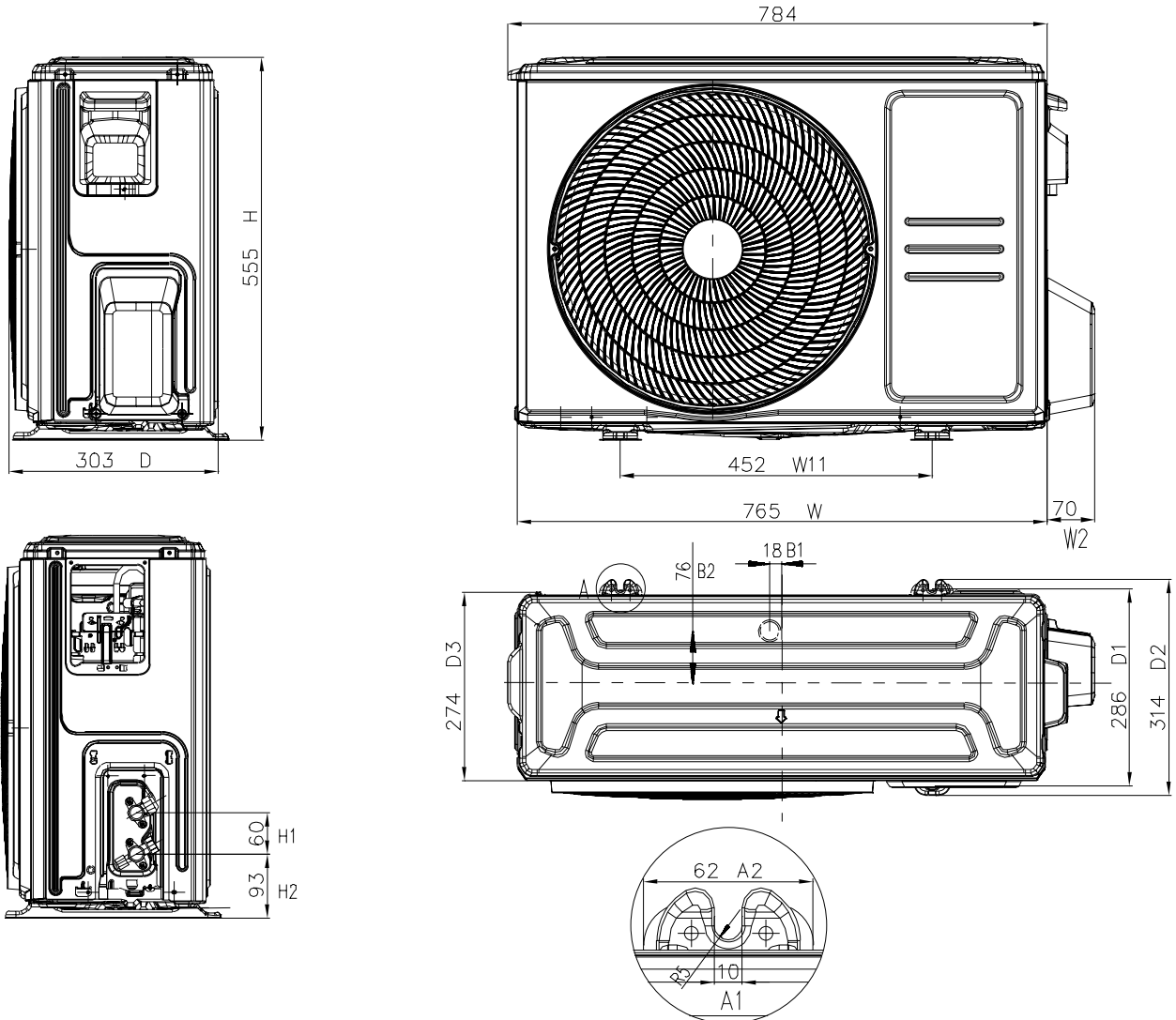
3.1 Indoor Unit



Model	unit	A	B	C	D	E	F	G	H	I	J	K	L	M	H1	H2	W1	W2
12	mm	700	200	506	450	137	537	30	152	599	186	50	741	360	84	140	84	84
	inch	27.6	7.9	19.9	17.7	5.4	21.1	1.2	6.0	23.6	7.3	2.0	29.2	14.2	3.3	5.5	3.3	3.3
18	mm	880	210	674	600	140	706	50	136	782	190	40	920	508	78	148	88	112
	inch	34.65	8.27	26.54	23.62	5.51	27.8	1.97	5.35	30.79	7.48	1.57	36.22	20	3.07	5.83	3.46	4.41
24	mm	1100	249	774	700	140	926	50	175	1001	228	5	1140	598	80	150	130	155
	inch	43.31	9.80	30.47	27.56	5.51	36.46	1.97	6.89	39.41	8.98	0.2	44.88	23.54	3.15	5.91	5.12	6.10
30/36	mm	1360	249	774	700	140	1186	50	175	1261	228	5	1400	598	80	150	130	155
	inch	53.54	9.80	30.47	27.56	5.51	46.69	1.97	6.89	49.65	8.98	0.2	55.12	23.54	3.15	5.91	5.12	6.10
42-60	mm	1200	300	874	800	123	1044	50	227	1101	280	5	1240	697	80	150	185	210
	inch	47.24	11.81	34.41	31.5	4.84	41.1	1.97	8.94	43.35	11.02	0.2	48.82	27.44	3.15	5.91	7.28	8.27

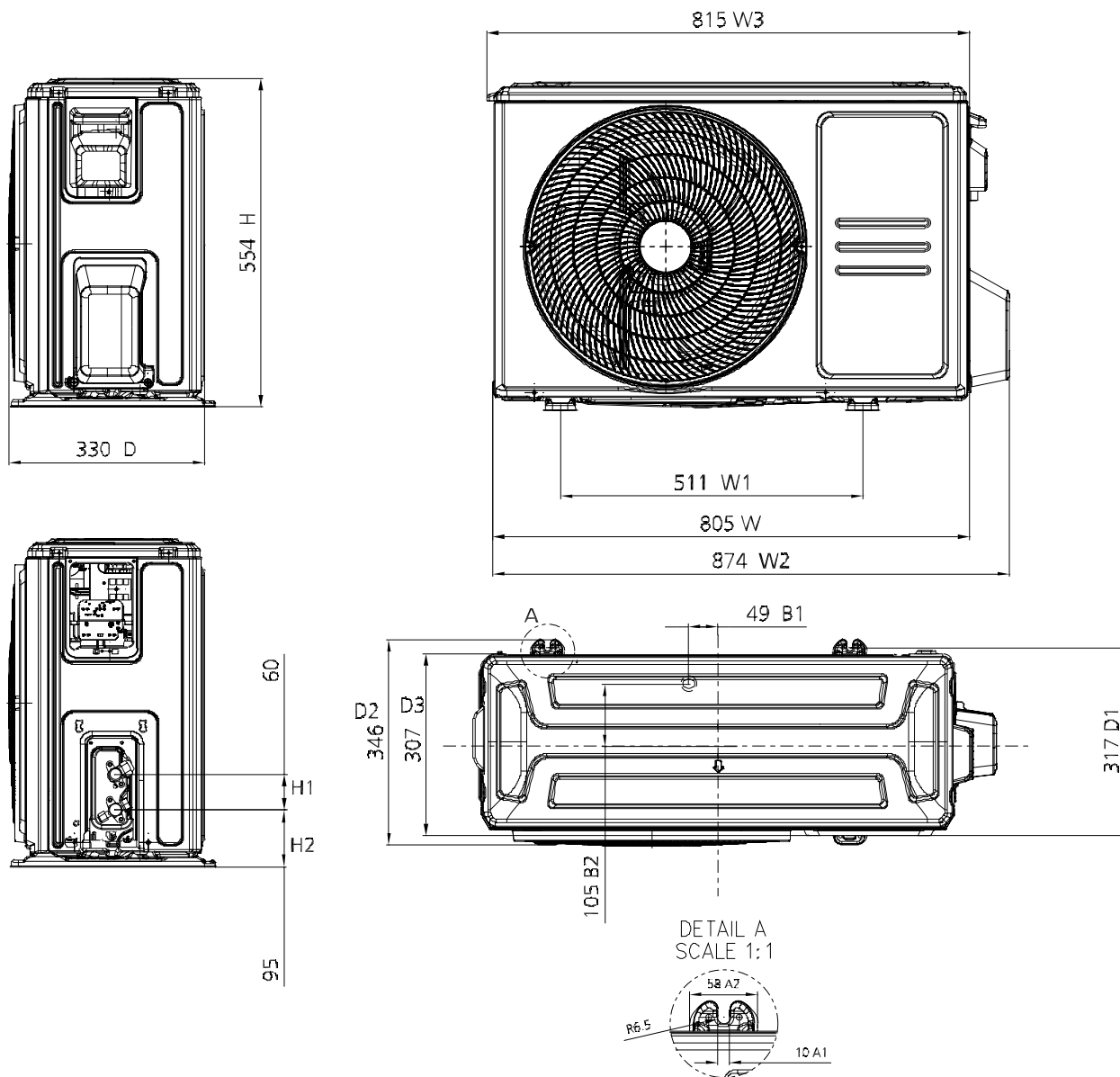
3.2 Outdoor Unit

12K X2

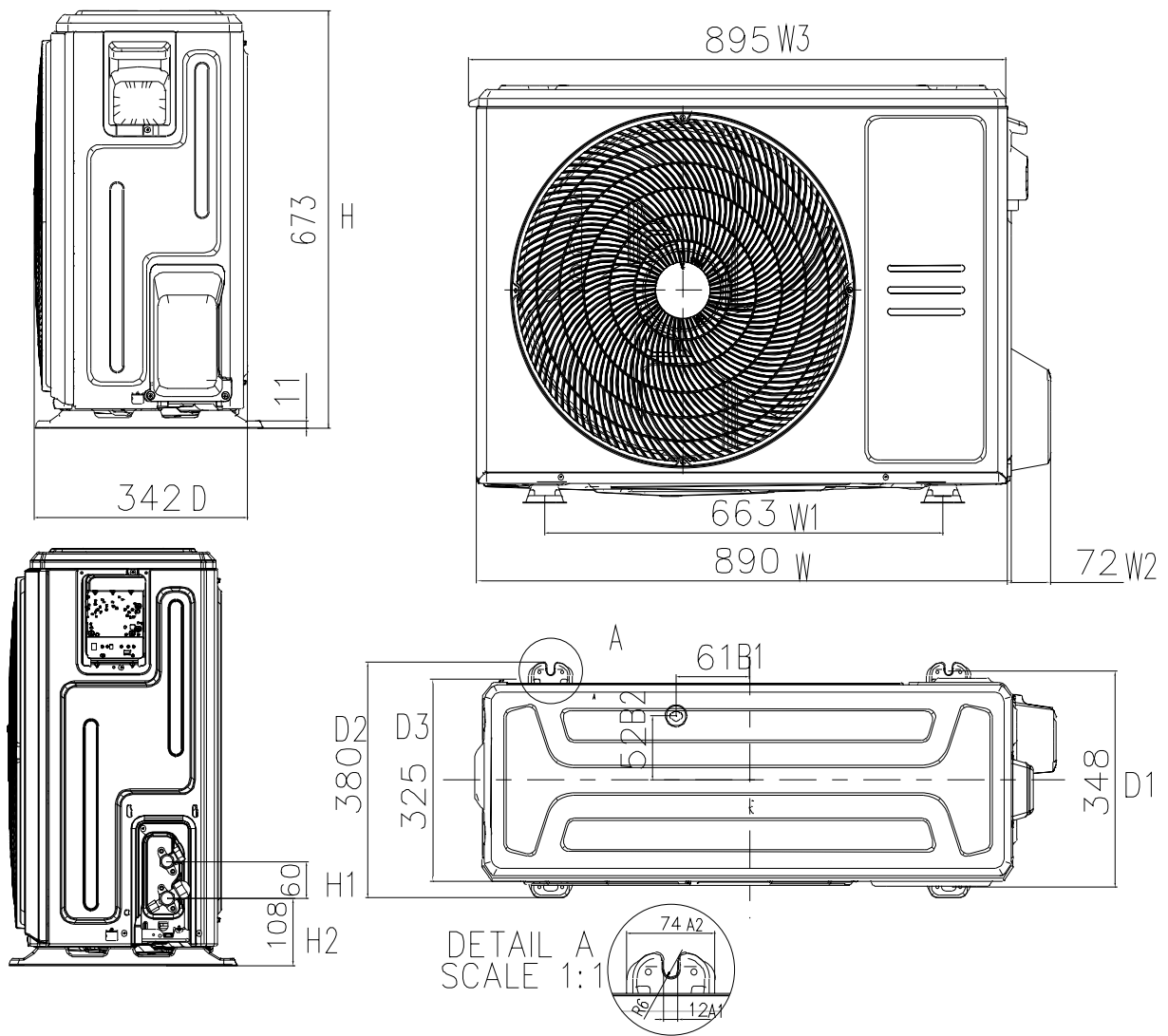


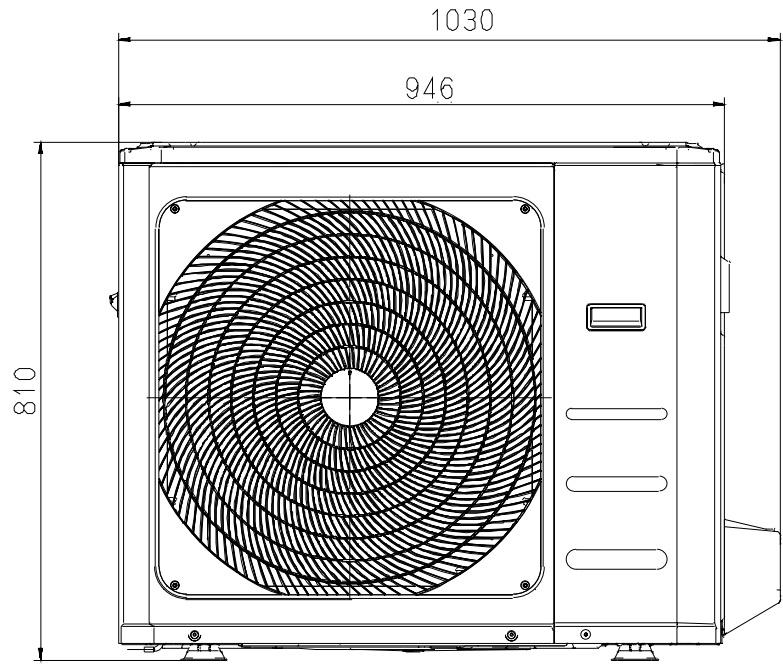
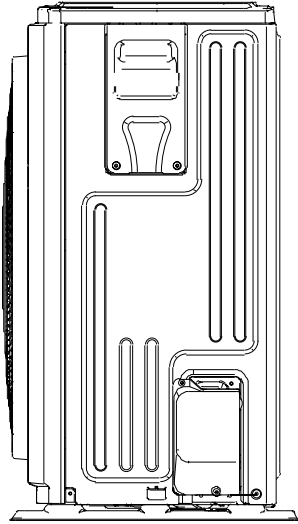
18K X3

Specifications

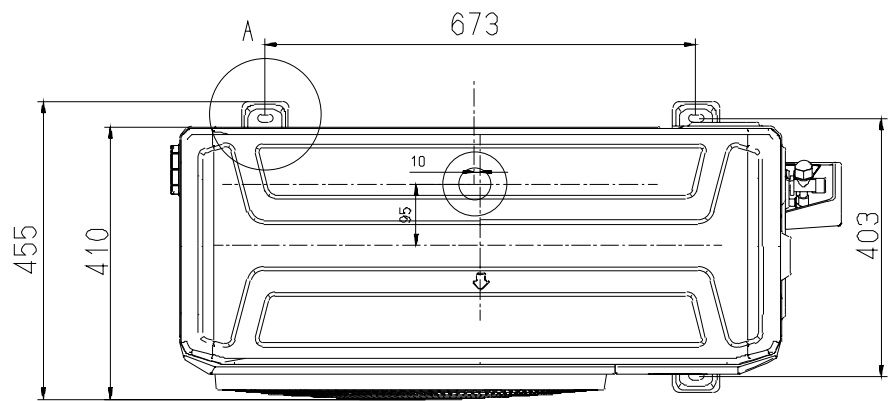
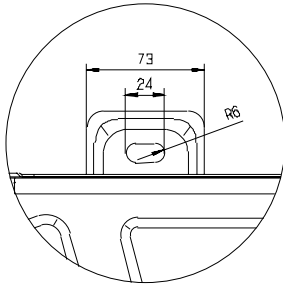


24K X4

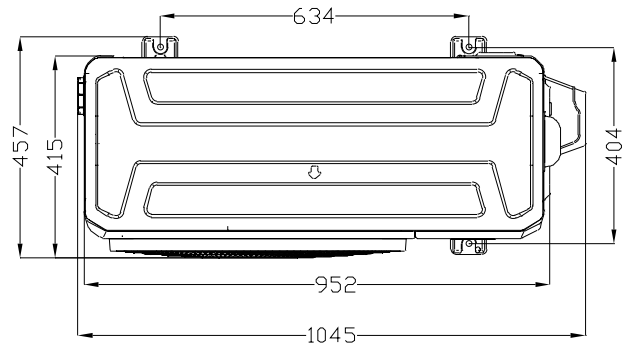
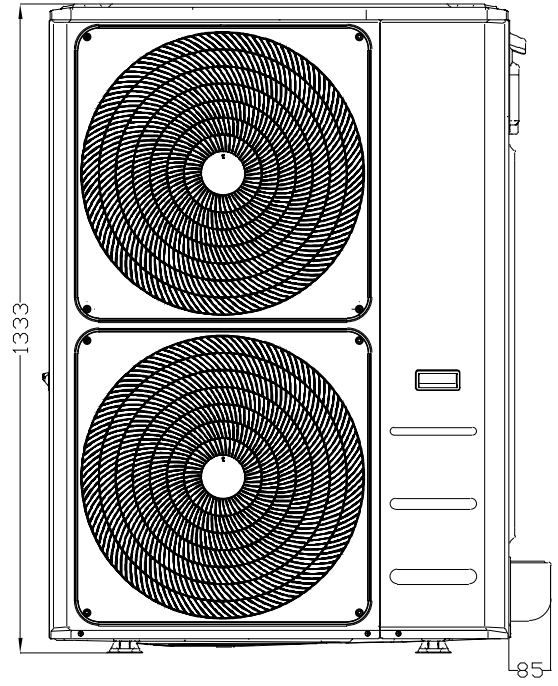
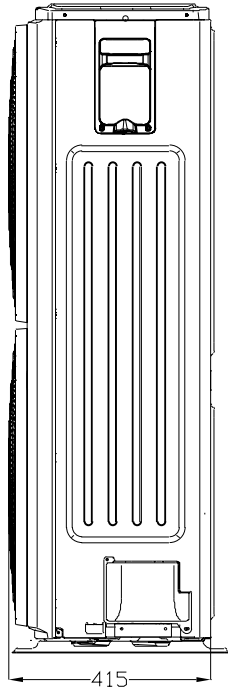
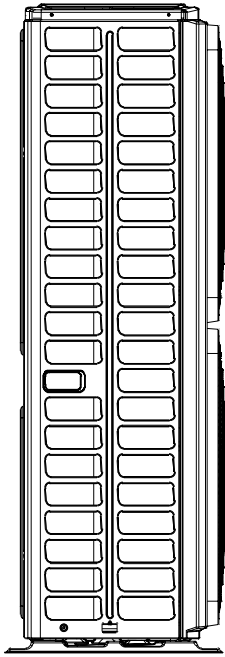




DETAIL A
SCALE 1 : 2



48K/60K E30

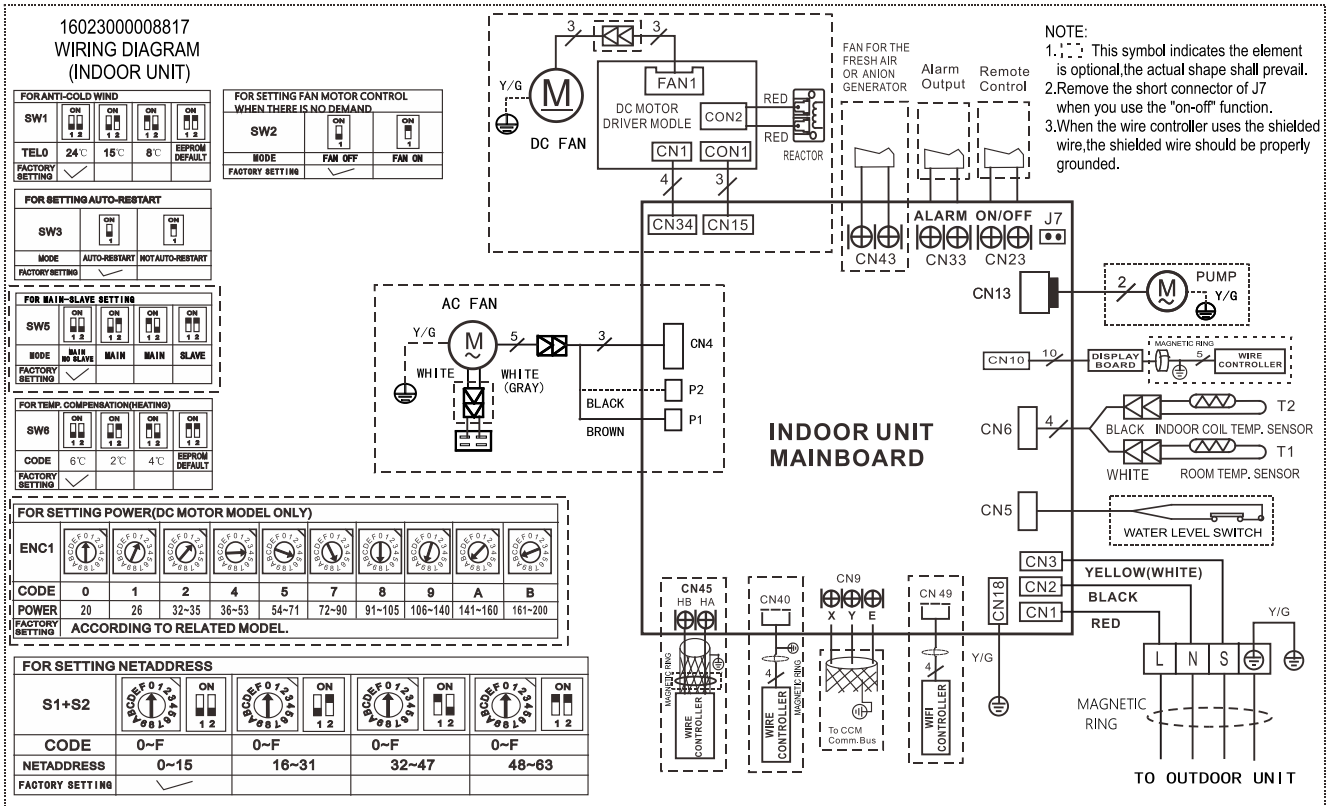


4. Electrical Wiring Diagrams

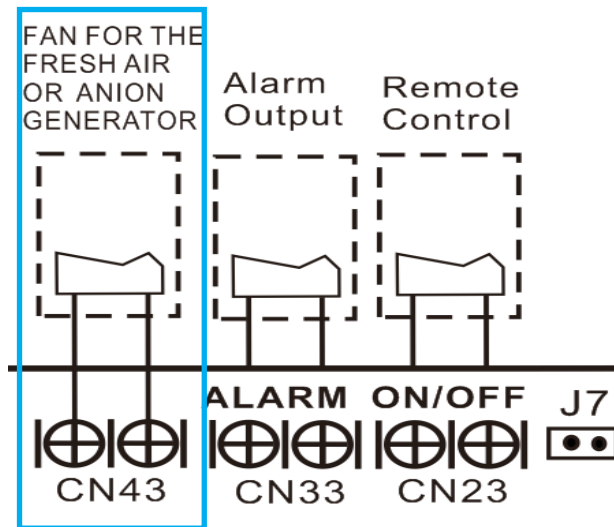
4.1 Indoor unit

Abbreviation	Paraphrase
Y/G	Yellow-Green Conductor
CAP1	Indoor Fan Capacitor
AC FAN	Alternating Current Fan
DC FAN	Direct Current Fan
PUMP	PUMP
L	LIVE
N	NEUTRAL
TO CCM Comm.Bus	Central Controller
T1	Indoor Room Temperature
T2	Coil Temperature of Indoor Heat Exchanger
P1	Super High Speed
P2	High Speed

Indoor unit

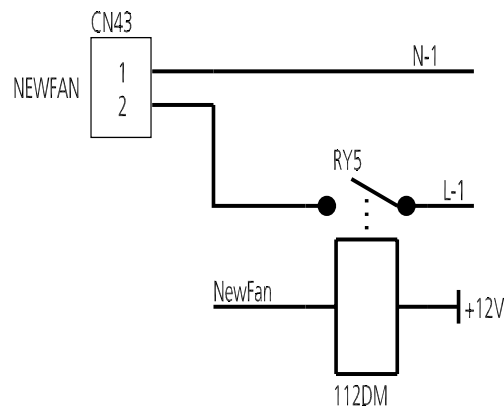


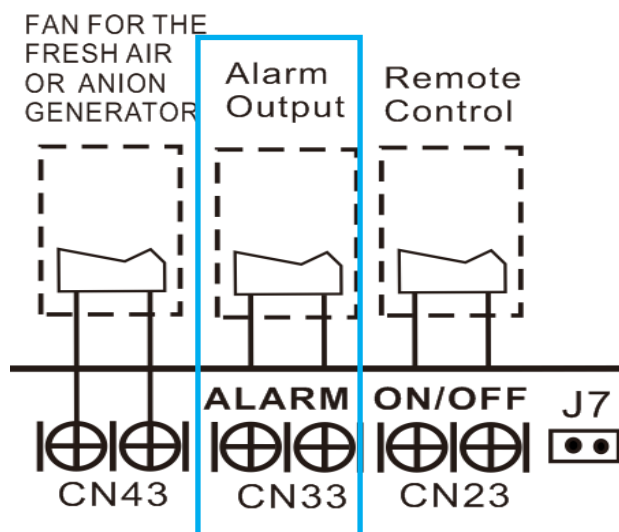
4.2 Some connectors introduce:



A. For new fresh motor terminal port (also for Anion generator) CN43:

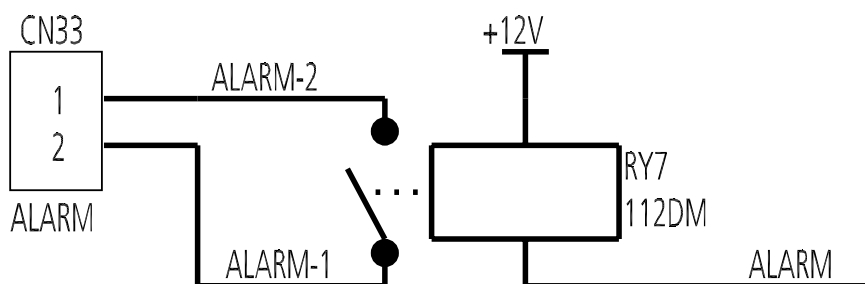
1. Connect the fan motor to the port , no need care L/N of the motor ;
2. The output voltage is the power supply;
3. The fresh motor can not exceed 200W or 1A , follow the smaller one ;
4. The new fresh motor will be worked when the indoor fan motor work ;when the indoor fan motor stops , the new fresh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

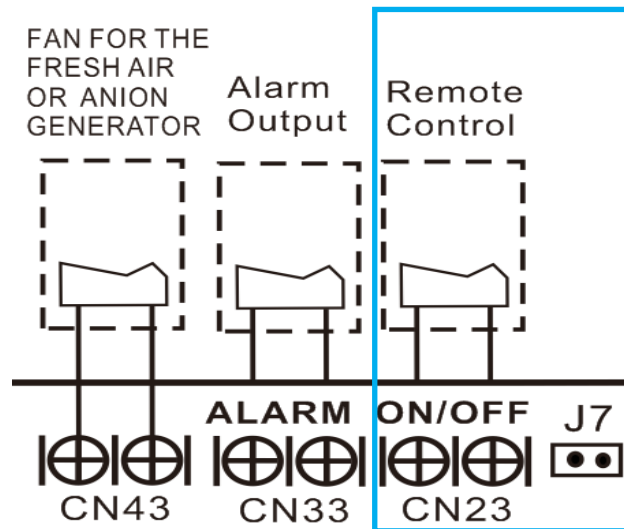




B For ALARM terminal port CN33

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



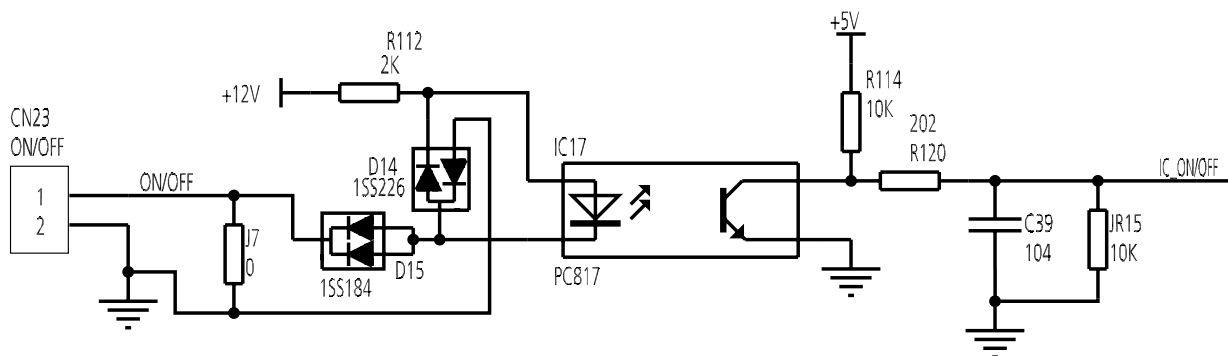


C. For remote control (ON-OFF) terminal port CN23 and short connector of J7


1. Remove the short connector of J7 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.



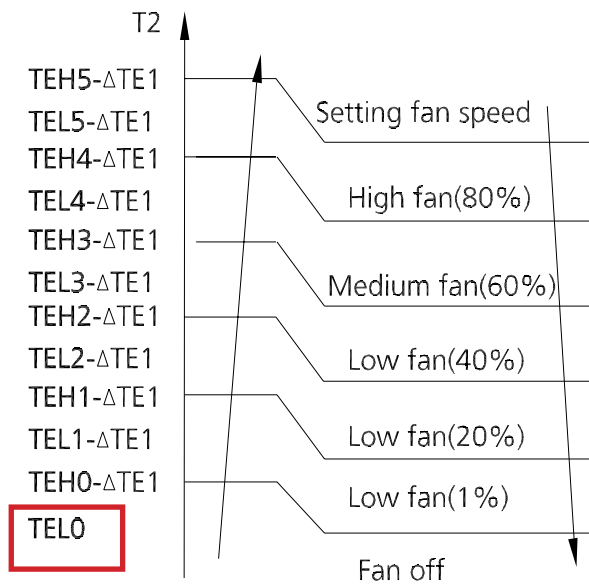

4.3 Micro-Switch Introduce:



FOR ANTI-COLD WIND				
SW1				
TELO	24°C	15°C	8°C	EEPROM DEFAULT
FACTORY 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).

FOR SETTING FAN MOTOR CONTROL WHEN THERE IS NO DEMAND		
SW2		
MODE	FAN OFF	FAN ON
FACTORY SETTING	✓	

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


Range: OFF (in 127s), Keep running.



FOR SETTING AUTO-RESTART		
SW3		
MODE	AUTO-RESTART	NOT AUTO-RESTART
FACTORY SETTING	✓	

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


Range: Active, inactive



FOR TEMP. COMPENSATION(HEATING)				
SW6				
CODE	6°C	2°C	4°C	EEPROM DEFAULT
FACTORY SETTING	✓			

D. 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)



FOR SETTING NETADDRESS				
S1+S2				
CODE	0~F		0~F	
NETADDRESS	0~15		16~31	
FACTORY SETTING	✓			

E. 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




FOR SETTING POWER(DC MOTOR MODEL ONLY)										
ENC1										
CODE	0	1	2	4	5	7	8	9	A	B
POWER	20	26	32~35	36~53	54~71	72~90	91~105	106~140	141~160	161~200
FACTORY SETTING	ACCORDING TO RELATED MODEL.									

F. Dial-switch ENC1: The indoor PCB is universal designed for whole series units from 7K to 68K. 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 unit. Then you have to select the right position to match the size of the unit.

“20” means 2kW (7K), “105” means 10.5kW(36K), and so on.



FOR MAIN-SLAVE SETTING				
SW5				
MODE	MAIN NO SLAVE	MAIN	MAIN	SLAVE
FACTORY SETTING	✓			

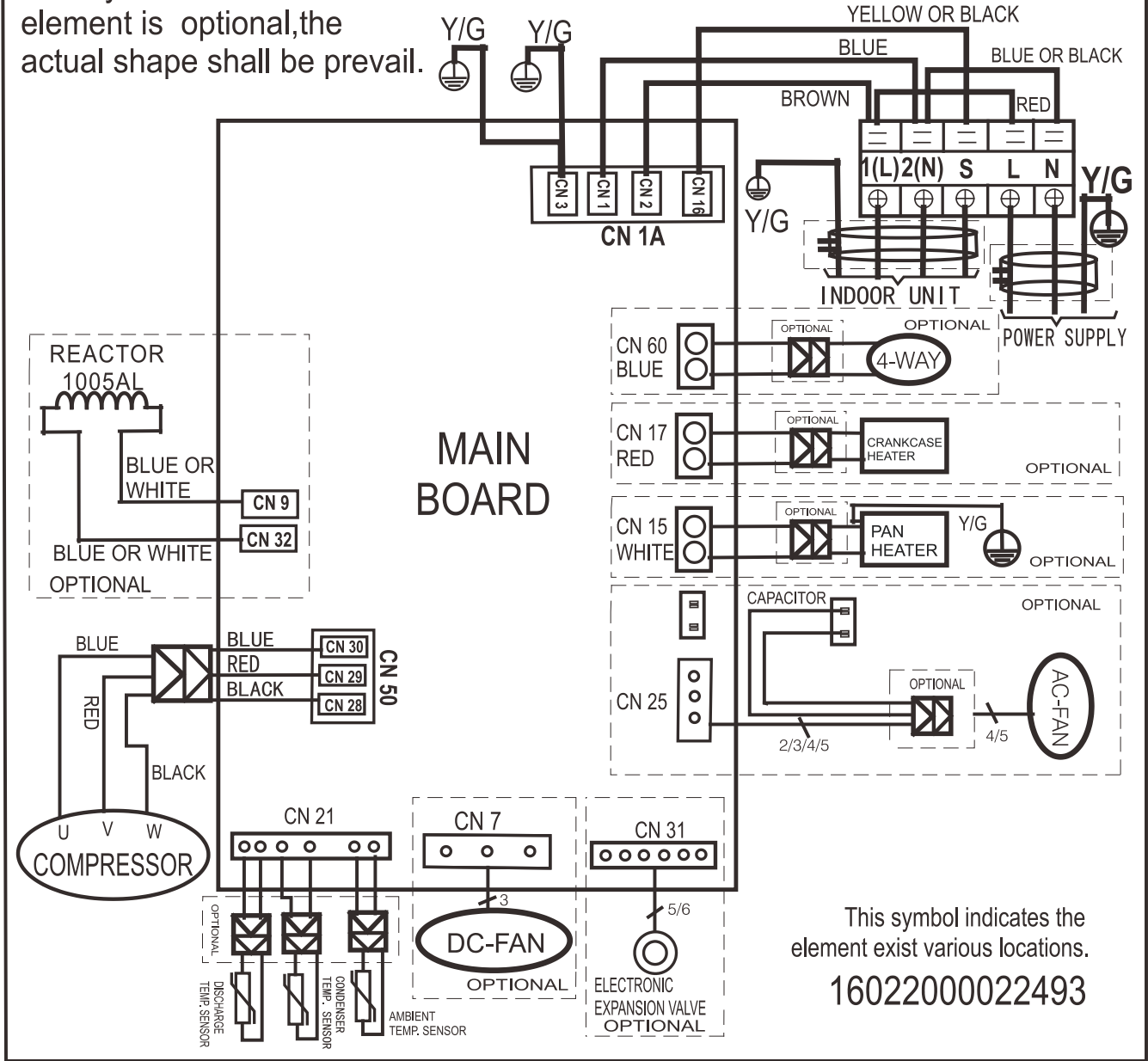
G. Micro-switch SW5 is for setting the master or slave unit when the unit is in twin connection.

Range: Master no slave (Normal 1 drive 1 connection), Master (2 positions without difference), Slave

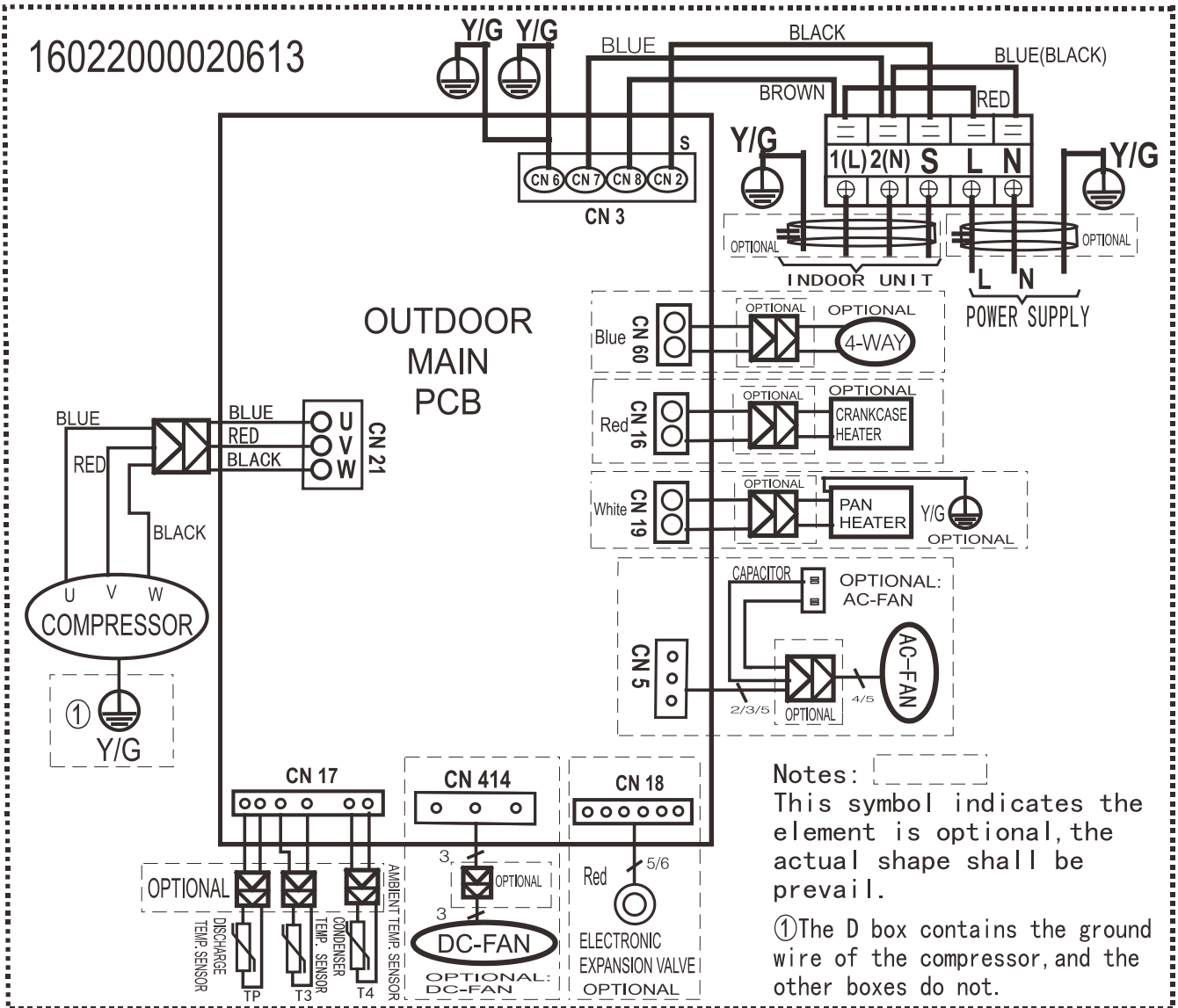
4.4 Outdoor Unit

Abbreviation	Paraphrase
CAP1, CAP2, CAP3,CAP4	Capacitor
FAN1	Outdoor Fan Motor
KM8	Contactora
CT1, CT2	AC Current Detector
COMP	Compressor
L-PRO, K2	Low Pressure Switch/Shorting Stub
K1	High Pressure Switch/Shorting Stub
TRANS	Power Transformer
T4	10KΩ RESISTANCE/Outdoor Ambient Temperature
T3	10KΩ RESISTANCE/Coil Temperature of Condenser
XT1	2-Way Terminal/4-Way Terminal
XT2	3-Way Terminal
XT4	Terminal
K3	Compressor Discharge Temperature/Shorting Stub
XP1~XP5,XT5~XT7	Connectors

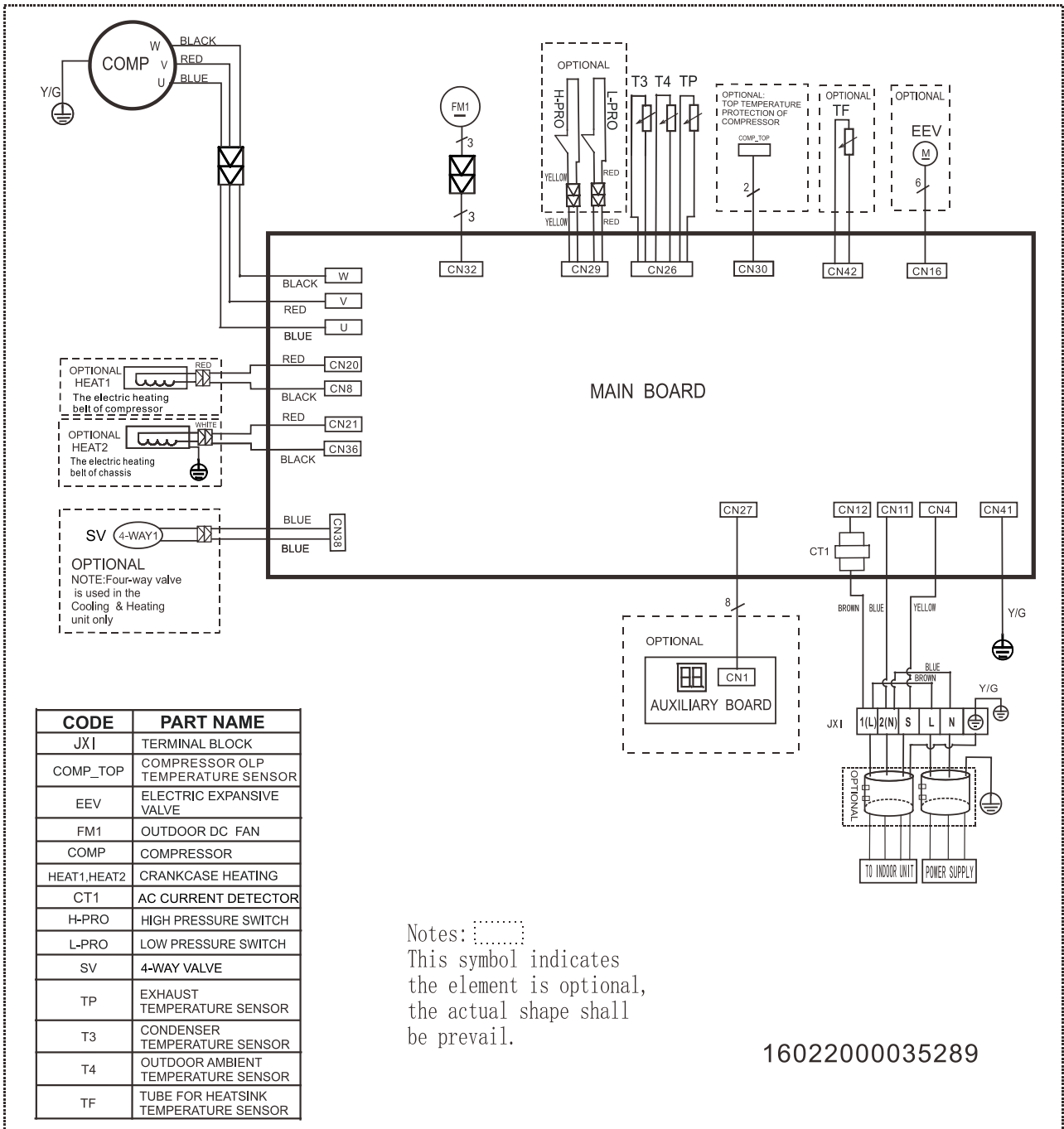
Notes:
 This symbol indicates the element is optional, the actual shape shall prevail.




16022000020613



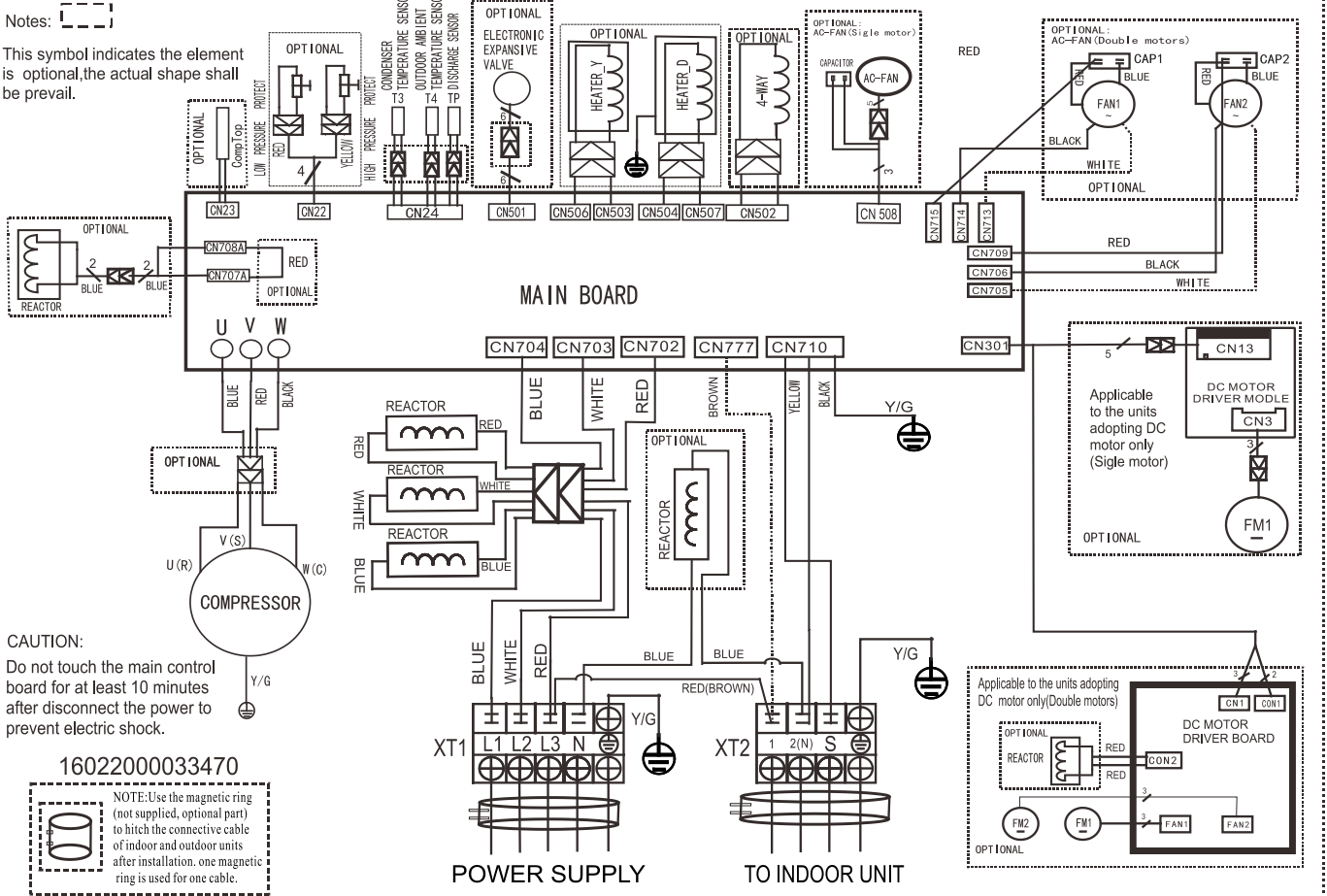
Notes:
 This symbol indicates the element is optional, the actual shape shall be prevail.
 ①The D box contains the ground wire of the compressor, and the other boxes do not.



16022000035289

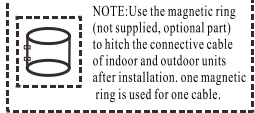
Notes: 

This symbol indicates the element is optional, the actual shape shall be prevail.



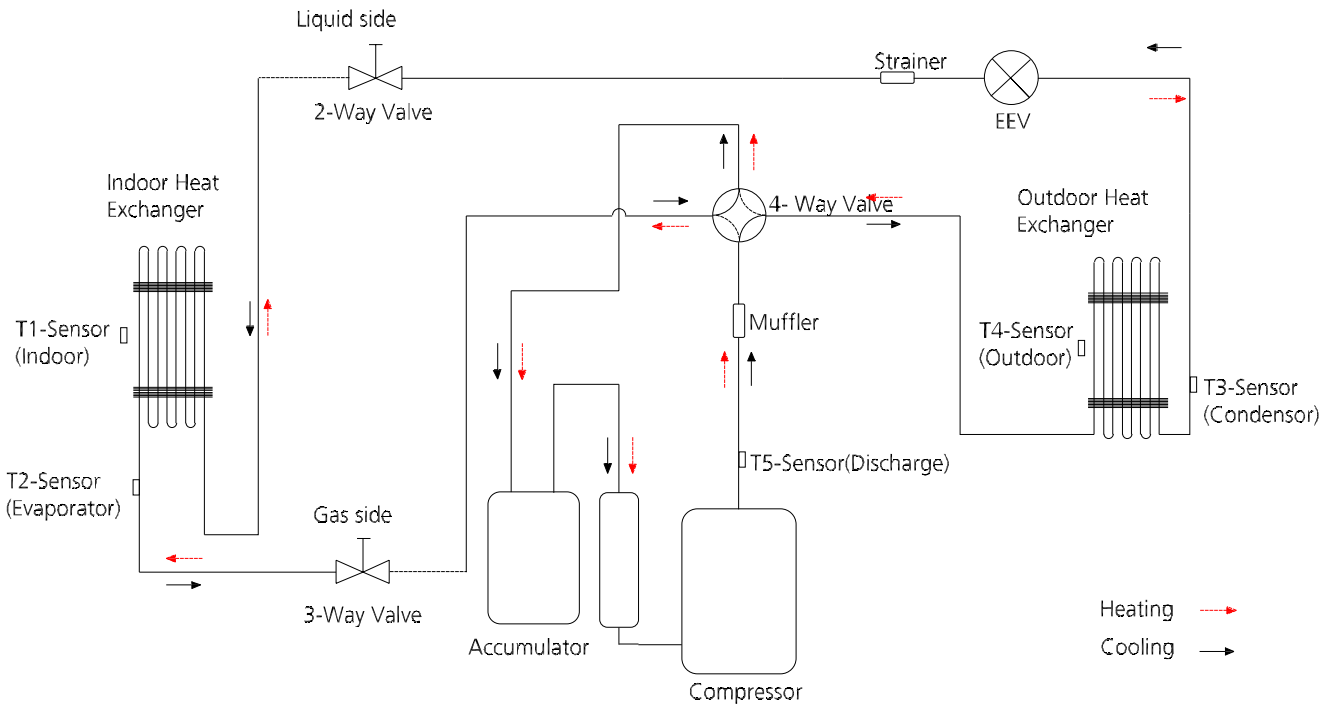
CAUTION:
Do not touch the main control board for at least 10 minutes after disconnect the power to prevent electric shock.

16022000033470

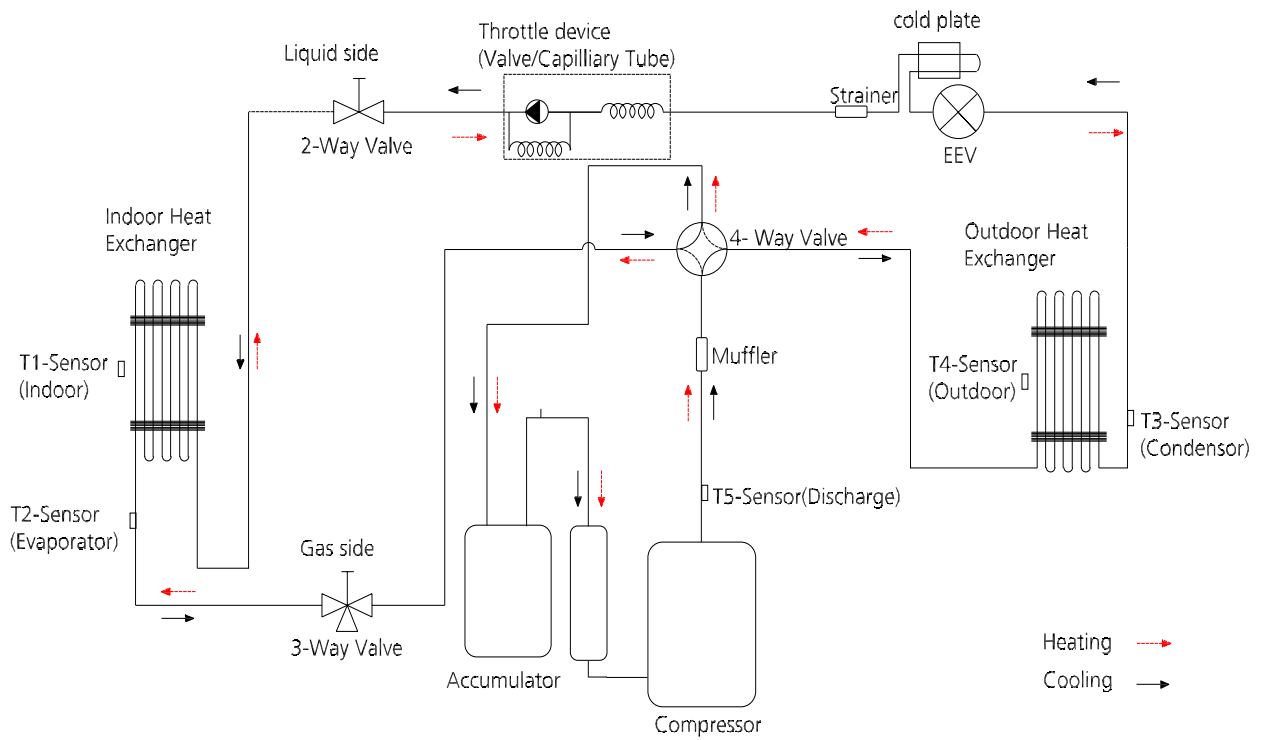


5. Refrigerant Cycle Diagrams

5.1 Heat pump

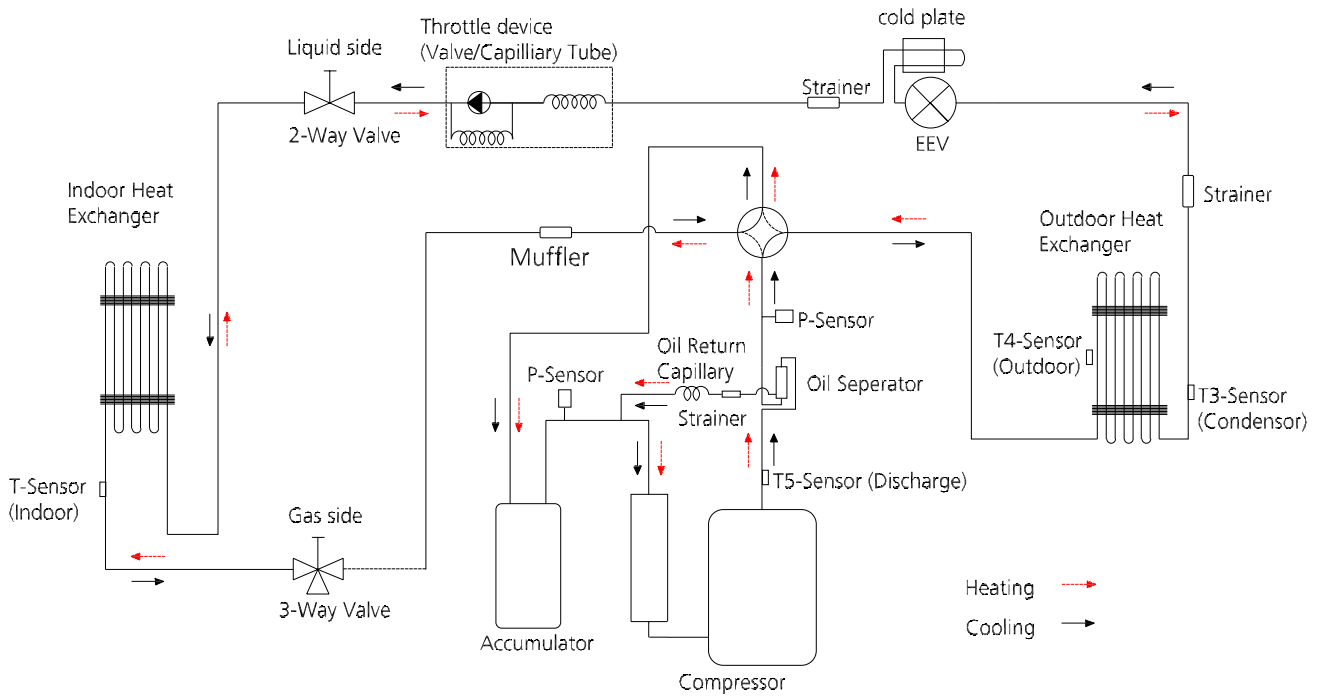


Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
12K	9.52(3/8)	6.35(1/4)	5/16.4	25/82	0	10/32.8	12g/m (0.13oz/ft)
18K	12.7(1/2)	6.35(1/4)	5/16.4	30/98.4	0	20/65.6	



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
24K	15.9(5/8)	9.52(3/8)	5/16.4	50/164	0	25/82	24g/m (0.26oz/ft)
30K	15.9(5/8)	9.52(3/8)	5/16.4	50/164	0	25/82	

There is no accumulator for model 30K model.



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
36K 1Ph	15.9(5/8)	9.52(3/8)	5/16.4	65/214.3	0	30/98.4	24g/m (0.26oz/ft)
36K 3Ph	15.9(5/8)	9.52(3/8)					
42K	15.9(5/8)	9.52(3/8)					
48K	15.9(5/8)	9.52(3/8)					
60K	15.9(5/8)	9.52(3/8)					

6. Capacity Tables

6.1 Cooling

INDOOR AIRFLOW (CMH)	OUTDOOR DB(°C)	ID WB (°C)	12k															
			16.0				18.0				19.0				22.0			
			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
300	-15	TC	3.71	3.72	3.72	3.72	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	0.65	0.70	0.76	0.81	0.55	0.60	0.66	0.70	0.50	0.55	0.60	0.66	0.39	0.43	0.48	0.53
		PI	0.70	0.70	0.70	0.70	0.69	0.69	0.69	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	-10	TC	3.68	3.70	3.70	3.70	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	0.65	0.71	0.77	0.82	0.55	0.61	0.66	0.71	0.50	0.55	0.60	0.66	0.39	0.44	0.49	0.53
		PI	0.70	0.70	0.70	0.70	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.70	0.70	0.70	0.70
	-5	TC	3.66	3.67	3.67	3.67	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	0.65	0.71	0.77	0.82	0.56	0.61	0.66	0.71	0.51	0.56	0.60	0.66	0.39	0.44	0.49	0.54
		PI	0.69	0.70	0.70	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.70	0.70	0.70	0.70
	0	TC	3.64	3.66	3.66	3.66	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	0.66	0.72	0.77	0.82	0.56	0.61	0.67	0.72	0.51	0.56	0.61	0.67	0.39	0.44	0.49	0.54
		PI	0.70	0.70	0.70	0.70	0.69	0.69	0.69	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	5	TC	3.62	3.64	3.64	3.64	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	0.66	0.72	0.78	0.83	0.56	0.61	0.67	0.72	0.51	0.56	0.61	0.67	0.39	0.44	0.49	0.54
		PI	0.70	0.71	0.71	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.71	0.71	0.71	0.71
	10	TC	3.60	3.61	3.61	3.61	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	0.66	0.72	0.78	0.83	0.56	0.62	0.67	0.72	0.51	0.56	0.61	0.67	0.40	0.45	0.50	0.54
		PI	0.72	0.72	0.72	0.72	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.72	0.72	0.72	0.72
	15	TC	3.57	3.59	3.59	3.59	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	0.67	0.73	0.79	0.84	0.57	0.62	0.68	0.73	0.52	0.57	0.62	0.68	0.40	0.45	0.50	0.55
		PI	0.73	0.74	0.74	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
	20	TC	3.53	3.54	3.54	3.54	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	0.67	0.73	0.79	0.84	0.57	0.62	0.68	0.73	0.52	0.57	0.62	0.68	0.40	0.45	0.50	0.55
		PI	0.76	0.76	0.76	0.76	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	25	TC	3.37	3.37	3.37	3.37	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	0.68	0.74	0.80	0.86	0.57	0.63	0.68	0.74	0.52	0.57	0.63	0.68	0.40	0.45	0.50	0.55
		PI	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
	30	TC	3.20	3.20	3.20	3.20	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	0.68	0.74	0.81	0.87	0.57	0.63	0.69	0.74	0.52	0.57	0.63	0.69	0.39	0.45	0.50	0.55
		PI	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	35	TC	3.05	3.05	3.05	3.05	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	0.68	0.75	0.82	0.88	0.57	0.63	0.69	0.75	0.51	0.57	0.63	0.69	0.39	0.44	0.50	0.56
		PI	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.02	1.02	1.02
	40	TC	2.89	2.89	2.89	2.91	3.09	3.09	3.09	3.09	3.18	3.18	3.21	3.18	3.43	3.43	3.43	3.43
		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	1.10	1.10	1.10	1.10	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.12	1.12	1.12	1.12
	46	TC	2.67	2.67	2.67	2.70	2.87	2.87	2.87	2.87	2.96	2.96	2.96	2.96	3.19	3.19	3.19	3.19
		S/T	0.70	0.78	0.85	0.92	0.57	0.64	0.71	0.78	0.51	0.58	0.65	0.72	0.38	0.44	0.50	0.57
		PI	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.24	1.24	1.24	1.24
	50	TC	2.53	2.53	2.53	2.55	2.70	2.70	2.70	2.70	2.79	2.79	2.79	2.79	3.02	3.02	3.02	3.02
		S/T	0.71	0.79	0.87	0.95	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	1.33	1.33	1.33	1.33	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.35	1.35	1.35	1.35

910	-15	TC	5.74	5.80	5.86	5.92	6.05	6.05	6.05	6.11	6.20	6.20	6.20	6.20	6.57	6.57	6.57	6.57
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.79	0.98	0.51	0.61	0.70	0.80	0.33	0.42	0.51	0.61
		PI	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.05	1.05	1.05
	-10	TC	5.71	5.77	5.83	5.89	6.02	6.02	6.02	6.08	6.17	6.17	6.17	6.17	6.55	6.55	6.55	6.55
		S/T	0.76	0.85	1.00	1.00	0.59	0.69	0.80	0.98	0.51	0.61	0.71	0.81	0.33	0.43	0.51	0.61
		PI	1.05	1.05	1.05	1.05	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.05	1.05	1.05
	-5	TC	5.67	5.73	5.79	5.85	6.00	6.00	6.00	6.06	6.15	6.15	6.15	6.15	6.53	6.53	6.53	6.53
		S/T	0.76	0.86	1.00	1.00	0.59	0.69	0.80	0.99	0.52	0.61	0.71	0.81	0.33	0.43	0.52	0.61
		PI	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	0	TC	5.65	5.71	5.76	5.82	5.97	5.97	5.97	6.03	6.13	6.13	6.13	6.13	6.53	6.53	6.53	6.53
		S/T	0.76	0.86	1.00	1.00	0.60	0.70	0.80	0.99	0.52	0.62	0.72	0.81	0.33	0.43	0.52	0.62
		PI	1.05	1.05	1.05	1.05	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	5	TC	5.62	5.68	5.74	5.79	5.95	5.95	5.95	6.01	6.11	6.11	6.11	6.11	6.52	6.52	6.52	6.52
		S/T	0.77	0.87	1.00	1.00	0.60	0.70	0.81	1.00	0.52	0.62	0.72	0.82	0.33	0.43	0.52	0.62
		PI	1.06	1.06	1.06	1.06	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
	10	TC	5.58	5.64	5.70	5.76	5.92	5.92	5.92	5.98	6.09	6.09	6.09	6.09	6.51	6.51	6.51	6.51
		S/T	0.77	0.87	1.00	1.00	0.60	0.70	0.81	1.00	0.52	0.62	0.72	0.82	0.34	0.44	0.52	0.62
		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	1.08	1.08	1.08	1.08
15	TC	5.54	5.60	5.65	5.71	5.88	5.88	5.88	5.94	6.05	6.05	6.05	6.05	6.48	6.48	6.48	6.48	
	S/T	0.78	0.88	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.83	0.34	0.44	0.53	0.63	
	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	1.10	1.10	1.10	1.10	1.10
20	TC	5.48	5.53	5.59	5.65	5.82	5.82	5.82	5.88	5.99	5.99	5.99	5.99	6.42	6.42	6.42	6.42	
	S/T	0.78	0.88	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.83	0.34	0.44	0.53	0.63	
	PI	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.14	1.14	1.14	1.14	1.14
25	TC	5.22	5.28	5.33	5.39	5.56	5.56	5.56	5.62	5.73	5.73	5.73	5.73	6.16	6.16	6.16	6.16	
	S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.94	0.53	0.64	0.74	0.85	0.34	0.44	0.54	0.64	
	PI	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
30	TC	4.99	5.05	5.10	5.16	5.30	5.30	5.30	5.36	5.45	5.45	5.45	5.45	5.88	5.88	5.88	5.88	
	S/T	0.81	0.92	1.00	1.00	0.62	0.74	0.85	0.96	0.54	0.65	0.76	0.87	0.34	0.44	0.55	0.65	
	PI	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.40	1.40	1.40	1.40	1.40
35	TC	4.73	4.79	4.85	4.90	5.05	5.05	5.05	5.10	5.19	5.19	5.19	5.40	5.33	5.59	5.59	5.59	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.77	0.88	0.34	0.44	0.55	0.66	
	PI	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	1.54	1.54	1.54	1.54	1.54
40	TC	4.39	4.43	4.47	4.52	4.68	4.68	4.71	4.77	4.82	4.82	4.87	4.93	5.21	5.21	5.21	5.21	
	S/T	0.86	0.99	1.00	1.00	0.65	0.78	0.91	1.00	0.55	0.68	0.81	0.93	0.33	0.45	0.57	0.90	
	PI	1.68	1.68	1.68	1.68	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.71	1.71	1.71	1.71	1.71
46	TC	4.06	4.09	4.12	4.15	4.35	4.35	4.40	4.46	4.49	4.49	4.49	4.54	4.85	4.85	4.85	4.85	
	S/T	0.87	1.00	1.00	1.00	0.65	0.79	0.93	1.00	0.56	0.69	0.82	0.95	0.33	0.45	0.58	0.92	
	PI	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.90	1.90	1.90	1.90	1.90
50	TC	3.81	3.84	3.87	3.89	4.06	4.06	4.09	4.12	4.20	4.20	4.20	4.23	4.57	4.57	4.57	4.57	
	S/T	0.90	1.00	1.00	1.00	0.67	0.82	0.96	1.00	0.56	0.71	0.85	0.99	0.32	0.46	0.59	0.97	
	PI	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.06	2.06	2.06	2.06	2.06

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.

1230	-15	TC	7.68	7.77	7.86	7.95	8.06	8.06	8.06	8.15	8.26	8.26	8.26	8.26	8.79	8.79	8.79	8.79
		S/T	0.75	0.86	1.00	1.00	0.59	0.69	0.79	0.98	0.51	0.61	0.70	0.81	0.33	0.42	0.52	0.61
		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	8.22	8.76	8.76	8.76	8.76
		S/T	0.76	0.86	1.00	1.00	0.59	0.69	0.80	0.98	0.51	0.61	0.71	0.82	0.33	0.43	0.52	0.61
		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	8.19	8.73	8.73	8.73	8.73
		S/T	0.76	0.87	1.00	1.00	0.59	0.69	0.80	0.99	0.52	0.61	0.71	0.82	0.33	0.43	0.53	0.61
		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	8.17	8.73	8.73	8.73	8.73
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	0.99	0.52	0.62	0.72	0.82	0.33	0.43	0.53	0.62
		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	8.14	8.72	8.72	8.72	8.72
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	1.00	0.52	0.62	0.72	0.83	0.33	0.43	0.53	0.62
		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	8.11	8.70	8.70	8.70	8.70
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	1.00	0.52	0.62	0.72	0.83	0.34	0.44	0.53	0.62
		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	8.06	8.66	8.66	8.66	8.66	
	S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.54	0.63	
	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	7.98	8.58	8.58	8.58	8.58	
	S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.54	0.63	
	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	7.64	8.21	8.21	8.21	8.21	
	S/T	0.79	0.91	1.00	1.00	0.62	0.73	0.84	0.94	0.53	0.64	0.75	0.86	0.34	0.44	0.54	0.64	
	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	7.06	7.12	7.29	7.29	7.29	7.29	7.84	7.84	7.84	7.84	
	S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.86	0.97	0.54	0.65	0.76	0.88	0.34	0.44	0.55	0.65	
	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	6.72	6.78	6.92	6.92	6.92	7.03	7.09	7.46	7.46	7.46	
	S/T	0.83	0.95	1.00	1.00	0.63	0.75	0.88	1.00	0.54	0.66	0.77	0.89	0.34	0.45	0.56	0.67	
	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	6.38	6.43	6.54	6.54	6.60	6.66	7.07	7.07	7.07	7.07	
	S/T	0.86	1.00	1.00	1.00	0.65	0.78	0.92	1.00	0.55	0.68	0.81	0.94	0.33	0.45	0.57	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	0.88	1.00	1.00	1.00	0.66	0.80	0.93	1.00	0.56	0.69	0.83	0.96	0.33	0.45	0.58	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	5.72	5.78	6.18	6.18	6.18	6.18	
	S/T	0.90	1.00	1.00	1.00	0.67	0.82	0.97	1.00	0.57	0.71	0.85	0.99	0.32	0.46	0.59	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	2.94	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.

2100	-15	TC	9.58	9.67	9.76	9.85	10.07	10.07	10.16	10.25	10.32	10.32	10.41	10.97	10.97	10.97	10.97	
		S/T	0.86	0.97	1.00	1.00	0.65	0.78	0.92	0.98	0.54	0.68	0.82	0.95	0.31	0.44	0.57	0.70
		PI	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.72	1.72	1.72	1.72
	-10	TC	9.53	9.62	9.71	9.80	10.01	10.01	10.10	10.19	10.27	10.27	10.27	10.36	10.93	10.93	10.93	10.93
		S/T	0.86	0.97	1.00	1.00	0.65	0.79	0.92	0.98	0.54	0.68	0.82	0.95	0.31	0.45	0.57	0.70
		PI	1.73	1.73	1.73	1.73	1.72	1.72	1.72	1.72	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
	-5	TC	9.47	9.56	9.65	9.74	9.98	9.98	10.06	10.15	10.23	10.23	10.23	10.32	10.90	10.90	10.90	10.90
		S/T	0.87	0.98	1.00	1.00	0.65	0.79	0.93	0.99	0.55	0.68	0.83	0.96	0.31	0.45	0.58	0.70
		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	1.73	1.73	1.73	1.73
	0	TC	9.42	9.51	9.60	9.69	9.94	9.94	10.03	10.11	10.21	10.21	10.21	10.29	10.89	10.89	10.89	10.89
		S/T	0.87	0.98	1.00	1.00	0.66	0.79	0.93	0.99	0.55	0.69	0.83	0.96	0.31	0.45	0.58	0.71
		PI	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.74	1.74	1.74	1.74
	5	TC	9.37	9.46	9.55	9.64	9.90	9.90	9.99	10.08	10.17	10.17	10.17	10.26	10.88	10.88	10.88	10.88
		S/T	0.88	0.99	1.00	1.00	0.66	0.80	0.94	1.00	0.55	0.69	0.84	0.97	0.32	0.45	0.58	0.71
		PI	1.75	1.75	1.75	1.75	1.74	1.74	1.74	1.74	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
	10	TC	9.32	9.41	9.49	9.58	9.85	9.85	9.94	10.03	10.13	10.13	10.13	10.22	10.86	10.86	10.86	10.86
		S/T	0.88	0.99	1.00	1.00	0.66	0.80	0.94	1.00	0.55	0.69	0.84	0.97	0.32	0.46	0.58	0.71
		PI	1.78	1.78	1.78	1.78	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
	15	TC	9.24	9.33	9.42	9.50	9.79	9.79	9.87	9.96	10.07	10.07	10.07	10.16	10.81	10.81	10.81	10.81
		S/T	0.89	1.00	1.00	1.00	0.67	0.81	0.95	1.00	0.56	0.70	0.85	0.98	0.32	0.46	0.59	0.72
		PI	1.82	1.82	1.82	1.82	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
	20	TC	9.14	9.22	9.31	9.40	9.68	9.68	9.77	9.86	9.97	9.97	9.97	10.06	10.72	10.72	10.72	10.72
		S/T	0.89	1.00	1.00	1.00	0.67	0.81	0.95	1.00	0.56	0.70	0.85	0.98	0.32	0.46	0.59	0.72
		PI	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86
	25	TC	8.71	8.79	8.88	8.96	9.25	9.25	9.34	9.42	9.54	9.54	9.63	10.26	10.26	10.26	10.26	10.26
		S/T	0.91	1.00	1.00	1.00	0.68	0.83	0.98	1.00	0.57	0.72	0.86	1.00	0.32	0.46	0.60	0.73
		PI	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07
	30	TC	8.30	8.39	8.48	8.56	8.82	8.82	8.91	8.99	9.11	9.11	9.19	9.28	9.80	9.80	9.80	9.80
		S/T	0.93	1.00	1.00	1.00	0.69	0.85	1.00	1.00	0.58	0.73	0.88	1.00	0.32	0.46	0.61	0.75
		PI	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.28	2.28	2.28	2.28
	35	TC	7.90	7.99	8.07	8.16	8.39	8.39	8.48	8.56	8.65	8.65	8.79	8.88	9.34	9.34	9.34	9.34
		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	0.77
		PI	2.48	2.48	2.48	2.48	2.49	2.49	2.49	2.49	2.50	2.50	2.50	2.50	2.51	2.51	2.51	2.51
	40	TC	7.44	7.51	7.59	7.66	7.93	7.97	8.05	8.14	8.17	8.17	8.29	8.38	8.84	8.84	8.84	8.84
		S/T	1.00	1.00	1.00	1.00	0.73	0.91	1.00	1.00	0.60	0.78	0.95	1.00	0.31	0.48	0.64	0.90
		PI	2.74	2.74	2.74	2.74	2.75	2.75	2.75	2.75	2.76	2.76	2.76	2.76	2.78	2.78	2.78	2.78
	46	TC	6.87	6.93	6.99	7.05	7.36	7.45	7.54	7.62	7.59	7.59	7.68	7.77	8.23	8.23	8.23	8.23
		S/T	1.00	1.00	1.00	1.00	0.74	0.93	1.00	1.00	0.61	0.80	0.98	1.00	0.31	0.48	0.65	0.92
		PI	3.05	3.05	3.05	3.05	3.06	3.06	3.06	3.06	3.07	3.07	3.07	3.07	3.10	3.10	3.10	3.10
	50	TC	6.47	6.53	6.59	6.64	6.90	6.96	7.02	7.08	7.13	7.13	7.19	7.28	7.74	7.74	7.74	7.74
		S/T	1.00	1.00	1.00	1.00	0.76	0.96	1.00	1.00	0.62	0.82	1.00	1.00	0.30	0.49	0.67	0.97
		PI	3.31	3.31	3.31	3.31	3.32	3.32	3.32	3.32	3.33	3.33	3.33	3.33	3.35	3.35	3.35	3.35

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.

		36 1Ph																	
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	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	
1500	-15	TC	11.05	11.06	11.18	11.30	11.63	11.87	11.87	11.99	11.90	11.90	11.90	11.90	12.65	12.65	12.65	12.65	
		S/T	0.71	0.81	0.90	0.97	0.57	0.65	0.74	0.83	0.50	0.59	0.67	0.75	0.35	0.42	0.50	0.58	
		PI	2.63	2.63	2.63	2.63	2.62	2.62	2.62	2.62	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61
	-10	TC	10.99	11.00	11.11	11.23	11.56	11.80	11.80	11.92	11.84	11.84	11.84	11.84	12.60	12.60	12.60	12.60	
		S/T	0.72	0.82	0.90	0.97	0.57	0.66	0.75	0.83	0.50	0.59	0.67	0.76	0.35	0.43	0.50	0.58	
		PI	2.62	2.61	2.61	2.62	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.62	2.62	2.62	2.62	
	-5	TC	10.92	10.93	11.05	11.17	11.52	11.76	11.76	11.88	11.80	11.80	11.80	11.80	12.57	12.57	12.57	12.57	
		S/T	0.72	0.82	0.91	0.98	0.58	0.66	0.75	0.84	0.51	0.59	0.67	0.76	0.35	0.43	0.51	0.59	
		PI	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.62	2.62	2.62	2.62	
	0	TC	10.87	10.87	10.99	11.11	11.47	11.71	11.71	11.83	11.77	11.77	11.77	11.77	12.56	12.56	12.56	12.56	
		S/T	0.73	0.82	0.91	0.98	0.58	0.66	0.75	0.84	0.51	0.60	0.68	0.76	0.35	0.43	0.51	0.59	
		PI	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.63	2.63	2.63	2.63	
	5	TC	10.81	10.82	10.94	11.06	11.43	11.67	11.67	11.79	11.73	11.73	11.73	11.73	12.55	12.55	12.55	12.55	
		S/T	0.73	0.83	0.92	0.99	0.58	0.67	0.76	0.85	0.51	0.60	0.68	0.77	0.35	0.43	0.51	0.59	
		PI	2.65	2.64	2.64	2.65	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.65	2.65	2.65	2.65	
	10	TC	10.75	10.75	10.87	10.99	11.38	11.61	11.61	11.73	11.68	11.68	11.68	11.68	12.52	12.52	12.52	12.52	
		S/T	0.73	0.83	0.92	0.99	0.58	0.67	0.76	0.85	0.51	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
		PI	2.69	2.69	2.69	2.69	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	
	15	TC	10.66	10.67	10.78	10.90	11.30	11.54	11.54	11.65	11.61	11.61	11.61	11.61	12.46	12.46	12.46	12.46	
		S/T	0.74	0.84	0.93	1.00	0.59	0.67	0.77	0.86	0.52	0.61	0.69	0.78	0.36	0.44	0.52	0.60	
		PI	2.76	2.75	2.75	2.76	2.75	2.75	2.75	2.75	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	
	20	TC	10.54	10.55	10.66	10.78	11.18	11.41	11.41	11.52	11.50	11.50	11.50	11.50	12.36	12.36	12.36	12.36	
		S/T	0.74	0.84	0.93	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	2.85	2.85	2.85	2.85	2.84	2.84	2.84	2.84	2.83	2.83	2.83	2.83	2.82	2.82	2.82	2.82	
	25	TC	10.06	10.06	10.17	10.29	10.69	10.69	10.69	10.69	11.01	11.01	11.01	11.01	11.84	11.84	11.84	11.84	
		S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.79	0.35	0.44	0.52	0.61	
		PI	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	
	30	TC	9.57	9.57	9.66	9.74	10.20	10.20	10.20	10.32	10.49	10.49	10.49	10.49	11.32	11.32	11.32	11.32	
		S/T	0.76	0.87	0.97	1.00	0.60	0.70	0.80	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62	
		PI	3.44	3.44	3.44	3.44	3.45	3.45	3.45	3.45	3.46	3.46	3.46	3.46	3.47	3.47	3.47	3.47	
	35	TC	9.11	9.20	9.28	9.37	9.68	9.68	9.68	9.77	10.00	10.00	10.14	10.00	10.78	10.78	10.78	10.78	
		S/T	0.78	0.88	0.99	1.00	0.61	0.71	0.81	0.91	0.53	0.63	0.72	0.83	0.35	0.44	0.53	0.63	
		PI	3.76	3.76	3.76	3.76	3.78	3.78	3.78	3.78	3.78	3.78	3.79	3.78	3.81	3.81	3.81	3.81	
	40	TC	8.49	8.58	8.66	8.75	9.05	9.05	9.05	9.13	9.34	9.34	9.41	9.34	10.08	10.08	10.08	10.08	
		S/T	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.96	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65	
		PI	4.15	4.15	4.15	4.15	4.17	4.17	4.17	4.17	4.18	4.18	4.18	4.18	4.21	4.21	4.21	4.21	
	46	TC	7.86	7.94	8.03	8.11	8.40	8.40	8.40	8.48	8.65	8.65	8.65	8.65	9.37	9.37	9.37	9.37	
		S/T	0.82	0.94	1.00	1.00	0.63	0.74	0.86	0.98	0.54	0.65	0.77	0.88	0.34	0.44	0.55	0.66	
		PI	4.62	4.62	4.62	4.62	4.64	4.64	4.64	4.64	4.65	4.65	4.65	4.65	4.69	4.69	4.69	4.69	
	50	TC	7.37	7.46	7.54	7.63	7.88	7.88	7.97	8.06	8.14	8.14	8.14	8.23	8.82	8.82	8.82	8.82	
		S/T	0.84	0.97	1.00	1.00	0.64	0.76	0.89	1.00	0.54	0.67	0.79	0.91	0.33	0.45	0.56	0.67	
		PI	5.00	5.00	5.00	5.00	5.02	5.02	5.02	5.02	5.03	5.03	5.03	5.03	5.07	5.07	5.07	5.07	
	1800	-15	TC	11.28	11.40	11.52	11.64	11.87	11.87	11.87	11.99	12.15	12.15	12.15	12.15	12.92	12.92	12.92	12.92
			S/T	0.75	0.86	0.98	1.00	0.59	0.69	0.79	0.89	0.51	0.61	0.70	0.81	0.33	0.42	0.52	0.61
			PI	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
		-10	TC	11.21	11.33	11.45	11.57	11.80	11.80	11.80	11.92	12.08	12.08	12.08	12.08	12.87	12.87	12.87	12.87
			S/T	0.76	0.86	0.99	1.00	0.59	0.69	0.80	0.89	0.51	0.61	0.71	0.82	0.33	0.43	0.52	0.61
			PI	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
-5		TC	11.14	11.26	11.38	11.50	11.76	11.76	11.76	11.88	12.04	12.04	12.04	12.04	12.84	12.84	12.84	12.84	
		S/T	0.76	0.87	0.99	1.00	0.59	0.69	0.80	0.90	0.52	0.61	0.71	0.82	0.33	0.43	0.53	0.61	
		PI	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	
0		TC	11.09	11.21	11.32	11.44	11.71	11.71	11.71	11.83	12.01	12.01	12.01	12.01	12.83	12.83	12.83	12.83	
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.33	0.43	0.53	0.62	
		PI	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	
5		TC	11.03	11.15	11.27	11.38	11.67	11.67	11.67	11.79	11.97	11.97	11.97	11.97	12.82	12.82	12.82	12.82	
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	0.91	0.52	0.62	0.72	0.83	0.33	0.43	0.53	0.62	
		PI	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	
10		TC	10.96	11.08	11.20	11.32	11.61	11.61	11.61	11.73	11.92	11.92	11.92	11.92	12.78	12.78	12.78	12.78	
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	0.91	0.52	0.62	0.72	0.83	0.34	0.44	0.53	0.62	
		PI	2.75	2.75	2.75	2.75	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	
15		TC	10.87	10.99	11.11	11.22	11.54	11.54	11.54	11.65	11.85	11.85	11.85	11.85	12.73	12.73	12.73	12.73	
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.54	0.63	
		PI	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	
20		TC	10.75	10.87	10.98	11.10	11.41	11.41	11.41	11.53	11.73	11.73	11.73	11.73	12.62	12.62	12.62	12.62	
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.54	0.63	
		PI	2.91	2.91	2.91	2.91	2.90	2.90	2.90	2.90	2.89	2.89	2.89	2.89	2.88	2.88</			

2100	-15	TC	11.49	11.61	11.73	11.85	12.08	12.08	12.08	12.20	12.38	12.38	12.50	13.15	13.15	13.15	13.15	
		S/T	0.79	0.92	1.00	1.00	0.61	0.72	0.84	0.98	0.52	0.64	0.75	0.86	0.33	0.43	0.53	0.64
		PI	2.74	2.74	2.74	2.74	2.73	2.73	2.73	2.73	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
	-10	TC	11.42	11.54	11.66	11.78	12.01	12.01	12.01	12.13	12.32	12.32	12.32	12.44	13.11	13.11	13.11	13.11
		S/T	0.80	0.92	1.00	1.00	0.61	0.73	0.84	0.98	0.52	0.64	0.76	0.86	0.33	0.44	0.53	0.64
		PI	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.73	2.73	2.73	2.73
	-5	TC	11.35	11.47	11.59	11.71	11.97	11.97	11.97	12.08	12.28	12.28	12.28	12.39	13.07	13.07	13.07	13.07
		S/T	0.80	0.93	1.00	1.00	0.61	0.73	0.85	0.99	0.53	0.64	0.76	0.87	0.33	0.44	0.54	0.64
		PI	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.73	2.73	2.73	2.73
	0	TC	11.29	11.41	11.53	11.65	11.92	11.92	11.92	12.04	12.24	12.24	12.24	12.36	13.06	13.06	13.06	13.06
		S/T	0.80	0.93	1.00	1.00	0.62	0.74	0.85	0.99	0.53	0.65	0.76	0.87	0.33	0.44	0.54	0.65
		PI	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.74	2.74	2.74	2.74
	5	TC	11.24	11.36	11.47	11.59	11.87	11.87	11.87	11.99	12.20	12.20	12.20	12.32	13.05	13.05	13.05	13.05
		S/T	0.81	0.94	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.65	0.77	0.88	0.33	0.44	0.54	0.65
		PI	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.75	2.75	2.75	2.75	2.76	2.76	2.76	2.76
	10	TC	11.17	11.29	11.40	11.52	11.82	11.82	11.82	11.94	12.15	12.15	12.15	12.27	13.02	13.02	13.02	13.02
		S/T	0.81	0.94	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.65	0.77	0.88	0.34	0.45	0.54	0.65
		PI	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.79	2.79	2.79	2.79	2.80	2.80	2.80	2.80
15	TC	11.08	11.19	11.31	11.43	11.74	11.74	11.74	11.86	12.08	12.08	12.08	12.19	12.96	12.96	12.96	12.96	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.78	0.89	0.34	0.45	0.55	0.66	
	PI	2.87	2.87	2.87	2.87	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.85	2.85	2.85	2.85	2.85
20	TC	10.95	11.07	11.18	11.30	11.61	11.61	11.61	11.73	11.96	11.96	11.96	12.07	12.85	12.85	12.85	12.85	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.78	0.89	0.34	0.45	0.55	0.66	
	PI	2.97	2.97	2.97	2.97	2.96	2.96	2.96	2.96	2.95	2.95	2.95	2.95	2.94	2.94	2.94	2.94	2.94
25	TC	10.46	10.58	10.69	10.81	11.10	11.10	11.21	11.33	11.44	11.44	11.44	11.56	12.30	12.30	12.30	12.30	
	S/T	0.84	0.97	1.00	1.00	0.64	0.77	0.89	1.00	0.55	0.67	0.79	0.91	0.33	0.45	0.56	0.68	
	PI	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27
30	TC	9.98	10.06	10.18	10.29	10.61	10.61	10.72	10.84	10.92	10.92	10.92	11.04	11.76	11.76	11.76	11.76	
	S/T	0.86	0.99	1.00	1.00	0.65	0.78	0.91	1.00	0.55	0.68	0.81	0.93	0.33	0.45	0.57	0.69	
	PI	3.59	3.59	3.59	3.59	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.62	3.62	3.62	3.62	3.62
35	TC	9.46	9.54	9.63	9.72	10.06	10.06	10.18	10.29	10.38	10.38	10.50	10.67	11.21	11.21	11.21	11.21	
	S/T	0.88	1.00	1.00	1.00	0.66	0.80	0.93	1.00	0.56	0.69	0.82	0.95	0.33	0.45	0.58	0.70	
	PI	3.92	3.92	3.92	3.92	3.94	3.94	3.94	3.94	3.94	3.94	3.95	3.94	3.97	3.97	3.97	3.97	
40	TC	8.83	8.91	9.00	9.09	9.40	9.40	9.50	9.60	9.70	9.70	9.83	9.93	10.50	10.50	10.50	10.50	
	S/T	0.92	1.00	1.00	1.00	0.68	0.83	0.98	1.00	0.57	0.72	0.87	1.00	0.32	0.46	0.60	0.90	
	PI	4.32	4.32	4.32	4.32	4.34	4.34	4.34	4.34	4.35	4.35	4.36	4.35	4.39	4.39	4.39	4.39	
46	TC	8.18	8.26	8.35	8.43	8.72	8.72	8.80	8.89	9.00	9.00	9.09	9.17	9.77	9.77	9.77	9.77	
	S/T	0.94	1.00	1.00	1.00	0.69	0.85	1.00	1.00	0.58	0.73	0.88	1.00	0.32	0.46	0.61	0.92	
	PI	4.81	4.81	4.81	4.81	4.83	4.83	4.83	4.83	4.85	4.85	4.85	4.85	4.89	4.89	4.89	4.89	
50	TC	7.66	7.75	7.83	7.92	8.20	8.20	8.29	8.38	8.49	8.49	8.58	8.66	9.20	9.20	9.20	9.20	
	S/T	0.97	1.00	1.00	1.00	0.71	0.88	1.00	1.00	0.59	0.75	0.91	1.00	0.32	0.47	0.62	0.97	
	PI	5.21	5.21	5.21	5.21	5.23	5.23	5.23	5.23	5.25	5.25	5.25	5.25	5.29	5.29	5.29	5.29	

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.

		36k 3Ph																	
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	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	
1500	-15	TC	11.05	11.06	11.18	11.30	11.63	11.87	11.87	11.99	11.90	11.90	11.90	11.90	12.65	12.65	12.65	12.65	
		S/T	0.71	0.81	0.90	0.97	0.57	0.65	0.74	0.83	0.50	0.59	0.67	0.75	0.35	0.42	0.50	0.58	
		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	2.65
	-10	TC	10.99	11.00	11.11	11.23	11.56	11.80	11.80	11.92	11.84	11.84	11.84	11.84	12.60	12.60	12.60	12.60	
		S/T	0.72	0.82	0.90	0.97	0.57	0.66	0.75	0.83	0.50	0.59	0.67	0.76	0.35	0.43	0.50	0.58	
		PI	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
	-5	TC	10.92	10.93	11.05	11.17	11.52	11.76	11.76	11.88	11.80	11.80	11.80	11.80	12.57	12.57	12.57	12.57	
		S/T	0.72	0.82	0.91	0.98	0.58	0.66	0.75	0.84	0.51	0.59	0.67	0.76	0.35	0.43	0.51	0.59	
		PI	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.66	2.66	2.66	2.66	2.66
	0	TC	10.87	10.87	10.99	11.11	11.47	11.71	11.71	11.83	11.77	11.77	11.77	11.77	12.56	12.56	12.56	12.56	
		S/T	0.73	0.82	0.91	0.98	0.58	0.66	0.75	0.84	0.51	0.60	0.68	0.76	0.35	0.43	0.51	0.59	
		PI	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.67	2.67	2.67	2.67	2.67
	5	TC	10.81	10.82	10.94	11.06	11.43	11.67	11.67	11.79	11.73	11.73	11.73	11.73	12.55	12.55	12.55	12.55	
		S/T	0.73	0.83	0.92	0.99	0.58	0.67	0.76	0.85	0.51	0.60	0.68	0.77	0.35	0.43	0.51	0.59	
		PI	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.69	2.69	2.69	2.69	2.69
	10	TC	10.75	10.75	10.87	10.99	11.38	11.61	11.61	11.73	11.68	11.68	11.68	11.68	12.52	12.52	12.52	12.52	
		S/T	0.73	0.83	0.92	0.99	0.58	0.67	0.76	0.85	0.51	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
		PI	2.73	2.73	2.73	2.73	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
	15	TC	10.66	10.67	10.78	10.90	11.30	11.54	11.54	11.65	11.61	11.61	11.61	11.61	12.46	12.46	12.46	12.46	
		S/T	0.74	0.84	0.93	1.00	0.59	0.67	0.77	0.86	0.52	0.61	0.69	0.78	0.36	0.44	0.52	0.60	
		PI	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78
	20	TC	10.54	10.55	10.66	10.78	11.18	11.41	11.41	11.52	11.50	11.50	11.50	11.50	12.36	12.36	12.36	12.36	
		S/T	0.74	0.84	0.93	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	2.89	2.89	2.89	2.89	2.88	2.88	2.88	2.88	2.87	2.87	2.87	2.87	2.86	2.86	2.86	2.86	2.86
	25	TC	10.06	10.06	10.17	10.29	10.69	10.69	10.69	10.69	11.01	11.01	11.01	11.01	11.84	11.84	11.84	11.84	
		S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.79	0.35	0.44	0.52	0.61	
		PI	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19
	30	TC	9.57	9.57	9.66	9.74	10.20	10.20	10.20	10.32	10.49	10.49	10.49	10.49	11.32	11.32	11.32	11.32	
		S/T	0.76	0.87	0.97	1.00	0.60	0.70	0.80	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62	
		PI	3.49	3.49	3.49	3.49	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.52	3.52	3.52	3.52	3.52
	35	TC	9.11	9.20	9.28	9.37	9.68	9.68	9.68	9.77	10.00	10.00	10.14	10.00	10.78	10.78	10.78	10.78	
		S/T	0.78	0.88	0.99	1.00	0.61	0.71	0.81	0.91	0.53	0.63	0.72	0.83	0.35	0.44	0.53	0.63	
		PI	3.81	3.81	3.81	3.81	3.83	3.83	3.83	3.83	3.83	3.83	3.84	3.83	3.86	3.86	3.86	3.86	3.86
	40	TC	8.49	8.58	8.66	8.75	9.05	9.05	9.05	9.13	9.34	9.34	9.41	9.34	10.08	10.08	10.08	10.08	
		S/T	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.96	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65	
		PI	4.21	4.21	4.21	4.21	4.23	4.23	4.23	4.23	4.23	4.23	4.24	4.23	4.26	4.26	4.26	4.26	4.26
	46	TC	7.86	7.94	8.03	8.11	8.40	8.40	8.40	8.48	8.65	8.65	8.65	8.65	9.37	9.37	9.37	9.37	
		S/T	0.82	0.94	1.00	1.00	0.63	0.74	0.86	0.98	0.54	0.65	0.77	0.88	0.34	0.44	0.55	0.66	
		PI	4.68	4.68	4.68	4.68	4.70	4.70	4.70	4.70	4.71	4.71	4.71	4.71	4.75	4.75	4.75	4.75	4.75
	50	TC	7.37	7.46	7.54	7.63	7.88	7.88	7.97	8.06	8.14	8.14	8.14	8.23	8.82	8.82	8.82	8.82	
		S/T	0.84	0.97	1.00	1.00	0.64	0.76	0.89	1.00	0.54	0.67	0.79	0.91	0.33	0.45	0.56	0.67	
		PI	5.06	5.06	5.06	5.06	5.09	5.09	5.09	5.09	5.10	5.10	5.10	5.10	5.14	5.14	5.14	5.14	5.14
	1800	-15	TC	11.28	11.40	11.52	11.64	11.87	11.87	11.87	11.99	12.15	12.15	12.15	12.15	12.92	12.92	12.92	12.92
			S/T	0.75	0.86	0.98	1.00	0.59	0.69	0.79	0.89	0.51	0.61	0.70	0.81	0.33	0.42	0.52	0.61
			PI	2.72	2.72	2.72	2.72	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71
		-10	TC	11.21	11.33	11.45	11.57	11.80	11.80	11.80	11.92	12.08	12.08	12.08	12.08	12.87	12.87	12.87	12.87
			S/T	0.76	0.86	0.99	1.00	0.59	0.69	0.80	0.89	0.51	0.61	0.71	0.82	0.33	0.43	0.52	0.61
			PI	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.70	2.70	2.70	2.70	2.71	2.71	2.71	2.71
-5		TC	11.14	11.26	11.38	11.50	11.76	11.76	11.76	11.88	12.04	12.04	12.04	12.04	12.84	12.84	12.84	12.84	
		S/T	0.76	0.87	0.99	1.00	0.59	0.69	0.80	0.90	0.52	0.61	0.71	0.82	0.33	0.43	0.53	0.61	
		PI	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.71	2.71	2.71	2.71	2.71
0		TC	11.09	11.21	11.32	11.44	11.71	11.71	11.71	11.83	12.01	12.01	12.01	12.01	12.83	12.83	12.83	12.83	
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.33	0.43	0.53	0.62	
		PI	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.72	2.72	2.72	2.72	2.72
5		TC	11.03	11.15	11.27	11.38	11.67	11.67	11.67	11.79	11.97	11.97	11.97	11.97	12.82	12.82	12.82	12.82	
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	0.91	0.52	0.62	0.72	0.83	0.33	0.43	0.53	0.62	
		PI	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.73	2.73	2.73	2.73	2.74	2.74	2.74	2.74	2.74
10		TC	10.96	11.08	11.20	11.32	11.61	11.61	11.61	11.73	11.92	11.92	11.92	11.92	12.78	12.78	12.78	12.78	
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	0.91	0.52	0.62	0.72	0.83	0.34	0.44	0.53	0.62	
		PI	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.77	2.77	2.77	2.77	2.78	2.78	2.78	2.78	2.78
15		TC	10.87	10.99	11.11	11.22	11.54	11.54	11.54	11.65	11.85	11.85	11.85	11.85	12.73	12.73	12.73	12.73	
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.54	0.63	
		PI	2.85	2.85	2.85	2.85	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84
20		TC	10.75	10.87	10.98	11.10	11.41	11.41	11.41	11.53	11.73	11.73	11.73	11.73	12.62	12.62	12.62	12.62	
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73						

2100	-15	TC	11.49	11.61	11.73	11.85	12.08	12.08	12.08	12.20	12.38	12.38	12.38	12.50	13.15	13.15	13.15	13.15	
		S/T	0.79	0.92	1.00	1.00	0.61	0.72	0.84	0.98	0.52	0.64	0.75	0.86	0.33	0.43	0.53	0.64	0.64
		PI	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76
	-10	TC	11.42	11.54	11.66	11.78	12.01	12.01	12.01	12.13	12.32	12.32	12.32	12.44	13.11	13.11	13.11	13.11	13.11
		S/T	0.80	0.92	1.00	1.00	0.61	0.73	0.84	0.98	0.52	0.64	0.76	0.86	0.33	0.44	0.53	0.64	0.64
		PI	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76
	-5	TC	11.35	11.47	11.59	11.71	11.97	11.97	11.97	12.08	12.28	12.28	12.28	12.39	13.07	13.07	13.07	13.07	13.07
		S/T	0.80	0.93	1.00	1.00	0.61	0.73	0.85	0.99	0.53	0.64	0.76	0.87	0.33	0.44	0.54	0.64	0.64
		PI	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.77	2.77	2.77	2.77	2.77
	0	TC	11.29	11.41	11.53	11.65	11.92	11.92	11.92	12.04	12.24	12.24	12.24	12.36	13.06	13.06	13.06	13.06	13.06
		S/T	0.80	0.93	1.00	1.00	0.62	0.74	0.85	0.99	0.53	0.65	0.76	0.87	0.33	0.44	0.54	0.65	0.65
		PI	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.78	2.78	2.78	2.78
	5	TC	11.24	11.36	11.47	11.59	11.87	11.87	11.87	11.99	12.20	12.20	12.20	12.32	13.05	13.05	13.05	13.05	13.05
		S/T	0.81	0.94	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.65	0.77	0.88	0.33	0.44	0.54	0.65	0.65
		PI	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.80	2.80	2.80	2.80	2.80
	10	TC	11.17	11.29	11.40	11.52	11.82	11.82	11.82	11.94	12.15	12.15	12.15	12.27	13.02	13.02	13.02	13.02	13.02
		S/T	0.81	0.94	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.65	0.77	0.88	0.34	0.45	0.54	0.65	0.65
		PI	2.84	2.84	2.84	2.84	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83
15	TC	11.08	11.19	11.31	11.43	11.74	11.74	11.74	11.86	12.08	12.08	12.08	12.19	12.96	12.96	12.96	12.96	12.96	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.78	0.89	0.34	0.45	0.55	0.66	0.66	
	PI	2.91	2.91	2.91	2.91	2.90	2.90	2.90	2.90	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	
20	TC	10.95	11.07	11.18	11.30	11.61	11.61	11.61	11.73	11.96	11.96	11.96	12.07	12.85	12.85	12.85	12.85	12.85	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.78	0.89	0.34	0.45	0.55	0.66	0.66	
	PI	3.01	3.01	3.01	3.01	3.00	3.00	3.00	3.00	2.99	2.99	2.99	2.99	2.98	2.98	2.98	2.98	2.98	
25	TC	10.46	10.58	10.69	10.81	11.10	11.10	11.21	11.33	11.44	11.44	11.44	11.56	12.30	12.30	12.30	12.30	12.30	
	S/T	0.84	0.97	1.00	1.00	0.64	0.77	0.89	1.00	0.55	0.67	0.79	0.91	0.33	0.45	0.56	0.68	0.68	
	PI	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	
30	TC	9.98	10.06	10.18	10.29	10.61	10.61	10.72	10.84	10.92	10.92	10.92	11.04	11.76	11.76	11.76	11.76	11.76	
	S/T	0.86	0.99	1.00	1.00	0.65	0.78	0.91	1.00	0.55	0.68	0.81	0.93	0.33	0.45	0.57	0.69	0.69	
	PI	3.63	3.63	3.63	3.63	3.64	3.64	3.64	3.64	3.65	3.65	3.65	3.65	3.66	3.66	3.66	3.66	3.66	
35	TC	9.46	9.54	9.63	9.72	10.06	10.06	10.18	10.29	10.38	10.38	10.60	10.67	11.21	11.21	11.21	11.21	11.21	
	S/T	0.88	1.00	1.00	1.00	0.66	0.80	0.93	1.00	0.56	0.69	0.82	0.95	0.33	0.45	0.58	0.70	0.70	
	PI	3.97	3.97	3.97	3.97	3.99	3.99	3.99	3.99	3.99	3.99	4.00	3.99	4.02	4.02	4.02	4.02	4.02	
40	TC	8.83	8.91	9.00	9.09	9.40	9.40	9.50	9.60	9.70	9.70	9.83	9.93	10.50	10.50	10.50	10.50	10.50	
	S/T	0.92	1.00	1.00	1.00	0.68	0.83	0.98	1.00	0.57	0.72	0.87	1.00	0.32	0.46	0.60	0.90	0.90	
	PI	4.38	4.38	4.38	4.38	4.40	4.40	4.40	4.40	4.41	4.41	4.41	4.41	4.44	4.44	4.44	4.44	4.44	
46	TC	8.18	8.26	8.35	8.43	8.72	8.72	8.80	8.89	9.00	9.00	9.09	9.17	9.77	9.77	9.77	9.77	9.77	
	S/T	0.94	1.00	1.00	1.00	0.69	0.85	1.00	1.00	0.58	0.73	0.88	1.00	0.32	0.46	0.61	0.92	0.92	
	PI	4.87	4.87	4.87	4.87	4.89	4.89	4.89	4.89	4.91	4.91	4.91	4.91	4.95	4.95	4.95	4.95	4.95	
50	TC	7.66	7.75	7.83	7.92	8.20	8.20	8.29	8.38	8.49	8.49	8.58	8.66	9.20	9.20	9.20	9.20	9.20	
	S/T	0.97	1.00	1.00	1.00	0.71	0.88	1.00	1.00	0.59	0.75	0.91	1.00	0.32	0.47	0.62	0.97	0.97	
	PI	5.27	5.27	5.27	5.27	5.30	5.30	5.30	5.30	5.31	5.31	5.31	5.31	5.35	5.35	5.35	5.35	5.35	

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.

		42k																	
INDOOR AIRFLOW (CMH)	OUTDOOR DB(C)	ID WB (C)	16.0				18.0				19.0				22.0				
			23.0	25.0	27.0	29.0	23.0	25.0	27.0	29.0	23.0	25.0	27.0	29.0	23.0	25.0	27.0	29.0	
		ID DB (C)																	
1680	-15	TC	12.59	12.60	12.72	12.84	13.24	13.51	13.51	13.66	13.57	13.57	13.57	13.57	14.41	14.41	14.41	14.41	
		S/T	0.71	0.80	0.89	0.97	0.57	0.65	0.73	0.82	0.50	0.58	0.67	0.75	0.35	0.42	0.50	0.58	
		PI	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	
	-10	TC	12.51	12.52	12.64	12.76	13.16	13.44	13.44	13.59	13.50	13.50	13.50	13.50	14.36	14.36	14.36	14.36	
		S/T	0.72	0.81	0.89	0.97	0.57	0.66	0.74	0.82	0.50	0.58	0.67	0.76	0.35	0.43	0.50	0.58	
		PI	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.78	2.78	2.78	2.78	2.79	2.79	2.79	2.79	
	-5	TC	12.44	12.45	12.57	12.69	13.11	13.39	13.39	13.53	13.45	13.45	13.45	13.45	14.32	14.32	14.32	14.32	
		S/T	0.72	0.81	0.90	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.76	0.35	0.43	0.51	0.59	
		PI	2.79	2.78	2.78	2.79	2.79	2.79	2.79	2.79	2.78	2.78	2.78	2.78	2.80	2.80	2.80	2.80	
	0	TC	12.38	12.39	12.50	12.62	13.06	13.34	13.34	13.48	13.41	13.41	13.41	13.41	14.31	14.31	14.31	14.31	
		S/T	0.73	0.81	0.90	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.68	0.76	0.35	0.43	0.51	0.59	
		PI	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.81	2.81	2.81	2.81	
	5	TC	12.31	12.32	12.44	12.56	13.02	13.28	13.28	13.43	13.37	13.37	13.37	13.37	14.30	14.30	14.30	14.30	
		S/T	0.73	0.82	0.91	0.99	0.58	0.66	0.75	0.84	0.51	0.59	0.68	0.77	0.35	0.43	0.51	0.59	
		PI	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.83	2.83	2.83	2.83	
	10	TC	12.24	12.25	12.37	12.48	12.95	13.22	13.22	13.37	13.31	13.31	13.31	13.31	14.26	14.26	14.26	14.26	
		S/T	0.73	0.82	0.91	0.99	0.58	0.67	0.75	0.84	0.51	0.59	0.68	0.77	0.36	0.44	0.51	0.59	
		PI	2.87	2.87	2.87	2.87	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	
	15	TC	12.14	12.15	12.27	12.38	12.87	13.13	13.13	13.28	13.23	13.23	13.23	13.23	14.20	14.20	14.20	14.20	
		S/T	0.74	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.78	0.36	0.44	0.52	0.60	
		PI	2.94	2.94	2.94	2.94	2.93	2.93	2.93	2.93	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	
	20	TC	12.00	12.01	12.13	12.24	12.73	12.73	12.73	12.73	13.10	13.10	13.10	13.10	14.08	14.08	14.08	14.08	
		S/T	0.74	0.83	0.92	1.00	0.59	0.68	0.76	0.85	0.52	0.60	0.69	0.78	0.36	0.44	0.52	0.60	
		PI	3.04	3.04	3.04	3.04	3.03	3.03	3.03	3.03	3.02	3.02	3.02	3.02	3.01	3.01	3.01	3.01	
	25	TC	11.44	11.44	11.55	11.67	12.16	12.16	12.16	12.16	12.53	12.53	12.53	12.53	13.48	13.48	13.48	13.48	
		S/T	0.75	0.85	0.94	1.00	0.59	0.68	0.78	0.87	0.52	0.61	0.70	0.79	0.35	0.44	0.52	0.60	
		PI	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	
	30	TC	10.92	10.92	11.03	11.15	11.61	11.61	11.61	11.72	11.95	11.95	11.95	11.95	12.87	12.87	12.87	12.87	
		S/T	0.76	0.86	0.96	1.00	0.60	0.69	0.79	0.88	0.52	0.62	0.71	0.80	0.35	0.44	0.52	0.61	
		PI	3.67	3.67	3.67	3.67	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.70	3.70	3.70	3.70	
	35	TC	10.37	10.37	10.49	10.60	11.03	11.03	11.03	11.15	11.38	11.38	11.55	11.38	12.27	12.27	12.27	12.27	
		S/T	0.77	0.88	0.98	1.00	0.60	0.71	0.81	0.91	0.53	0.62	0.72	0.82	0.35	0.44	0.53	0.62	
		PI	4.01	4.01	4.01	4.01	4.03	4.03	4.03	4.03	4.03	4.03	4.04	4.03	4.06	4.06	4.06	4.06	
	40	TC	9.68	9.71	9.82	9.92	10.32	10.32	10.32	10.42	10.65	10.65	10.74	10.65	11.49	11.49	11.49	11.49	
		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	4.43	4.43	4.43	4.43	4.44	4.44	4.44	4.44	4.45	4.45	4.46	4.45	4.49	4.49	4.49	4.49	
	46	TC	8.95	9.03	9.12	9.20	9.57	9.57	9.57	9.66	9.89	9.89	9.89	9.89	10.68	10.68	10.68	10.68	
		S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.86	0.97	0.54	0.65	0.76	0.88	0.34	0.44	0.55	0.65	
		PI	4.92	4.92	4.92	4.92	4.94	4.94	4.94	4.94	4.96	4.96	4.96	4.96	5.00	5.00	5.00	5.00	
	50	TC	8.40	8.49	8.57	8.66	8.97	8.97	8.97	9.06	9.29	9.29	9.29	9.37	10.06	10.06	10.06	10.06	
		S/T	0.83	0.96	1.00	1.00	0.63	0.76	0.88	1.00	0.54	0.66	0.78	0.90	0.33	0.45	0.56	0.67	
		PI	5.33	5.33	5.33	5.33	5.35	5.35	5.35	5.35	5.36	5.36	5.36	5.36	5.41	5.41	5.41	5.41	
	2040	-15	TC	12.84	12.96	13.08	13.20	13.51	13.51	13.51	13.66	13.84	13.84	13.84	13.84	14.71	14.71	14.71	14.71
			S/T	0.75	0.86	0.98	1.00	0.59	0.69	0.79	0.89	0.51	0.61	0.70	0.81	0.33	0.42	0.51	0.61
			PI	2.86	2.86	2.86	2.86	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.84	2.84	2.84	2.84
		-10	TC	12.77	12.89	13.01	13.13	13.44	13.44	13.44	13.59	13.77	13.77	13.77	13.77	14.66	14.66	14.66	14.66
			S/T	0.76	0.86	0.99	1.00	0.59	0.69	0.80	0.89	0.51	0.61	0.71	0.82	0.33	0.43	0.51	0.61
			PI	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.85	2.85	2.85	2.85
-5		TC	12.69	12.81	12.93	13.05	13.39	13.39	13.39	13.53	13.72	13.72	13.72	13.72	14.62	14.62	14.62	14.62	
		S/T	0.76	0.87	0.99	1.00	0.59	0.69	0.80	0.90	0.52	0.61	0.71	0.82	0.33	0.43	0.52	0.61	
		PI	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.85	2.85	2.85	2.85	
0		TC	12.63	12.75	12.86	12.98	13.34	13.34	13.34	13.48	13.68	13.68	13.68	13.68	14.61	14.61	14.61	14.61	
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.33	0.43	0.52	0.62	
		PI	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.86	2.86	2.86	2.86	
5		TC	12.56	12.68	12.80	12.92	13.28	13.28	13.28	13.43	13.64	13.64	13.64	13.64	14.60	14.60	14.60	14.60	
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	0.91	0.52	0.62	0.72	0.83	0.33	0.43	0.52	0.62	
		PI	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.87	2.87	2.87	2.87	2.88	2.88	2.88	2.88	
10		TC	12.49	12.60	12.72	12.84	13.22	13.22	13.22	13.37	13.58	13.58	13.58	13.58	14.56	14.56	14.56	14.56	
		S/T	0.77	0.88	1.00	1.00	0.60	0.70	0.81	0.91	0.52	0.62	0.72	0.83	0.34	0.44	0.52	0.62	
		PI	2.93	2.93	2.93	2.93	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	
15		TC	12.39	12.50	12.62	12.73	13.13	13.13	13.13	13.28	13.50	13.50	13.50	13.50	14.50	14.50	14.50	14.50	
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.53	0.63	
		PI	3.00	3.00	3.00	3.00	2.99	2.99	2.99	2.99	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	
20		TC	12.25	12.36	12.48	12.59	12.99	12.99	12.99	13.14	13.37	13.37	13.37	13.37	14.37	14.37	14.37	14.37	
		S/T	0.78	0.89	0.99	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.53	0.63	
		PI	3.10	3.10	3.10	3.10	3.09	3.09	3.09	3.09	3.08	3.08	3.08	3.08	3.07	3.07	3.07	3.07	
25		TC	11.67	11.79	11.90	12.02	12.42	12.42	12.42	12.53	12.79	12.79	12.79	12.79	13.74	13.74	13.74	13.74	
		S/T	0.79	0.91	1.00	1.00	0.61	0.72	0.83	0.94	0.53	0.64	0.75	0.85	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	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	
30		TC	11.13	11.24	11.36	11.47	11.84	11.84	11.84	11.96	12.19	12.19	12.19	12.19	13.14	13.14	13.14	13.14	
		S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.85	0.96	0.54	0.65	0.76	0.87	0.34	0.44	0.55	0.65	
		PI	3.74	3.74	3.74	3.74	3.75	3.75	3.75	3.7									

2400	-15	TC	13.08	13.20	13.33	13.45	13.78	13.78	13.78	13.93	14.11	14.11	14.11	14.26	14.97	14.97	14.97	14.97	
		S/T	0.79	0.92	1.00	1.00	0.61	0.72	0.84	0.98	0.52	0.64	0.75	0.86	0.33	0.43	0.54	0.65	0.65
		PI	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
	-10	TC	13.01	13.13	13.25	13.37	13.70	13.70	13.70	13.85	14.04	14.04	14.04	14.19	14.92	14.92	14.92	14.92	14.92
		S/T	0.80	0.92	1.00	1.00	0.61	0.73	0.84	0.98	0.52	0.64	0.76	0.86	0.33	0.44	0.54	0.65	0.65
		PI	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.89	2.89	2.89	2.89	2.90	2.90	2.90	2.90	2.90
	-5	TC	12.93	13.05	13.17	13.29	13.65	13.65	13.65	13.80	13.99	13.99	13.99	14.13	14.89	14.89	14.89	14.89	14.89
		S/T	0.80	0.93	1.00	1.00	0.61	0.73	0.85	0.99	0.53	0.64	0.76	0.87	0.33	0.44	0.55	0.65	0.65
		PI	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.91	2.91	2.91	2.91	2.91
	0	TC	12.86	12.98	13.10	13.22	13.60	13.60	13.60	13.75	13.95	13.95	13.95	14.10	14.87	14.87	14.87	14.87	14.87
		S/T	0.80	0.93	1.00	1.00	0.62	0.74	0.85	0.99	0.53	0.65	0.76	0.87	0.33	0.44	0.55	0.66	0.66
		PI	2.90	2.90	2.90	2.90	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.92	2.92	2.92	2.92	2.92
	5	TC	12.80	12.92	13.04	13.15	13.55	13.55	13.55	13.70	13.90	13.90	13.90	14.05	14.86	14.86	14.86	14.86	14.86
		S/T	0.81	0.94	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.65	0.77	0.88	0.33	0.44	0.55	0.66	0.66
		PI	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.93	2.94	2.94	2.94	2.94	2.94
	10	TC	12.72	12.84	12.96	13.07	13.48	13.48	13.48	13.63	13.85	13.85	13.85	13.99	14.82	14.82	14.82	14.82	14.82
		S/T	0.81	0.94	1.00	1.00	0.62	0.74	0.86	1.00	0.53	0.65	0.77	0.88	0.34	0.45	0.55	0.66	0.66
		PI	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.97	2.97	2.97	2.97	2.98	2.98	2.98	2.98	2.98
15	TC	12.62	12.73	12.85	12.97	13.39	13.39	13.39	13.54	13.76	13.76	13.76	13.91	14.76	14.76	14.76	14.76	14.76	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.78	0.89	0.34	0.45	0.56	0.67	0.67	
	PI	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	
20	TC	12.48	12.59	12.71	12.82	13.25	13.25	13.25	13.40	13.63	13.63	13.63	13.77	14.63	14.63	14.63	14.63	14.63	
	S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.78	0.89	0.34	0.45	0.56	0.67	0.67	
	PI	3.16	3.16	3.16	3.16	3.15	3.15	3.15	3.15	3.14	3.14	3.14	3.14	3.13	3.13	3.13	3.13	3.13	
25	TC	11.90	12.02	12.13	12.25	12.65	12.65	12.65	12.88	13.02	13.02	13.02	13.17	14.03	14.03	14.03	14.03	14.03	
	S/T	0.84	0.97	1.00	1.00	0.64	0.77	0.89	1.00	0.55	0.67	0.79	0.91	0.33	0.45	0.56	0.68	0.68	
	PI	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	
30	TC	11.36	11.47	11.59	11.70	12.07	12.07	12.19	12.30	12.45	12.45	12.45	12.56	13.40	13.40	13.40	13.40	13.40	
	S/T	0.86	0.99	1.00	1.00	0.65	0.78	0.91	1.00	0.55	0.68	0.81	0.94	0.33	0.45	0.57	0.69	0.69	
	PI	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.83	3.83	3.83	3.83	3.85	3.85	3.85	3.85	3.85	
35	TC	10.78	10.90	11.01	11.13	11.47	11.47	11.59	11.70	11.84	11.84	12.00	12.13	12.76	12.76	12.76	12.76	12.76	
	S/T	0.88	1.00	1.00	1.00	0.66	0.80	0.93	1.00	0.56	0.69	0.82	0.95	0.33	0.45	0.58	0.71	0.71	
	PI	4.17	4.17	4.17	4.17	4.19	4.19	4.19	4.19	4.19	4.19	4.20	4.19	4.22	4.22	4.22	4.22	4.22	
40	TC	10.04	10.14	10.24	10.34	10.70	10.70	10.80	10.91	11.04	11.04	11.04	11.19	11.30	11.93	11.93	11.93	11.93	
	S/T	0.92	1.00	1.00	1.00	0.68	0.83	0.98	1.00	0.57	0.72	0.87	1.00	0.32	0.46	0.60	0.90	0.90	
	PI	4.61	4.61	4.61	4.61	4.63	4.63	4.63	4.63	4.63	4.63	4.64	4.63	4.67	4.67	4.67	4.67	4.67	
46	TC	9.30	9.38	9.47	9.55	9.92	9.92	10.01	10.12	10.24	10.24	10.24	10.35	10.46	11.09	11.09	11.09	11.09	
	S/T	0.94	1.00	1.00	1.00	0.69	0.85	1.00	1.00	0.58	0.73	0.88	1.00	0.32	0.46	0.61	0.92	0.92	
	PI	5.13	5.13	5.13	5.13	5.15	5.15	5.15	5.15	5.16	5.16	5.16	5.16	5.21	5.21	5.21	5.21	5.21	
50	TC	8.73	8.81	8.90	8.98	9.33	9.33	9.41	9.50	9.64	9.64	9.72	9.81	10.46	10.46	10.46	10.46	10.46	
	S/T	0.97	1.00	1.00	1.00	0.71	0.88	1.00	1.00	0.59	0.75	0.91	1.00	0.32	0.47	0.62	0.97	0.97	
	PI	5.55	5.55	5.55	5.55	5.57	5.57	5.57	5.57	5.59	5.59	5.59	5.59	5.59	5.63	5.63	5.63	5.63	

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.

2400	-15	TC	15.33	15.33	15.48	15.63	16.12	16.12	16.12	16.27	16.53	16.53	16.53	16.53	17.54	17.54	17.54	17.54
		S/T	0.74	0.85	1.00	1.00	0.59	0.69	0.78	0.98	0.51	0.61	0.70	0.80	0.34	0.42	0.51	0.61
		PI	3.33	3.33	3.33	3.33	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.31	3.31	3.31
	-10	TC	15.23	15.23	15.38	15.53	16.03	16.03	16.03	16.18	16.45	16.45	16.45	16.45	17.48	17.48	17.48	17.48
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.79	0.98	0.51	0.61	0.71	0.81	0.34	0.43	0.51	0.61
		PI	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31
	-5	TC	15.14	15.14	15.29	15.44	15.97	15.97	15.97	16.12	16.38	16.38	16.38	16.38	17.44	17.44	17.44	17.44
		S/T	0.75	0.86	1.00	1.00	0.59	0.69	0.79	0.99	0.52	0.61	0.71	0.81	0.34	0.43	0.52	0.61
		PI	3.31	3.31	3.31	3.31	3.30	3.30	3.30	3.30	3.31	3.31	3.31	3.31	3.32	3.32	3.32	3.32
	0	TC	15.07	15.07	15.22	15.36	15.91	15.91	15.91	16.06	16.34	16.34	16.34	16.34	17.42	17.42	17.42	17.42
		S/T	0.75	0.86	1.00	1.00	0.60	0.70	0.79	0.99	0.52	0.62	0.72	0.81	0.34	0.43	0.52	0.62
		PI	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33
	5	TC	14.99	14.99	15.14	15.29	15.85	15.85	15.85	16.00	16.29	16.29	16.29	16.29	17.41	17.41	17.41	17.41
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	1.00	0.52	0.62	0.72	0.82	0.34	0.43	0.52	0.62
		PI	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.36	3.36	3.36	3.36
	10	TC	14.90	14.90	15.05	15.19	15.78	15.78	15.78	15.92	16.22	16.22	16.22	16.22	17.36	17.36	17.36	17.36
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	1.00	0.52	0.62	0.72	0.82	0.35	0.44	0.52	0.62
		PI	3.41	3.41	3.41	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
	15	TC	14.78	14.78	14.93	15.07	15.67	15.67	15.67	15.81	16.12	16.12	16.12	16.12	17.29	17.29	17.29	17.29
		S/T	0.77	0.88	0.99	1.00	0.61	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63
		PI	3.49	3.49	3.49	3.49	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.47	3.47	3.47	3.47
	20	TC	14.61	14.61	14.76	14.90	15.50	15.50	15.50	15.65	15.96	15.96	15.96	15.96	17.14	17.14	17.14	17.14
		S/T	0.77	0.88	0.99	1.00	0.61	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63
		PI	3.61	3.61	3.61	3.61	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.58	3.58	3.58	3.58
25	TC	13.95	14.10	14.24	14.38	14.81	14.81	14.81	14.96	15.25	15.25	15.25	15.25	16.42	16.42	16.42	16.42	
	S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.64	0.74	0.85	0.34	0.44	0.54	0.64	
	PI	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	
30	TC	13.29	13.44	13.58	13.72	14.13	14.13	14.13	14.27	14.56	14.56	14.56	14.56	15.68	15.68	15.68	15.68	
	S/T	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.96	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65	
	PI	4.36	4.36	4.36	4.36	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.39	4.39	4.39	4.39	
35	TC	12.63	12.75	12.86	12.98	13.44	13.44	13.44	13.58	13.87	13.87	14.10	14.21	14.96	14.96	14.96	14.96	
	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	4.77	4.77	4.77	4.77	4.78	4.78	4.78	4.78	4.79	4.79	4.80	4.79	4.82	4.82	4.82	4.82	
40	TC	11.79	11.91	12.02	12.14	12.57	12.57	12.62	12.75	12.97	12.97	13.08	13.21	14.01	14.01	14.01	14.01	
	S/T	0.85	0.99	1.00	1.00	0.64	0.78	0.90	1.00	0.55	0.68	0.80	0.93	0.33	0.45	0.57	0.90	
	PI	5.26	5.26	5.26	5.26	5.28	5.28	5.28	5.28	5.29	5.29	5.30	5.29	5.33	5.33	5.33	5.33	
46	TC	10.91	11.02	11.14	11.25	11.65	11.65	11.76	11.88	12.02	12.02	12.02	12.13	13.02	13.02	13.02	13.02	
	S/T	0.87	1.00	1.00	1.00	0.65	0.79	0.92	1.00	0.55	0.69	0.82	0.95	0.33	0.45	0.57	0.92	
	PI	5.85	5.85	5.85	5.85	5.88	5.88	5.88	5.88	5.89	5.89	5.89	5.89	5.94	5.94	5.94	5.94	
50	TC	10.25	10.37	10.48	10.60	10.97	10.97	11.08	11.19	11.31	11.31	11.31	11.42	12.28	12.28	12.28	12.28	
	S/T	0.89	1.00	1.00	1.00	0.67	0.81	0.95	1.00	0.56	0.70	0.85	0.98	0.33	0.46	0.59	0.97	
	PI	6.34	6.34	6.34	6.34	6.36	6.36	6.36	6.36	6.38	6.38	6.38	6.38	6.43	6.43	6.43	6.43	

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.

60K																			
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	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
		1820	-15	TC	15.98	15.98	15.98	16.13	16.80	17.13	17.13	17.13	17.20	17.20	17.20	17.20	18.27	18.27	18.27
S/T	0.69			0.76	0.84	0.91	0.55	0.63	0.70	0.77	0.49	0.57	0.64	0.70	0.36	0.42	0.49	0.55	
PI	3.50			3.51	3.51	3.50	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.48	3.48	3.48	3.48
-10	TC		15.88	15.88	15.88	16.03	16.71	17.04	17.04	17.04	17.12	17.12	17.12	17.12	18.21	18.21	18.21	18.21	
	S/T		0.69	0.77	0.84	0.91	0.55	0.63	0.71	0.78	0.49	0.57	0.64	0.71	0.36	0.43	0.49	0.55	
	PI		3.49	3.49	3.49	3.49	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48
-5	TC		15.79	15.79	15.79	15.94	16.64	16.97	16.97	16.97	17.05	17.05	17.05	17.05	18.16	18.16	18.16	18.16	
	S/T		0.69	0.77	0.85	0.92	0.56	0.63	0.71	0.78	0.50	0.58	0.64	0.71	0.36	0.43	0.50	0.56	
	PI		3.48	3.49	3.49	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.49	3.49	3.49	3.49
0	TC		15.71	15.71	15.71	15.86	16.58	16.91	16.91	16.91	17.01	17.01	17.01	17.01	18.14	18.14	18.14	18.14	
	S/T		0.70	0.77	0.85	0.92	0.56	0.64	0.72	0.78	0.50	0.58	0.65	0.72	0.36	0.43	0.50	0.56	
	PI		3.50	3.50	3.50	3.50	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.50	3.50	3.50	3.50	
5	TC		15.63	15.63	15.63	15.78	16.52	16.85	16.85	16.85	16.95	16.95	16.95	16.95	18.13	18.13	18.13	18.13	
	S/T		0.70	0.78	0.86	0.93	0.56	0.64	0.72	0.79	0.50	0.58	0.65	0.72	0.36	0.43	0.50	0.56	
	PI		3.53	3.53	3.53	3.53	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.53	3.53	3.53	3.53	
10	TC		15.53	15.53	15.53	15.68	16.44	16.77	16.77	16.77	16.88	16.88	16.88	16.88	18.08	18.08	18.08	18.08	
	S/T		0.70	0.78	0.86	0.93	0.56	0.64	0.72	0.79	0.50	0.58	0.65	0.72	0.37	0.44	0.50	0.56	
	PI		3.59	3.59	3.59	3.59	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.57	3.57	3.57	3.57	
15	TC		15.41	15.41	15.41	15.55	16.33	16.65	16.65	16.65	16.78	16.78	16.78	16.78	18.01	18.01	18.01	18.01	
	S/T		0.71	0.79	0.87	0.94	0.57	0.65	0.73	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.51	0.57	
	PI		3.67	3.68	3.68	3.67	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.65	3.65	3.65	3.65	
20	TC		15.23	15.23	15.23	15.38	16.15	16.15	16.15	16.15	16.61	16.61	16.61	16.61	17.85	17.85	17.85	17.85	
	S/T		0.71	0.79	0.87	0.94	0.57	0.65	0.73	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.51	0.57	
	PI		3.80	3.81	3.81	3.80	3.79	3.79	3.79	3.79	3.78	3.78	3.78	3.78	3.76	3.76	3.76	3.76	
25	TC		14.54	14.54	14.54	14.69	15.44	15.44	15.44	15.44	15.90	15.90	15.90	15.90	17.10	17.10	17.10	17.10	
	S/T		0.72	0.80	0.88	0.96	0.58	0.66	0.74	0.81	0.51	0.59	0.67	0.74	0.37	0.44	0.51	0.58	
	PI		4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19
30	TC		13.85	13.85	14.00	14.14	14.72	14.72	14.72	14.72	15.18	15.18	15.18	15.18	16.36	16.36	16.36	16.36	
	S/T		0.72	0.81	0.90	0.98	0.58	0.66	0.75	0.83	0.51	0.59	0.68	0.76	0.36	0.44	0.51	0.59	
	PI		4.59	4.59	4.59	4.59	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.62	4.62	4.62	4.62	
35	TC		13.17	13.17	13.31	13.45	14.00	14.00	14.00	14.00	14.43	14.43	14.43	14.43	15.58	15.58	15.58	15.58	
	S/T		0.73	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
	PI		5.01	5.01	5.01	5.01	5.03	5.03	5.03	5.03	5.04	5.04	5.05	5.04	5.08	5.08	5.08	5.08	
40	TC		12.41	12.41	12.54	12.67	13.22	13.22	13.22	13.22	13.64	13.64	13.64	13.64	14.74	14.74	14.74	14.74	
	S/T		0.76	0.86	0.96	1.00	0.60	0.69	0.79	0.88	0.52	0.61	0.71	0.80	0.35	0.44	0.52	0.61	
	PI		5.54	5.54	5.54	5.54	5.56	5.56	5.56	5.56	5.57	5.57	5.58	5.57	5.61	5.61	5.61	5.61	
46	TC		11.49	11.49	11.60	11.72	12.26	12.26	12.26	12.26	12.67	12.67	12.67	12.67	13.70	13.70	13.70	13.70	
	S/T		0.77	0.87	0.97	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.81	0.35	0.44	0.53	0.62	
	PI		6.16	6.16	6.16	6.16	6.18	6.18	6.18	6.18	6.20	6.20	6.20	6.20	6.25	6.25	6.25	6.25	
50	TC		10.77	10.88	11.00	11.11	11.51	11.51	11.51	11.51	11.63	11.92	11.92	11.92	12.90	12.90	12.90	12.90	
	S/T		0.78	0.89	1.00	1.00	0.61	0.71	0.82	0.92	0.53	0.63	0.73	0.84	0.34	0.44	0.53	0.63	
	PI		6.67	6.67	6.67	6.67	6.70	6.70	6.70	6.70	6.71	6.71	6.71	6.71	6.77	6.77	6.77	6.77	
2210	-15		TC	16.28	16.28	16.43	16.59	17.13	17.13	17.13	17.13	17.57	17.57	17.57	17.57	18.66	18.66	18.66	18.66
			S/T	0.71	0.81	0.98	1.00	0.57	0.66	0.74	0.83	0.50	0.59	0.67	0.75	0.35	0.42	0.50	0.58
			PI	3.57	3.57	3.57	3.57	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
	-10		TC	16.19	16.19	16.34	16.49	17.04	17.04	17.04	17.04	17.48	17.48	17.48	17.48	18.59	18.59	18.59	18.59
			S/T	0.72	0.82	0.99	1.00	0.57	0.66	0.75	0.83	0.50	0.59	0.67	0.76	0.35	0.43	0.50	0.58
			PI	3.55	3.55	3.55	3.55	3.54	3.54	3.54	3.54	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
	-5	TC	16.09	16.09	16.25	16.39	16.97	16.97	16.97	16.97	17.41	17.41	17.41	17.41	18.55	18.55	18.55	18.55	
		S/T	0.72	0.82	0.99	1.00	0.58	0.66	0.75	0.84	0.51	0.59	0.67	0.76	0.35	0.43	0.51	0.59	
		PI	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	
	0	TC	16.01	16.01	16.16	16.31	16.91	16.91	16.91	16.91	17.37	17.37	17.37	17.37	18.53	18.53	18.53	18.53	
		S/T	0.73	0.82	1.00	1.00	0.58	0.67	0.75	0.84	0.51	0.60	0.68	0.76	0.35	0.43	0.51	0.59	
		PI	3.56	3.56	3.56	3.56	3.55	3.55	3.55	3.55	3.56	3.56	3.56	3.56	3.57	3.57	3.57	3.57	
	5	TC	15.93	15.93	16.08	16.23	16.85	16.85	16.85	16.85	17.31	17.31	17.31	17.31	18.52	18.52	18.52	18.52	
		S/T	0.73	0.83	1.00	1.00	0.58	0.67	0.76	0.85	0.51	0.60	0.68	0.77	0.35	0.43	0.51	0.59	
		PI	3.59	3.59	3.59	3.59	3.58	3.58	3.58	3.58	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	
	10	TC	15.83	15.83	15.98	16.13	16.77	16.77	16.77	16.77	17.24	17.24	17.24	17.24	18.47	18.47	18.47	18.47	
		S/T	0.73	0.83	1.00	1.00	0.58	0.67	0.76	0.85	0.51	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
		PI	3.65	3.65	3.65	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64	3.64	3.64	3.64	3.64	3.64	
	15	TC	15.70	15.70	15.85	16.00	16.65	16.65	16.65	16.65	17.13	17.13	17.13	17.13	18.39	18.39	18.39	18.39	
		S/T	0.74	0.84	0.93	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	3.74	3.74	3.74	3.74	3.72	3.72	3.72	3.72	3.73	3.73	3.73	3.73	3.72	3.72	3.72	3.72	
	20	TC	15.53	15.53	15.67	15.82	16.48	16.48	16.48	16.48	16.97	16.97	16.97	16.97	18.23	18.23	18.23	18.23	
		S/T	0.74	0.84	0.93	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	3.87	3.87	3.87	3.87	3.85	3.85</											

2600	-15	TC	16.62	16.62	16.80	16.98	17.46	17.46	17.46	17.64	17.89	17.89	17.89	17.89	19.01	19.01	19.01	19.01
		S/T	0.74	0.85	1.00	1.00	0.59	0.69	0.78	0.98	0.51	0.61	0.70	0.80	0.34	0.42	0.51	0.61
		PI	3.64	3.64	3.64	3.64	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.62	3.62	3.62	3.62
	-10	TC	16.52	16.52	16.70	16.88	17.37	17.37	17.37	17.54	17.80	17.80	17.80	17.80	18.95	18.95	18.95	18.95
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.79	0.98	0.51	0.61	0.71	0.81	0.34	0.43	0.51	0.61
		PI	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62
	-5	TC	16.42	16.42	16.60	16.78	17.30	17.30	17.30	17.48	17.74	17.74	17.74	17.74	18.90	18.90	18.90	18.90
		S/T	0.75	0.86	1.00	1.00	0.59	0.69	0.79	0.99	0.52	0.61	0.71	0.81	0.34	0.43	0.52	0.61
		PI	3.61	3.61	3.61	3.61	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.63	3.63	3.63	3.63
	0	TC	16.34	16.34	16.51	16.69	17.23	17.23	17.23	17.41	17.69	17.69	17.69	17.69	18.88	18.88	18.88	18.88
		S/T	0.75	0.86	1.00	1.00	0.60	0.70	0.79	0.99	0.52	0.62	0.72	0.81	0.34	0.43	0.52	0.62
		PI	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.64	3.64	3.64	3.64
	5	TC	16.25	16.25	16.43	16.61	17.17	17.17	17.17	17.35	17.63	17.63	17.63	17.63	18.87	18.87	18.87	18.87
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	1.00	0.52	0.62	0.72	0.82	0.34	0.43	0.52	0.62
		PI	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.67	3.67	3.67	3.67
	10	TC	16.16	16.16	16.33	16.51	17.09	17.09	17.09	17.26	17.56	17.56	17.56	17.56	18.82	18.82	18.82	18.82
		S/T	0.76	0.87	1.00	1.00	0.60	0.70	0.80	1.00	0.52	0.62	0.72	0.82	0.35	0.44	0.52	0.62
		PI	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72
15	TC	16.02	16.02	16.20	16.37	16.97	16.97	16.97	17.15	17.45	17.45	17.45	17.45	18.74	18.74	18.74	18.74	
	S/T	0.77	0.88	0.99	1.00	0.61	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63	
	PI	3.81	3.81	3.81	3.81	3.81	3.81	3.81	3.81	3.80	3.80	3.80	3.80	3.79	3.79	3.79	3.79	
20	TC	15.84	15.84	16.02	16.19	16.79	16.79	16.79	16.97	17.28	17.28	17.28	17.28	18.58	18.58	18.58	18.58	
	S/T	0.77	0.88	0.99	1.00	0.61	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63	
	PI	3.95	3.95	3.95	3.95	3.94	3.94	3.94	3.94	3.93	3.93	3.93	3.93	3.91	3.91	3.91	3.91	
25	TC	15.10	15.24	15.38	15.53	16.05	16.05	16.05	16.22	16.53	16.53	16.53	16.53	17.77	17.77	17.77	17.77	
	S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.64	0.74	0.85	0.34	0.44	0.54	0.64	
	PI	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	
30	TC	14.41	14.55	14.69	14.84	15.30	15.30	15.30	15.44	15.79	15.79	15.79	15.79	16.99	16.99	16.99	16.99	
	S/T	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.96	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65	
	PI	4.77	4.77	4.77	4.77	4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.78	4.80	4.80	4.80	4.80	
35	TC	13.66	13.80	13.95	14.09	14.55	14.55	14.55	14.69	15.01	15.01	15.01	15.01	16.19	16.19	16.19	16.19	
	S/T	0.82	0.94	1.00	1.00	0.63	0.75	0.87	0.98	0.54	0.66	0.77	0.88	0.34	0.44	0.55	0.66	
	PI	5.21	5.21	5.21	5.21	5.23	5.23	5.23	5.23	5.24	5.24	5.24	5.24	5.28	5.28	5.28	5.28	
40	TC	12.72	12.85	12.98	13.11	13.57	13.57	13.62	13.75	14.00	14.00	14.00	14.12	14.26	15.12	15.12	15.12	
	S/T	0.85	0.99	1.00	1.00	0.65	0.78	0.90	1.00	0.55	0.68	0.80	0.93	0.33	0.45	0.57	0.90	
	PI	5.75	5.75	5.75	5.75	5.77	5.77	5.77	5.77	5.78	5.78	5.79	5.78	5.83	5.83	5.83	5.83	
46	TC	11.79	11.91	12.02	12.14	12.59	12.59	12.70	12.82	12.99	12.99	12.99	13.13	14.07	14.07	14.07	14.07	
	S/T	0.87	1.00	1.00	1.00	0.65	0.79	0.92	1.00	0.55	0.69	0.82	0.95	0.33	0.45	0.57	0.92	
	PI	6.39	6.39	6.39	6.39	6.42	6.42	6.42	6.42	6.44	6.44	6.44	6.44	6.49	6.49	6.49	6.49	
50	TC	11.06	11.17	11.28	11.40	11.82	11.82	11.94	12.05	12.22	12.22	12.22	12.33	13.24	13.24	13.24	13.24	
	S/T	0.90	1.00	1.00	1.00	0.67	0.81	0.95	1.00	0.56	0.70	0.85	0.98	0.33	0.46	0.59	0.97	
	PI	6.92	6.92	6.92	6.92	6.95	6.95	6.95	6.95	6.97	6.97	6.97	6.97	7.03	7.03	7.03	7.03	

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.

6.2 Heating

12k								[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
300	-15.0	2.61	2.59	2.59	2.56	1.17	1.21	1.18	1.19
	-10.0	2.79	2.76	2.76	2.74	1.25	1.29	1.26	1.27
	-7.0	2.92	2.90	2.90	2.87	1.32	1.37	1.34	1.35
	-5.6	2.98	2.95	2.95	2.92	1.29	1.30	1.31	1.31
	-2.8	3.04	3.01	3.01	2.98	1.23	1.24	1.24	1.25
	0.0	3.07	3.04	3.01	3.01	1.17	1.17	1.18	1.18
	2.8	3.21	3.18	3.16	3.13	1.12	1.13	1.13	1.13
	5.6	3.45	3.42	3.39	3.36	1.07	1.07	1.08	1.08
	7.0	3.73	3.69	3.61	3.61	1.05	1.02	1.05	1.05
	11.1	3.90	3.84	3.81	3.78	0.96	0.96	0.96	0.96
	13.9	4.01	3.98	3.96	3.93	0.91	0.90	0.90	0.90
	16.7	4.16	4.10	4.07	4.04	0.85	0.84	0.84	0.83
18.0	4.22	4.16	4.13	4.10	0.82	0.81	0.81	0.80	
480	-15.0	2.66	2.63	2.63	2.61	1.18	1.22	1.20	1.20
	-10.0	2.84	2.81	2.81	2.78	1.25	1.30	1.28	1.28
	-7.0	2.97	2.95	2.95	2.92	1.33	1.38	1.36	1.36
	-5.6	3.04	3.01	3.01	2.98	1.30	1.31	1.32	1.33
	-2.8	3.13	3.07	3.07	3.04	1.24	1.25	1.25	1.26
	0.0	3.16	3.10	3.07	3.07	1.17	1.18	1.19	1.19
	2.8	3.27	3.24	3.21	3.18	1.13	1.14	1.14	1.14
	5.6	3.53	3.50	3.47	3.45	1.08	1.08	1.08	1.09
	7.0	3.81	3.78	3.69	3.69	1.06	1.03	1.06	1.06
	11.1	3.98	3.93	3.90	3.87	0.97	0.97	0.97	0.97
	13.9	4.13	4.07	4.04	4.01	0.91	0.91	0.91	0.90
	16.7	4.28	4.22	4.19	4.16	0.86	0.85	0.84	0.84
18.0	4.33	4.28	4.25	4.22	0.83	0.82	0.81	0.81	
600	-15.0	2.69	2.67	2.67	2.64	1.19	1.24	1.21	1.22
	-10.0	2.87	2.85	2.85	2.82	1.27	1.32	1.29	1.30
	-7.0	3.01	2.98	2.98	2.95	1.35	1.40	1.37	1.38
	-5.6	3.07	3.04	3.04	3.01	1.32	1.33	1.34	1.34
	-2.8	3.16	3.10	3.10	3.07	1.25	1.26	1.27	1.27
	0.0	3.18	3.13	3.13	3.10	1.19	1.20	1.20	1.20
	2.8	3.30	3.27	3.24	3.21	1.15	1.15	1.15	1.16
	5.6	3.56	3.53	3.50	3.47	1.09	1.10	1.10	1.10
	7.0	3.84	3.81	3.72	3.72	1.07	1.04	1.07	1.07
	11.1	4.01	3.96	3.93	3.90	0.98	0.98	0.98	0.98
	13.9	4.16	4.10	4.07	4.04	0.92	0.92	0.92	0.91
	16.7	4.30	4.25	4.22	4.16	0.87	0.86	0.85	0.85
18.0	4.36	4.30	4.28	4.25	0.84	0.83	0.82	0.82	

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

		18k				[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
515	-15.0	3.93	3.87	3.85	3.82	1.45	1.50	1.49	1.50
	-10.0	4.19	4.14	4.11	4.08	1.55	1.60	1.59	1.60
	-7.0	4.39	4.33	4.31	4.28	1.64	1.70	1.69	1.70
	-5.6	4.48	4.42	4.39	4.36	1.62	1.65	1.66	1.67
	-2.8	4.54	4.48	4.45	4.45	1.57	1.60	1.61	1.63
	0.0	4.57	4.51	4.48	4.45	1.53	1.56	1.57	1.58
	2.8	4.74	4.68	4.65	4.63	1.51	1.53	1.54	1.55
	5.6	5.09	5.03	5.00	4.97	1.48	1.50	1.52	1.53
	7.0	5.46	5.39	5.31	5.25	1.46	1.47	1.49	1.50
	11.1	5.68	5.60	5.57	5.51	1.41	1.43	1.44	1.44
	13.9	5.86	5.77	5.74	5.68	1.37	1.39	1.40	1.41
	16.7	6.03	5.95	5.92	5.86	1.34	1.35	1.36	1.37
18.0	6.12	6.03	6.00	5.95	1.32	1.33	1.34	1.35	
710	-15.0	4.00	3.95	3.92	3.90	1.47	1.51	1.50	1.52
	-10.0	4.27	4.22	4.19	4.16	1.57	1.62	1.60	1.62
	-7.0	4.48	4.42	4.39	4.36	1.66	1.72	1.70	1.72
	-5.6	4.57	4.51	4.48	4.45	1.63	1.66	1.67	1.69
	-2.8	4.63	4.57	4.57	4.54	1.59	1.62	1.63	1.64
	0.0	4.65	4.60	4.57	4.54	1.55	1.57	1.58	1.60
	2.8	4.86	4.80	4.77	4.71	1.53	1.54	1.55	1.57
	5.6	5.21	5.15	5.12	5.06	1.50	1.52	1.53	1.54
	7.0	5.57	5.51	5.39	5.37	1.48	1.49	1.51	1.52
	11.1	5.80	5.71	5.68	5.63	1.43	1.45	1.46	1.47
	13.9	5.97	5.92	5.86	5.83	1.39	1.41	1.42	1.43
	16.7	6.18	6.09	6.03	6.00	1.36	1.37	1.38	1.39
18.0	6.26	6.18	6.12	6.09	1.34	1.36	1.36	1.37	
910	-15.0	4.03	3.98	3.95	3.93	1.48	1.53	1.52	1.53
	-10.0	4.30	4.25	4.22	4.19	1.58	1.63	1.62	1.63
	-7.0	4.51	4.45	4.42	4.39	1.67	1.73	1.72	1.73
	-5.6	4.60	4.54	4.51	4.48	1.65	1.68	1.69	1.71
	-2.8	4.68	4.63	4.60	4.57	1.61	1.63	1.65	1.66
	0.0	4.71	4.65	4.63	4.60	1.56	1.59	1.60	1.62
	2.8	4.89	4.83	4.80	4.77	1.54	1.56	1.57	1.59
	5.6	5.27	5.18	5.15	5.12	1.52	1.53	1.54	1.56
	7.0	5.66	5.57	5.45	5.42	1.50	1.51	1.53	1.54
	11.1	5.86	5.77	5.74	5.71	1.45	1.47	1.48	1.49
	13.9	6.06	5.97	5.92	5.89	1.41	1.43	1.44	1.45
	16.7	6.24	6.15	6.12	6.06	1.38	1.40	1.40	1.41
18.0	6.35	6.24	6.21	6.15	1.36	1.38	1.39	1.39	

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

24k								[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
825	-15.0	5.37	5.32	5.30	5.27	2.21	2.29	2.25	2.26
	-10.0	5.74	5.68	5.66	5.63	2.36	2.44	2.40	2.41
	-7.0	6.01	5.95	5.93	5.90	2.51	2.60	2.55	2.56
	-5.6	6.13	6.07	6.04	6.01	2.44	2.46	2.47	2.48
	-2.8	6.25	6.16	6.13	6.10	2.31	2.33	2.34	2.35
	0.0	6.27	6.19	6.16	6.10	2.19	2.20	2.20	2.21
	2.8	6.51	6.42	6.39	6.33	2.08	2.09	2.09	2.09
	5.6	6.97	6.88	6.86	6.80	1.97	1.97	1.97	1.97
	7.0	7.48	7.39	7.24	7.21	1.92	1.86	1.92	1.92
	11.1	7.77	7.65	7.62	7.56	1.75	1.74	1.73	1.73
	13.9	8.03	7.91	7.85	7.79	1.64	1.62	1.61	1.60
	16.7	8.26	8.14	8.08	8.03	1.52	1.50	1.49	1.47
18.0	8.37	8.26	8.20	8.14	1.46	1.44	1.43	1.42	
1035	-15.0	5.48	5.43	5.40	5.38	2.24	2.32	2.27	2.27
	-10.0	5.85	5.80	5.77	5.74	2.39	2.47	2.42	2.43
	-7.0	6.13	6.07	6.05	6.02	2.54	2.62	2.57	2.58
	-5.6	6.25	6.19	6.16	6.13	2.47	2.49	2.50	2.51
	-2.8	6.36	6.27	6.25	6.22	2.34	2.35	2.36	2.37
	0.0	6.39	6.30	6.27	6.22	2.21	2.22	2.23	2.23
	2.8	6.65	6.56	6.51	6.48	2.10	2.11	2.11	2.11
	5.6	7.12	7.03	6.97	6.94	2.00	2.00	1.99	1.99
	7.0	7.63	7.53	7.39	7.36	1.94	1.88	1.94	1.94
	11.1	7.91	7.82	7.77	7.71	1.77	1.76	1.75	1.75
	13.9	8.17	8.05	8.00	7.94	1.65	1.64	1.63	1.62
	16.7	8.43	8.32	8.26	8.17	1.54	1.51	1.50	1.49
18.0	8.55	8.43	8.37	8.29	1.48	1.45	1.44	1.43	
1230	-15.0	5.53	5.48	5.45	5.43	2.26	2.34	2.29	2.30
	-10.0	5.90	5.85	5.82	5.80	2.41	2.49	2.44	2.45
	-7.0	6.19	6.13	6.10	6.07	2.56	2.65	2.60	2.61
	-5.6	6.30	6.25	6.22	6.19	2.49	2.51	2.52	2.53
	-2.8	6.42	6.36	6.30	6.27	2.36	2.38	2.38	2.39
	0.0	6.45	6.36	6.33	6.30	2.23	2.24	2.25	2.25
	2.8	6.71	6.62	6.59	6.54	2.12	2.13	2.13	2.13
	5.6	7.20	7.12	7.06	7.00	2.02	2.02	2.02	2.02
	7.0	7.71	7.62	7.48	7.42	1.96	1.90	1.96	1.96
	11.1	8.00	7.91	7.85	7.79	1.79	1.78	1.77	1.77
	13.9	8.26	8.14	8.08	8.03	1.67	1.65	1.65	1.64
	16.7	8.52	8.40	8.34	8.29	1.55	1.53	1.52	1.51
18.0	8.66	8.52	8.46	8.40	1.50	1.47	1.46	1.45	

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

30k								[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
1500	-15.0	5.67	5.59	5.54	5.52	2.26	2.34	2.32	2.33
	-10.0	6.05	5.97	5.92	5.89	2.42	2.50	2.47	2.49
	-7.0	6.34	6.26	6.20	6.17	2.57	2.66	2.63	2.65
	-5.6	6.66	6.57	6.52	6.49	2.52	2.56	2.58	2.60
	-2.8	6.95	6.86	6.81	6.78	2.44	2.48	2.50	2.51
	0.0	7.15	7.07	7.01	6.98	2.36	2.39	2.41	2.42
	2.8	7.65	7.53	7.50	7.44	2.30	2.33	2.34	2.36
	5.6	8.40	8.28	8.22	8.17	2.24	2.27	2.28	2.29
	7.0	9.24	9.12	8.86	8.80	2.22	2.21	2.25	2.26
	11.1	9.76	9.64	9.55	9.49	2.11	2.13	2.14	2.15
	13.9	10.25	10.10	10.05	9.96	2.04	2.06	2.06	2.07
	16.7	10.71	10.57	10.51	10.42	1.97	1.98	1.99	1.99
18.0	10.95	10.80	10.74	10.66	1.94	1.95	1.95	1.96	
1800	-15.0	5.78	5.70	5.68	5.65	2.29	2.36	2.34	2.36
	-10.0	6.17	6.09	6.06	6.04	2.44	2.52	2.50	2.52
	-7.0	6.46	6.38	6.35	6.33	2.60	2.68	2.66	2.68
	-5.6	6.78	6.69	6.66	6.63	2.55	2.59	2.61	2.63
	-2.8	7.10	7.01	6.95	6.92	2.47	2.50	2.52	2.54
	0.0	7.30	7.21	7.15	7.10	2.38	2.41	2.43	2.45
	2.8	7.79	7.67	7.65	7.59	2.32	2.35	2.37	2.38
	5.6	8.57	8.46	8.40	8.34	2.26	2.29	2.30	2.31
	7.0	9.42	9.29	9.03	8.97	2.24	2.23	2.27	2.28
	11.1	9.93	9.81	9.76	9.67	2.13	2.15	2.16	2.17
	13.9	10.42	10.31	10.22	10.16	2.06	2.07	2.08	2.09
	16.7	10.92	10.77	10.71	10.63	1.99	2.00	2.01	2.01
18.0	11.18	11.00	10.95	10.86	1.95	1.96	1.97	1.97	
2100	-15.0	5.85	5.77	5.75	5.70	2.31	2.39	2.36	2.38
	-10.0	6.24	6.16	6.14	6.09	2.46	2.55	2.52	2.54
	-7.0	6.54	6.46	6.43	6.38	2.62	2.71	2.68	2.70
	-5.6	6.86	6.78	6.75	6.69	2.57	2.61	2.63	2.65
	-2.8	7.15	7.07	7.04	6.98	2.49	2.52	2.54	2.56
	0.0	7.38	7.27	7.24	7.18	2.40	2.44	2.45	2.47
	2.8	7.88	7.76	7.70	7.65	2.34	2.37	2.39	2.40
	5.6	8.63	8.54	8.49	8.43	2.28	2.31	2.32	2.33
	7.0	9.47	9.38	9.12	9.06	2.26	2.25	2.29	2.30
	11.1	10.05	9.90	9.84	9.76	2.15	2.17	2.18	2.19
	13.9	10.54	10.39	10.31	10.25	2.08	2.09	2.10	2.11
	16.7	11.03	10.86	10.80	10.71	2.00	2.02	2.02	2.03
18.0	11.27	11.09	11.03	10.95	1.97	1.98	1.99	1.99	

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

36k 1Ph								[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
1500	-15.0	7.96	7.88	7.83	7.78	3.39	3.51	3.46	3.49
	-10.0	8.50	8.42	8.36	8.31	3.62	3.74	3.69	3.72
	-7.0	8.90	8.82	8.76	8.70	3.84	3.97	3.92	3.95
	-5.6	9.14	9.05	8.99	8.93	3.76	3.81	3.83	3.86
	-2.8	9.34	9.25	9.19	9.14	3.63	3.67	3.69	3.72
	0.0	9.45	9.34	9.28	9.22	3.49	3.53	3.55	3.57
	2.8	9.89	9.74	9.69	9.63	3.38	3.41	3.43	3.45
	5.6	10.67	10.53	10.47	10.38	3.27	3.30	3.31	3.33
	7.0	11.53	11.38	11.14	11.06	3.22	3.19	3.26	3.27
	11.1	12.01	11.84	11.75	11.69	3.04	3.05	3.06	3.07
	13.9	12.45	12.27	12.19	12.10	2.91	2.92	2.93	2.93
	16.7	12.88	12.71	12.62	12.51	2.79	2.79	2.80	2.80
18.0	13.09	12.91	12.83	12.71	2.73	2.73	2.73	2.73	
1800	-15.0	8.13	8.05	8.00	7.95	3.43	3.54	3.50	3.52
	-10.0	8.68	8.60	8.55	8.49	3.66	3.78	3.73	3.76
	-7.0	9.09	9.01	8.95	8.90	3.88	4.01	3.96	3.99
	-5.6	9.34	9.25	9.19	9.14	3.80	3.85	3.87	3.90
	-2.8	9.54	9.45	9.40	9.34	3.66	3.71	3.73	3.75
	0.0	9.66	9.54	9.45	9.40	3.52	3.56	3.58	3.60
	2.8	10.09	9.95	9.89	9.83	3.41	3.45	3.46	3.48
	5.6	10.88	10.73	10.67	10.61	3.30	3.33	3.34	3.36
	7.0	11.76	11.61	11.38	11.29	3.25	3.22	3.29	3.30
	11.1	12.25	12.07	12.01	11.93	3.07	3.08	3.09	3.10
	13.9	12.68	12.51	12.42	12.33	2.94	2.95	2.95	2.96
	16.7	13.15	12.94	12.86	12.77	2.81	2.82	2.82	2.82
18.0	13.35	13.17	13.06	12.97	2.75	2.75	2.76	2.76	
2100	-15.0	8.22	8.14	8.09	8.04	3.46	3.58	3.53	3.55
	-10.0	8.77	8.69	8.64	8.58	3.69	3.81	3.77	3.79
	-7.0	9.19	9.11	9.05	8.99	3.92	4.05	4.00	4.02
	-5.6	9.43	9.34	9.28	9.22	3.83	3.88	3.91	3.94
	-2.8	9.66	9.54	9.48	9.43	3.70	3.73	3.76	3.78
	0.0	9.74	9.63	9.57	9.51	3.55	3.59	3.61	3.63
	2.8	10.21	10.06	10.01	9.92	3.44	3.48	3.49	3.51
	5.6	10.99	10.85	10.79	10.70	3.33	3.36	3.37	3.39
	7.0	11.88	11.72	11.49	11.40	3.28	3.25	3.32	3.33
	11.1	12.36	12.22	12.13	12.04	3.09	3.11	3.12	3.13
	13.9	12.83	12.65	12.56	12.48	2.97	2.98	2.98	2.99
	16.7	13.26	13.09	13.00	12.88	2.84	2.84	2.85	2.85
18.0	13.49	13.29	13.20	13.09	2.78	2.78	2.78	2.78	

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

36k 3 Ph								[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
1500	-15.0	8.07	7.97	7.95	7.90	3.41	3.52	3.48	3.50
	-10.0	8.62	8.51	8.49	8.43	3.63	3.76	3.71	3.73
	-7.0	9.03	8.92	8.89	8.83	3.86	3.99	3.94	3.96
	-5.6	9.24	9.12	9.09	9.03	3.77	3.82	3.85	3.88
	-2.8	9.41	9.32	9.27	9.21	3.63	3.68	3.70	3.72
	0.0	9.50	9.38	9.32	9.27	3.50	3.54	3.56	3.56
	2.8	9.93	9.79	9.73	9.67	3.39	3.42	3.44	3.45
	5.6	10.69	10.54	10.49	10.43	3.27	3.30	3.31	3.33
	7.0	11.53	11.38	11.14	11.08	3.22	3.19	3.26	3.27
	11.1	11.98	11.84	11.75	11.67	3.04	3.05	3.06	3.07
	13.9	12.42	12.25	12.16	12.07	2.91	2.92	2.92	2.93
	16.7	12.86	12.65	12.56	12.48	2.78	2.78	2.79	2.79
18.0	13.06	12.86	12.77	12.68	2.72	2.72	2.72	2.72	
1800	-15.0	8.21	8.13	8.08	8.03	3.44	3.56	3.51	3.53
	-10.0	8.76	8.68	8.63	8.58	3.67	3.79	3.75	3.77
	-7.0	9.18	9.10	9.04	8.98	3.90	4.03	3.98	4.00
	-5.6	9.41	9.32	9.27	9.21	3.81	3.86	3.89	3.91
	-2.8	9.61	9.50	9.44	9.38	3.67	3.71	3.73	3.76
	0.0	9.70	9.59	9.53	9.47	3.53	3.56	3.58	3.60
	2.8	10.14	9.99	9.93	9.88	3.42	3.45	3.47	3.48
	5.6	10.92	10.78	10.69	10.63	3.31	3.33	3.35	3.36
	7.0	11.76	11.61	11.38	11.29	3.26	3.22	3.29	3.30
	11.1	12.25	12.07	11.98	11.90	3.06	3.08	3.09	3.09
	13.9	12.68	12.51	12.42	12.33	2.94	2.94	2.95	2.95
	16.7	13.12	12.91	12.83	12.74	2.81	2.81	2.81	2.81
18.0	13.32	13.12	13.03	12.94	2.74	2.74	2.74	2.74	
2100	-15.0	8.28	8.21	8.15	8.10	3.47	3.59	3.55	3.56
	-10.0	8.84	8.76	8.71	8.65	3.70	3.83	3.78	3.80
	-7.0	9.26	9.18	9.12	9.07	3.93	4.07	4.02	4.04
	-5.6	9.50	9.41	9.35	9.30	3.85	3.90	3.93	3.95
	-2.8	9.70	9.59	9.53	9.47	3.70	3.75	3.77	3.79
	0.0	9.79	9.67	9.61	9.56	3.56	3.59	3.61	3.63
	2.8	10.22	10.11	10.02	9.96	3.45	3.48	3.50	3.52
	5.6	11.04	10.89	10.81	10.75	3.34	3.36	3.38	3.39
	7.0	11.88	11.72	11.49	11.40	3.29	3.25	3.32	3.33
	11.1	12.36	12.19	12.10	12.04	3.09	3.11	3.11	3.12
	13.9	12.80	12.62	12.54	12.45	2.96	2.97	2.98	2.98
	16.7	13.23	13.06	12.97	12.86	2.83	2.83	2.84	2.84
18.0	13.46	13.26	13.17	13.06	2.77	2.77	2.77	2.77	

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

42k								[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
1680	-15.0	8.49	8.39	8.34	8.29	3.38	3.50	3.47	3.50
	-10.0	9.07	8.96	8.91	8.86	3.61	3.73	3.70	3.73
	-7.0	9.50	9.39	9.33	9.28	3.83	3.96	3.93	3.96
	-5.6	9.88	9.76	9.71	9.65	3.77	3.83	3.86	3.89
	-2.8	10.26	10.11	10.05	10.00	3.67	3.72	3.75	3.77
	0.0	10.49	10.34	10.29	10.23	3.56	3.61	3.64	3.67
	2.8	11.13	10.98	10.89	10.81	3.49	3.54	3.56	3.59
	5.6	12.14	11.97	11.91	11.82	3.41	3.46	3.48	3.50
	7.0	13.27	13.08	12.76	12.67	3.38	3.39	3.45	3.47
	11.1	13.92	13.74	13.66	13.57	3.25	3.28	3.30	3.32
	13.9	14.55	14.35	14.26	14.15	3.15	3.19	3.20	3.22
	16.7	15.19	14.99	14.87	14.76	3.06	3.09	3.11	3.12
18.0	15.48	15.28	15.16	15.05	3.02	3.05	3.06	3.07	
2040	-15.0	8.65	8.55	8.50	8.45	3.42	3.53	3.51	3.53
	-10.0	9.24	9.13	9.08	9.03	3.65	3.77	3.74	3.77
	-7.0	9.68	9.57	9.51	9.46	3.87	4.00	3.97	4.00
	-5.6	10.08	9.97	9.91	9.85	3.81	3.87	3.90	3.93
	-2.8	10.46	10.32	10.26	10.20	3.71	3.75	3.78	3.81
	0.0	10.69	10.55	10.49	10.40	3.59	3.65	3.68	3.70
	2.8	11.33	11.18	11.10	11.04	3.52	3.57	3.59	3.62
	5.6	12.37	12.23	12.14	12.05	3.44	3.49	3.51	3.53
	7.0	13.49	13.34	12.99	12.90	3.41	3.42	3.48	3.50
	11.1	14.21	14.00	13.92	13.83	3.27	3.31	3.33	3.35
	13.9	14.84	14.64	14.55	14.44	3.18	3.21	3.23	3.25
	16.7	15.48	15.28	15.16	15.08	3.09	3.12	3.13	3.14
18.0	15.80	15.57	15.48	15.37	3.04	3.07	3.08	3.10	
2400	-15.0	8.75	8.65	8.60	8.55	3.45	3.57	3.54	3.57
	-10.0	9.34	9.24	9.18	9.13	3.68	3.80	3.78	3.80
	-7.0	9.79	9.68	9.62	9.57	3.91	4.04	4.01	4.04
	-5.6	10.20	10.08	10.03	9.97	3.84	3.91	3.94	3.97
	-2.8	10.58	10.43	10.37	10.32	3.73	3.79	3.82	3.85
	0.0	10.81	10.66	10.61	10.52	3.63	3.68	3.71	3.73
	2.8	11.47	11.30	11.24	11.16	3.55	3.60	3.63	3.65
	5.6	12.52	12.34	12.26	12.17	3.47	3.52	3.54	3.57
	7.0	13.67	13.48	13.13	13.05	3.44	3.45	3.51	3.53
	11.1	14.35	14.18	14.06	13.97	3.30	3.34	3.36	3.38
	13.9	15.02	14.82	14.70	14.61	3.21	3.24	3.26	3.27
	16.7	15.66	15.45	15.34	15.22	3.11	3.14	3.16	3.17
18.0	15.98	15.74	15.63	15.51	3.07	3.09	3.11	3.12	

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

48k								[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
1680	-15.0	11.29	11.19	11.11	11.06	4.62	4.77	4.72	4.76
	-10.0	12.06	11.95	11.87	11.81	4.92	5.09	5.03	5.07
	-7.0	12.63	12.52	12.43	12.37	5.23	5.41	5.35	5.39
	-5.6	12.89	12.78	12.69	12.63	5.13	5.20	5.24	5.27
	-2.8	13.13	12.98	12.89	12.83	4.95	5.01	5.05	5.08
	0.0	13.18	13.04	12.95	12.86	4.78	4.83	4.86	4.89
	2.8	13.74	13.56	13.47	13.39	4.64	4.69	4.72	4.75
	5.6	14.75	14.55	14.46	14.37	4.51	4.55	4.57	4.60
	7.0	15.85	15.63	15.34	15.22	4.44	4.41	4.50	4.52
	11.1	16.44	16.21	16.09	15.97	4.21	4.24	4.25	4.26
	13.9	16.96	16.73	16.61	16.50	4.05	4.07	4.08	4.09
	16.7	17.51	17.25	17.13	17.02	3.90	3.92	3.92	3.93
18.0	17.77	17.51	17.40	17.25	3.83	3.84	3.84	3.85	
2040	-15.0	11.52	11.42	11.34	11.29	4.67	4.82	4.76	4.80
	-10.0	12.30	12.19	12.11	12.06	4.98	5.14	5.08	5.12
	-7.0	12.89	12.77	12.69	12.63	5.29	5.47	5.40	5.44
	-5.6	13.15	13.04	12.95	12.89	5.18	5.26	5.29	5.33
	-2.8	13.39	13.24	13.15	13.10	5.00	5.07	5.10	5.13
	0.0	13.47	13.30	13.21	13.13	4.82	4.88	4.90	4.93
	2.8	14.03	13.85	13.74	13.65	4.69	4.74	4.77	4.78
	5.6	15.04	14.87	14.75	14.66	4.55	4.59	4.62	4.64
	7.0	16.13	15.95	15.66	15.54	4.48	4.45	4.54	4.56
	11.1	16.76	16.55	16.44	16.32	4.24	4.27	4.29	4.30
	13.9	17.31	17.08	16.96	16.84	4.08	4.10	4.12	4.13
	16.7	17.86	17.60	17.48	17.37	3.93	3.95	3.95	3.96
18.0	18.12	17.86	17.74	17.60	3.86	3.87	3.87	3.88	
2400	-15.0	11.65	11.53	11.45	11.40	4.71	4.87	4.82	4.85
	-10.0	12.44	12.31	12.23	12.17	5.03	5.19	5.14	5.17
	-7.0	13.04	12.89	12.81	12.75	5.34	5.52	5.46	5.50
	-5.6	13.30	13.15	13.07	13.01	5.23	5.31	5.34	5.38
	-2.8	13.53	13.39	13.30	13.21	5.05	5.12	5.15	5.18
	0.0	13.62	13.44	13.36	13.27	4.86	4.92	4.96	4.99
	2.8	14.17	14.00	13.88	13.79	4.74	4.78	4.81	4.83
	5.6	15.22	15.01	14.93	14.81	4.60	4.64	4.67	4.69
	7.0	16.34	16.12	15.80	15.71	4.53	4.50	4.59	4.61
	11.1	16.96	16.73	16.61	16.50	4.29	4.32	4.34	4.35
	13.9	17.51	17.28	17.13	17.02	4.13	4.15	4.17	4.18
	16.7	18.06	17.80	17.69	17.57	3.98	4.00	4.00	4.01
18.0	18.35	18.06	17.95	17.80	3.90	3.92	3.92	3.93	

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

60k								[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
1820	-15.0	11.65	11.53	11.45	11.38	4.82	4.97	4.96	5.00
	-10.0	12.44	12.31	12.23	12.15	5.14	5.30	5.29	5.33
	-7.0	13.03	12.89	12.81	12.73	5.46	5.64	5.62	5.67
	-5.6	13.53	13.39	13.30	13.21	5.39	5.49	5.54	5.59
	-2.8	14.00	13.82	13.74	13.65	5.27	5.37	5.41	5.46
	0.0	14.29	14.08	14.00	13.91	5.15	5.24	5.29	5.34
	2.8	15.10	14.90	14.78	14.69	5.08	5.17	5.22	5.26
	5.6	16.44	16.20	16.12	16.00	5.01	5.10	5.14	5.18
	7.0	17.90	17.65	17.21	17.10	4.99	5.05	5.12	5.16
	11.1	18.75	18.52	18.37	18.26	4.85	4.93	4.97	5.01
	13.9	19.56	19.30	19.19	19.04	4.76	4.83	4.87	4.91
	16.7	20.38	20.12	19.97	19.83	4.67	4.74	4.77	4.80
18.0	20.78	20.49	20.35	20.20	4.63	4.69	4.72	4.76	
2210	-15.0	11.88	11.75	11.68	11.60	4.86	5.02	5.00	5.04
	-10.0	12.69	12.55	12.47	12.39	5.18	5.36	5.33	5.38
	-7.0	13.29	13.15	13.07	12.98	5.51	5.69	5.67	5.72
	-5.6	13.79	13.65	13.56	13.47	5.44	5.54	5.59	5.64
	-2.8	14.26	14.08	14.00	13.91	5.32	5.42	5.47	5.52
	0.0	14.55	14.37	14.29	14.17	5.20	5.29	5.34	5.39
	2.8	15.39	15.19	15.07	14.98	5.13	5.22	5.27	5.31
	5.6	16.76	16.52	16.44	16.32	5.06	5.15	5.19	5.24
	7.0	18.25	18.00	17.56	17.45	5.04	5.10	5.17	5.21
	11.1	19.13	18.87	18.75	18.64	4.90	4.98	5.02	5.06
	13.9	19.97	19.68	19.56	19.42	4.81	4.88	4.92	4.95
	16.7	20.78	20.49	20.35	20.20	4.72	4.78	4.82	4.85
18.0	21.19	20.90	20.75	20.61	4.67	4.74	4.77	4.80	
2600	-15.0	12.01	11.86	11.79	11.74	4.91	5.07	5.05	5.10
	-10.0	12.83	12.67	12.59	12.53	5.24	5.41	5.39	5.44
	-7.0	13.44	13.27	13.19	13.13	5.57	5.75	5.73	5.77
	-5.6	13.94	13.76	13.68	13.62	5.49	5.60	5.65	5.70
	-2.8	14.40	14.23	14.14	14.06	5.37	5.47	5.52	5.57
	0.0	14.69	14.52	14.40	14.32	5.25	5.35	5.39	5.44
	2.8	15.54	15.33	15.22	15.13	5.18	5.27	5.32	5.36
	5.6	16.93	16.70	16.58	16.47	5.11	5.20	5.24	5.29
	7.0	18.42	18.17	17.74	17.62	5.09	5.15	5.22	5.26
	11.1	19.30	19.07	18.93	18.81	4.95	5.03	5.07	5.11
	13.9	20.15	19.88	19.74	19.62	4.86	4.93	4.97	5.00
	16.7	20.99	20.70	20.55	20.41	4.76	4.83	4.87	4.90
18.0	21.39	21.10	20.96	20.81	4.72	4.78	4.82	4.85	

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

7. Capacity Correction Factor for Height Difference

Capacity (Btu/h)		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	20	25
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	

Capacity (Btu/h)		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	

Capacity (Btu/h)	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	

Capacity (Btu/h)	30K		Pipe Length (m)					
Cooling			5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.887	0.856	0.824
		20			0.928	0.896	0.864	0.833
		10		0.969	0.937	0.905	0.873	0.841
		5	0.995	0.979	0.947	0.914	0.882	0.850
	Outdoor Upper than Indoor	0	1.000	0.984	0.951	0.919	0.886	0.854
		-5	1.000	0.984	0.951	0.919	0.886	0.854
		-10		0.984	0.951	0.919	0.886	0.854
		-20			0.951	0.919	0.886	0.854
					0.919	0.886	0.854	
Heating			5	10	20	30	40	50
Height difference H (m)	Indoor Upper than Outdoor	25				0.958	0.942	0.925
		20			0.975	0.958	0.942	0.925
		10		0.992	0.975	0.958	0.942	0.925
		5	1.000	0.992	0.975	0.958	0.942	0.925
	Outdoor Upper than Indoor	0	1.000	0.992	0.975	0.958	0.942	0.925
		-5	0.992	0.984	0.967	0.951	0.934	0.918
		-10		0.976	0.959	0.943	0.927	0.910
		-20			0.952	0.936	0.919	0.903
					0.928	0.912	0.896	

Capacity (Btu/h)		36k		Pipe Length (m)						
		Cooling		5	15	25	35	50	65	75
Height difference H (m)	Indoor Upper than Outdoor	30					0.885	0.845	0.805	0.778
		20			0.921	0.894	0.854	0.813	0.786	
		10		0.958	0.931	0.903	0.862	0.822	0.794	
		5	0.995	0.967	0.940	0.912	0.871	0.830	0.802	
		0	1.000	0.972	0.945	0.917	0.876	0.834	0.806	
	Outdoor Upper than Indoor	-5	1.000	0.972	0.945	0.917	0.876	0.834	0.806	
		-10		0.972	0.945	0.917	0.876	0.834	0.806	
		-20			0.945	0.917	0.876	0.834	0.806	
		-30				0.917	0.876	0.834	0.806	
			Heating		5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30					0.962	0.943	0.924	0.911
		20			0.975	0.962	0.943	0.924	0.911	
		10		0.987	0.975	0.962	0.943	0.924	0.911	
		5	1.000	0.987	0.975	0.962	0.943	0.924	0.911	
		0	1.000	0.987	0.975	0.962	0.943	0.924	0.911	
	Outdoor Upper than Indoor	-5	0.992	0.979	0.967	0.954	0.935	0.917	0.904	
		-10		0.972	0.959	0.947	0.928	0.909	0.896	
		-20			0.951	0.939	0.921	0.902	0.889	
-30					0.932	0.913	0.895	0.882		

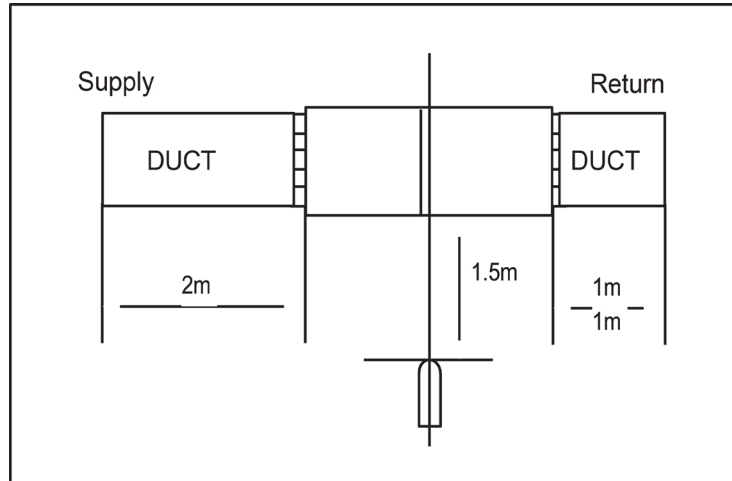
Capacity (Btu/h)		42k		Pipe Length (m)						
		Cooling		5	15	25	35	50	65	75
Height difference H (m)	Indoor Upper than Outdoor	30					0.881	0.839	0.797	0.769
		20			0.919		0.890	0.848	0.806	0.777
		10		0.956	0.928	0.899	0.857	0.814	0.785	
		5	0.995	0.966	0.937	0.908	0.865	0.822	0.793	
		0	1.000	0.971	0.942	0.913	0.870	0.826	0.797	
	Outdoor Upper than Indoor	-5	1.000	0.971	0.942	0.913	0.870	0.826	0.797	
		-10		0.971	0.942	0.913	0.870	0.826	0.797	
		-20			0.942	0.913	0.870	0.826	0.797	
		-30				0.913	0.870	0.826	0.797	
			Heating		5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30					0.960	0.940	0.920	0.907
		20			0.973		0.960	0.940	0.920	0.907
		10		0.987	0.973	0.960	0.940	0.920	0.907	
		5	1.000	0.987	0.973	0.960	0.940	0.920	0.907	
		0	1.000	0.987	0.973	0.960	0.940	0.920	0.907	
	Outdoor Upper than Indoor	-5	0.992	0.979	0.966	0.952	0.932	0.913	0.900	
		-10		0.971	0.958	0.945	0.925	0.905	0.893	
		-20			0.950	0.937	0.918	0.898	0.885	
-30					0.930	0.910	0.891	0.878		

Capacity (Btu/h)		48k		Pipe Length (m)						
		Cooling		5	15	25	35	50	65	75
Height difference H (m)	Indoor Upper than Outdoor	30					0.880	0.838	0.796	0.768
		20			0.918		0.889	0.846	0.804	0.775
		10		0.956	0.927	0.898	0.855	0.812	0.783	
		5	0.995	0.966	0.937	0.907	0.864	0.820	0.791	
		0	1.000	0.971	0.941	0.912	0.868	0.824	0.795	
	Outdoor Upper than Indoor	-5	1.000	0.971	0.941	0.912	0.868	0.824	0.795	
		-10		0.971	0.941	0.912	0.868	0.824	0.795	
		-20			0.941	0.912	0.868	0.824	0.795	
		-30				0.912	0.868	0.824	0.795	
			Heating		5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30					0.956	0.933	0.911	0.896
		20			0.970		0.956	0.933	0.911	0.896
		10		0.985	0.970	0.956	0.933	0.911	0.896	
		5	1.000	0.985	0.970	0.956	0.933	0.911	0.896	
		0	1.000	0.985	0.970	0.956	0.933	0.911	0.896	
	Outdoor Upper than Indoor	-5	0.992	0.977	0.963	0.948	0.926	0.904	0.889	
		-10		0.969	0.955	0.940	0.918	0.896	0.882	
		-20			0.947	0.933	0.911	0.889	0.875	
		-30				0.925	0.904	0.882	0.868	

Capacity (Btu/h)		55k		Pipe Length (m)						
		Cooling		5	15	25	35	50	65	75
Height difference H (m)	Indoor Upper than Outdoor	30					0.866	0.816	0.767	0.734
		20			0.908		0.875	0.825	0.774	0.741
		10		0.951	0.917	0.884	0.833	0.782	0.749	
		5	0.995	0.961	0.927	0.893	0.841	0.790	0.756	
		0	1.000	0.966	0.931	0.897	0.846	0.794	0.760	
	Outdoor Upper than Indoor	-5	1.000	0.966	0.931	0.897	0.846	0.794	0.760	
		-10		0.966	0.931	0.897	0.846	0.794	0.760	
		-20			0.931	0.897	0.846	0.794	0.760	
		-30				0.897	0.846	0.794	0.760	
			Heating		5	15	25	35	50	65
Height difference H (m)	Indoor Upper than Outdoor	30					0.953	0.929	0.905	0.889
		20			0.968		0.953	0.929	0.905	0.889
		10		0.984	0.968	0.953	0.929	0.905	0.889	
		5	1.000	0.984	0.968	0.953	0.929	0.905	0.889	
		0	1.000	0.984	0.968	0.953	0.929	0.905	0.889	
	Outdoor Upper than Indoor	-5	0.992	0.976	0.961	0.945	0.921	0.898	0.882	
		-10		0.968	0.953	0.937	0.914	0.891	0.875	
		-20			0.945	0.930	0.907	0.883	0.868	
-30					0.922	0.899	0.876	0.861		

8. Noise Criterion Curves

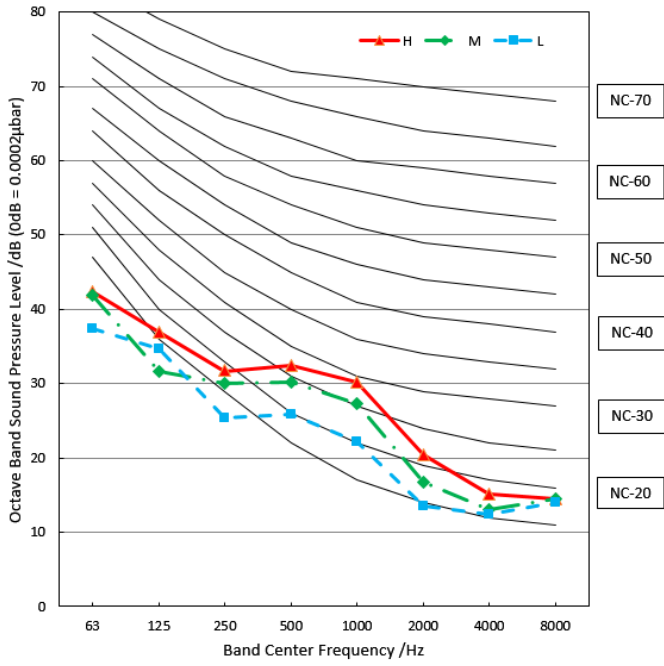
8.1 Indoor Unit



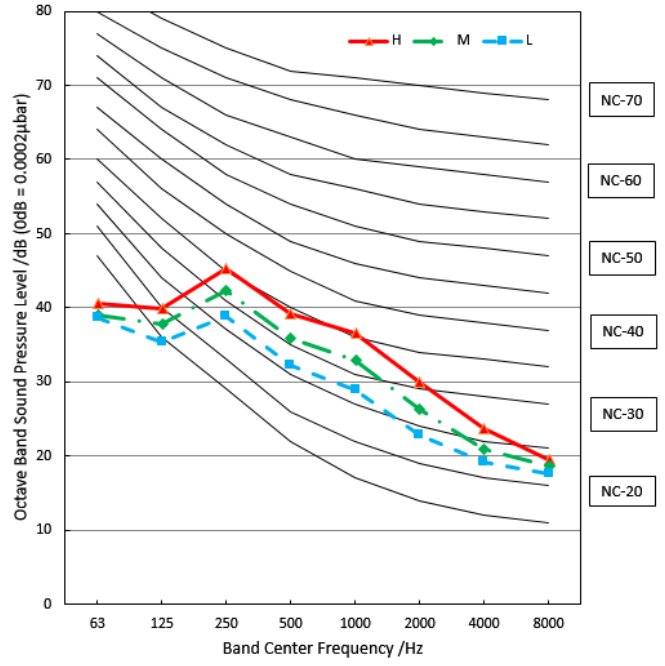
Notes:

- Sound measured at 1.5m 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 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.

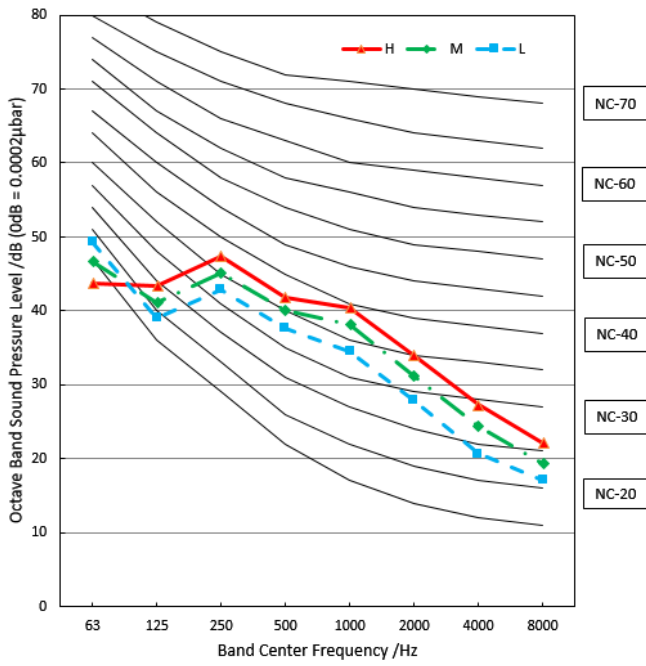
12K



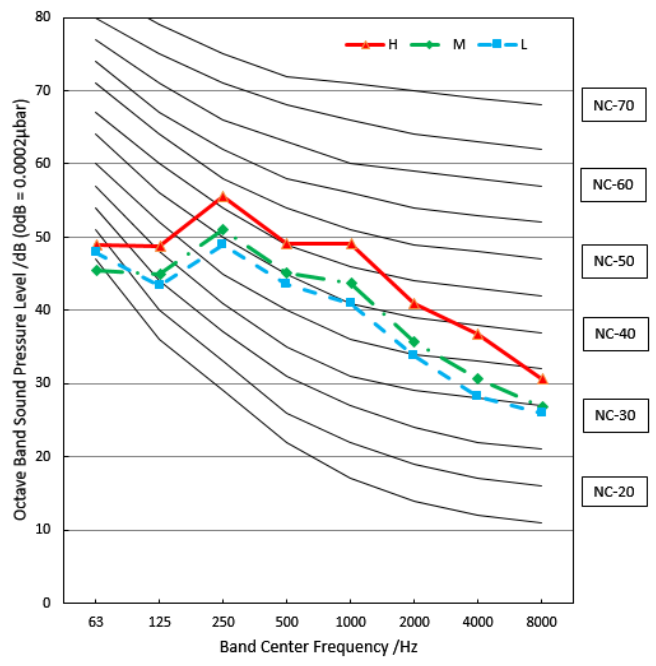
18K



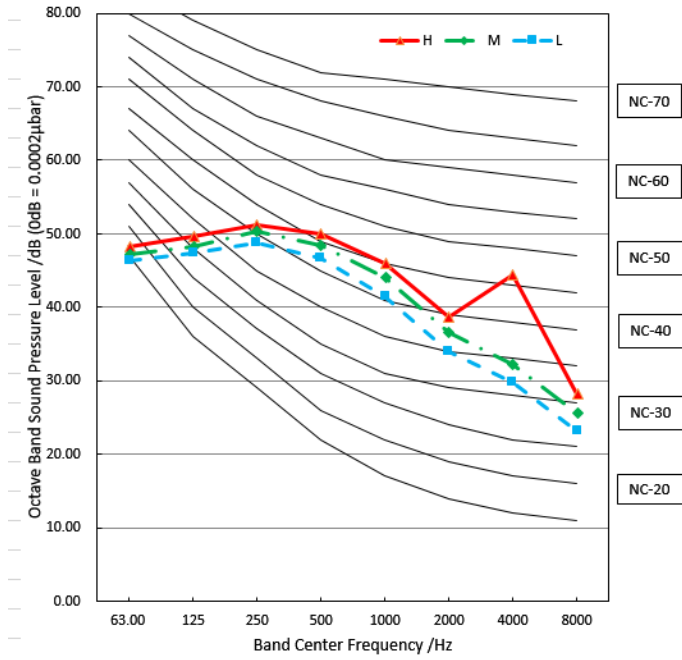
24K



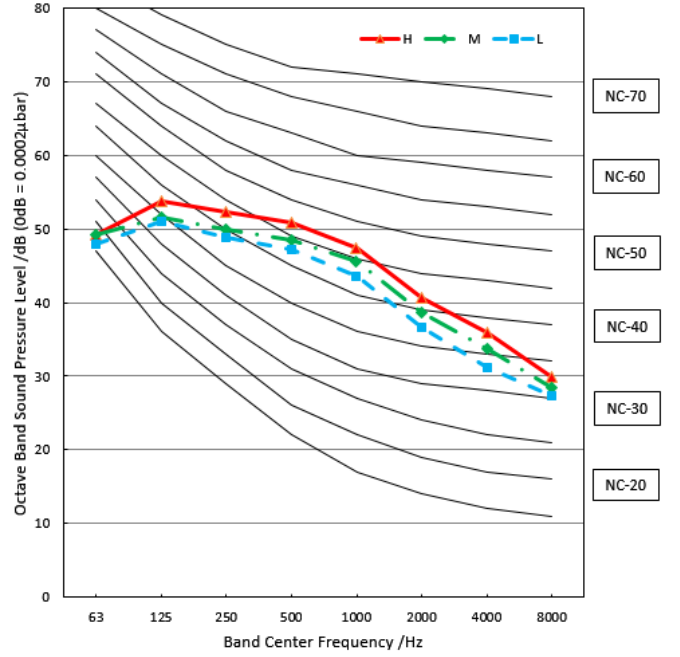
30K



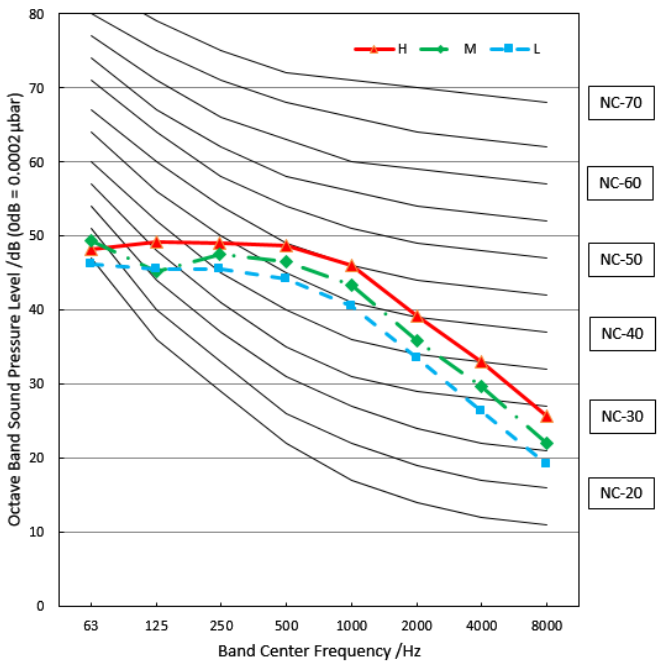
36K



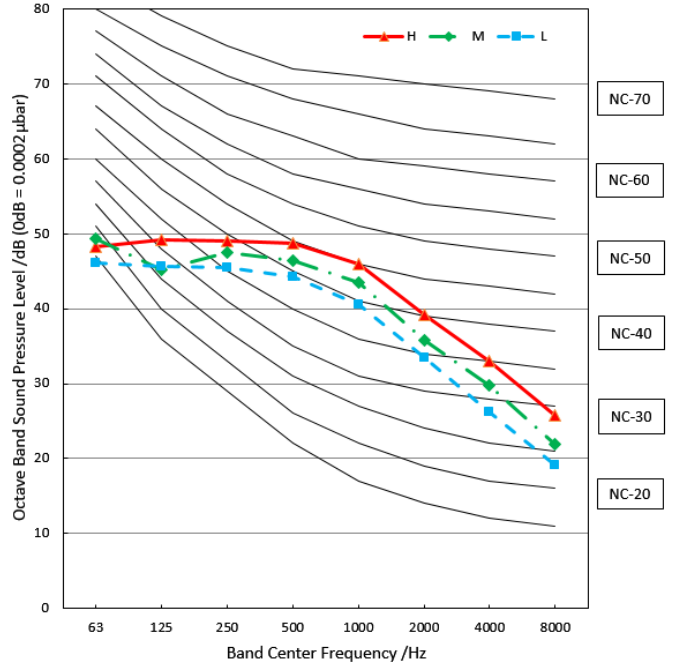
42K



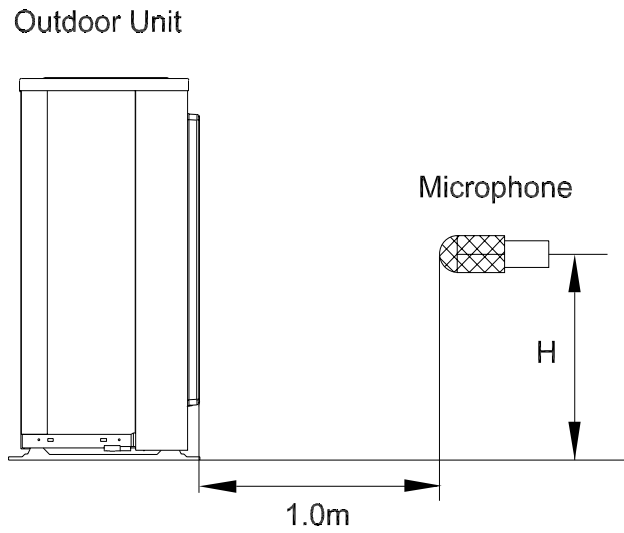
48K



60K



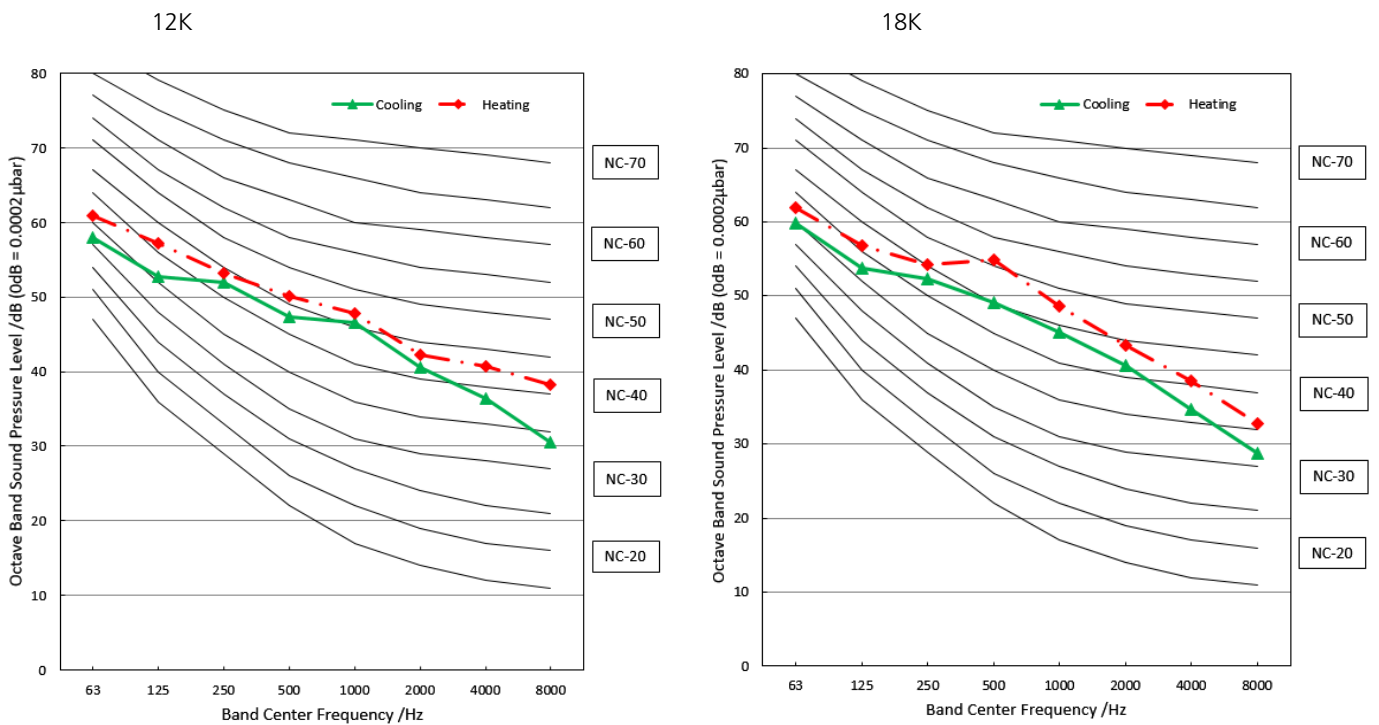
8.2 Outdoor Unit



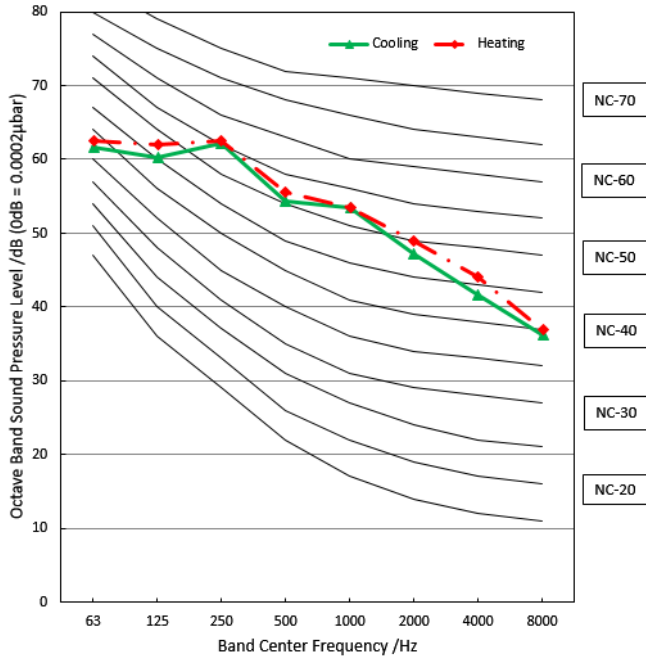
Note: $H = 0.5 \times$ height of outdoor unit

Notes:

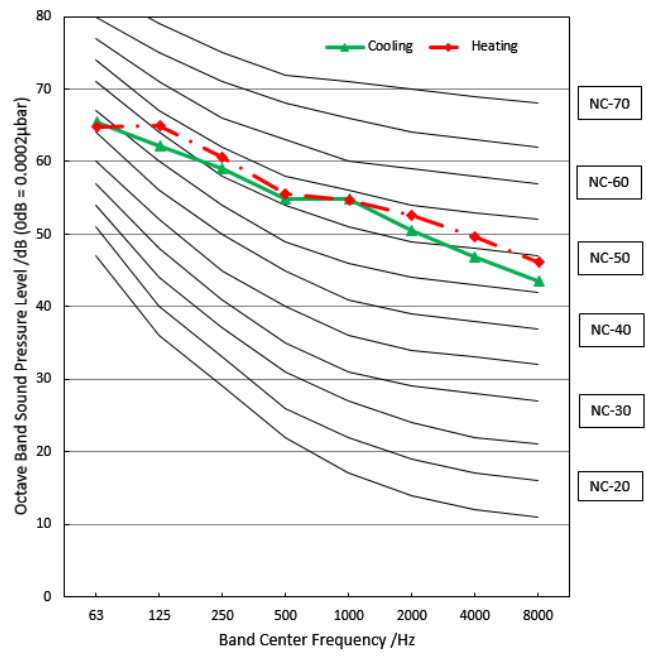
- Sound measured at 1.0m away from the center of the unit.
- Data is valid at free field condition
- Data is valid at nominal operation condition
- Reference acoustic pressure $OdB=20\mu Pa$
- Sound level will vary depending on arrange off actors such as the construction (acoustic absorption coefficient)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



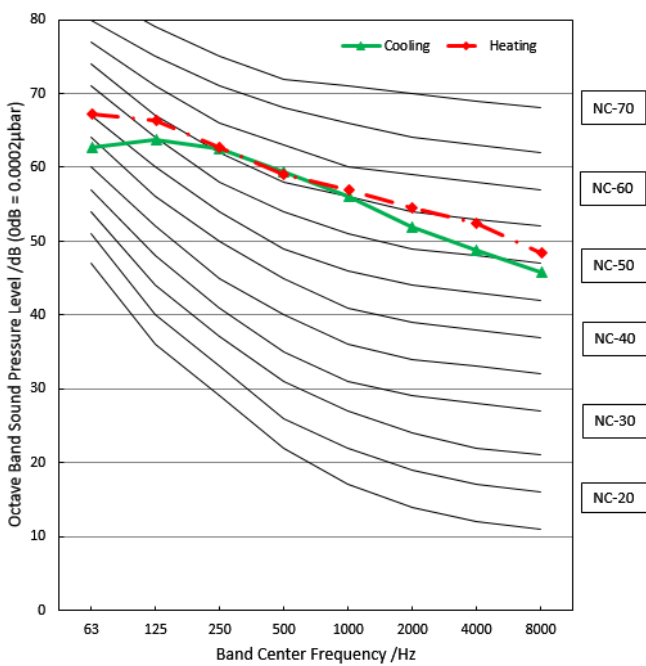
24K



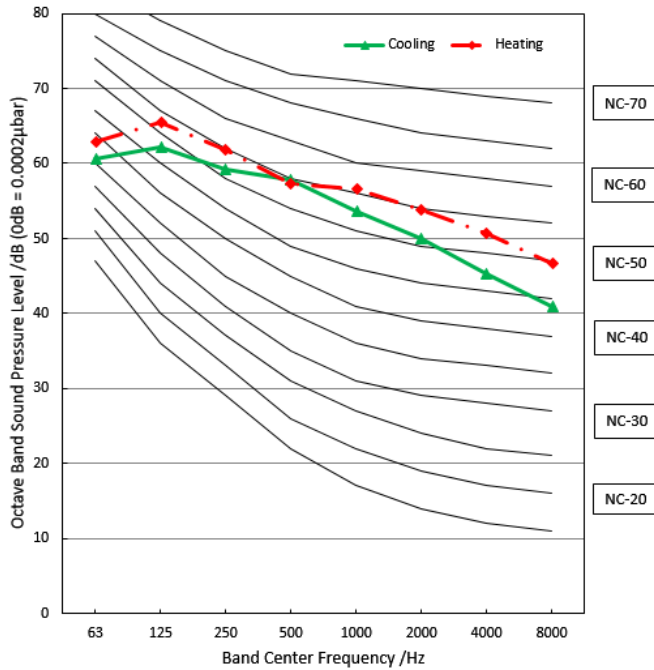
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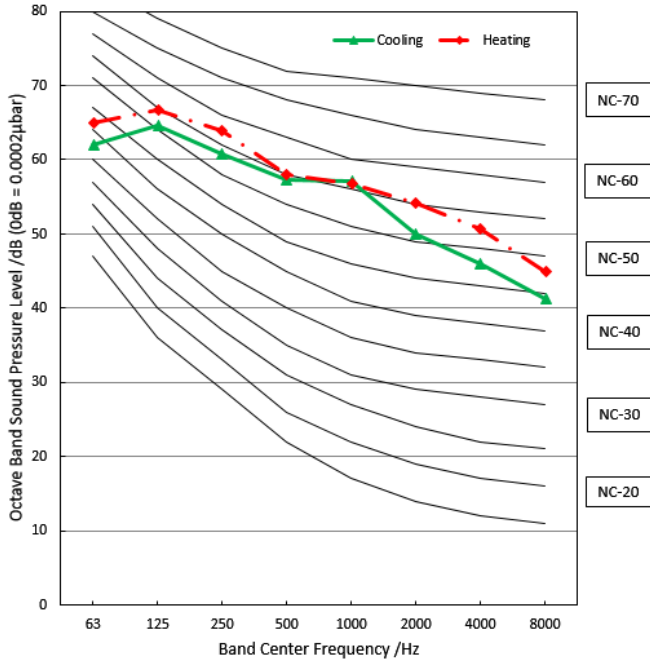
36K



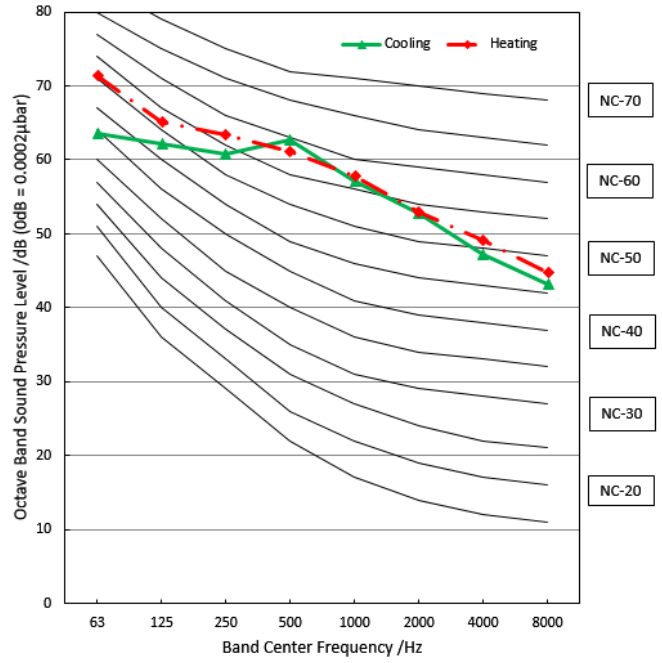
36K 3 Ph



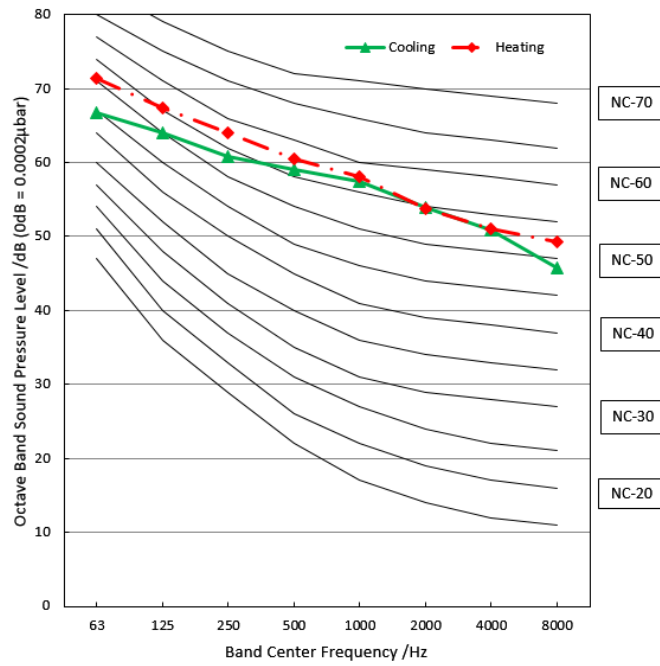
42K



48K



60K



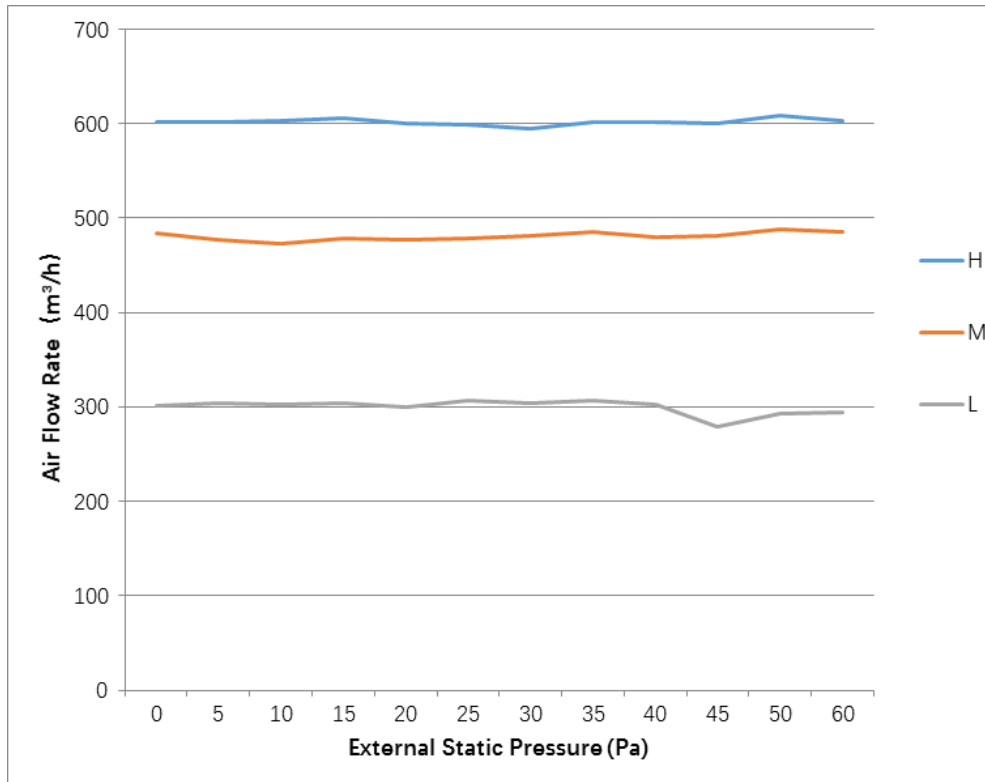
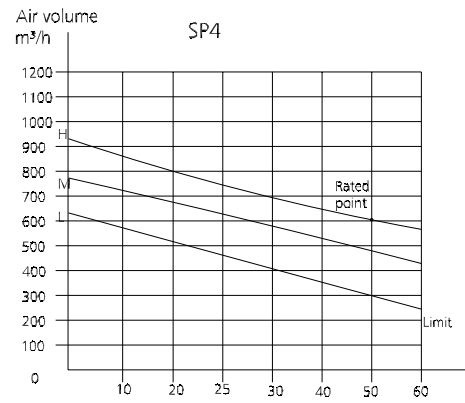
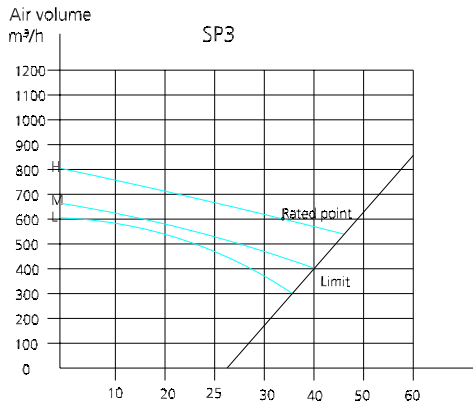
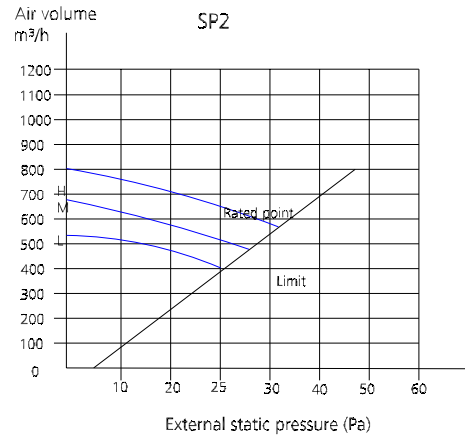
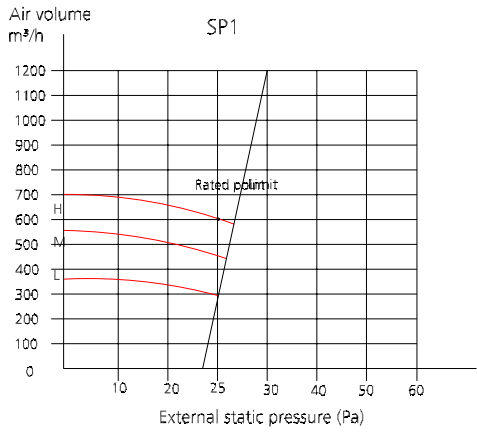
9. Electrical Characteristics

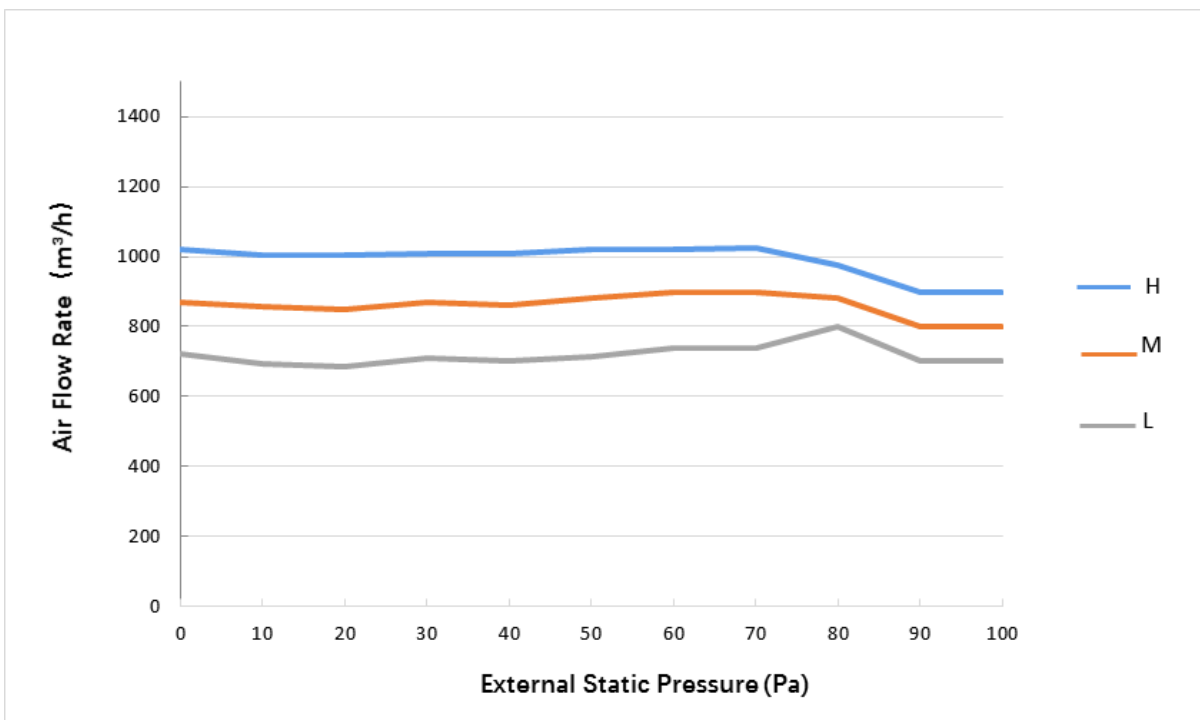
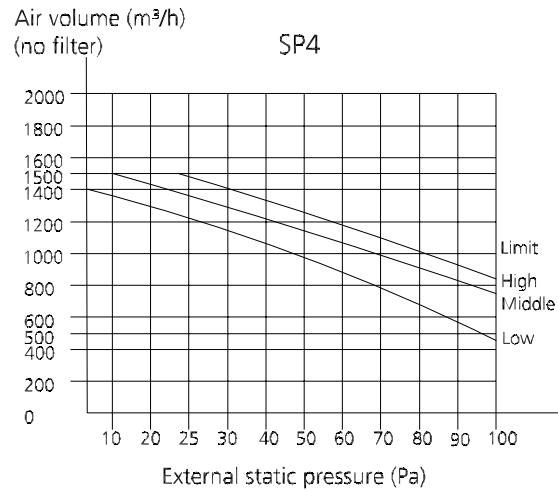
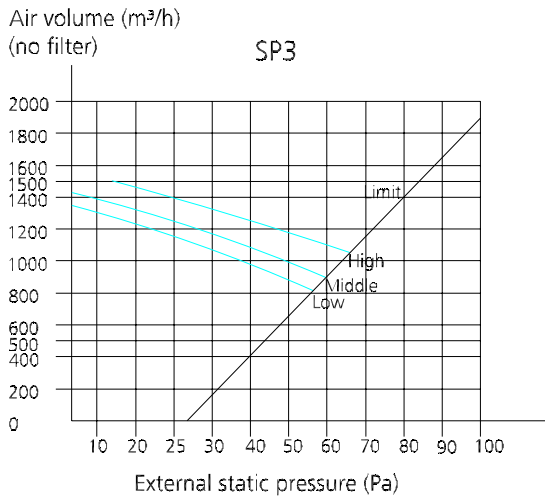
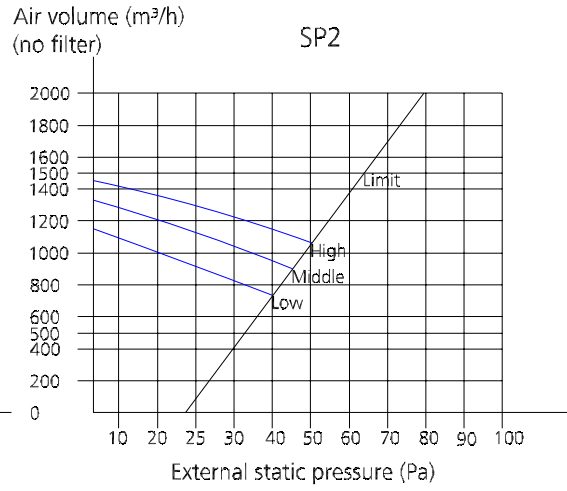
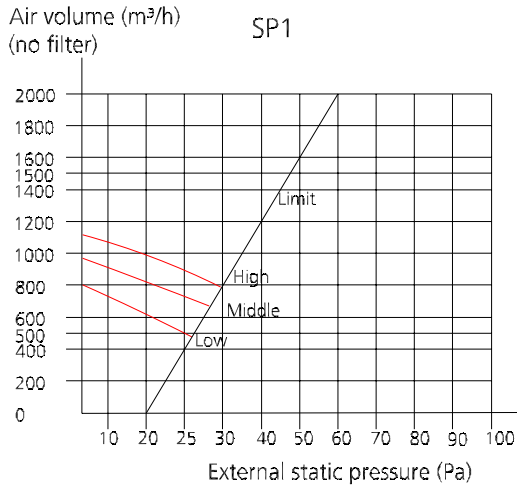
Capacity (Btu/h)		12k~18k	24k	30k	36k
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	Power Wiring (mm ²)	3×1.5	3×2.5	3×2.5	3×4.0
	Circuit Breaker/ Fuse (A)	25/20	25/20	50/40	50/40
Indoor/Outdoor Connecting Wiring	Weak Electric Signal)(mm ²)				
	Strong Electric Signal)(mm ²)	4×1.0	4×1.0	4×1.0	4×1.0

Capacity (Btu/h)		36k	42k	48~60k
OUTDOOR UNIT POWER	Phase	3-phase	1-phase	3-phase
	Frequency and Voltage	380-415V, 50Hz	220-240V, 50Hz	380-415V, 50Hz
	Power Wiring (mm ²)	5×2.5	3×4.0	5×2.5
	Circuit Breaker/ Fuse (A)	25/20	50/40	32/25
Indoor/Outdoor Connecting Wiring	Weak Electric Signal) (mm ²)			
	Strong Electric Signal)(mm ²)	4×1.0	4×1.0	4×1.0

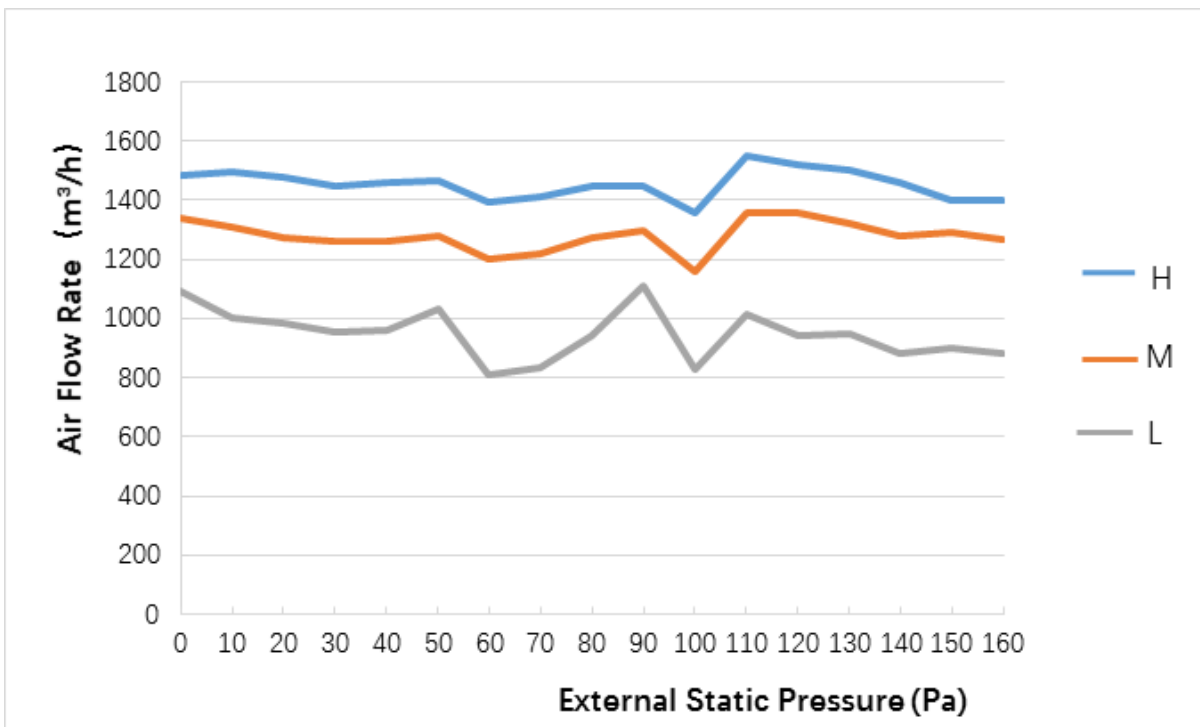
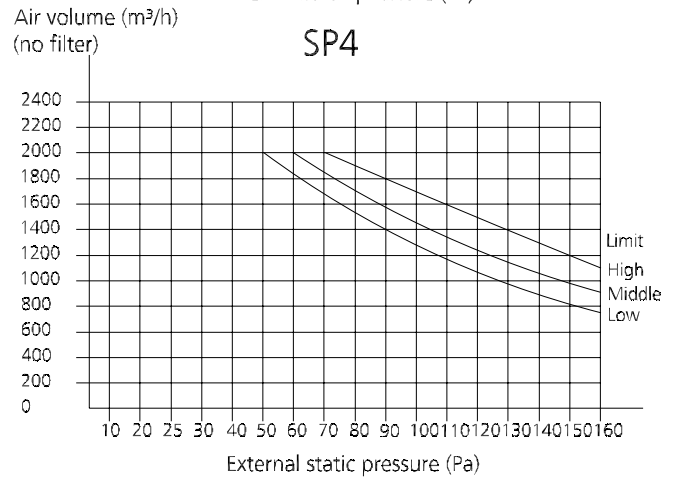
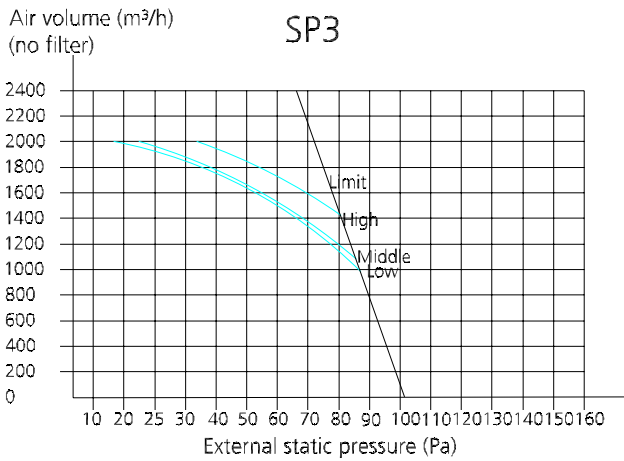
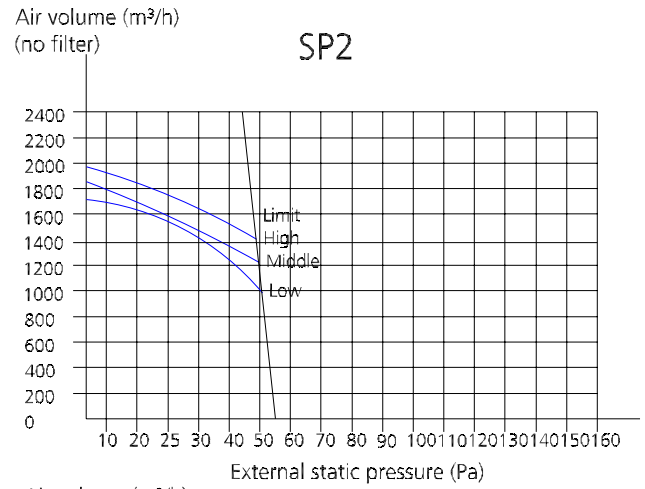
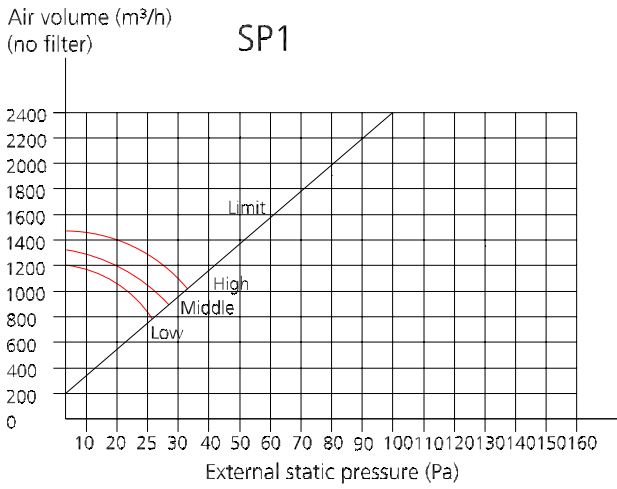
10. Static Pressure

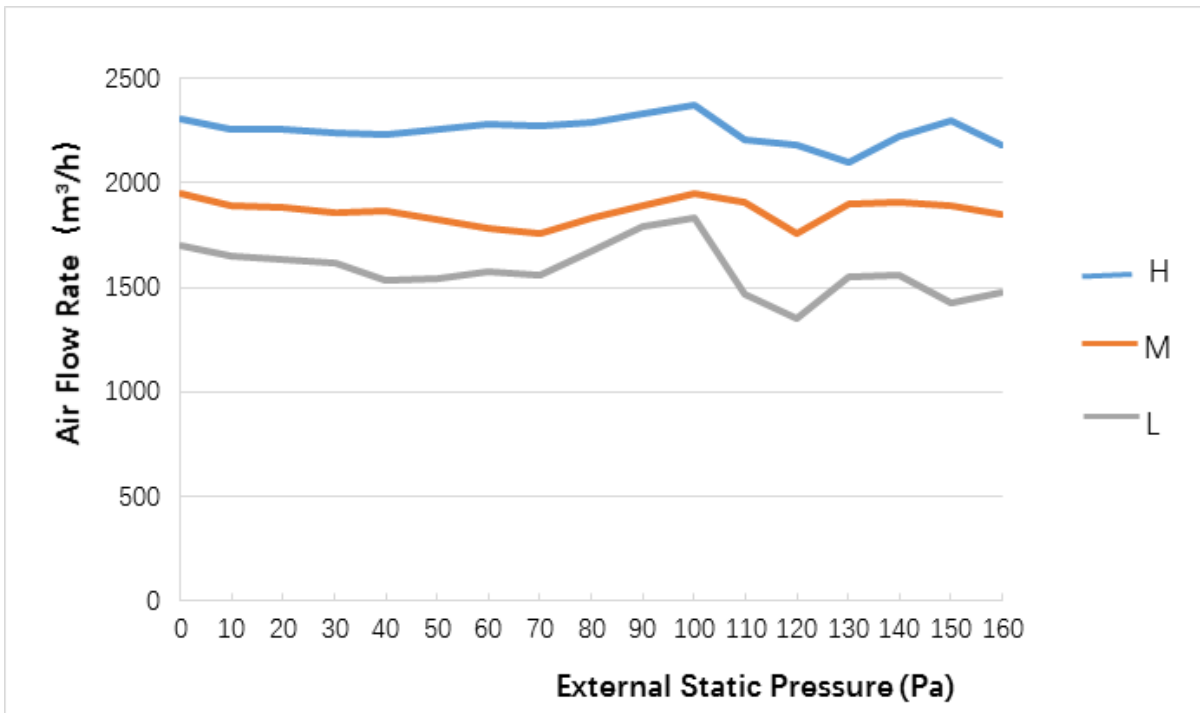
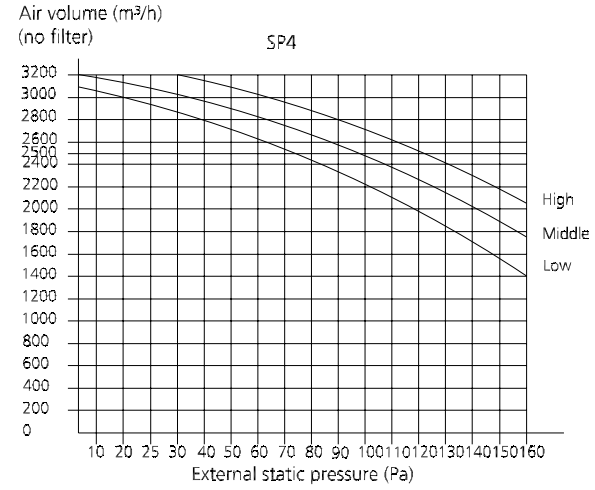
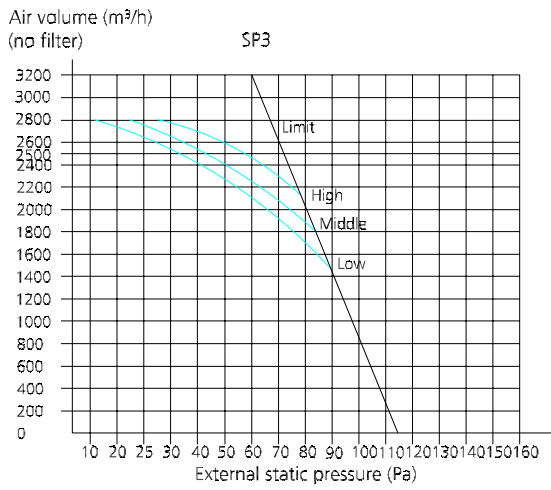
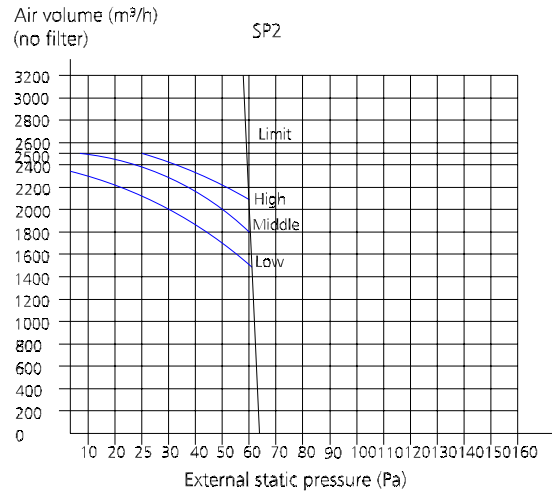
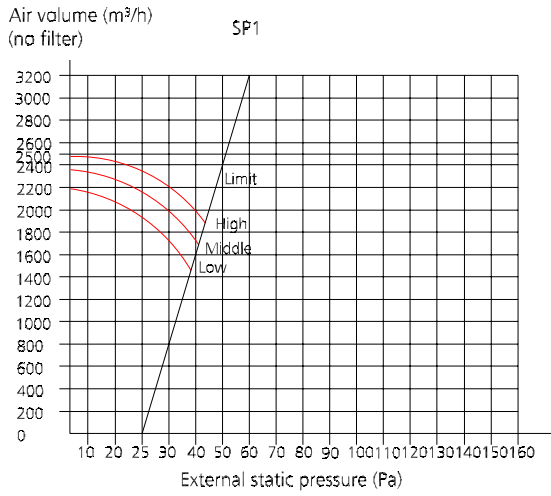
12k



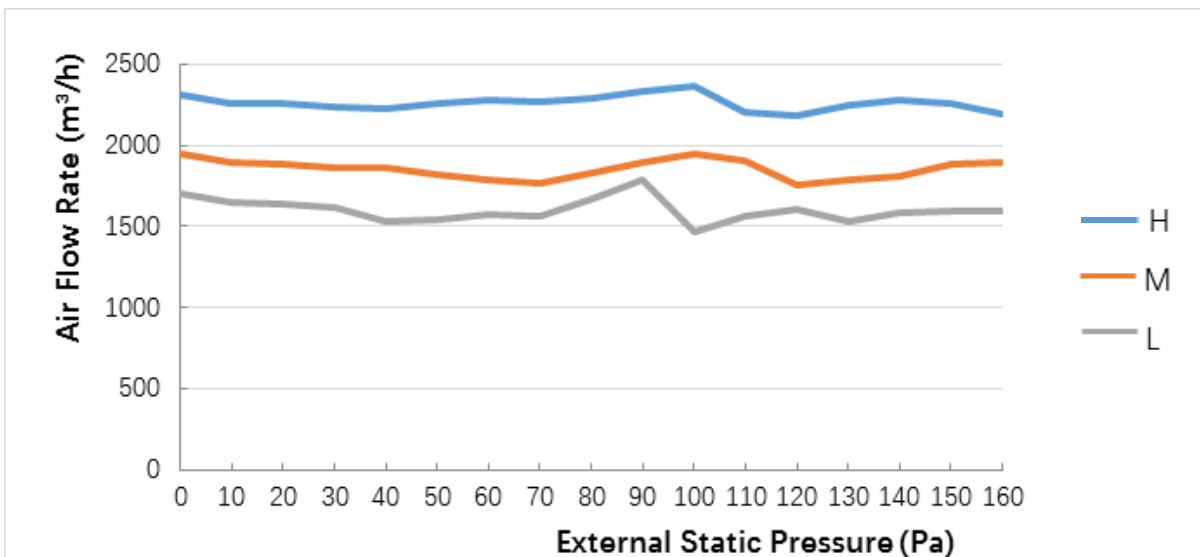
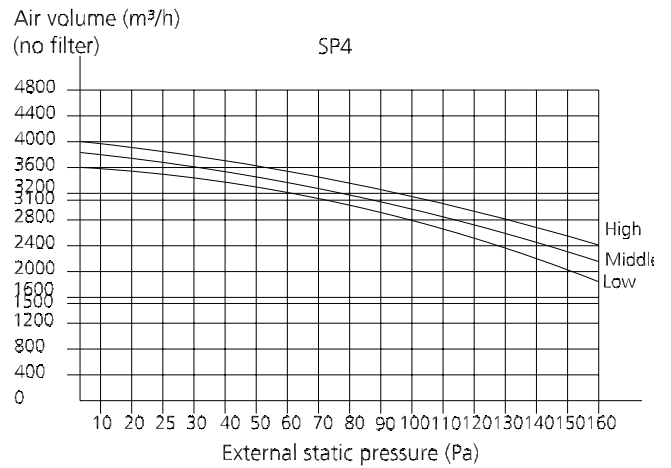
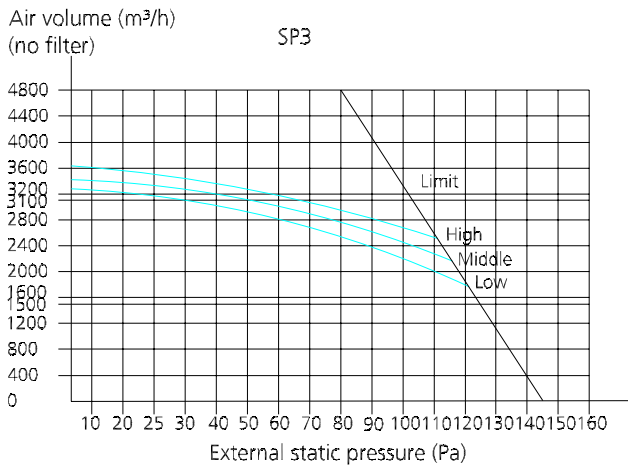
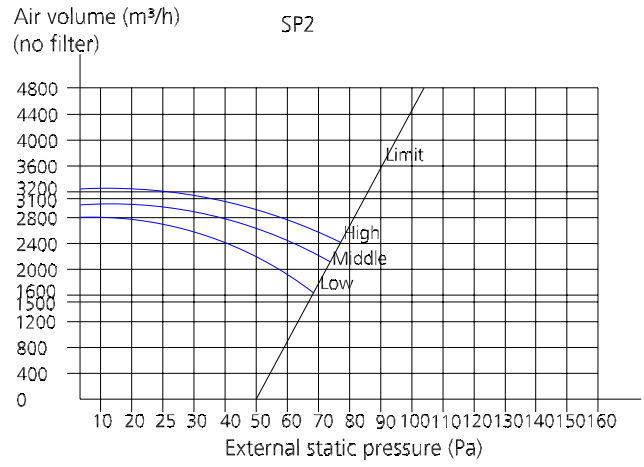
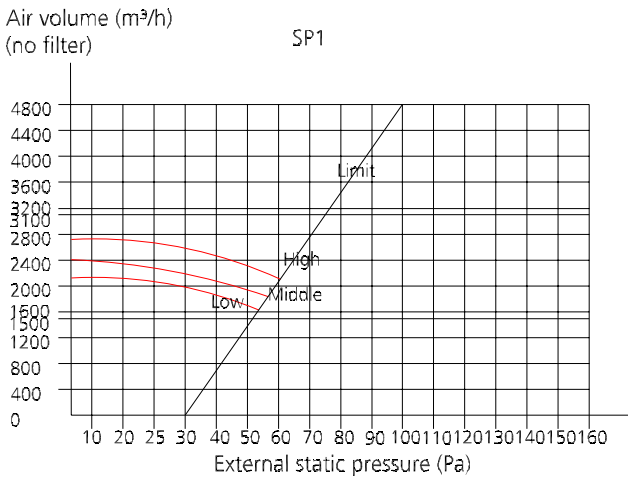


24k

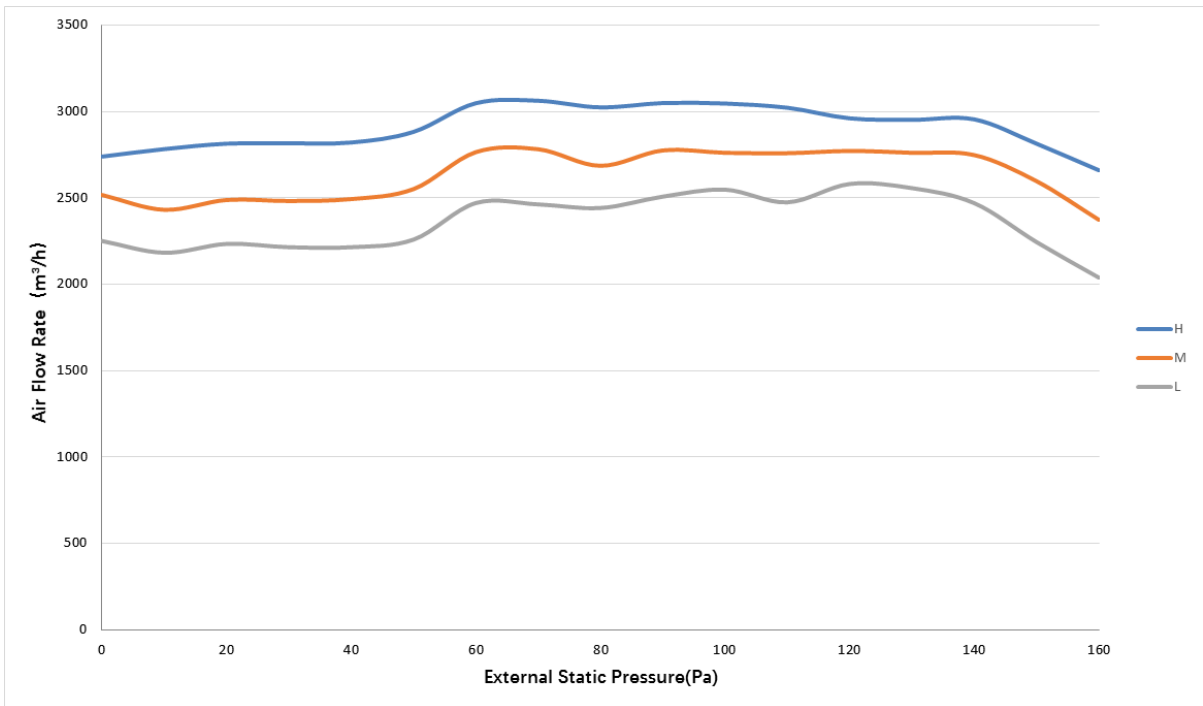
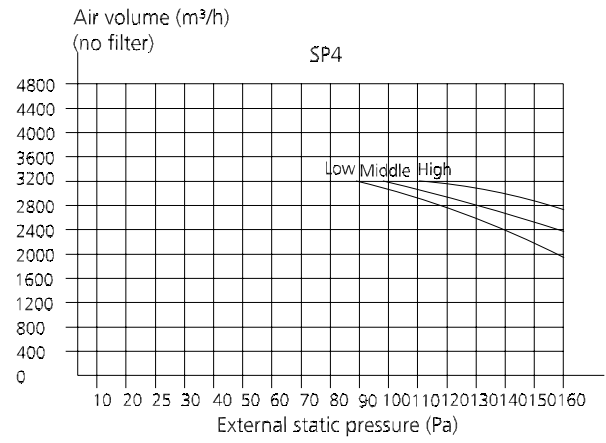
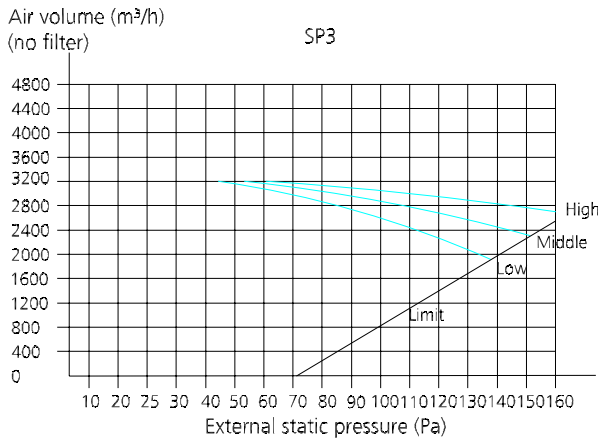
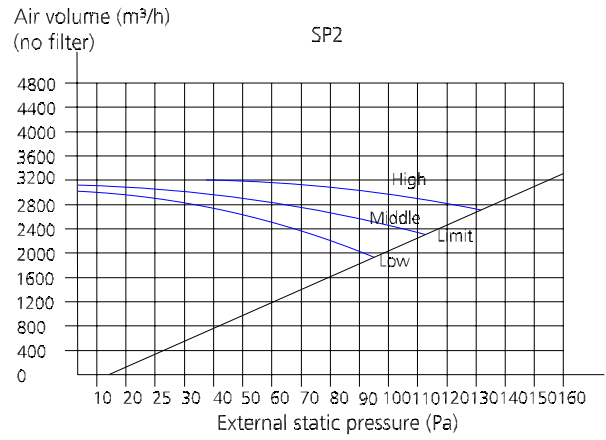
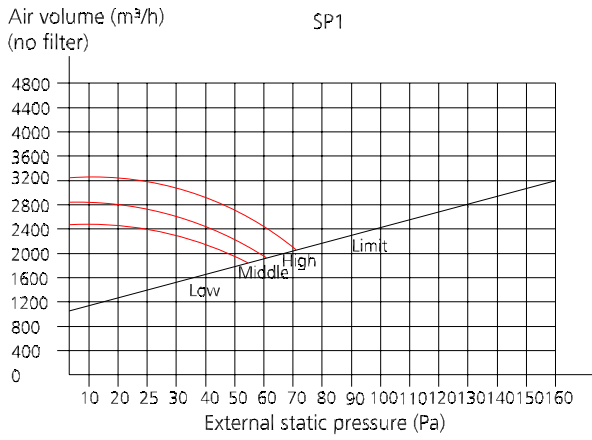




42k/48k



60k



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
TP	Compressor discharge temperature
Tsc	Adjusted setting temperature

In this manual, such as CDIFTEMP, HDIFTEMP2, TCE1, TCE2...etc., they are well-setting parameter of EEPROM.

1.2 Safety Features

Compressor three-minute delay at restart

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

Automatic shutoff based on discharge temperature

If the compressor discharge temperature exceeds a certain level for nine seconds, the compressor ceases operation.

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.

Indoor fan delayed operation

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

Compressor preheating

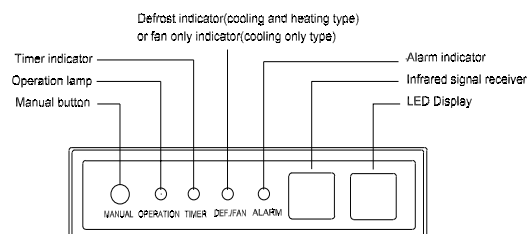
Preheating is automatically activated when T4 sensor is lower than setting temperature.

Sensor redundancy and automatic shutoff

- If one temperature sensor malfunctions, the air conditioner continues operation and displays the corresponding error code, allowing for emergency use.
- When more than one temperature sensor is malfunctioning, the air conditioner ceases operation.

1.3 Display Function

Unit display functions



1.4 Fan Mode

When fan mode is activated:

- The outdoor fan and compressor are stopped.
- Temperature control is disabled and no temperature setting is displayed.
- The indoor fan speed can be set to 1%~100%, or low, medium, high and auto.
- The louver operations are identical to those in cooling mode.
- Auto fan: In fan-only mode, AC operates the same as auto fan in cooling mode with the temperature set at 24°C.

1.5 Cooling Mode

1.5.1 Compressor Control

Reach the configured temperature:

- 1) When the compressor runs continuously for less than 120 minutes.
 - If the following conditions are satisfied, the compressor ceases operation.
 - Calculated frequency(fb) is less than minimum limit frequency(FminC).
 - Compressor runs at FminC more than ten minutes.
 - T1 is lower than or equal to (Tsc-CDIFTEMP-0.5°C)
- 2) When the compressor runs continuously for more than 120 minutes.
 - If the following conditions are satisfied, the compressor ceases operation.
 - Calculated frequency(fb) is less than minimum limit frequency(FminC).
 - Compressor runs at FminC more than 10 minutes.
 - When T1 is lower than or equal to (Tsc-CDIFTEMP).
- 3) If one of the following conditions is satisfied, not judge protective time.

- Compressor running frequency is more than test frequency.
- When compressor running frequency is equal to test frequency, T4 is more than 15°C or T4 fault.
- Change setting temperature.
- Turbo or sleep function on/off
- Various frequency limit shutdown occurs.

1.5.2 Indoor Fan Control

1) In cooling mode, the indoor fan operates continuously. The fan speed can be set to 1%-100%, or low, medium, high and auto.

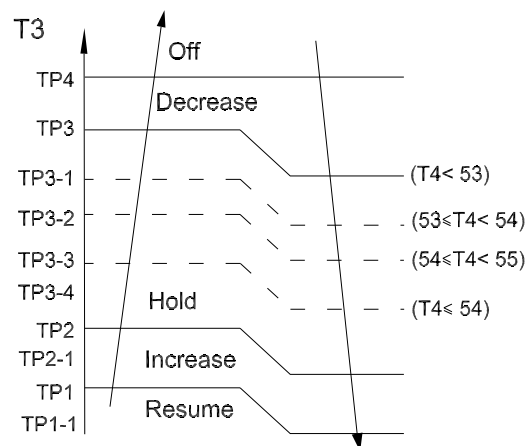
2) Auto fan action in cooling mode:

- Descent curve
 - When T1-Tsc is lower than or equal to 3.5°C, fan speed reduces to 80%;
 - When T1-Tsc is lower than or equal to 1°C, fan speed reduces to 60%;
 - When T1-Tsc is lower than or equal to 0.5°C, fan speed reduces to 40%;
 - When T1-Tsc is lower than or equal to 0°C, fan speed reduces to 20%;
 - When T1-Tsc is lower than or equal to -0.5°C, fan speed reduces to 1%.
- Rise curve
 - When T1-Tsc is higher than 0°C, fan speed increases to 20%;
 - When T1-Tsc is higher than 0.5°C, fan speed increases to 40%;
 - When T1-Tsc is higher than 1°C, fan speed increases to 60%;
 - When T1-Tsc is higher than 1.5°C, fan speed increases to 80%;
 - When T1-Tsc is higher than 4°C, fan speed increases to 100%.

1.5.3 Outdoor Fan Control

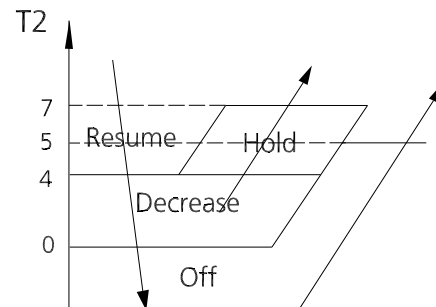
- The outdoor unit will be run at different fan speed according to T4 and compressor frequency.
- For different outdoor units, the fan speeds are different.

1.5.4 Condenser Temperature Protection



When the condenser temperature exceeds a configured value, the compressor ceases operation.

1.5.5 Evaporator Temperature Protection



- Off: Compressor stops.
- Decrease: Decrease the running frequency to the lower level per 1 minute.
- Hold: Keep the current frequency.
- Resume: No limitation for frequency.

1.6 Heating Mode(Heat Pump Units)

1.6.1 Compressor Control

1) Reach the configured temperature

- If the following conditions are satisfied, the compressor ceases operation.
 - Calculated frequency(fb) is less than minimum limit frequency(FminH).
 - Compressor runs at FminH more than 10 minutes.
 - T1 is higher than or equal to Tsc+ HDIFTEMP2.

Note: HDIFTEMP2 is EEPROM setting parameter. It is 2°C usually.

- If one of the following conditions is satisfied, not judge protective time.
 - Compressor running frequency is more than test frequency.
 - Compressor running frequency is equal to test

frequency, T4 is more than 15°C or T4 fault.

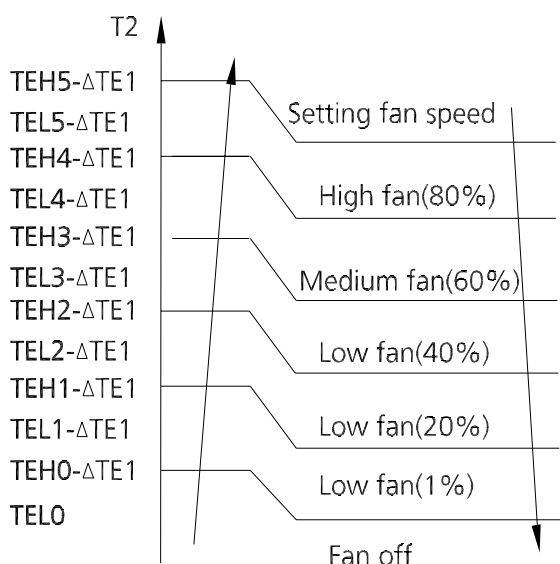
- Change setting temperature.
- Turbo or sleep function on/off.

2) When the current is higher than the predefined safe value, surge protection is activated, causing the compressor to cease operations.

1.6.2 Indoor Fan Control:

1) In heating mode, the indoor fan operates continuously. The fan speed can be set to 1%-100%, or low, medium, high and auto.

- Anti-cold air function
 - The indoor fan is controlled by the indoor temperature T1 and indoor unit coil temperature T2.



$\Delta TE1=0$

2) Auto fan action in heating mode:

- Rise curve
 - When T1-Tsc is higher than -1.5°C, fan speed reduces to 80%;
 - When T1-Tsc is higher than 0°C, fan speed reduces to 60%;
 - When T1-Tsc is higher than 0.5°C, fan speed reduces to 40%;
 - When T1-Tsc is higher than 1°C, fan speed reduces to 20%.
- Descent curve
 - When T1-Tsc is lower than or equal to 0.5°C, fan speed increases to 40%;
 - When T1-Tsc is lower than or equal to 0°C, fan speed increases to 60%;
 - When T1-Tsc is lower than or equal to -1.5°C, fan

speed increases to 80%;

- When T1-Tsc is lower than or equal to -3°C, fan speed increases to 100%.

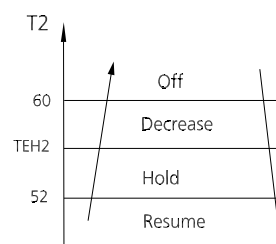
1.6.3 Outdoor Fan Control:

- The outdoor unit will be run at different fan speed according to T4 and compressor frequency.
- For different outdoor units, the fan speeds are different.

1.6.4 Defrosting mode

- The unit enters defrosting mode according to the temperature value of T3 and T4 as well as the compressor running time.
- In defrosting mode, the compressor continues to run, the indoor and outdoor motor will cease operation, the defrost light of the indoor unit will turn on, and the "df" symbol is displayed.
- If any one of the following conditions is satisfied, defrosting ends and the machine switches to normal heating mode:
 - T3 rises above TCDE1.
 - T3 maintained above TCDE2 for 80 seconds.
 - Unit runs for 15 minutes consecutively in defrosting mode.
- If T4 is lower than or equal to -22°C and compressor running time is more than TIMING_DEFROST_TIME, if any one of the following conditions is satisfied, defrosting ends and the machine switches to normal heating mode:
 - Unit runs for 10 minutes consecutively in defrosting mode.
 - T3 rises above 10°C.

1.6.5 Evaporator Coil Temperature Protection



- Off: Compressor stops.
- Decrease: Decrease the running frequency to the lower level per 20 seconds.
- Hold: Keep the current frequency.
- Resume: No limitation for frequency.

1.7 Auto-mode

- This mode can be selected with the remote controller and the temperature setting can be adjusted between 16°C~30°C.

Case 1:

- In auto mode, the machine selects cooling, heating, or fan-only mode on the basis of ΔT ($\Delta T = T1 - TS$).

ΔT	Running mode
$\Delta T > 2^{\circ}\text{C}$ (3.6°F)	Cooling
-3°C (-5.4°F) $\leq \Delta T \leq 2^{\circ}\text{C}$ (3.6°F)	Fan-only
$\Delta T < -3^{\circ}\text{C}$ (-5.4°F)	Heating*

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

- Indoor fan will run at auto fan speed.
- The louver operates same as in relevant mode.
- If the machine switches mode between heating and cooling, the compressor will keep stopping for certain time and then choose mode according to ΔT .

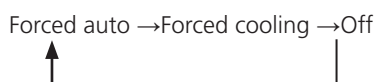
1.8 Drying mode

- In drying mode, AC operates the same as auto fan in cooling mode.
- All protections are activated and operate the same as they do that in cooling mode.
- Low Room Temperature Protection

If the room temperature is lower than 10°C, the compressor ceases operations and does not resume until room temperature exceeds 12°C.

1.9 Forced operation function

Press the AUTO/COOL button, the AC will run as below sequence:



- Forced cooling mode:

The compressor and outdoor fan continue to run and the indoor fan runs at breeze speed. After running for 30 minutes, the AC will switch to auto mode with a preset temperature of 24°C(76°F).

- Forced auto mode:

Forced auto mode operates the same as normal auto mode with a preset temperature of 24°C(76°F).

- The unit exits forced operation when it receives the following signals:
 - Switch off
 - Changes in:
 - mode

- fan speed
- sleep mode
- Follow me

1.10 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 off automatically at the preset Off Time and then turns on 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 off and the unit running mode remains unchanged.
- The timer uses relative time, not clock time

1.11 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/86°F) 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 16°C/60.8°F) every hour. After 2 hours, the temperature stops decreasing and the indoor fan is fixed at low speed. Anti-cold wind function takes priority.
- The operating time for sleep mode is 8 hours, after which, the unit exits this mode.
- The timer setting is available in this mode.

1.12 Auto-Restart function

- The indoor unit has an auto-restart module that allows the unit to restart automatically. The module automatically stores the current settings and in the case of a sudden power failure, will restore those setting automatically within 3 minutes after power returns.

1.13 8°C Heating

In heating mode, the temperature can be set to as low as 8°C, preventing the indoor area from freezing if unoccupied during severe cold weather.

1.14 Follow me

- 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 or you press “Follow Me,” the function turns off. The unit regulates temperature based on its own sensor and settings.

1.15 Silence

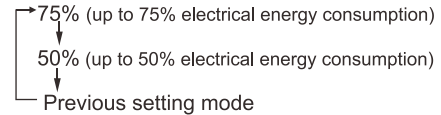
- Press “Silence” or keep pressing Fan button for more than 2 seconds on the remote control to enable the SILENCE function. While this function is active, the compressor frequency is maintained at a lower level than F3. The indoor unit will run at faint breeze(1%), which reduces noise to the lowest possible level.
- When match with multi outdoor unit, this function is disabled.

1.16 ECO Function

- Used to enter the energy efficient mode.
 - Under cooling mode, press ECO button, the remote controller will adjust the temperature automatically to 24°C/75°F, fan speed of Auto to save energy (but only if the set temperature is less than 24°C/75°F). If the set temperature is more than 24°C/75°F and 30°C/86°F, press the ECO button, the fan speed will change to Auto, the set temperature will remain unchanged.
- When pressing the ECO button, or modifying the mode or adjusting the set temperature to less than 24°C/75°F, the AC will quit the ECO operation.
- Operation time in ECO mode is 8 hours. After 8 hours the AC quits this mode.

1.17 Electrical energy consumption control function (Optional)

Press the “Gear” button on remote controller to enter the energy efficient mode in a sequence of following:



Turn off the unit or activate ECO, sleep, Super cool, 8°C Heating, Silence or self clean function will quit this function.

1.18 Active Clean function

- The Active Clean Technology washes away dust, mold, and grease that may cause odors when it adheres to the heat exchanger by automatically freezing and then rapidly thawing the frost. The internal wind wheel then keeps operating to blow-dry the evaporator, thus preventing the growth of mold and keeping the inside clean.
- When this function is turned on, the indoor unit display window appears “CL”, after 20 to 45 minutes, the unit will turn off automatically and cancel Active Clean function.

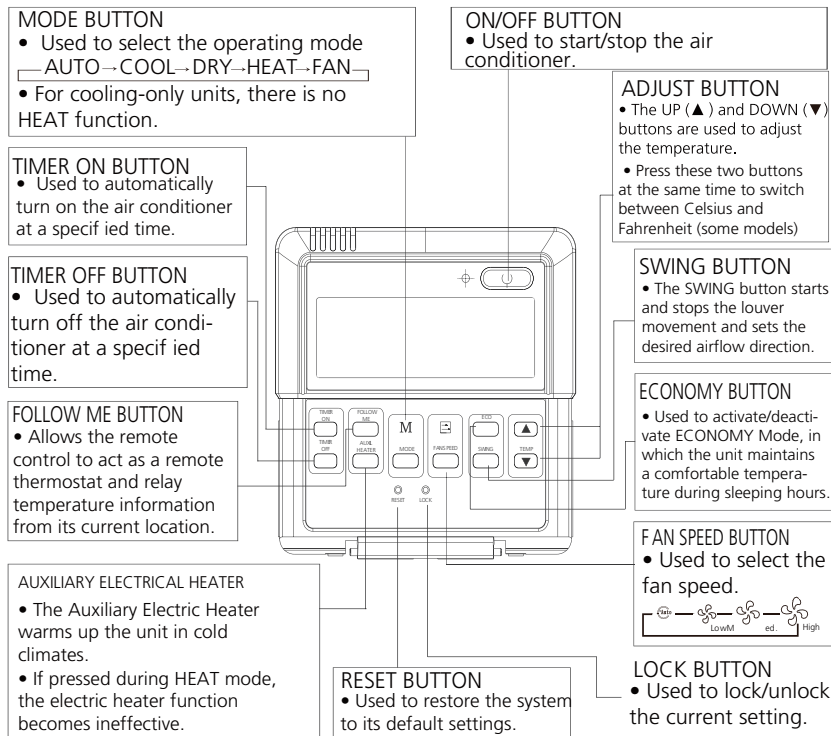
2. Remote Controller Functions

2.1 LCD Wired Remote Controller

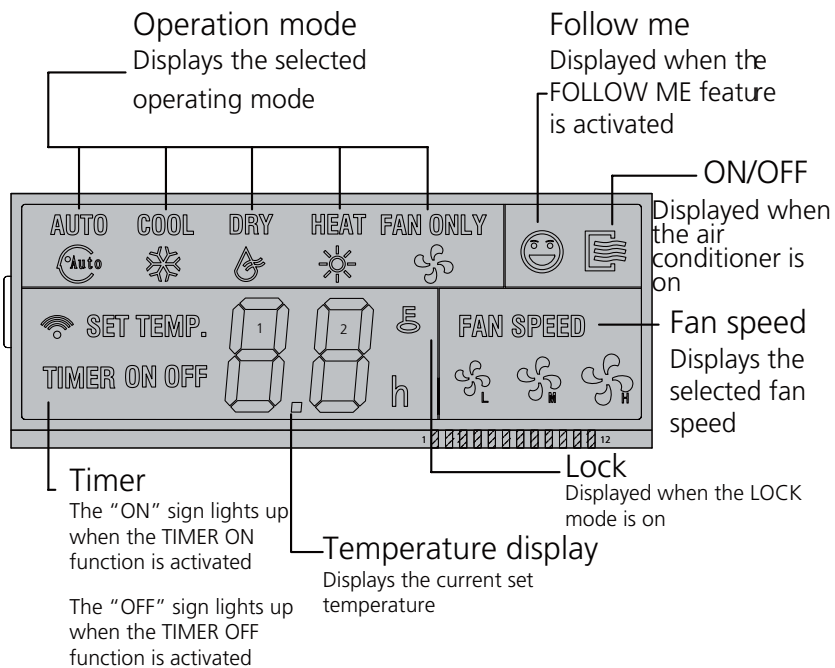
2.1.1 LCD Wired Remote Controller KJR-12B/DP(T) (Optional)

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

i) Buttons and Functions

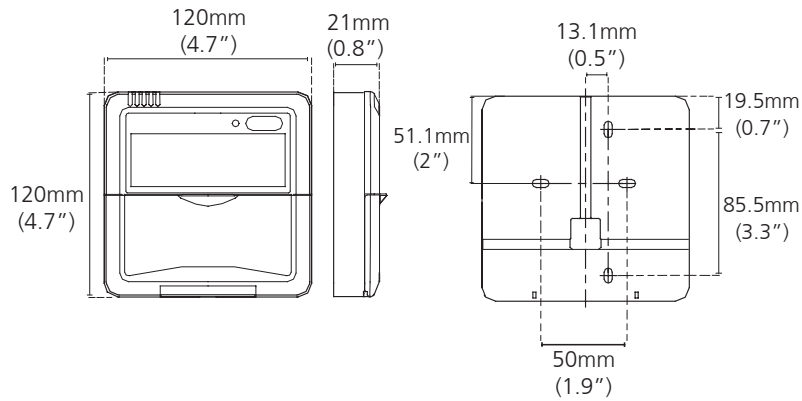


ii) LCD Screen



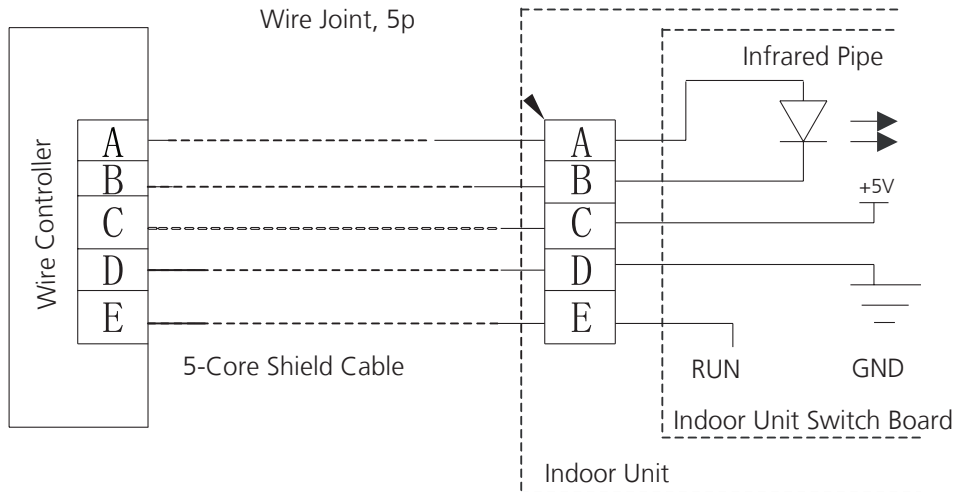
iii) Installation

- Dimensions



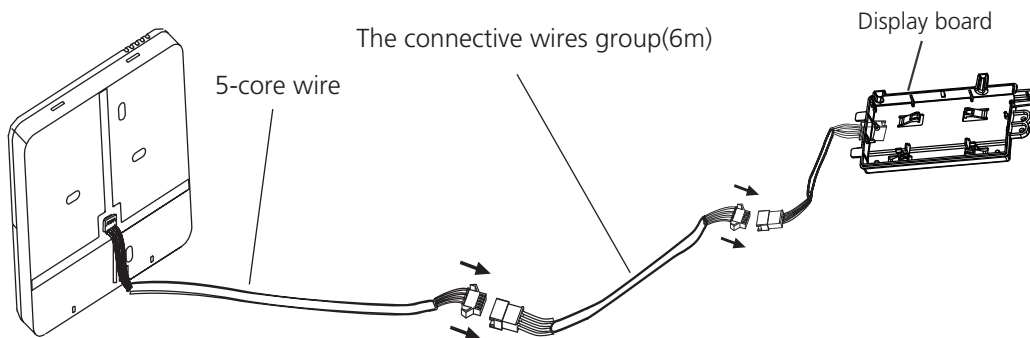
- Wiring diagram

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

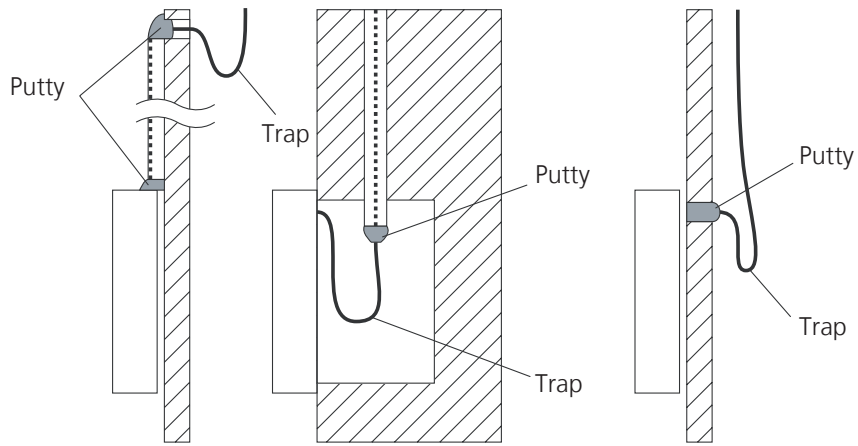


- Installation Diagram

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.

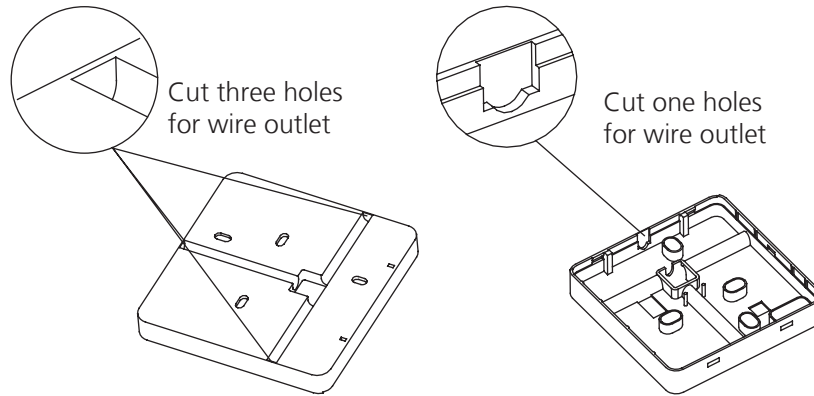


Note: Be sure to reserve a length of the connecting wire for periodic maintenance.



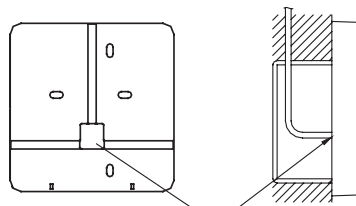
Note: DO NOT allow water to enter the remote control. Use the trap and putty to seal the wires.

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



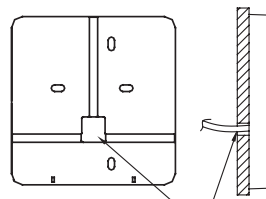
- For shielded wiring, please refer to the picture below.

Embedded switch box wiring



Wiring hole

Wiring through the wall

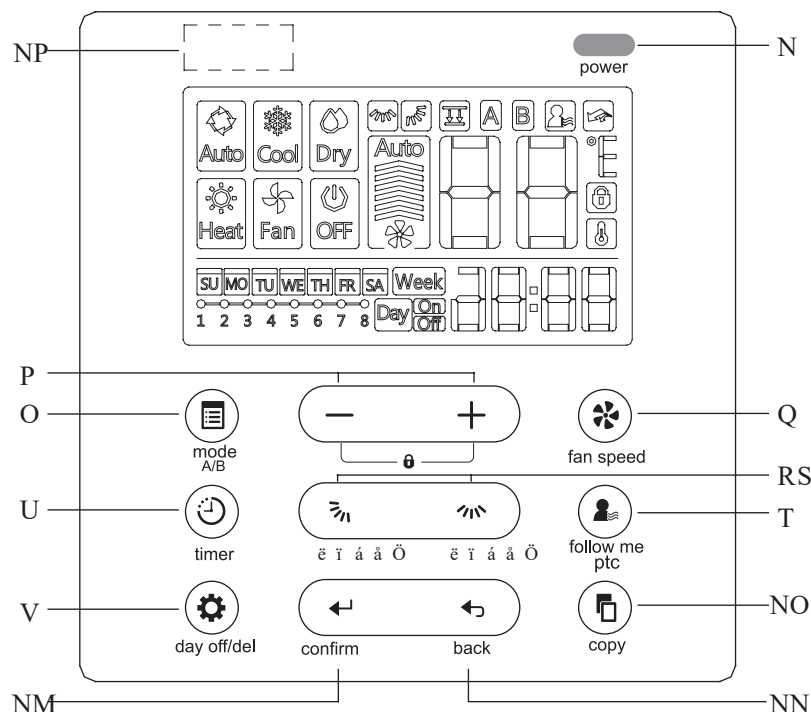


Wall hole and wiring hole
Diameter of wall hole: Φ 2cm

2.1.2 LCD Wired Remote Controller KJR-120C/TF-E(Optional)

The KJR-120C/TF-E wired remote controller is optional for some models.

i) Buttons and Functions



1. POWER button

Turn on or turn off the unit.

2. MODE(A/B) button

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

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

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. Up-down airflow direction and swing Button

Press for adjusting the angel of louver, hold for vertical swing; individual louver control for cassette panel

6. Left-right airflow swing Button

Press for activating the horizontal swing

7. FOLLOW ME(PTC) button

Allows the remote control to act as a remote thermostat and send temperature information from its current location.

8. TIMER button

To set timer on and timer off time of one day

9. 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

10. CONFIRM button

To confirm an setting or call up the menu

11. BACK button

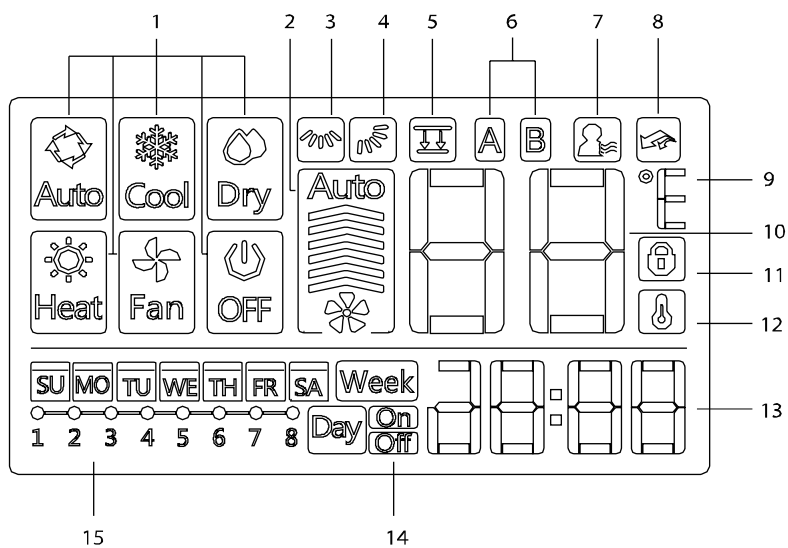
Back to previous operation or superior menu

12. COPY button

Copy timer setting of one day to another in weekly schedule setting

13 Infrared remote receiver (on some models)

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 PTC function indication

9 C° / F° indication

10 Temperature display

11 Lock indication

12 Room temperature indication

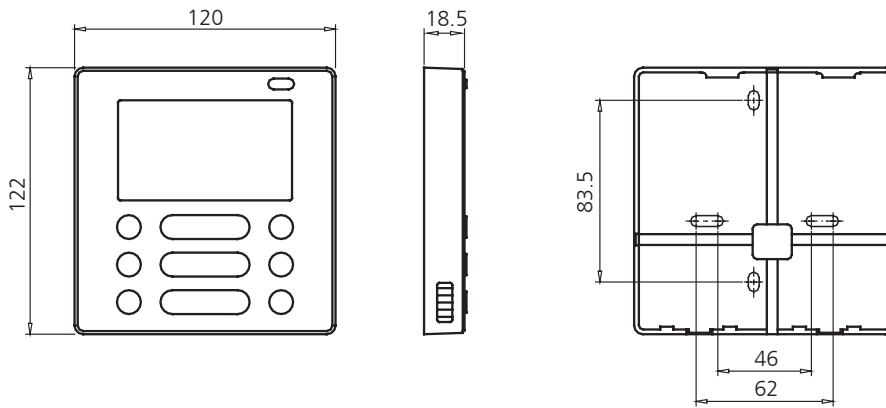
13 Clock display

14 On/Off timer

15 Timer display

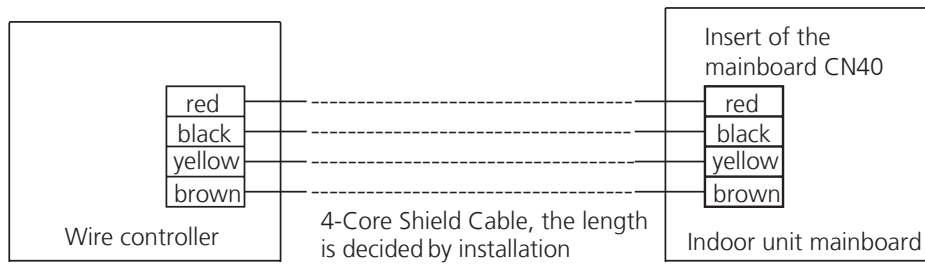
iii) Installation

• Dimensions



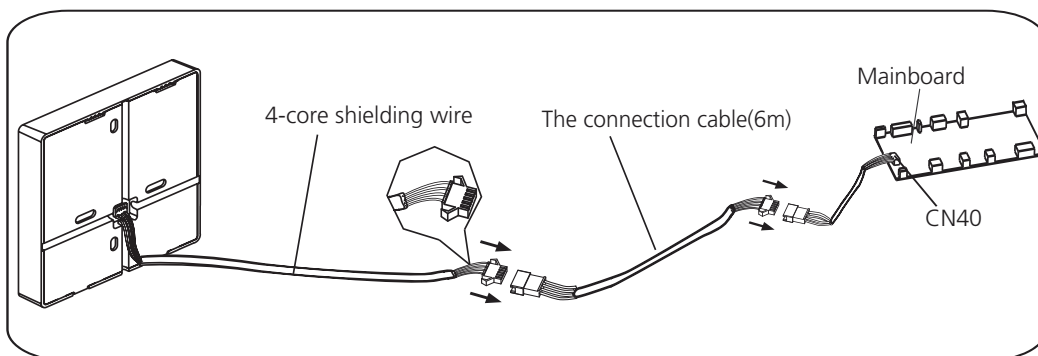
• Wiring diagram

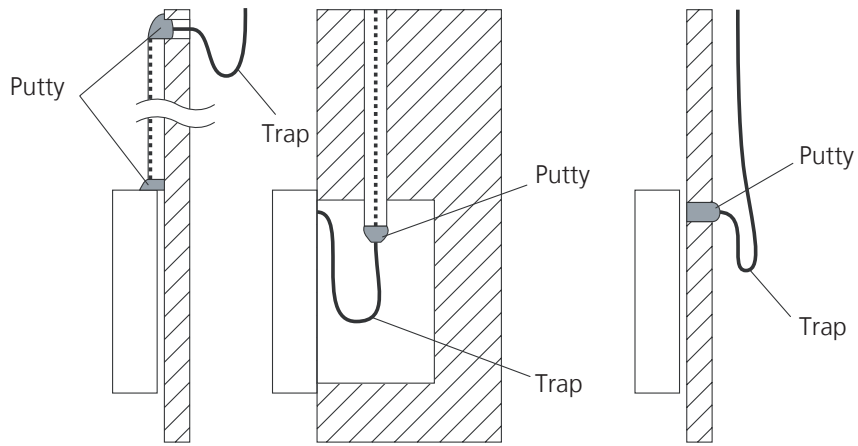
Refer to the following diagram to wire the wall-mounted remote control to the indoor unit.



• Installation Diagram

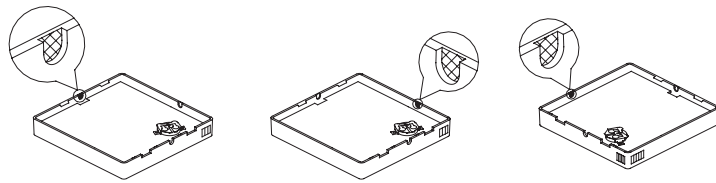
Connect the female joint of wires group from the mainboard with the male joint of connective wires group. Then connect the other side of connective wires group with the male joint of wires group leads from wire controller.





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

- For exposed mounting, four outletting positions. There are three need cutting.

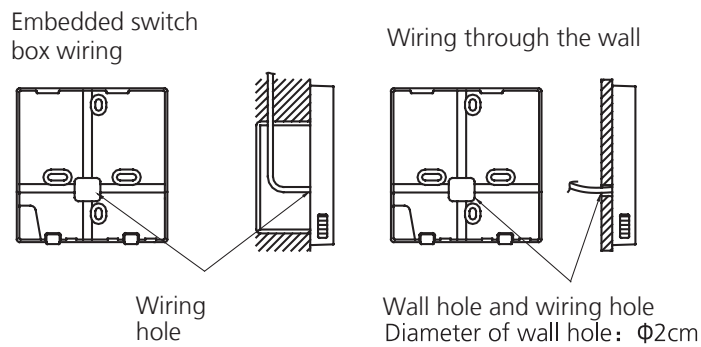


Cutting place of top side wire outlet

Cutting place of left side wire outlet

Cutting place of right side wire outlet

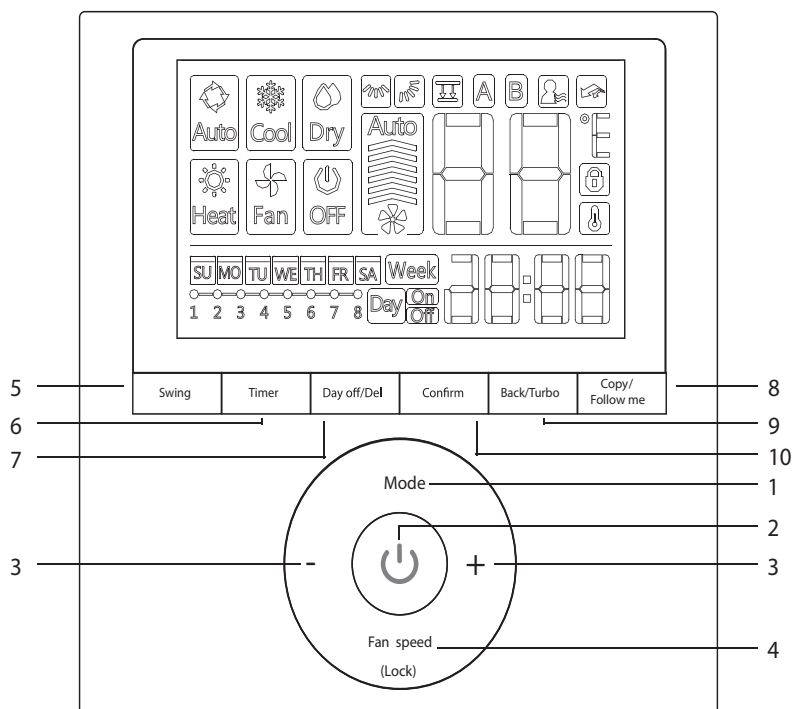
- For shielded wiring, please refer to the picture below.



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

The KJR-120G/TF-E wired remote controller is optional for some models.

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

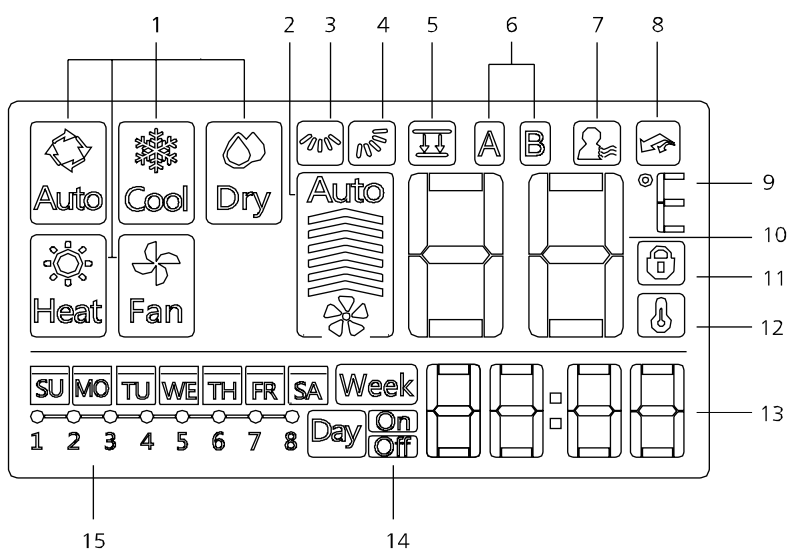
Back to previous operation or superior menu

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

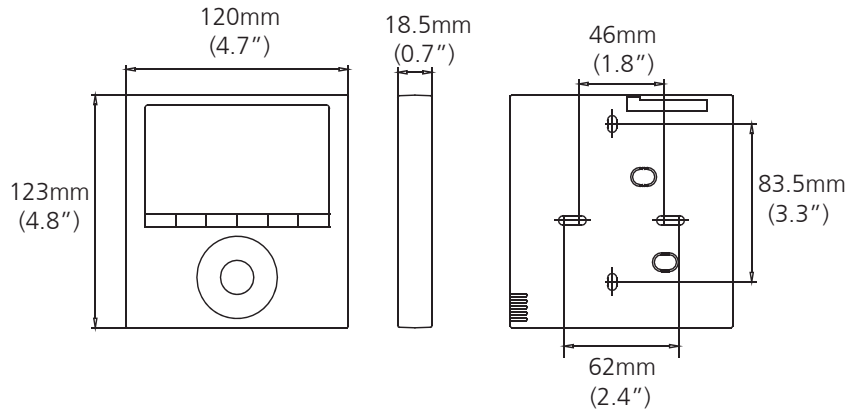
13 Clock display

14 On/Off timer

15 Timer display

iii) Installation

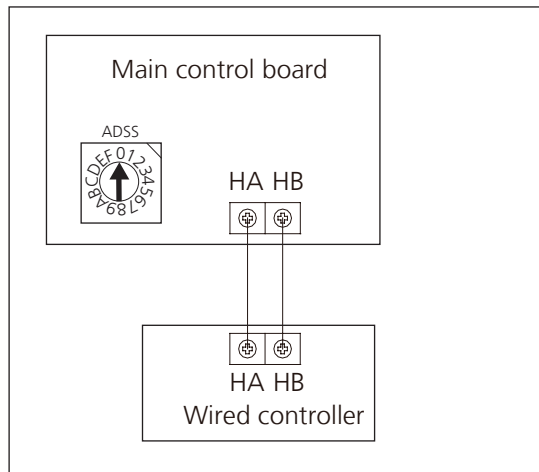
- Dimensions



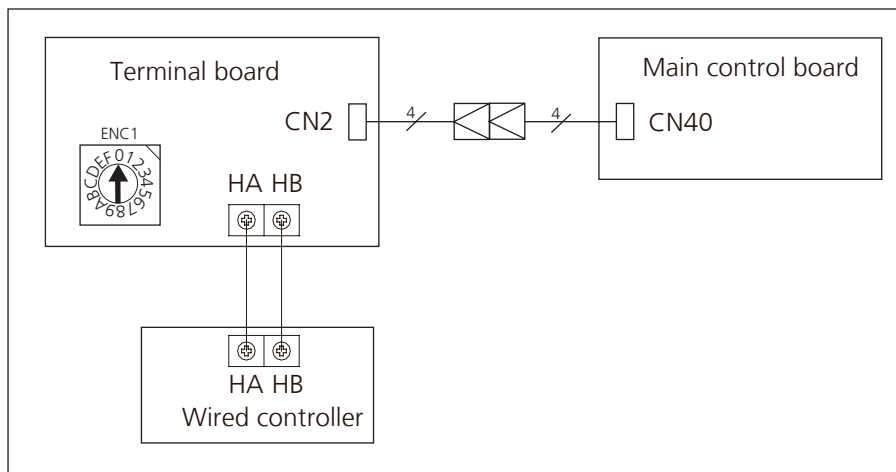
- Wiring diagram

3) Connection

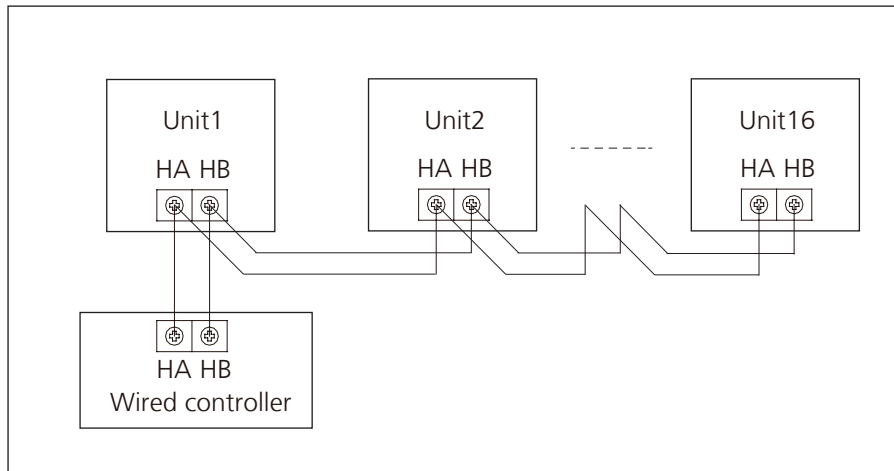
For some models: The wired controller connects to main control board directly.



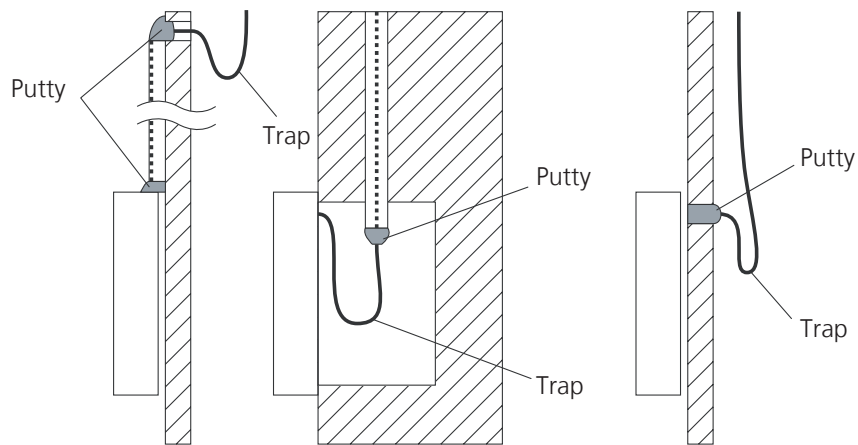
For some models, Ceiling& floor: The wired controller connects to terminal board, terminal board connects to main control board.



4) Address setting



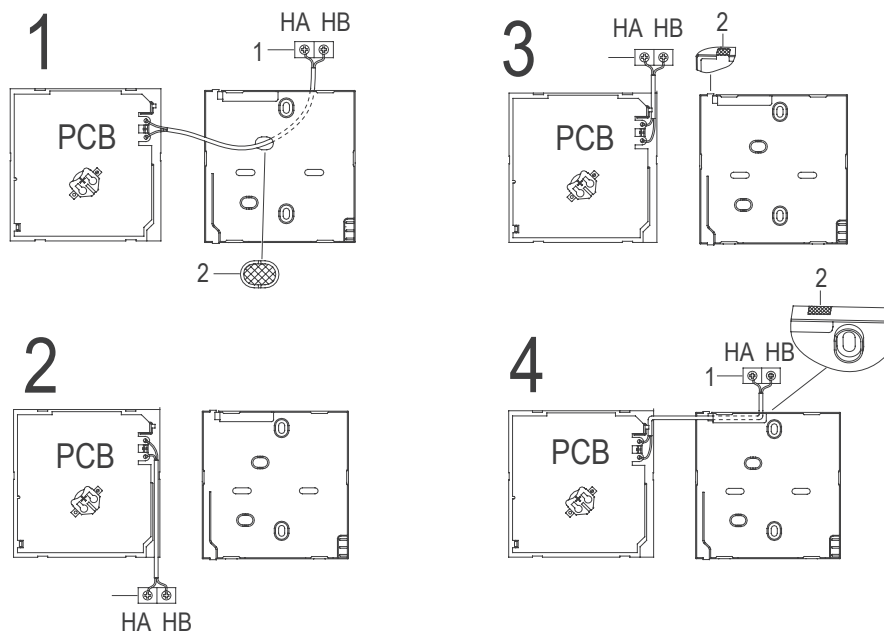
- One non-polarity controller can control up to 16 indoor units.
- When the non-polarity controller is connected to several units, every air-conditioner in network has only one network address to distinguish each other.
- Address code of air-conditioner in LAN is set by code switch ENC1(Duct and Ceiling& Floor) or ADSS(Cassette) of the indoor unit, and the set range is 0-15.
- 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.

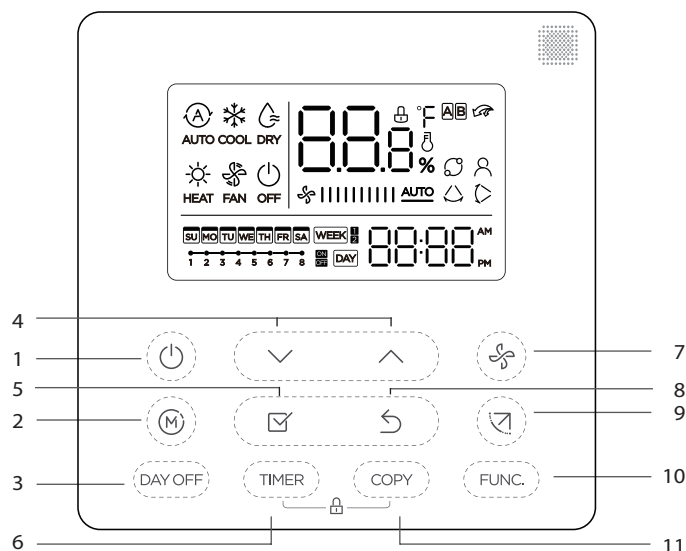


- 1: Indoor Unit.
- 2: Notch the part for the wiring to pass through with a nipper tool.
- Connect the terminals on the remote controller (HA ,HB), and the terminals of the indoor unit. (HA ,HB). (HA and HB do not have polarity.)

2.1.4 LCD Wired Remote Controller KJR-120X/TFBG-E(Optional)

The KJR-120X/TFBG-E wired remote controller is optional for some models.

i) Buttons and Functions



1. POWER button

Turn on or turn off the unit.

2. MODE button

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

3. DAY OFF/DEL button

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

4. Adjust button

To set temperature, time and timer

5. CONFIRM button

To confirm an setting or call up the superior menu

6. TIMER button

To set timer on and timer off time of one day

7. FAN SPEED button

Used to select the fan speed.

8. BACK button

Back to previous operation or superior menu

9. Swing Button

Press to active vertical swing, hold for horizontal swing

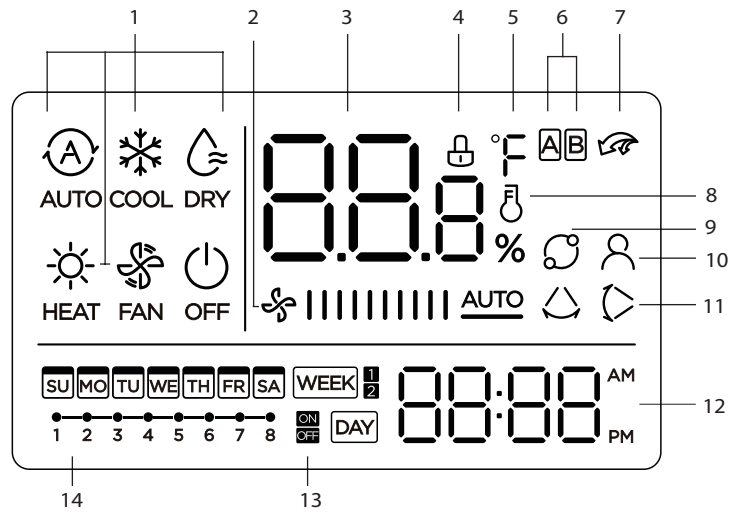
10. FUNC. button

Press the FUNC. button to set the turbo or rotating or lfeel function.

11. COPY button

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

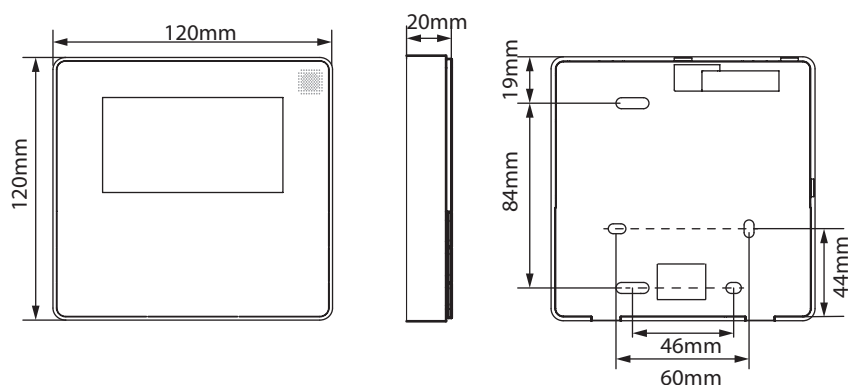
ii) LCD Screen



- | | |
|--|---|
| 1 Operation mode indication | 8 Room temperature indication |
| 2 Fan speed indication | 9 Rotating indication |
| 3 Temperature display | 10 Follow Me function indication |
| 4 Lock indication | 11 Left-right swing indication
(some models) |
| 5 °C / °F indication | 12 Clock display |
| 6 Main unit and secondary unit
indication | 13 On/Of timer |
| 7 Turbo function indication | 14 Timer display |

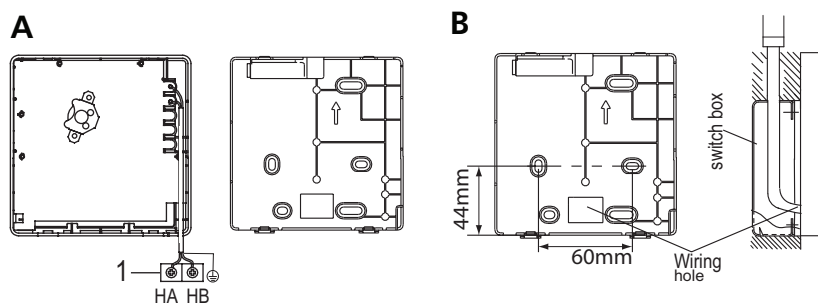
iii) Installation

• Dimensions



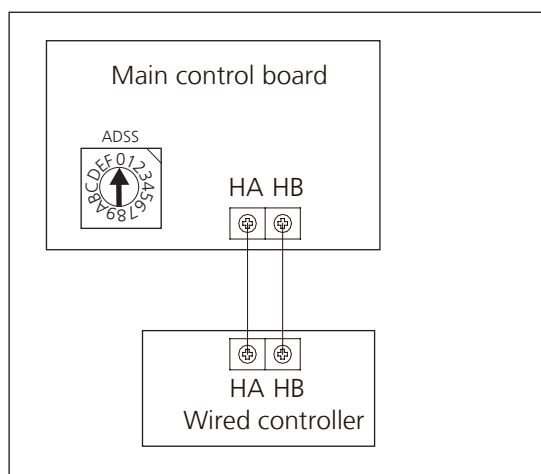
5) Connection

• Wire with the indoor unit:

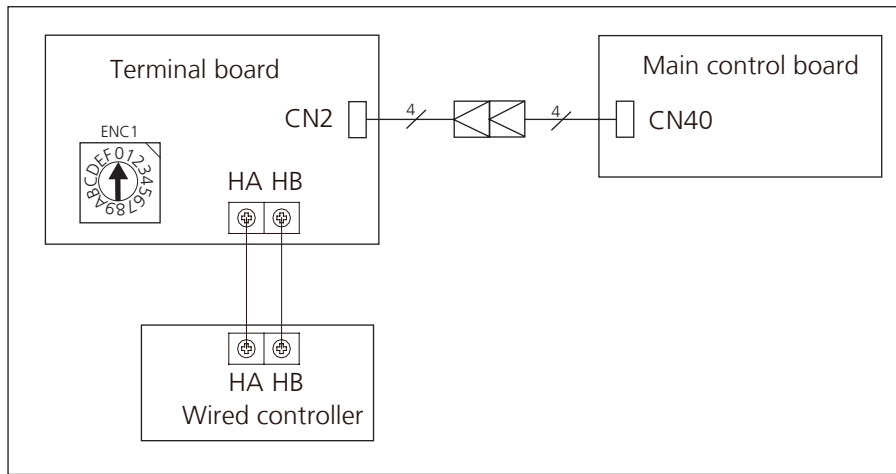


- 1: Indoor Unit.
- 2: Notch the part for the wiring to pass through with a nipper tool.
- Connect the terminals on the remote controller (HA ,HB), and the terminals of the indoor unit. (HA ,HB). (HA and HB do not have polarity.)

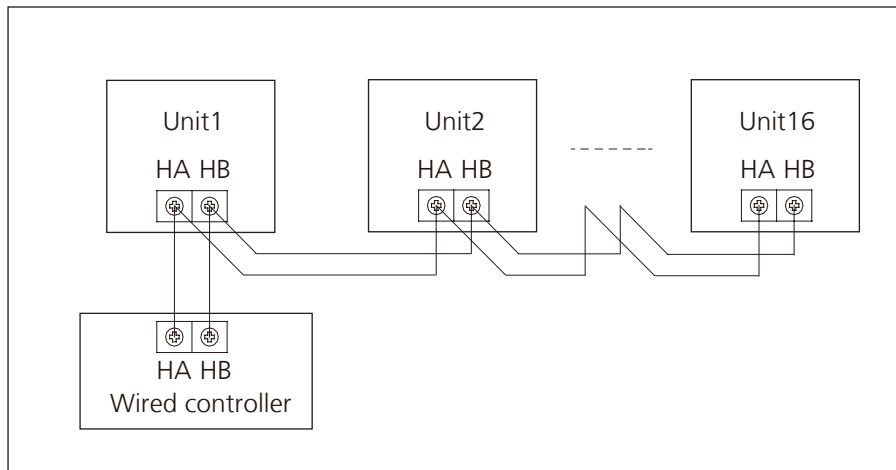
For some models: The wired controller connects to main control board directly.



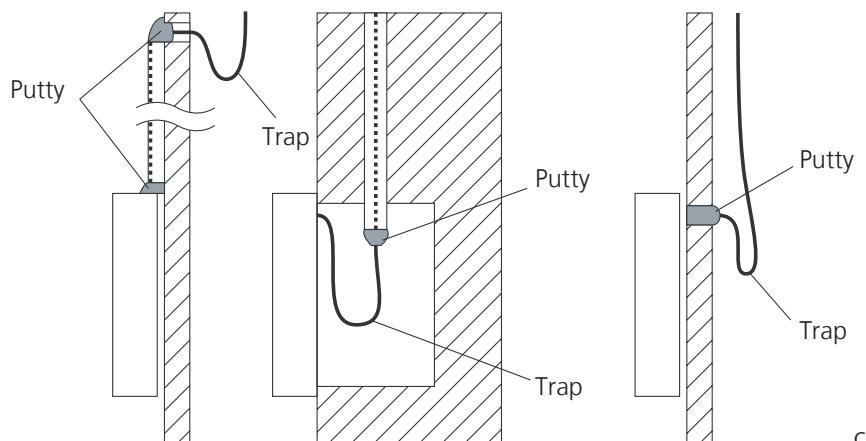
For some models: The wired controller connects to terminal board, terminal board connects to main control board.



6) 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.
- 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.
- 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.

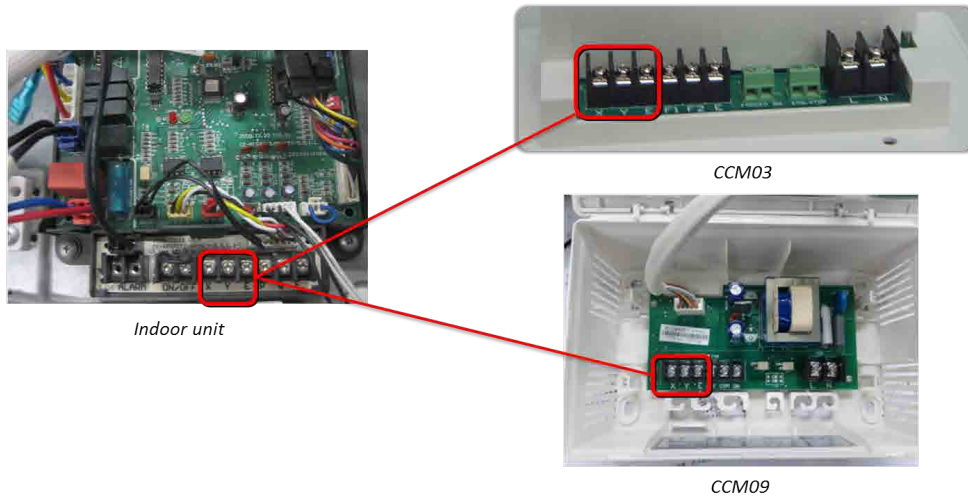


Note: DO NOT allow water to enter the remote control. Use the trap and putty to seal the wires.

2.2 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...)

2.3 Using the wire controller to set external static pressure

- You can use the unit’s automatic airflow adjustment function to set external static pressure.
- Automatic airflow adjustment is the volume of blow-off air that has been automatically adjusted to the quantity rated.

1. Make sure the test run is done with a dry coil. If the coil is not dry, run the unit for 2 hours in FAN ONLY mode to dry the coil.

2. Check that both power supply wiring and duct installation have been completed. Check that any closing dampers are open. Check that the air filter is properly attached to the air suction side passage of the unit.

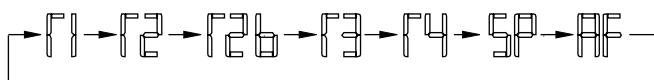
3. If there is more than one air inlet and outlet, adjust the dampers so that the airflow rate of each air inlet and outlet conforms with the designed airflow rate. Make sure the unit is in FAN ONLY mode. Press and set the airflow adjustment button on the remote control to change the airflow rate from H or L.

4. Set the parameters for automatic airflow adjustment. When the air conditioning unit is off, perform the following steps:

- When the unit is turned off, hold the MODE button and FAN button down together for three seconds. (“AF” indicator flashes for 3 times.)

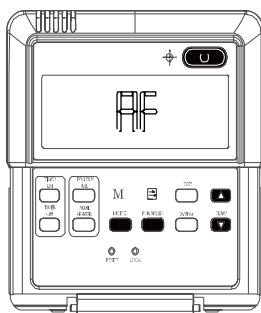
- Press “Δ” or “∇” to select the AF.

- Press “Δ” or “∇” to select the AF.



- Press “MODE”. The air conditioning unit will then start the fan for airflow automatic adjustment.

After 3 to 6 minutes, the air conditioning unit stops operating once automatic airflow adjustment has finished.



Caution: DO NOT adjust the dampers when automatic airflow adjustment is active.

Caution:

• If there is no change after airflow adjustment in the ventilation paths, be sure to reset automatic airflow adjustment.

• If there is no change to ventilation paths after airflow adjustment, contact your dealer, especially if this occurs after testing the outdoor unit or if the unit has been moved to a different location.

• Do not use automatic airflow adjustment with remote control, if you are using booster fans, outdoor air processing unit, or a HRV via duct.

• If the ventilation paths have been changed, reset airflow automatic adjustment as described from step 3 onwards.

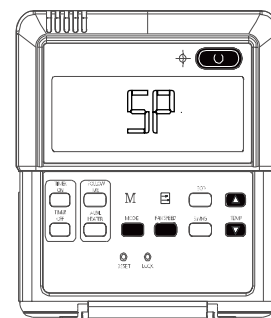
2.4 Using the wire controller to set airflow rate

When the air conditioning unit is off, perform the following steps:

1. Press “MODE” and “FAN” for three seconds.

2. Press “Δ” or “∇” to select the SP.

3. Press “MODE” to set the airflow rate in the range of 0~4.



“0”: No airflow change

“1” ~ “4”: Airflow increase progressively

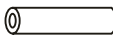

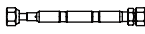




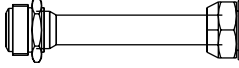
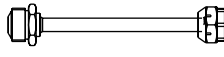
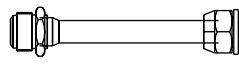

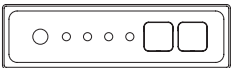
4. Press “ON/OFF” to finish the airflow setting.

Installation

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Accessories

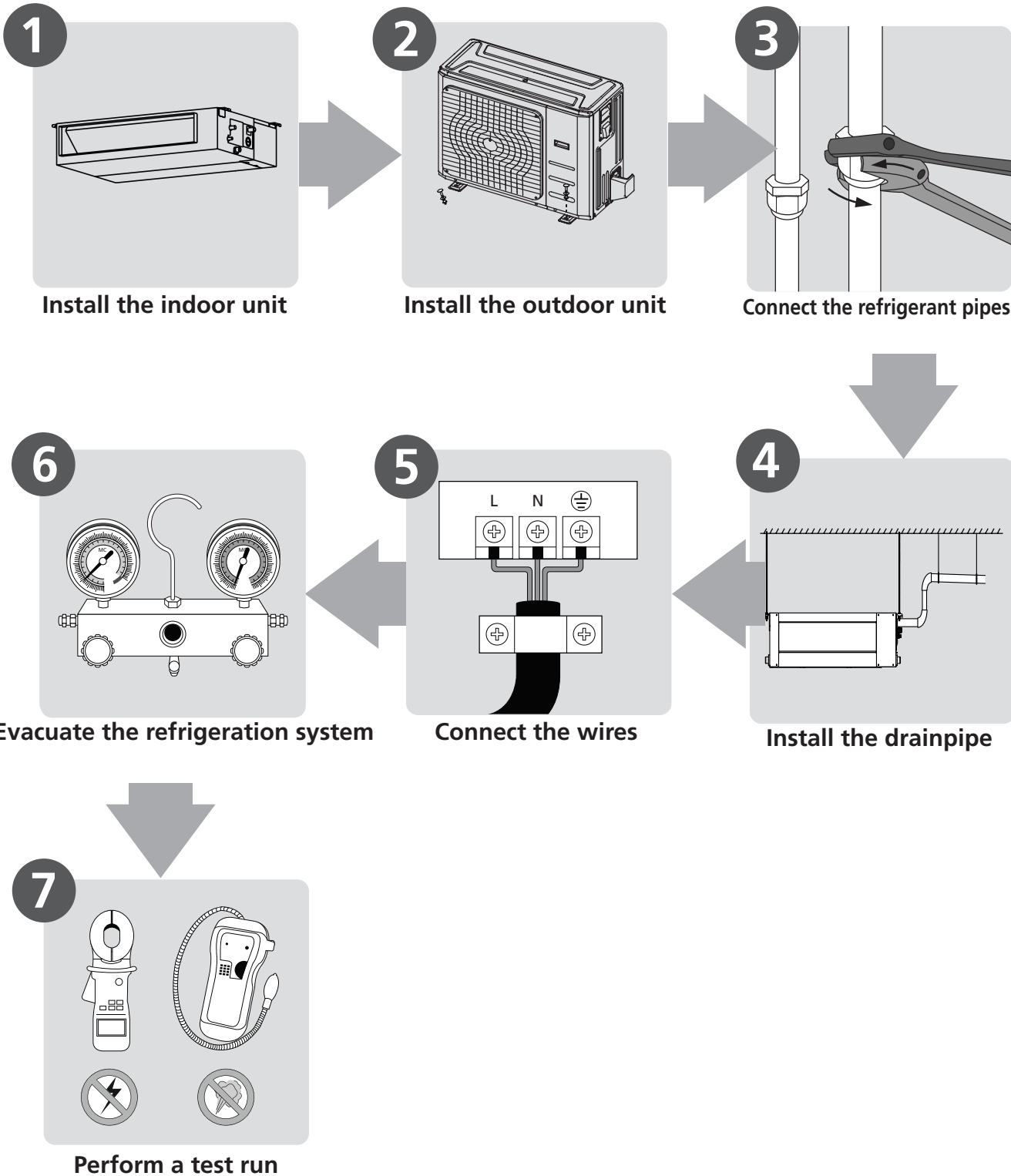
	Name	Shape	Quantity
Tubing & Fittings	Soundproof / insulation sheath		2
	Seal sponge (some models)		1
	Orifice (some models)		1
Drainpipe Fittings (for cooling & heating)	Drain joint (some models)		1
	Seal ring (some models)		1
EMC Magnetic Ring (some models)	Magnetic ring(Wrap the electric wires S1 & S2 (P & Q & E) around the magnetic ring twice)	 S1&S2(P&Q&E)	1
	Magnetic ring(Hitch on the connective cable between the indoor unit and outdoor unit after installation.)		1
Others	Manual	-	2~4
	Transfer connector($\phi 12.7$ - $\phi 15.9$)/($\phi 0.5$ in- $\phi 0.63$ in)(Packed with the indoor unit) NOTE: Pipe size may differ from appliance to appliance. To meet different pipe size requirements, sometimes the pipe connections need a transfer connector installed on the outdoor unit.		1 (on some models)
	Transfer connector($\phi 6.35$ - $\phi 9.52$)/($\phi 0.25$ in- $\phi 0.375$ in)(Packed with the indoor unit) NOTE: Pipe size may differ from appliance to appliance. To meet different pipe size requirements, sometimes the pipe connections need a transfer connector installed on the outdoor unit.		1 (on some models)
	Transfer connector($\phi 9.52$ - $\phi 12.7$)/($\phi 0.375$ in- $\phi 0.5$ in)(Packed with the indoor unit) NOTE: Pipe size may differ from appliance to appliance. To meet different pipe size requirements, sometimes the pipe connections need a transfer connector installed on the outdoor unit.		1 (on some models)
	Connecting wire for display (2m)	-	1(on some models)
	Cord protection rubber ring		1(on some models)
	Display panel *Just for testing purposes only		1(on some models- KJR-120G,KJR-120H)

Optional accessories:

- There are two types of remote controls: wired and wireless.
- Select a remote controller based on customer preferences and requirements and install in an appropriate place.
- Refer to catalogues and technical literature for guidance on selecting a suitable remote controller.

1. Installation Overview

Installation Order



Installation

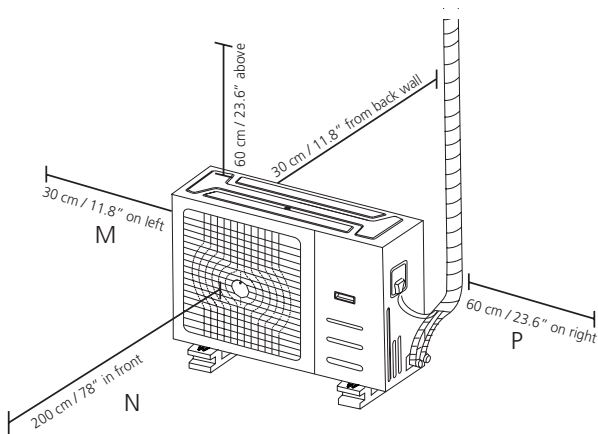
2. Location selection

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.

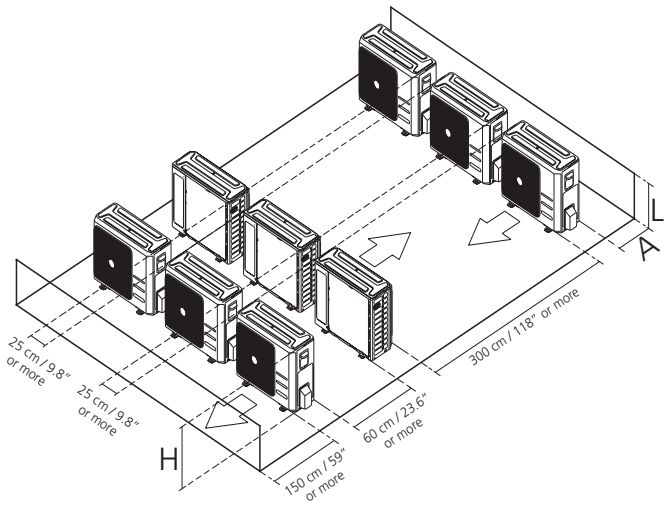
2.3 **The minimum distance between the outdoor unit and walls described in the installation guide does not apply to airtight rooms. Be sure to keep the unit unobstructed in at least two of the three directions (M, N, P)**



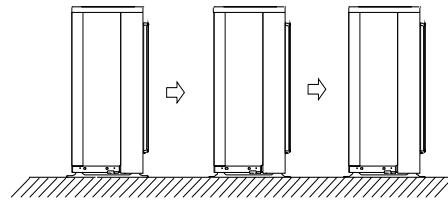
2.4 Rows of series installation

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

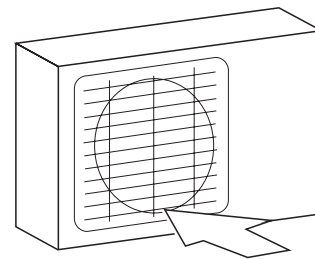
	L	A
L ≤ H	$L \leq 1/2H$	25 cm / 9.8" or more
	$1/2H < L \leq H$	30 cm / 11.8" or more
L > H	Can not be installed	



DO NOT install the rows of series like following figure.



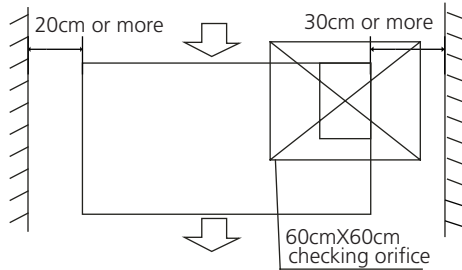
2.5 If the location is exposed to strong winds (for example: near a seaside), the unit must be placed against the wall to shelter it from the wind. If necessary, use an awning.



DO NOT Strong wind

3. Indoor Unit Installation

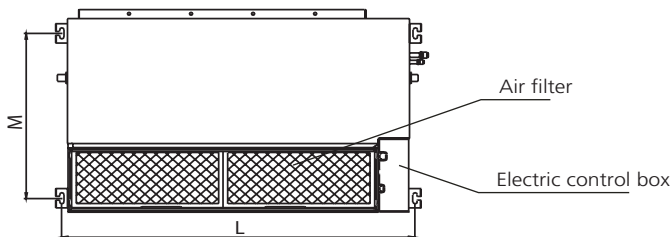
3.1 Service space for indoor unit



3.2 Hang Indoor Unit

1. Please refer to the following diagrams to locate the four positioning screw bolt hole on the ceiling. Be sure to mark the areas where ceiling hook holes will be drilled.

For A6 Duct,



Capacity(KBtu/h)	Size of mounted plug	
	L	M
12	741	360
18	920	508
24	1140	598
30~36	1400	598
42~60	1240	697

2. Install and fit pipes and wires after you have finished installing the main body. When choosing where to start, determine the direction of the pipes to be drawn out.

Especially in cases where there is a ceiling involved, align the refrigerant pipes, drain pipes, and indoor and outdoor lines with their connection points before mounting the unit.

3. Install hanging screw bolts.

- 1) Cut off the roof beam.
- 2) Strengthen the point at which the cut was made. Consolidate the roof beam..
4. After you select an installation location, align the refrigerant pipes, drain pipes, as well as indoor and outdoor wires with their connection points before

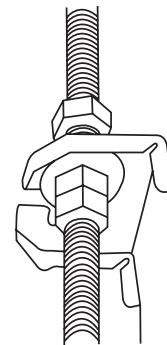
mounting the unit..

5. Drill 4 holes 10cm (4") deep at the ceiling hook positions in the internal ceiling. Be sure to hold the drill at a 90° angle to the ceiling.

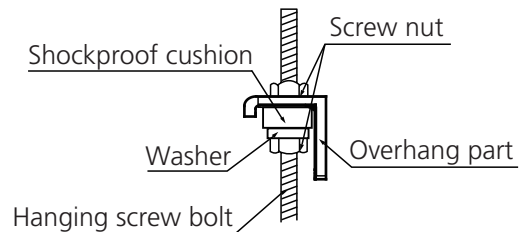
6. Secure the bolt using the included washers and nuts.

7. Install the four suspension bolts.

8. Mount the indoor unit with at least two people to lift and secure it. Insert suspension bolts into the unit's hanging holes. Fasten them using the washers and nuts provided.



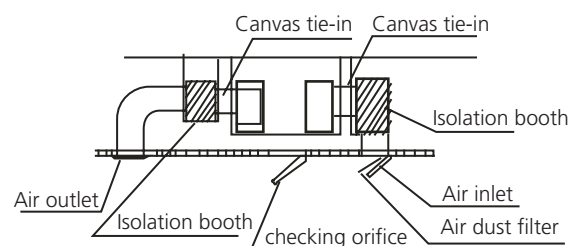
9. Mount the indoor unit onto the hanging screw bolts with a block. Position the indoor unit flat using a level indicator to prevent leaks.



Note: Confirm the minimum drain tilt is 1/100 or more.

3.3 Duct and accessories installation

1. Install the filter(optional) according to air inlet size.
2. Install the canvas tie-in between the body and duct.
3. The air inlet and air outlet duct should be far enough apart enough to a avoid air passage short-circuit.
4. Connect the duct according to the following diagram.



5. Refer to the following static pressure guidelines when installing the indoor unit.

Model(KBtu/h)	Static Pressure(Pa)
12	0-60
18	0-100
24~55	0-160

Change the fan motor static pressure according to external duct static pressure.

NOTE: 1. Do not put the connecting duct weight on the indoor unit.

2. When connecting the duct, use a nonflammable canvas tie-in to prevent vibrating.

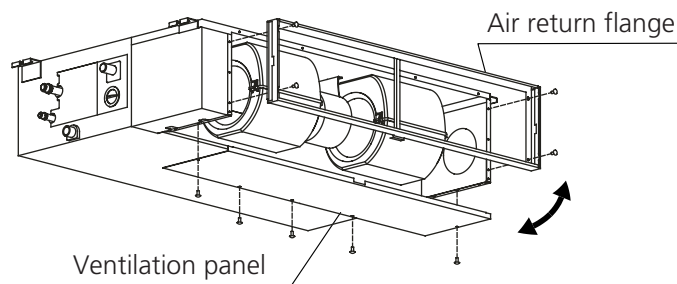
3. When connecting duct, install in place prone to takedown for maintenance.

4. Change the fan motor static pressure corresponding to external duct static pressure.

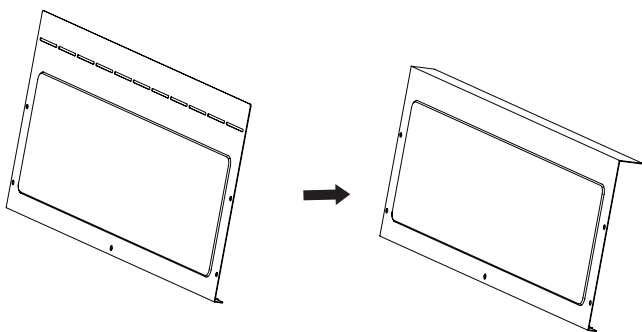
5. If installed in place like meeting room where noise is easy to be perceived, design isolation booth and internal duct underlayer to muffle the duct system and weaken the air encounter noise in the duct.

3.4 Adjust the air inlet direction(From rear side to under-side.)(only for A6 duct type)

1. Take off ventilation panel and flange,

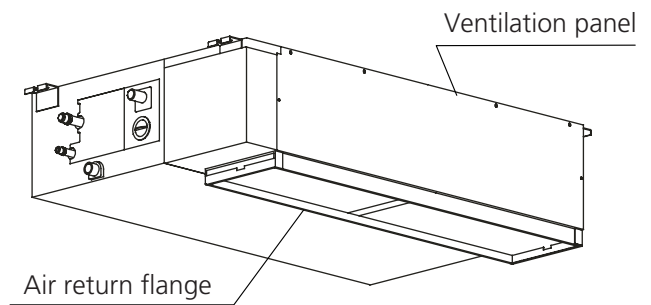


Bend the rear ventilation panel 90 degrees along the dotted line into a descending ventilation panel.(some models)

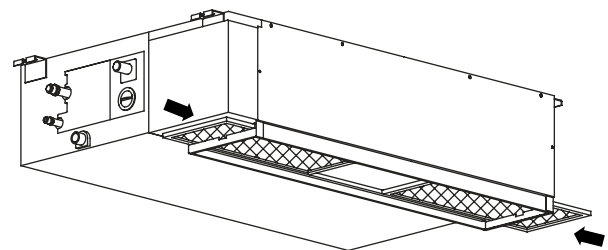


2. Change the mounting positions of ventilation panel and

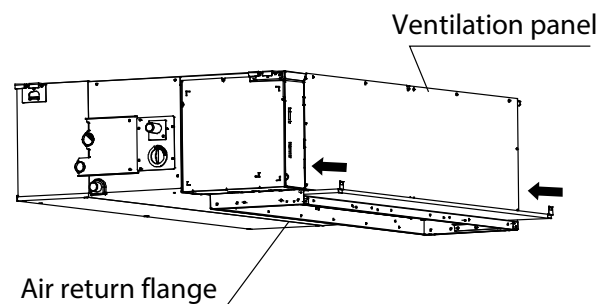
air return flange .



3. When installing the filter mesh, fit it into the flange as illustrated in the following figure.



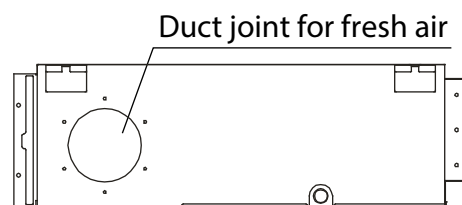
Or



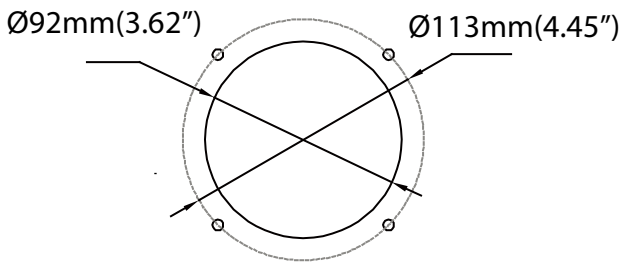
NOTE: All the figures in this manual are for demonstration purposes only. The air conditioner you have purchased may be slightly different in design, though similar in shape.

3.5 Fresh air duct installation (only for A6 duct type)

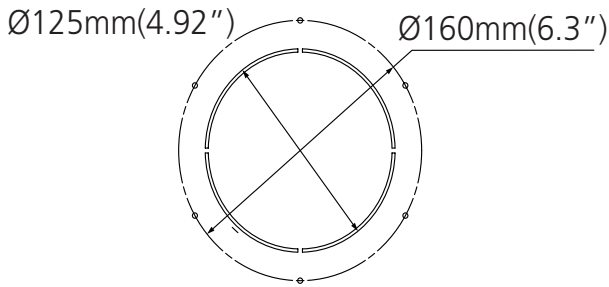
Dimension :



9-12k



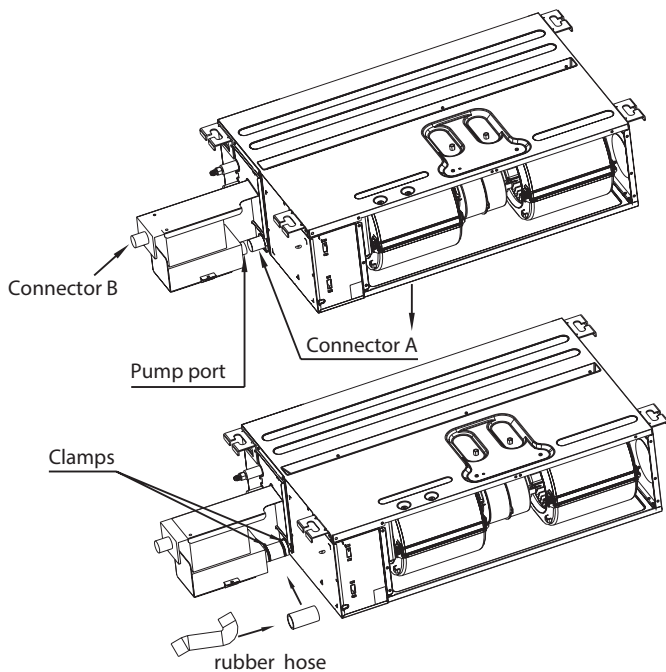
18-60k



3.6 Horizontal Installation

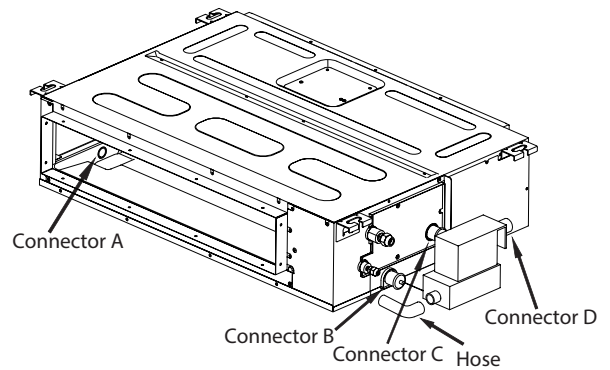
3.6.1 With External pump (9K, 12K models)

Cut both ends of the rubber hose into a straight one, use it to connect the drain Connector A and the external pump and safety it with clamps on both ends. Then connect the drainpipe to the Connector B.



3.6.2 With External pump (18K model only)

Drain connector A, B & C are covered with caps originally. Take the cap on drain connector B off, connect the external pump to drain connector B using a hose & two hoseclamps. Then connect the drainpipe to the connector D.



Plug the external pump to the "PUMP" pin and the water level sensor to the "CN5" to enable the pump.

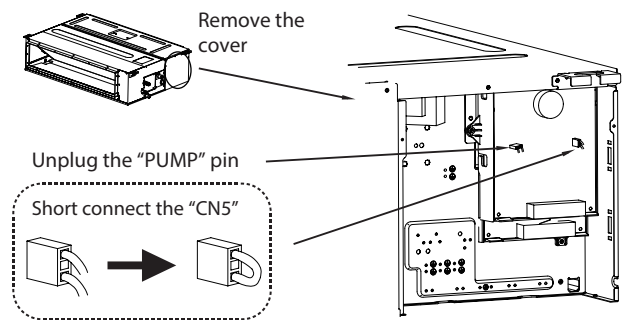
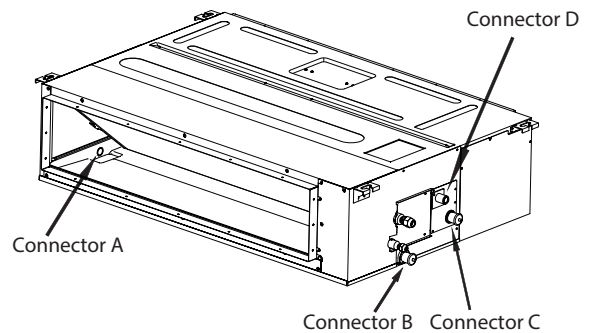


Fig. 1

3.6.3 With Built-in pump (24K, 36K, 48K models)

Drain connector A, B & C are covered with caps originally. Connect the drainpipe to the connector D.



3.7 Vertical Installation

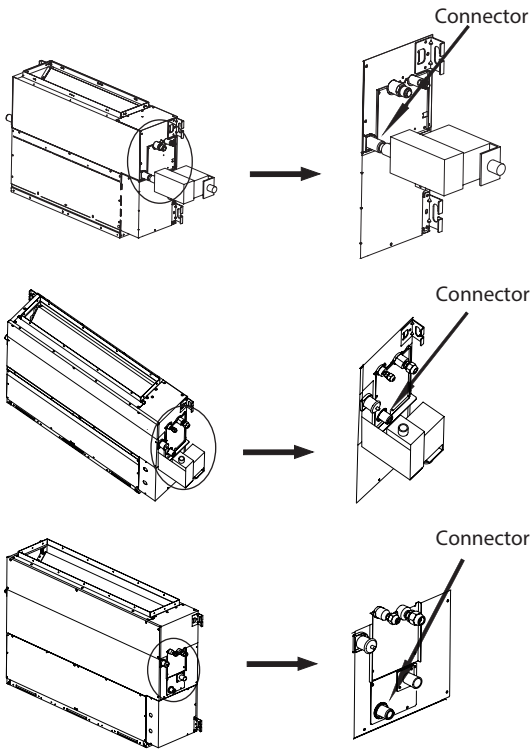
3.7.1 No need pump (Disable pump)

The pump must be disabled while the unit is installed vertically or the pump assembly is removed from its original position.

Open the cover of E-Parts Box assembly, unplug the "PUMP" pin to disable the pump function, and short connect "CN5" plug to disable the water level sensor. (see Fig. 1)

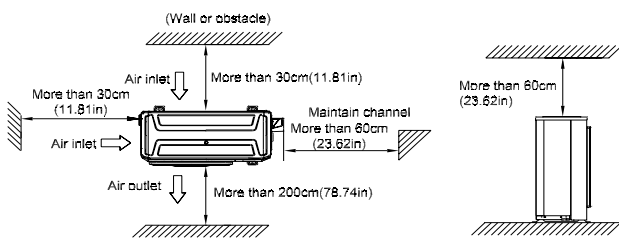
3.7.2 Drain pipe connecting

When installed vertically (up flow), the pump must be disabled firstly. Follow the 3.7.1 steps to disable the pump. For the unit with external pump (9K ,12K &18K models), the whole pump assembly can be removed. Then take the cap on drain connector off and connect the drainpipe to drain connector .

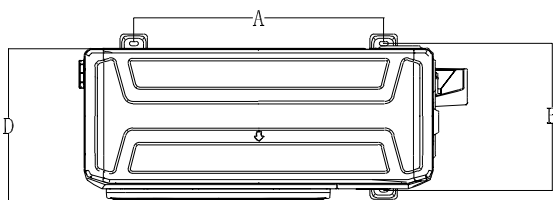


4. Outdoor unit installation(Side Discharge Unit)

4.1 Service space for outdoor unit



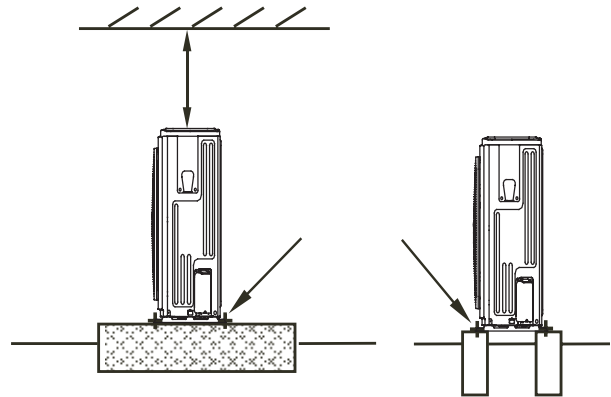
4.2 Bolt pitch



Capacity(kBtu/h)	A(mm)	B(mm)	D(mm)
12	452	286	303
18	511	317	330
24	663	354	342
30~42	673	403	410
48~55	634	404	415

4.3 Install Outdoor Unit

Fix the outdoor unit with anchor bolts(M10)



Cation

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)	Water flowrate (l/h)
12	2.4
18	4
24	6
36	8
48	12
55	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	

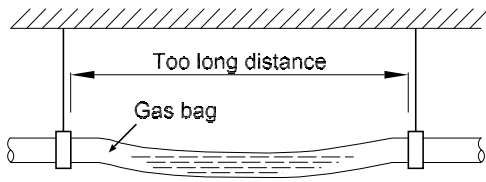
Attention: Adopt PVC40 or bigger pipe to be the main pipe.

3. Individual design of drainage pipe system

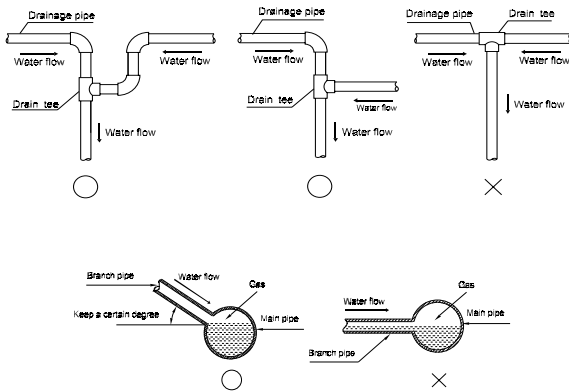
- The drainage pipe of air conditioner shall be installed separately with other sewage pipe, rainwater pipe and drainage pipe in building.
- The drainage pipe of the indoor unit with water pump should be apart from the one without water pump.

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.



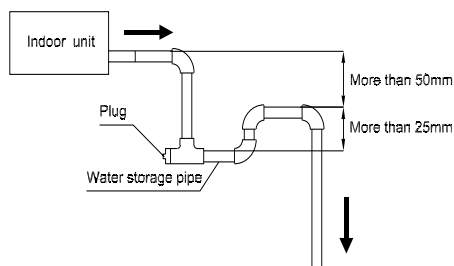
5. The horizontal pipe layout should avoid converse flow or bad flow



- 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

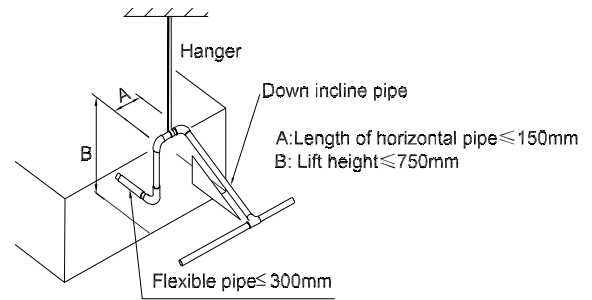
- If the indoor unit has high extra static pressure and without water pump to elevate the condensate water, such as high extra static pressure duct unit, the water storage pipe should be set to avoid converse flow or blow water phenomena.



7. Lifting pipe setting of indoor unit with water pump

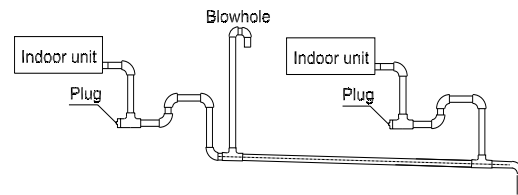
- The length of lifting pipe should not exceed 750mm.
- The drainage pipe should be set down inclined after the lifting pipe immediately to avoid wrong operation of water level switch.

- 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 entering 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 Drainage test

1. Water leakage test

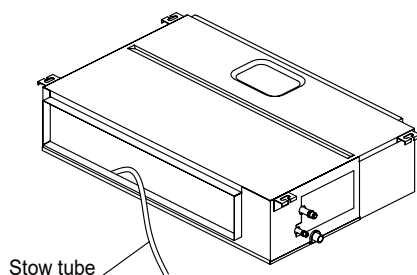
- After finishing the construction of drainage pipe system, fill the pipe with water and keep it for 24 hours to check whether there is leakage at joint section.

2. Water discharge test

Check that the drainpipe is unhindered.

This test should be performed on newly built houses before the ceiling is paved.

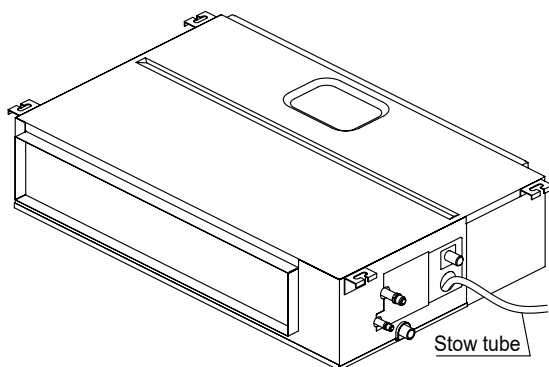
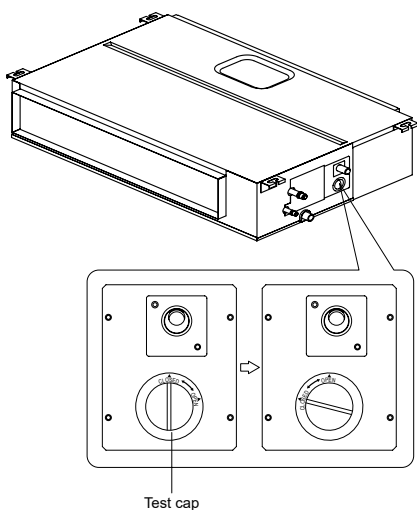
2.1 Units without a pump



- Fill the water pan with 2 liters of water.
- Check that the drainpipe is unhindered

.2.2 Units with a pump

1. Remove the test cover.
- Fill the water pan with 2 liters of water.



2. Turn on the unit in COOLING mode. You will hear the drain pump. Check whether the water is discharged properly (a 1-minute lag is possible, depending on the length of the drain pipe), Check whether water leaks from the joints.

3. Turn off the air conditioner and put the cap back on.
 - After turn off the air conditioner 3 minutes, check whether there is anything abnormal. If drainage pipes have not been distributed properly, over back-flow water shall cause the flashing of alarm indicator at remote-controlled receiving board and

even water shall run over the water collector.

- Continuously infusing water until water level alarmed, check whether the drainage pump could discharge water at once. If water level does not decline under warning water level 3 minutes later, it shall cause shutdown of unit. When this situation happens, the normal startup only can be recovered by turning down power supply and eliminating accumulated water.

Note: Drain plug at the main water-containing plate is used for eliminating accumulated water in water-containing plate when maintaining air conditioner fault. During normal operation, the plug shall be filled in to prevent leakage.

5.4 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)
12	25/82	10/32.8
18	30/98.4	20/65.6
24~30	50/164	25/82
36~55	75/246.1	30/98.4

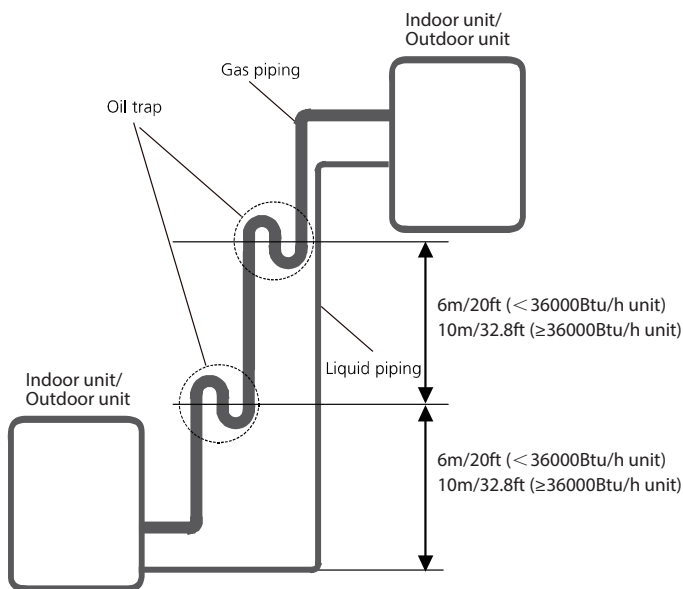
caution:

- The capacity test is based on the standard length and the maximum permissible length is based on the system reliability.
- Oil traps

-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 6m(20ft) of vertical suction line riser (<36000Btu/h unit).

-An oil trap should be installed every 10m(32.8ft) of vertical suction line riser (\geq 36000Btu/h unit).



6.2 The procedure of connecting pipes

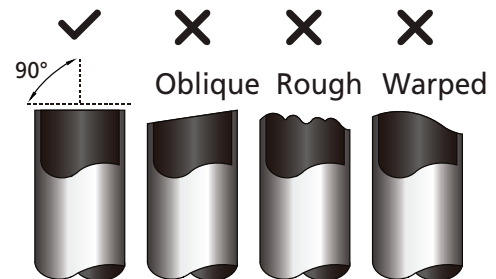
1.Choose the pipe size according to the specification table.

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.

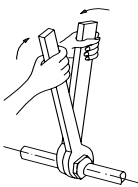
12. Locate the pipe and fix it by supporter

- 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

1. When conduct first vacuum drying, connect pressure gauge to the infusing mouth of gas pipe and liquid pipe, and keep vacuum pump running for 1 hour (vacuum degree of vacuum pump shall be reached -755mmHg).
2. 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.
3. If the vacuum degree of vacuum pump still could not reach -755mmHg after 1.5 hours of drying, check whether there is leakage source.
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.

7.3.2 Special vacuum drying

The special vacuum drying method shall be adopted when:

1. Finding moisture during flushing refrigerant pipe.
2. Conducting construction on rainy day, because rain water might penetrated into pipeline.
3. 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

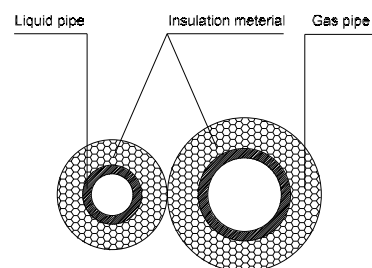
- During operation, temperature of gas pipe and liquid pipe shall be over-heating or over-cooling extremely. Therefore, it is necessary to carry out insulation; otherwise it shall debase the performance of unit and burn compressor.
- Gas pipe temperature is very low during cooling. If insulation is not 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

10.1 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.
- You must first choose the right cable size before preparing it for connection. Be sure to use H07RN-F cables.

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. Test Operation

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

11.2 Please confirm the following points before the test operation.

- The indoor unit and outdoor unit are installed properly.
- Tubing and wiring are correctly completed.
- The refrigerant pipe system is leakage-checked.
- The drainage is unimpeded.
- The ground wiring is connected correctly.
- The length of the tubing and the added stow capacity of the refrigerant have been recorded.
- The power voltage fits the rated voltage of the air conditioner.
- There is no obstacle at the outlet and inlet of the outdoor and indoor units.
- The gas-side and liquid-side stop valves are both opened.
- The air conditioner is pre-heated by turning on the power.

11.3 Test operation

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.

Drainage Test

- a. Ensure the drainpipe flows 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.

Static Pressure Design

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1. Introduction

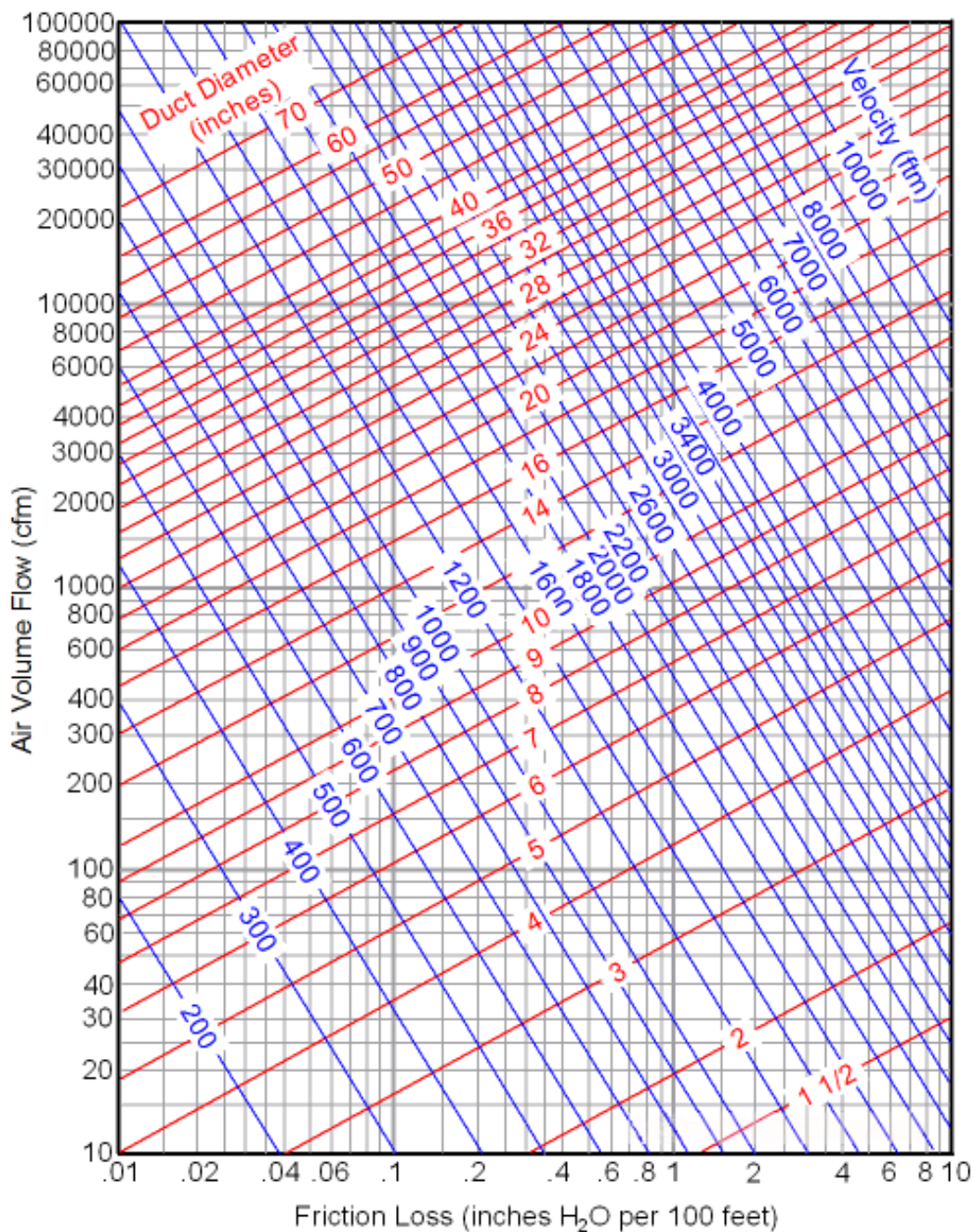
Duct system losses are the irreversible transformation of mechanical energy into heat. The two types of losses are (1) friction losses and (2) dynamic losses.

Friction losses are due to fluid viscosity and result from momentum exchange between molecules (in laminar flow) or between individual particles of adjacent fluid layers moving at different velocities (in turbulent flow). Friction losses occur along the entire duct length.

Dynamic losses result from flow disturbances caused by duct mounted equipment and fittings (e.g., entries, exits, elbows, transitions, and junctions) that change the airflow path's direction or area.

2. Charts For Friction Losses In Round Ducts

Fluid resistance caused by friction in round ducts can be determined by the friction chart. (based on galvanized sheet)



3. Dynamic Losses

For dynamic losses, please refer to below image.

Elbow ($r/w = 1$)		Sharp elbow ($r/w = 0.5$)		Branch Straight-Thru		Branch Thru-Branch ($r/w = 1$)		Reducer $\theta \leq 14^\circ$	
V m/s	loss mm H ₂ O	V m/s	loss mm H ₂ O	No friction loss		V m/s	loss mm H ₂ O	V m/s	loss mm H ₂ O
3.5~5	0.2	3.5~5	1			3.5~5	0.4	3.5~5	0.2
5~7	0.4	5~7	2			5~7	0.8	5~7	0.4
7~9	0.8 ^x	7~9	3.5 ^x			7~9	1.5 ^x	7~9	0.8 ^x
9~15	2	9~15	7			9~15	3	9~15	2
Anemostat		Gallery or louver		Register		Hopper			
V m/s	loss mm H ₂ O	V m/s	loss mm H ₂ O	V m/s	loss mm H ₂ O	V m/s	loss mm H ₂ O		
3.5~5	1	3.5~5	0.5	3.5~5	1.5	3.5~5	0.3		
5~7	2	5~7	1	5~7	3	5~7	0.6		
7~9	3.5	7~9	2	7~8	6	7~9	1		
9~15	6								

Note: W Shows a diameter of round duct or long side length of the rectangular duct.

4. Corresponding Relation Between Rectangular Duct and Round Duct

Circular Duct Diameter, in.	Length of One Side of Rectangular Duct, in.																			
	4	5	6	7	8	9	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	Length Adjacent Side of Rectangular Duct, in.																			
5	5																			
5.5	6	5																		
6	8	6																		
6.5	9	7	6																	
7	11	8	7																	
7.5	13	10	8	7																
8	15	11	9	8																
8.5	17	13	10	9																
9	20	15	12	10	8															
9.5	22	17	13	11	9															
10	25	19	15	12	10	9														
10.5	29	21	16	14	12	10														
11	32	23	18	15	13	11	10													
11.5		26	20	17	14	12	11													
12		29	22	18	15	13	12													
12.5		32	24	20	17	15	13													
13		35	27	22	18	16	14	12												
13.5		38	29	24	20	17	15	13												
14			32	26	22	19	17	14												
14.5			35	28	24	20	18	15												
15			38	30	25	22	19	16	14											
16			45	36	30	25	22	18	15											
17				41	34	29	25	20	17	16										
18				47	39	33	29	23	19	17										
19				54	44	38	33	26	22	19	18									
20					50	43	37	29	24	21	19									
21					57	48	41	33	27	23	20									
22					64	54	46	36	30	26	23	20								
23						60	51	40	33	28	25	22								
24						66	57	44	36	31	27	24	22							
25							63	49	40	34	29	26	24							
26							69	54	44	37	32	28	26	24						
27							76	59	48	40	35	31	28	25						
28								64	52	43	38	33	30	27	26					
29								70	56	47	41	36	32	29	27					
30								76	61	51	44	39	35	31	29	28				
31								82	66	55	47	41	37	34	31	29				
32								89	71	59	51	44	40	36	33	31				
33								96	76	64	54	48	42	38	35	33	30			
34									82	68	58	51	45	41	37	35	32			
35									88	73	62	54	48	44	40	37	34	32		
36									95	78	67	58	51	46	42	39	36	34		
37									101	83	71	62	55	49	45	41	38	36	34	
38									108	89	76	66	58	52	47	44	40	38	36	36
39										95	80	70	62	55	50	46	43	40	37	36
40										101	85	74	65	58	53	49	45	42	39	37
41										107	91	78	69	62	56	51	47	44	41	39
42										114	96	83	73	65	59	54	50	46	44	41
43										120	102	88	77	69	62	57	53	49	46	43
44											107	93	81	73	66	60	55	51	48	45
45											113	98	86	76	69	63	58	54	50	47
46											120	103	90	80	72	66	61	56	53	49
47											126	108	95	84	76	69	64	59	55	52
48											133	114	100	89	80	73	67	62	58	54
49											140	120	105	93	84	76	70	65	60	56
50											147	126	110	98	88	80	73	68	63	59
51											132	115	102	92	83	76	71	66	61	57
52											139	121	107	96	87	80	74	69	64	59
53											145	127	112	100	91	83	77	71	67	62
54											152	133	117	105	95	87	80	74	70	65
55												139	123	110	99	91	84	78	72	67
56												145	128	114	104	95	87	81	75	70
57												151	134	119	108	98	91	84	78	73
58												158	139	124	112	102	94	87	81	76
59												165	145	130	117	107	98	91	85	80
60												172	151	135	122	111	102	94	88	83

5. Method For Duct Calculation (equal friction method)

- 1) Draw schematic view of the duct system.
- 1) Make notes for air volume and mark clearly the elbow, the branch parts, the air discharge outlet.
- 1) Select one main ducting route (where the maximum static pressure loss occurs).
- 1) Select the air velocity for the main duct in accordance with the desirable air velocity.

Main duct	Typical design velocity (m/s)		
	Residence	Public building	Factory
	3.5~6.0	5.0~8.0	6.0~11.0

- 1) Since the velocity and air volume are fixed for main duct, then use the Friction loss chart to find standard friction loss.
- 1) Use air volume and friction loss to find corresponding duct size and velocity for each part of main duct through Frictions loss chart.
- 1) Find the dynamic loss of main ducting route according to the velocity. and type of special fittings (elbows, junctions, regulating flaps, etc.)
- 1) Obtain the duct size and velocity of each branch duct based on the air volume and the same standard friction loss as for the main duct.
- 1) Find the dynamic loss of branch duct.
- 1) Calculate the total pressure loss.

6. Unit Conversion

- 1 inch water=248.8 N/m² (Pa)=0.0361 lb/in² (psi)=25.4 kg/cm²=0.0739 in mercury
- 1 ft³/min (cfm)=1.7 m³/h
- 1 ft/min=5.08*10⁻³ m/s
- 1 inch=2.54 cm=0.0254m=0.08333ft

7. Recommended Outlet Velocity For Different Occasion

The permissible sound level and correspondingly maximum air velocity, is determined by the occasion.

Noise / dB(A)	Occasion	Maximum velocity / m/s
25	Studio, recording room	2
35	Cinema, hospital, library	3
40	Office, school, hotel	4
46	Bank, public hall	5
50	Store, post office	6
70	Factory	10



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BEIJER REF AB

Stortorget 8

Malmö

Sweden