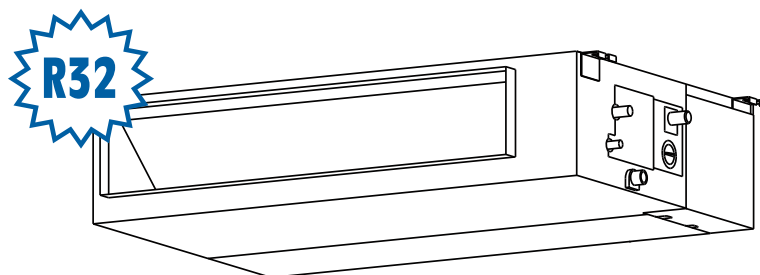


MUCR-H14



Service manual



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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		Universal Outdoor Unit Model	Capacity (Btu/h)	Power Supply
MUCR-H14	MUCR-09-H14-I	MUER-09-H14-E	9k	1Ph, 220-240V~, 50Hz
	MUCR-12-H14-I	MUER-12-H14-E	12k	
	MUCR-18-H14-I	MUER-18-H14-E	18k	
	MUCR-24-H14-I	MUER-24-H14-E	24k	
	MUCR-30-H14-I	MUER-30-H14-E	30k	
	MUCR-36-H14-I	MUER-36-H14-E	36k	
	MUCR-42-H14-I	MUER-42-H14-E	42k	
	MUCR-48-H14-I	MUER-48-H14-E	48k	
	MUCR-48-H14-I	MUER-48-H14T-E	48k	3Ph, 380-415V~, 50Hz
	MUCR-60-H14-I	MUER-60-H14T-E	55k	

2. General Specifications

Indoor model			MUCR-09-H14-I	MUCR-12-H14-I
Outdoor model			MUER-09-H14-E	MUER-12-H14-E
Power supply (Indoor)		V- Ph-Hz	220~240-1-50	220~240-1-50
Power Supply (Outdoor)		V-Ph-Hz	220~240-1-50	220~240-1-50
Rated Power Input		W	1820	1850
Rated Current		A	8.5	9
Indoor fan motor	Model		ZKFN-81-8-1	ZKFN-81-8-1
	Qty		1	1
	Insulation class		B	B
	IP rating		IP20	IP20
	Output	W	81	81
	Capacitor	uF	/	/
	Speed(Hi/Mi/Lo)	r/min	1130/1047/965	1140/1052/965
Indoor coil	Number of rows		3	3
	Tube pitch(a)x row pitch(b)	mm	21x13.37	19.5*11.6
	Fin spacing	mm	1.4	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ7,Inner groove tube	Φ5,Inner groove tube
	Coil length x height x width	mm	525x210x40.11	525*23.2*214.5
	Number of circuits		3	5
Indoor air flow (Hi/Mi/Lo)		m3/h	620/540/450	660/570/470
ESP	Rated	Pa	25	25
	Range	Pa	0-100	0-100
Indoor sound pressure level Hi/Mi/Lo)		dB(A)	35/33/31/27	35/33/31/26
Indoor sound power level		dB(A)	52	52
Indoor unit	Dimension(W*D*H)	mm	700x506x200	700x506x200
	Packing (W*D*H)	mm	860x540x285	860x540x285
	Net/Gross weight	kg	16.6/19.8	16.6/19.8
Drainage water pipe diameter		mm	ODΦ25mm	ODΦ25mm
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ9.52(1/4"/3/8")	Φ6.35/Φ9.52(1/4"/3/8")
Controller			Wired control	Wired control
Operation temperature		°C	16-30	16-30
Room temperature	Cooling	°C	16~32	16~32
	Heating	°C	0~30	0~30
Qty'per 20' /40' /40'HQ		Indoor unit	214/461/519	214/461/519
Compressor	Model		KSK103D33UEZ3	KSN98D64UFZ3
	Type		ROTARY	ROTARY
	Brand		GMCC	GMCC
	Capacity	W	2035/3255	1930/3100 ±3%
	Input	W	325/826	292/765 ±3%
	Rated current(RLA)	A	2.40/5.65	2.15/4.65 ±3%
	Refrigerant oil/oil charge	ml	ESTER OIL VG74 310	ESTER OIL VG74 300±10
Outdoor fan motor	Model		ZKFN-34-10-1L	ZKFN-34-10-1-3
	Qty		1	1
	Insulation class		B	B
	IP rating		IP24	IP24
	Output	W	34	34
	Capacitor	uF	/	/
	Speed	r/min	780/600	780/600

Outdoor coil	Number of rows		1	1
	Tube pitch(a)x row pitch(b)	mm	21x22	21x22
	Fin spacing	mm	1.3	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ7,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width	mm	745*504*22	745*504*22
	Number of circuits		2	2
Outdoor air flow		m3/h	2200	2200
Outdoor sound pressure level		dB(A)	53	55.5
Outdoor sound power level		dB(A)	62	62
Throttle type			EXV	EXV
Outdoor unit	Dimension(W*D*H)	mm	765x303x555	765x303x555
	Packing (W*D*H)	mm	887x337x610	887x337x610
	Net/Gross weight	kg	24.6/27	26.6/29
Refrigerant type	Type	-	R32	R32
	GWP	-	675	675
	Charged quantity	kg	0.65	0.71
Design pressure		MPa	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/Φ9.52(1/4"/3/8")
	Max. refrigerant pipe length	m	25	25
	Max. difference in level	m	10	10
Ambient temperature	Cooling	°C	-15~50	-15~50
	Heating	°C	-20~24	-20~24
Qty'per 20' /40' /40'HQ		Outdoor unit	132/264/352	132/264/352

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.

4) TDB Summer Outdoor: 35°C; TWB Summer Outdoor: 21,4°C; TDB Winter Outdoor: -0.8°C; RH Winter Outdoor: 90%.

Indoor model			MUCR-18-H14-I	MUCR-24-H14-I
Outdoor model			MUER-18-H14-E	MUER-24-H14-E
Power supply (Indoor)	V- Ph-Hz		220-240-1-50	220-240-1-50
Power Supply (Outdoor)	V-Ph-Hz		220-240-1-50	220-240-1-50
Rated Power Input	W		2950	3700
Rated Current	A		13.5	19
Indoor fan motor	Model		ZKFN-81-8-1	ZKFN-165-10-1L
	Qty		1	1
	Insulation class		B	B
	IP rating		IP20	IP20
	Output	W	81	165
	Capacitor	uF	/	/
	Speed(Hi/Mi/Lo)	r/min	1000/900/800	950/850/750
Indoor coil	Number of rows		3	3
	Tube pitch(a)x row pitch(b)	mm	19.5*11.6	19.5*11.6
	Fin spacing	mm	1.2	1.2
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ5,Inner groove tube	Φ5,Inner groove tube
	Coil length x height x width	mm	525*351*34.8	825*351*34.8
	Number of circuits		6	9
Indoor air flow (Hi/Mi/Lo)		m3/h	900/780/650	1200/1000/700
ESP	Rated	Pa	25	25
	Range	Pa	0-160	0-160
Indoor sound pressure level Hi/Mi/Lo)		dB(A)	36.5/34/31	33.5/32.5/31
Indoor sound power level		dB(A)	53	56
Indoor unit	Dimension(W*D*H)	mm	700x750x245	1000x750x245
	Packing (W*D*H)	mm	925x850x298	1225x860x304
	Net/Gross weight	kg	24.4/29	31.8/37.2
Drainage water pipe diameter		mm	ODΦ25mm	ODΦ25mm
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ12.7(1/4"/1/2")	Φ9.52/Φ15.9(3/8"/5/8")
Controller			Wired control	Wired control
Operation temperature		°C	16-30	16-30
Room temperature	Cooling	°C	16~32	16~32
	Heating	°C	0~30	0~30
Qty/per 20' /40' /40'HQ		Indoor unit	96/224/252	70/154/176
Compressor	Model		KSN140D21UFZ	KTM240D46UKT2
	Type		ROTARY	ROTARY
	Brand		GMCC	GMCC
	Capacity	W	4385	4780/7600
	Input	W	1140	805/2045
	Rated current(RLA)	A	7.50	4.15/9.30
	Refrigerant oil/oil charge	ml	VG74 440	VG74 620
Outdoor fan motor	Model		ZKFN-34-10-1-3	ZKFN-80-8-3
	Qty		1	1
	Insulation class		B	E
	IP rating		IP24	IPX4
	Output	W	34	80
	Capacitor	uF	/	/
	Speed	r/min	760/650	830/550

Outdoor coil	Number of rows		2	1.6
	Tube pitch(a)x row pitch(b)	mm	21x22	21x22
	Fin spacing	mm	1.3	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ7,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width	mm	860*504*44	900*609*22+540*609*22
	Number of circuits		4	5
Outdoor air flow		m ³ /h	2100	3500
Outdoor sound pressure level		dB(A)	59	60
Outdoor sound power level		dB(A)	62	69
Throttle type			EXV	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	805x330x554	890x342x673
	Packing (W*D*H)	mm	915x370x615	995x398x740
	Net/Gross weight	kg	32.5/35.2	41.9/45.2
Refrigerant type	Type	-	R32	R32
	GWP	-	675	675
	Charged quantity	kg	1.15	1.4
Design pressure		MPa	4.3/1.7	4.3/1.7
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ12.7(1/4"/1/2")	Φ9.52/Φ15.9(3/8"/5/8")
	Max. refrigerant pipe length	m	30	50
	Max. difference in level	m	20	25
Ambient temperature	Cooling	°C	-15~50	-15~50
	Heating	°C	-20~24	-20~24
Qty/per 20' /40' /40'HQ		Outdoor unit	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.

4) TDB Summer Outdoor: 35°C; TWB Summer Outdoor: 21,4°C; TDB Winter Outdoor: -0.8°C; RH Winter Outdoor: 90%.

Indoor model			MUCR-30-H14-I	MUCR-36-H14-I
Outdoor model			MUER-30-H14-E	MUER-36-H14-E
Power supply (Indoor)	V- Ph-Hz		220~240-1-50	220~240-1-50
Power Supply (Outdoor)	V-Ph-Hz		220~240-1-50	220~240-1-50
Rated Power Input	W		4500	5000
Rated Current	A		20	22.5
Indoor fan motor	Model		ZKFN-165-10-1L	ZKFN-400-8-1
	Qty		1	1
	Insulation class		B	B
	IP rating		IP20	IP20
	Output	W	165	400
	Capacitor	uF	/	/
	Speed(Hi/Mi/Lo)	r/min	1180/1040/910	1120/1000/880
Indoor coil	Number of rows		4	3
	Tube pitch(a)x row pitch(b)	mm	19.5*11.6	21x13.37
	Fin spacing	mm	1.2	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ5,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width	mm	825*351*46.4	1025*378*40.11
	Number of circuits		9	9
Indoor air flow (Hi/Mi/Lo)	m3/h		1500/1200/900	1700/1400/1100
ESP	Rated	Pa	37	37
	Range	Pa	0-160	0-160
Indoor sound pressure level Hi/Mi/Lo)		dB(A)	39/37/35	38/36/33
Indoor sound power level		dB(A)	60	62
Indoor unit	Dimension(W*D*H)	mm	1000x750x245	1200x750x245
	Packing (W*D*H)	mm	1225x860x304	1425x860x304
	Net/Gross weight	kg	32.7/38.3	38.4/44.4
Drainage water pipe diameter	mm		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")
Controller			Wired control	Wired control
Operation temperature		°C	16-30	16-30
Room temperature	Cooling	°C	16~32	16~32
	Heating	°C	0~30	0~30
Qty'per 20' /40' /40'HQ	Indoor unit		70/154/176	70/147/168
Compressor	Model		KTM240D46UKT2	KTF310D43UMT
	Type		ROTARY	ROTARY
	Brand		GMCC	GMCC
	Capacity	W	4780/7600	10010
	Input	W	805/2045	2765
	Rated current(RLA)	A	4.15/9.30	5.38
	Thermal protector		/	INT01L-4639
	Thermal protector position		NA	EXTERNAL
	Refrigerant oil/oil charge	ml	VG74/620	VG74/1000
Outdoor fan motor	Model		ZKFN-120-8-2	ZKFN-120-8-2
	Qty		1	1
	Insulation class		E	E
	IP rating		IPX4	IPX4
	Output	W	120	120
	Capacitor	uF	/	/
Speed	r/min		900/750/550	950/850/700

Outdoor coil	Number of rows		1.6	2
	Tube pitch(a)x row pitch(b)	mm	25.4x22	25.4x22
	Fin spacing	mm	1.3	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ7Inner groove tube	Φ9.52,Inner groove tube
	Coil length x height x width	mm	995x762x44	995x762x44
	Number of circuits		6	4
Outdoor air flow		m ³ /h	3800	4000
Outdoor sound pressure level		dB(A)	60	65
Outdoor sound power level		dB(A)	70	70
Throttle type			EXV+Throttle valve	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	946x410x810	946x410x810
	Packing (W*D*H)	mm	1090x500x885	1090x500x885
	Net/Gross weight	kg	51/55.7	66.9/71.5
Refrigerant type	Type	-	R32	R32
	GWP	-	675	675
	Charged quantity	kg	1.8	2.4
Design pressure		MPa	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")
	Max. refrigerant pipe length	m	50	75
	Max. difference in level	m	25	30
Ambient temperature	Cooling	°C	-15~50	-15~50
	Heating	°C	-20~24	-20~24
Qty'per 20' /40' /40'HQ		Outdoor unit	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.

4) TDB Summer Outdoor: 35°C; TWB Summer Outdoor: 21,4°C; TDB Winter Outdoor: -0.8°C; RH Winter Outdoor: 90%.

Indoor model			MUCR-42-H14-I	MUCR-48-H14-I	
Outdoor model			MUER-42-H14-E	MUER-48-H14-E	
Power supply (Indoor)		V- Ph-Hz	220~240-1-50	220~240-1-50	
Power Supply (Outdoor)		V-Ph-Hz	220~240-1-50	220~240-1-50	
Rated Power Input		W	5000	7300	
Rated Current		A	22.5	32	
Indoor fan motor	Model		ZKFN-400-8-1	ZKFN-400-8-1	
	Qty		1	1	
	Insulation class		B	B	
	IP rating		IP20	IP20	
	Output		W	400	
	Capacitor		uF	/	
	Speed(Hi/Mi/Lo)		r/min	1350/1230/1110	1350/1230/1110
Indoor coil	Number of rows		4	4	
	Tube pitch(a)x row pitch(b)		mm	21x13.37	21x13.37
	Fin spacing		mm	1.4	1.4
	Fin type (code)			Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type		mm	Φ7,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width		mm	1025*378*53.48	1025*378*53.48
	Number of circuits			9	9
Indoor air flow (Hi/Mi/Lo)		m ³ /h	2000/1700/1300	2000/1700/1300	
ESP	Rated		Pa	50	50
	Range		Pa	0-160	0-160
Indoor sound pressure level Hi/Mi/Lo)		dB(A)	39/37/35.5	46/44/42	
Indoor sound power level		dB(A)	62	64	
Indoor unit	Dimension(W*D*H)		mm	1200x750x245	1200x750x245
	Packing (W*D*H)		mm	1425x860x304	1425x860x304
	Net/Gross weight		kg	40.6/46.1	40.4/46.8
Drainage water pipe diameter		mm	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")
Controller			Wired control	Wired control	
Operation temperature		°C	16-30	16-30	
Room temperature	Cooling		°C	16~32	16~32
	Heating		°C	0~30	0~30
Qty/per 20' /40' /40'HQ		Indoor unit	70/147/168	70/147/168	
Compressor	Model		KTF310D43UMT	KTQ420D1UMU	
	Type		ROTARY	ROTARY	
	Brand		GMCC	GMCC	
	Capacity		W	10010	13700
	Input		W	2765	3700
	Rated current(RLA)		A	5.38	7.02
	Thermal protector			INT01L-4639	INT01L-4639
	Thermal protector position			EXTERNAL	EXTERNAL
Refrigerant oil/oil charge		ml	VG74/1000	VG74/1400	
Outdoor fan motor	Model		ZKFN-120-8-2	ZKFN-250-10-1	
	Qty		1	2	
	Insulation class			E	B
	IP rating			IPX4	IP44
	Output		W	120	250
	Capacitor		uF	/	/
	Speed		r/min	950/750	850/400

Outdoor coil	Number of rows		2.6	2.6
	Tube pitch(a)x row pitch(b)	mm	25.4x22	21x22
	Fin spacing	mm	1.5	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ9.52,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width	mm	995x762x22+960x762x22+580x762x22	990*924*66
	Number of circuits		6	14
Outdoor air flow		m ³ /h	4000	5600
Outdoor sound pressure level		dB(A)	63.5	64.5
Outdoor sound power level		dB(A)	72	74
Throttle type			EXV+Throttle valve	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	946x410x810	980x375x975
	Packing (W*D*H)	mm	1090x500x885	1145x500x1080
	Net/Gross weight	kg	71.0/75.0	82.5/97
Refrigerant type	Type	-	R32	R32
	GWP	-	675	675
	Charged quantity	kg	2.8	2.9
Design pressure		MPa	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")
	Max. refrigerant pipe length	m	75	75
	Max. difference in level	m	30	30
Ambient temperature	Cooling	°C	-15~50	-15~50
	Heating	°C	-20~24	-20~24
Qty/per 20' /40' /40'HQ		Outdoor unit	44/96/138	44/96/96

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.

4) TDB Summer Outdoor: 35°C; TWB Summer Outdoor: 21,4°C; TDB Winter Outdoor: -0.8°C; RH Winter Outdoor: 90%.

Indoor model			MUCR-48-H14-I	MUCR-60-H14-I
Outdoor model			MUER-48-H14T-E	MUER-60-H14T-E
Power supply (Indoor)		V- Ph-Hz	220~240-1-50	220~240-1-50
Power Supply (Outdoor)		V-Ph-Hz	380~415-3-50	380~415-3-50
Rated Power Input		W	7300	7500
Rated Current		A	14	14
Indoor fan motor	Model		ZKFN-400-8-1	ZKFN-400-8-1
	Qty		1	1
	Insulation class		B	B
	IP rating		IP20	IP20
	Output	W	400	400
	Capacitor	uF	/	/
	Speed(Hi/Mi/Lo)	r/min	1350/1230/1110	910/855/690
Indoor coil	Number of rows		4	4
	Tube pitch(a)x row pitch(b)	mm	21x13.37	21x13.37
	Fin spacing	mm	1.4	1.4
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ7,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width	mm	1025*378*53.48	1025*378*53.48
	Number of circuits		9	9
Indoor air flow (Hi/Mi/Lo)		m3/h	2000/1700/1300	2200/1900/1500
ESP	Rated	Pa	50	50
	Range	Pa	0-160	0-160
Indoor sound pressure level Hi/Mi/Lo)		dB(A)	43.5/41.5/39.5	44.5/43/41.5
Indoor sound power level		dB(A)	65	66
Indoor unit	Dimension(W*D*H)	mm	1200x750x245	1200x750x300
	Packing (W*D*H)	mm	1425x860x304	1425x860x359
	Net/Gross weight	kg	40.4/46.8	42.9/49.1
Drainage water pipe diameter		mm	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")
Controller			Wired control	Wired control
Operation temperature		°C	16-30	16-30
Room temperature	Cooling	°C	16~32	16~32
	Heating	°C	0~30	0~30
Qty'per 20' /40' /40'HQ		Indoor unit	70/147/168	60/126/147
Compressor	Model		KTQ420D1UMU	KTQ420D1UMU
	Type		ROTARY	ROTARY
	Brand		GMCC	GMCC
	Capacity	W	13700	13700
	Input	W	3700	3700
	Rated current(RLA)	A	7.02	7.02
	Thermal protector		INT01L-4639	INT01L-4639
	Thermal protector position		EXTERNAL	EXTERNAL
Refrigerant oil/oil charge	ml	VG74/1400	VG74/1400	
Outdoor fan motor	Model		ZKFN-250-10-1	ZKFN-250-10-1
	Qty		2	2
	Insulation class		B	B
	IP rating		IP44	IP44
	Output	W	250	250
	Capacitor	uF	/	/
	Speed	r/min	850/400	850/400

Outdoor coil	Number of rows		2.6	3
	Tube pitch(a)x row pitch(b)	mm	21x22	21x22
	Fin spacing	mm	1.3	1.3
	Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ7,Inner groove tube	Φ7,Inner groove tube
	Coil length x height x width	mm	757*303*924	990*924*66
	Number of circuits		14	14
Outdoor air flow		m ³ /h	5600	5600
Outdoor sound pressure level		dB(A)	64.5	64
Outdoor sound power level		dB(A)	73	74
Throttle type			EXV+Throttle valve	EXV+Throttle valve
Outdoor unit	Dimension(W*D*H)	mm	980x375x975	980x375x975
	Packing (W*D*H)	mm	1145x500x1080	1145x500x1080
	Net/Gross weight	kg	90/105	92/107
Refrigerant type	Type	-	R32	R32
	GWP	-	675	675
	Charged quantity	kg	2.9	3.2
Design pressure		MPa	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")
	Max. refrigerant pipe length	m	75	75
	Max. difference in level	m	30	30
Ambient temperature	Cooling	°C	-15~50	-15~50
	Heating	°C	-20~24	-20~24
Qty'per 20' /40' /40'HQ		Outdoor unit	44/96/96	44/96/96

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.

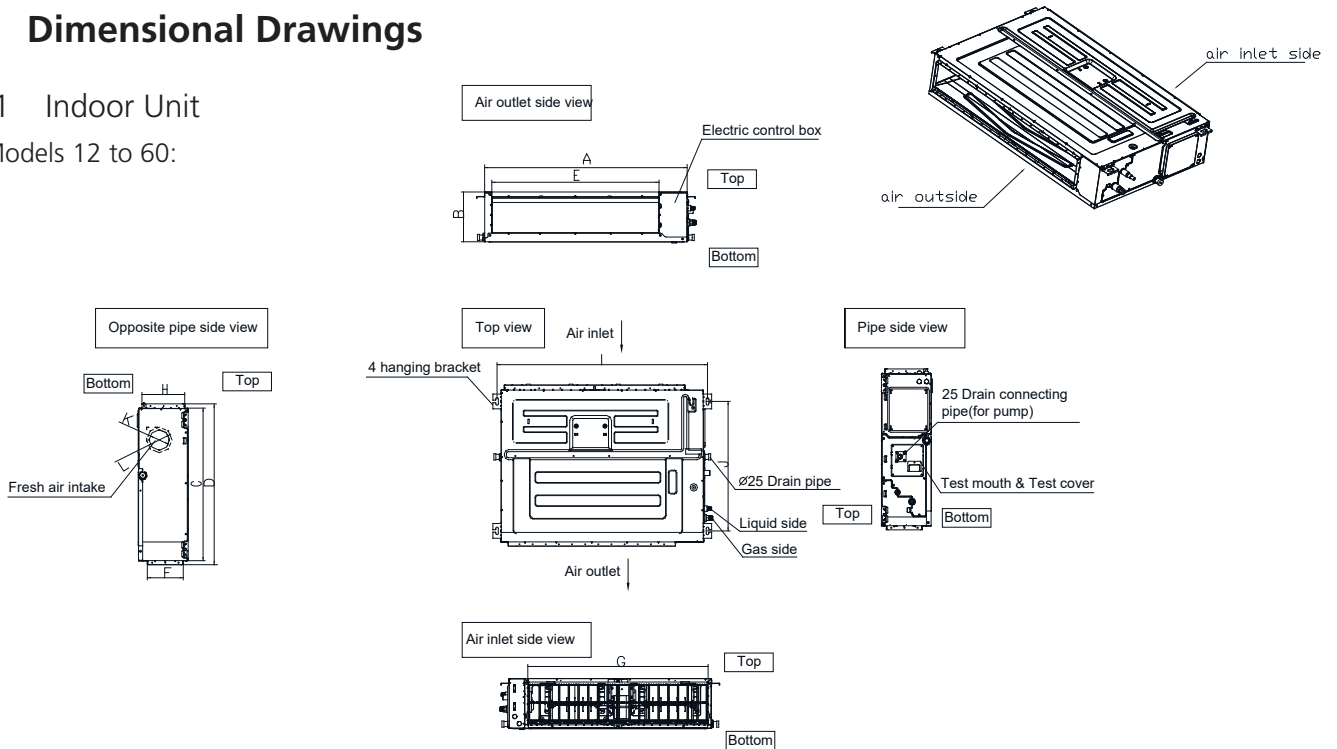
3) Due to our policy of innovation some specifications may be changed without notification.

4) TDB Summer Outdoor: 35°C; TWB Summer Outdoor: 21,4°C; TDB Winter Outdoor: -0.8°C; RH Winter Outdoor: 90%.

3. Dimensional Drawings

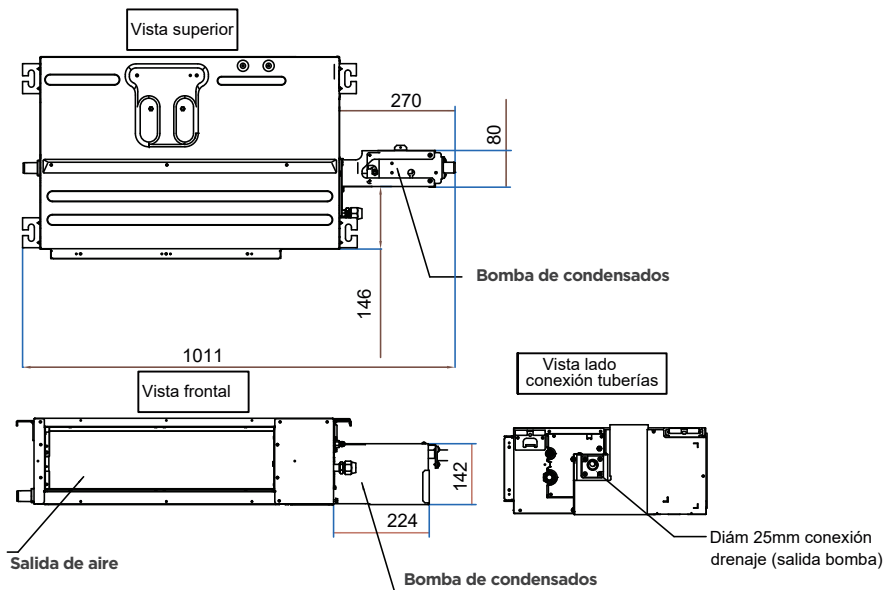
3.1 Indoor Unit

Models 12 to 60:



Model (KBtu/h)	unit	Outline Dimension				Air Outlet Opening Size		Air Return Opening Size		Size Of Mounted Lug		Fresh Air In- take Opening Size	
		A	B	C	D	E	F	G	H	I	J	K	L
12	mm	700	200	450	506	537	152	599	186	741	360	92	113
18	mm	700	245	750	795	527	178	592	212	740	640	100	126
24/30	mm	1000	245	750	795	827	178	892	212	1040	640	100	126
36/42/48	mm	1200	245	750	795	1027	178	1092	212	1240	640	100	126
60	mm	1200	300	750	795	1027	233	1092	267	1240	640	125	160

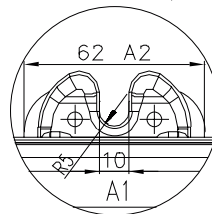
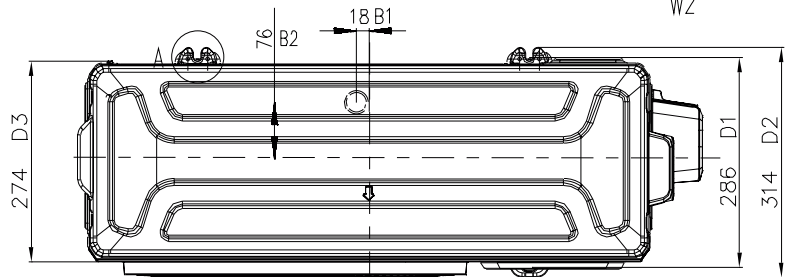
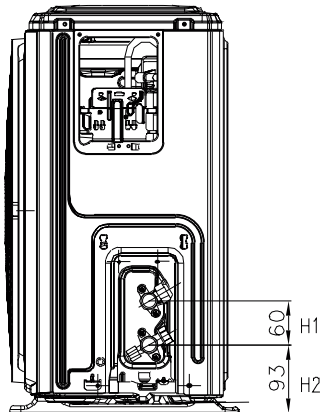
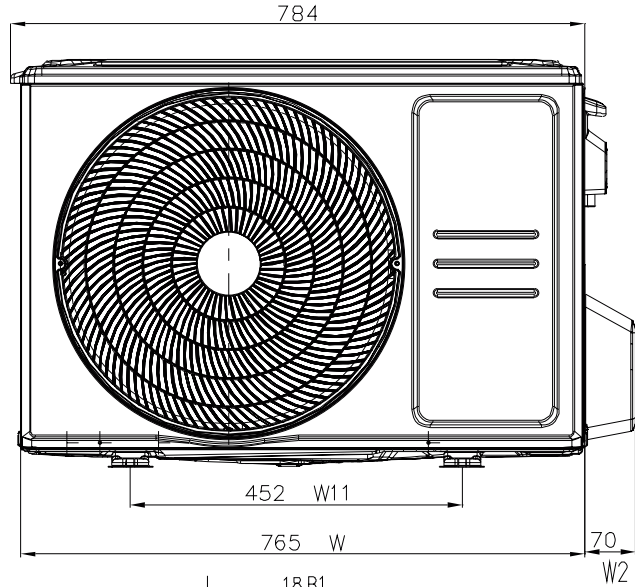
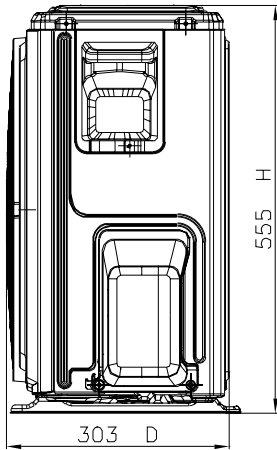
Model 09:



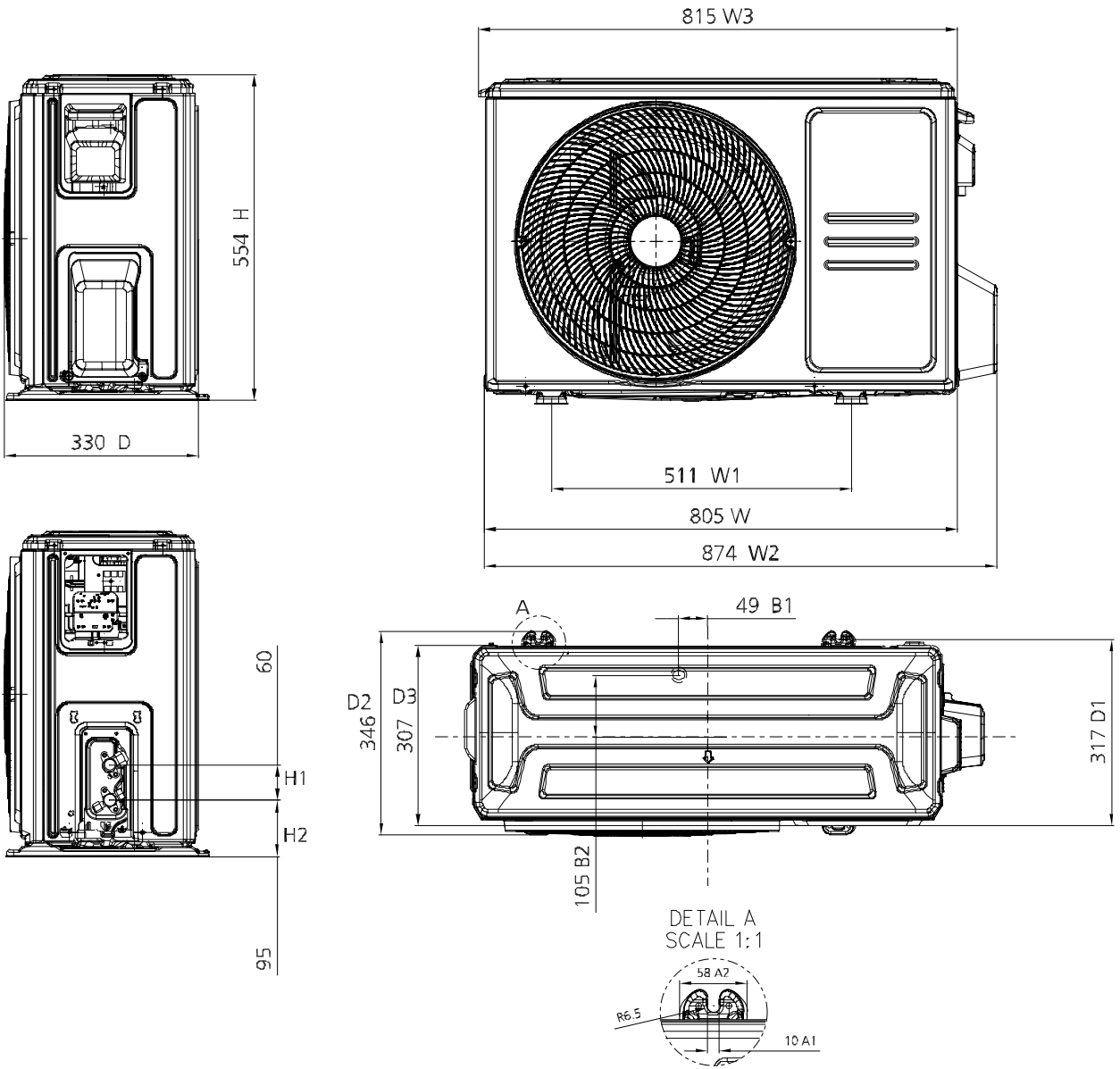
3.2 Outdoor Unit

MUER-09-H14-E

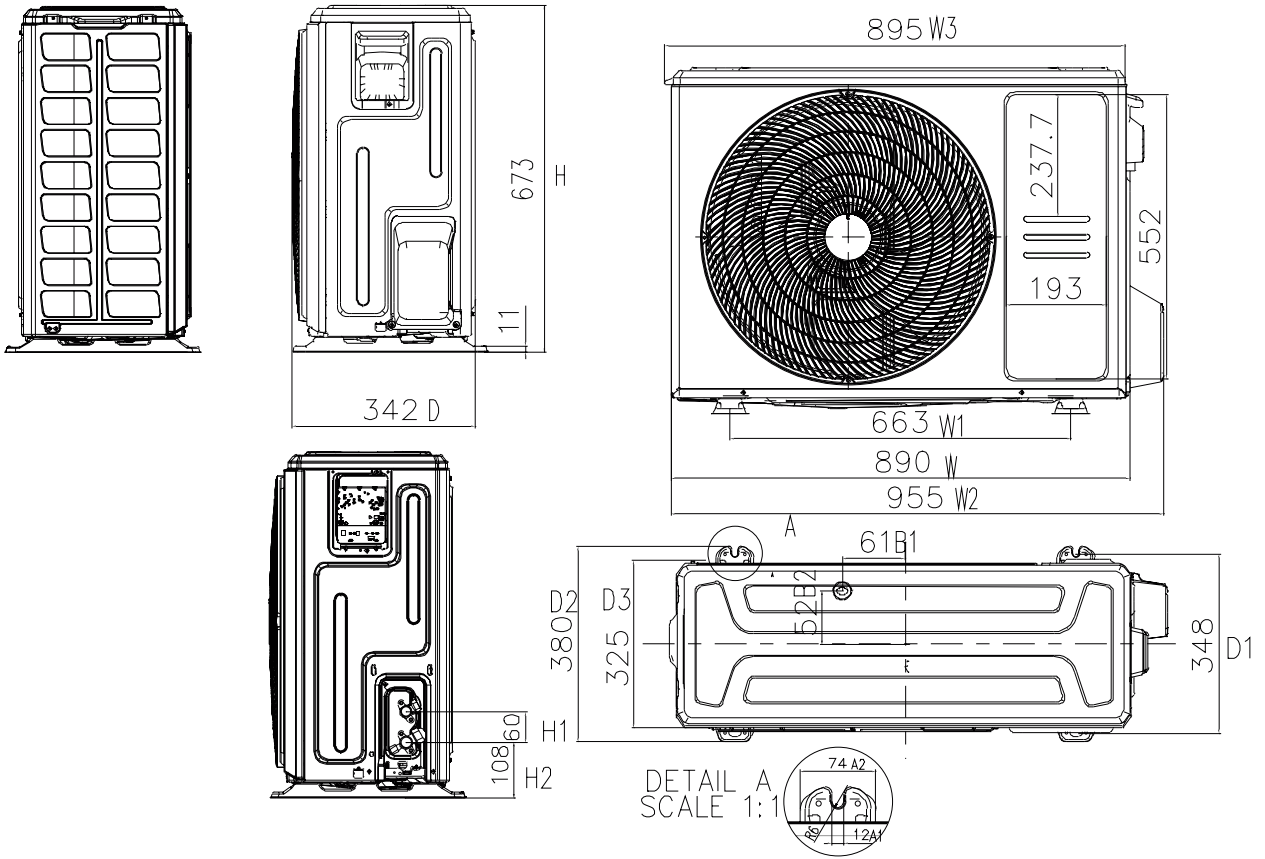
MUER-12-H14-E



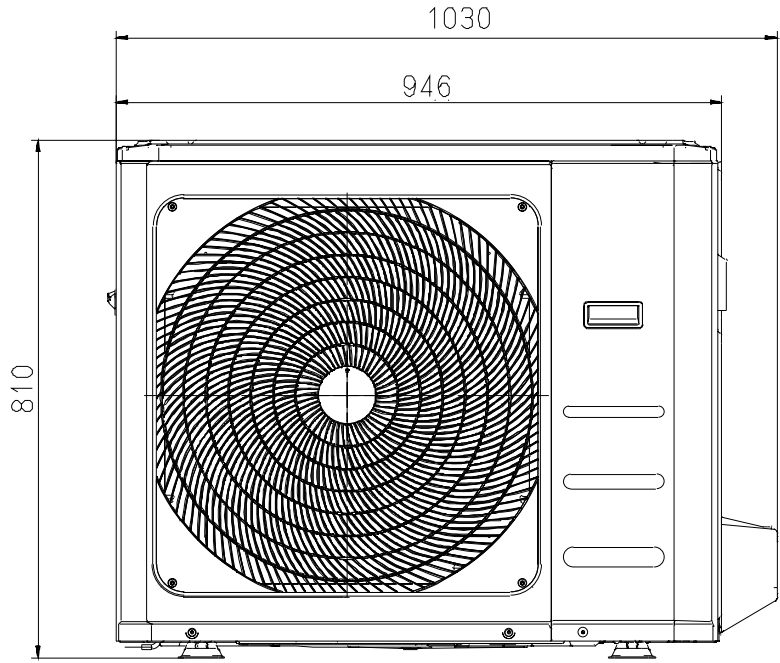
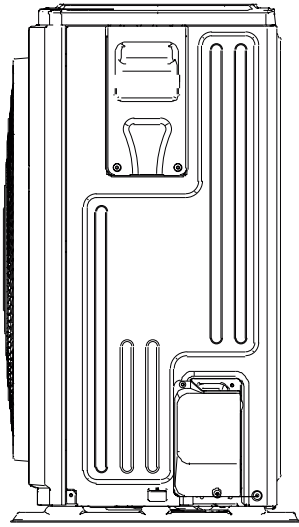
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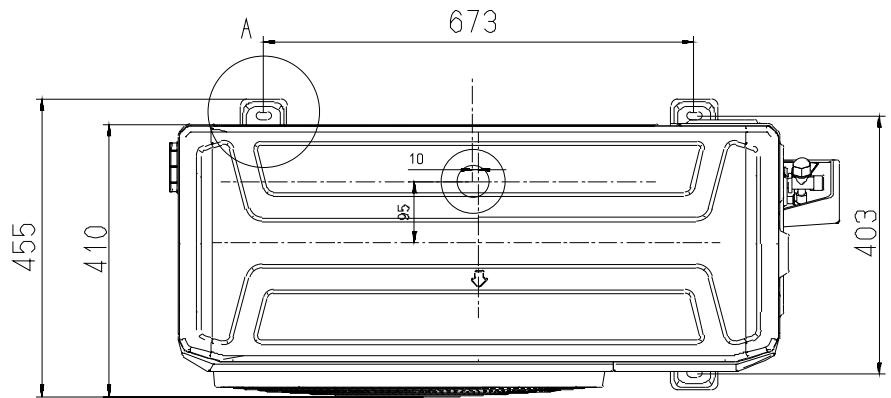
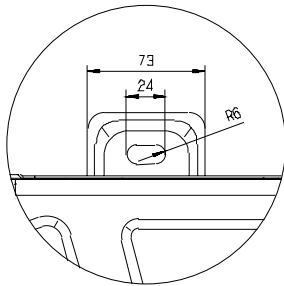
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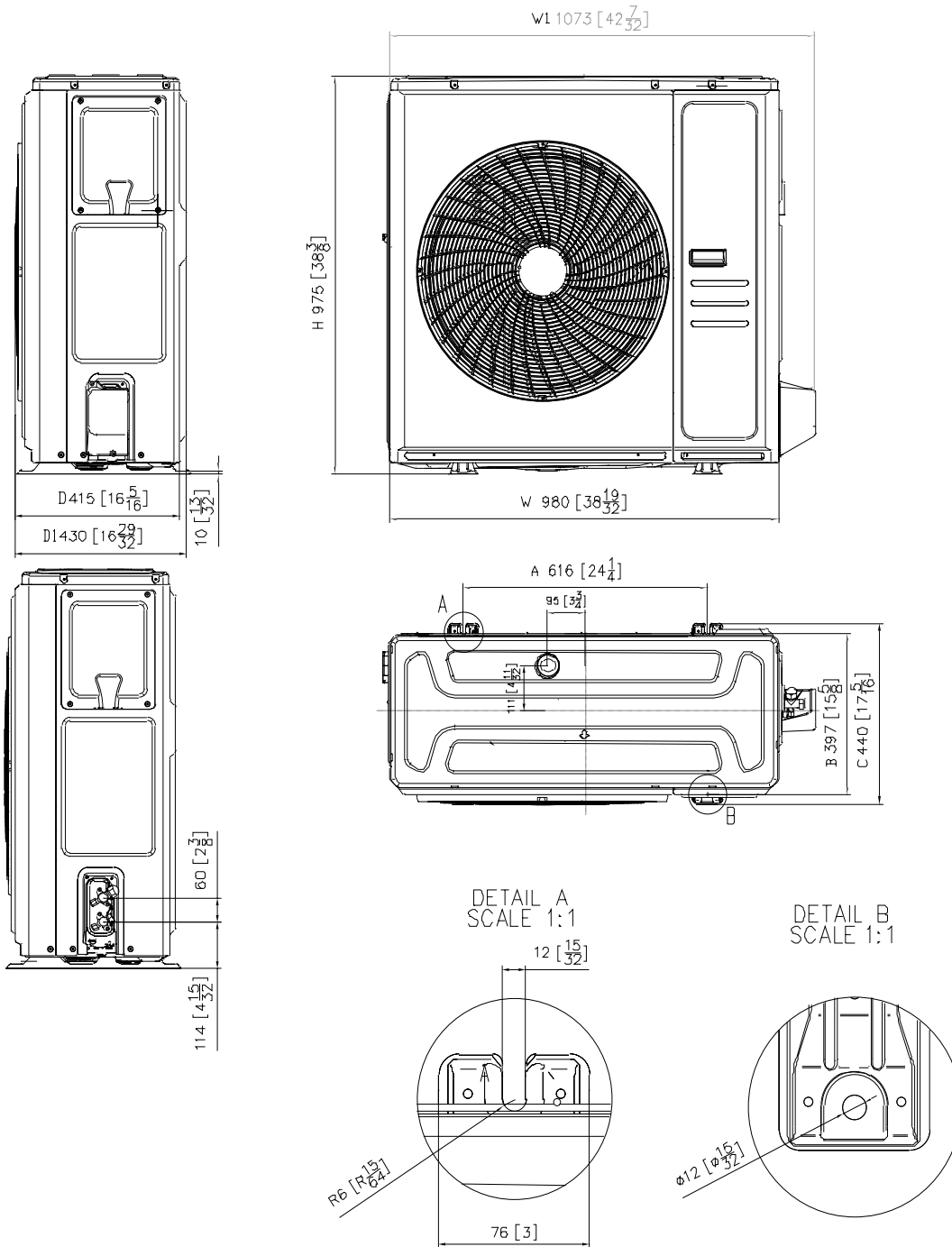
MUER-30-H14-E
MUER-36-H14-E
MUER-42-H14-E



DETAIL A
SCALE 1 : 2



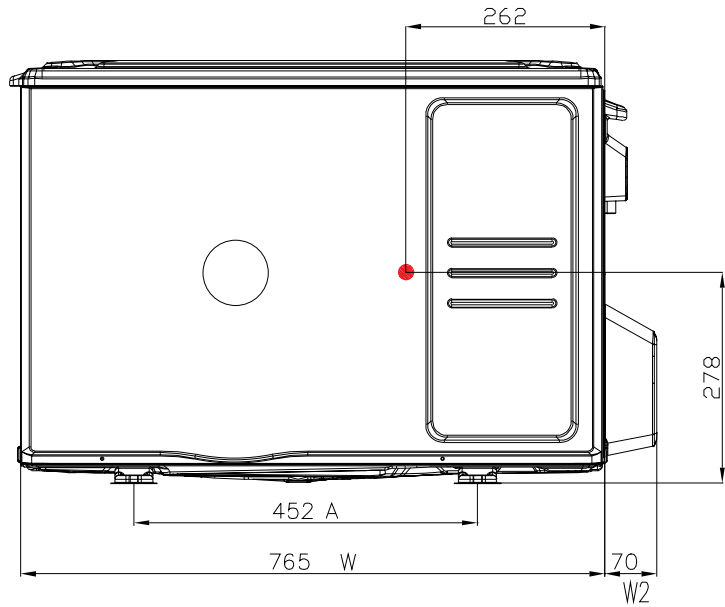
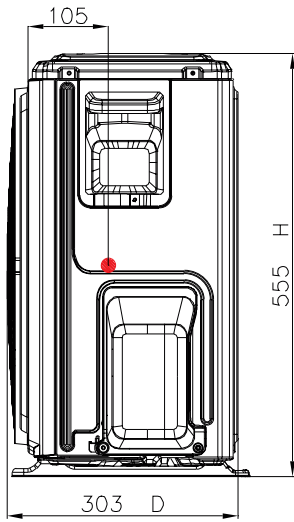
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 MUER-48-H14T-E
 MUER-60-H14T-E



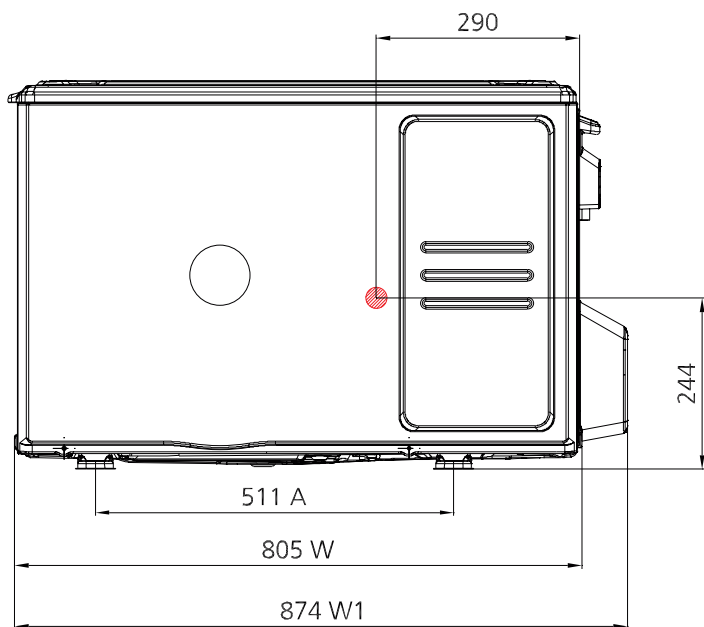
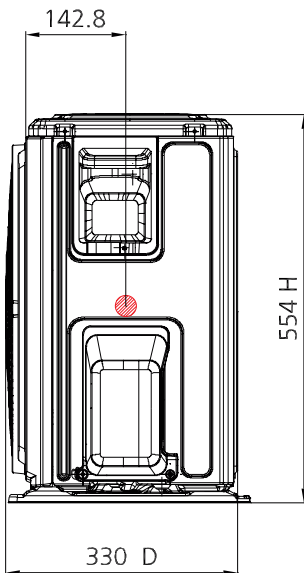
4. Centre of gravity

MUER-09-H14-E

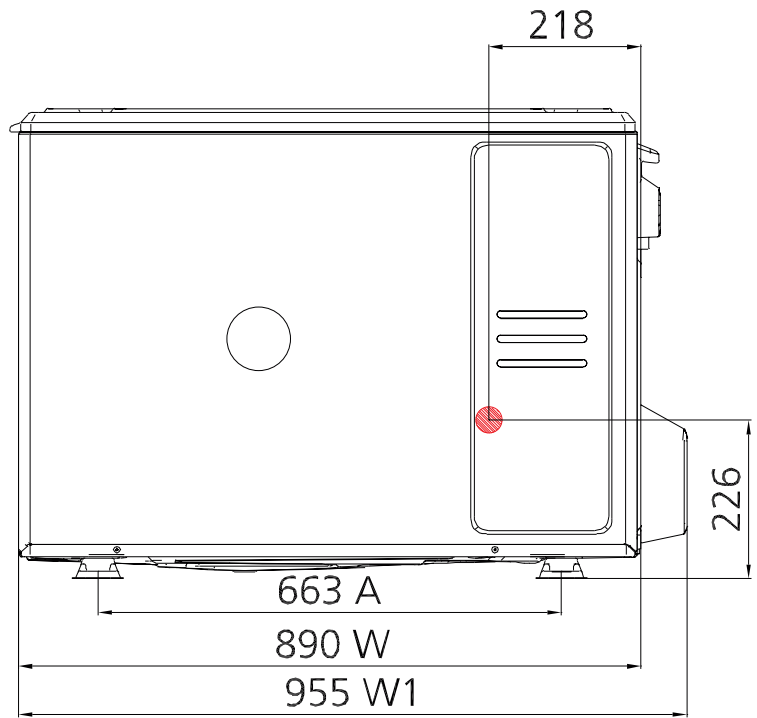
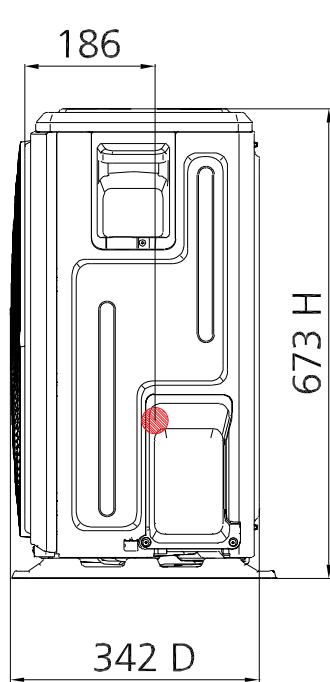
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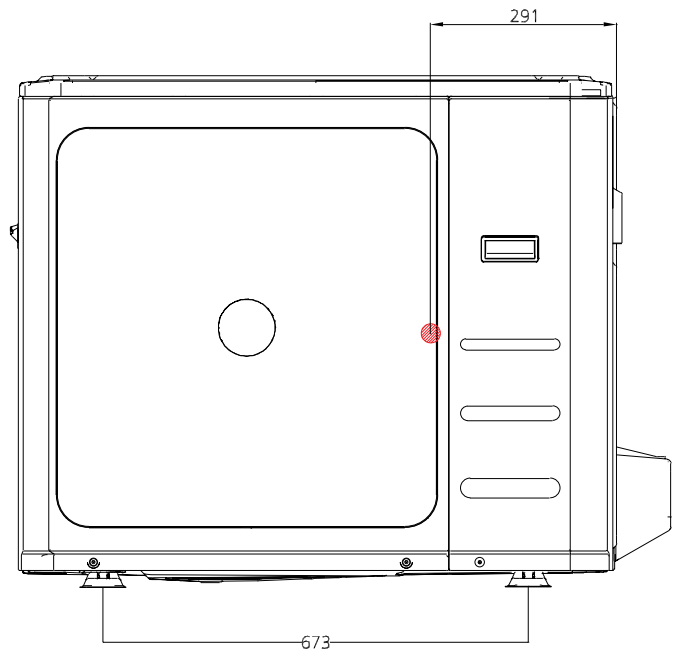
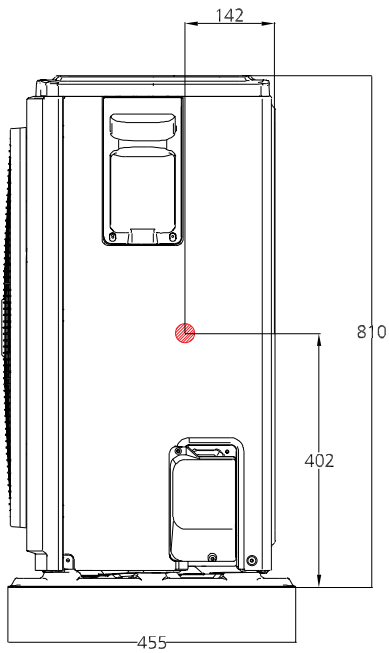
MUER-18-H14-E



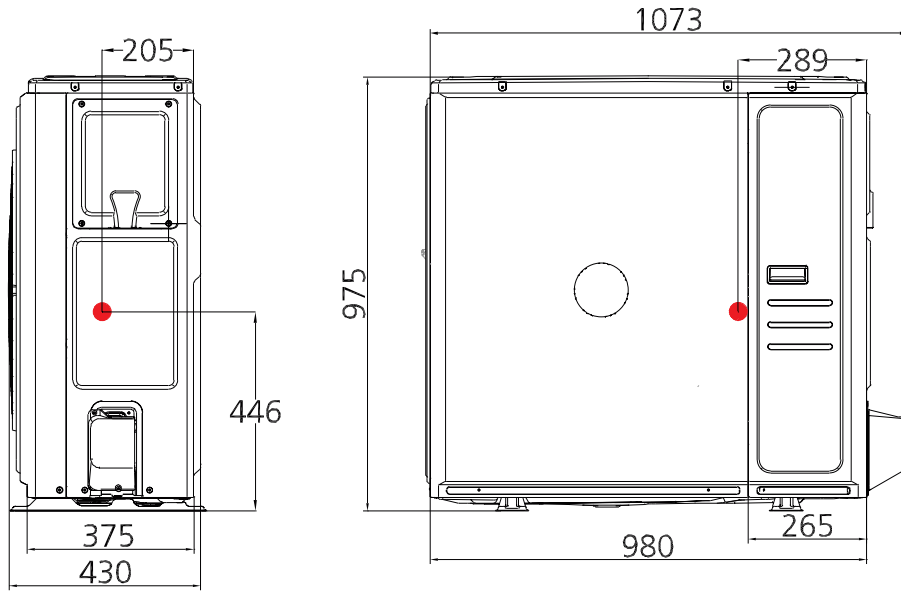
MUER-24-H14-E



MUER-30-H14-E
MUER-36-H14-E
MUER-42-H14-E



MUER-48-H14-E
MUER-48-H14T-E
MUER-60-H14T-E

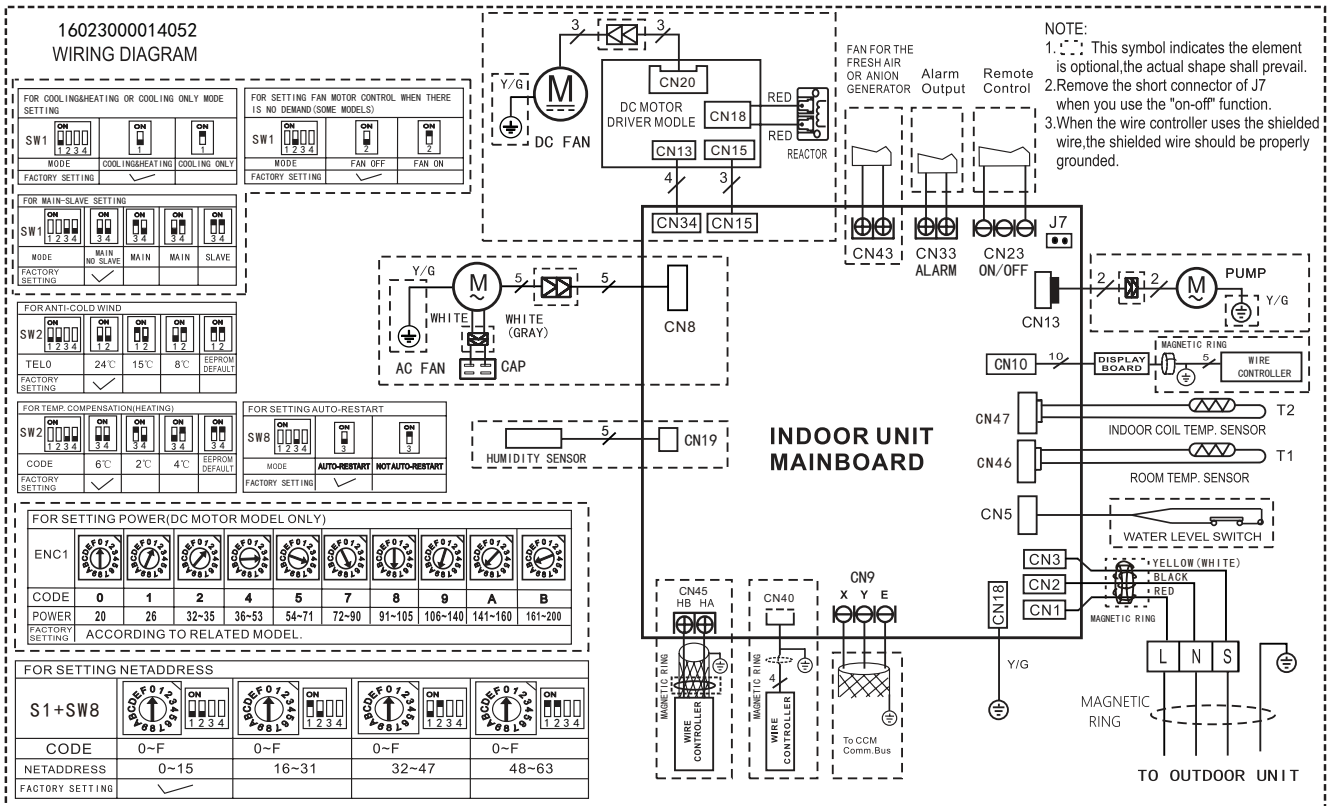


5. Electrical Wiring Diagrams

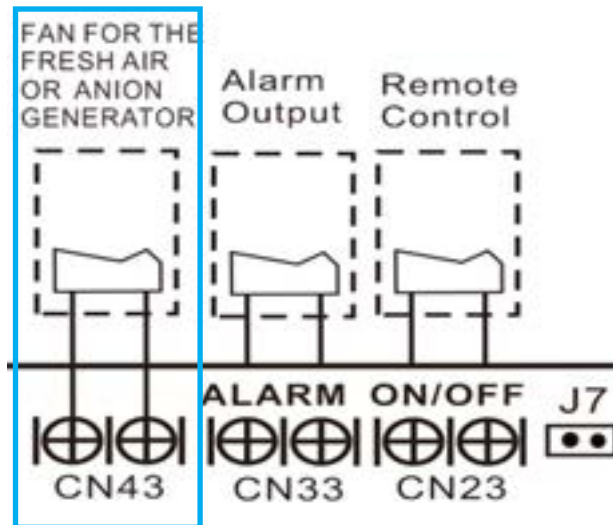
5.1 Indoor unit

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

MUCR-H14-I (all models)

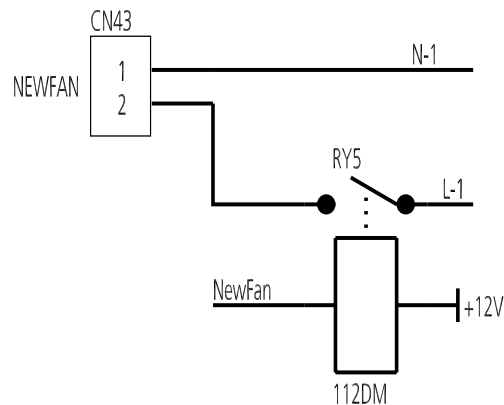


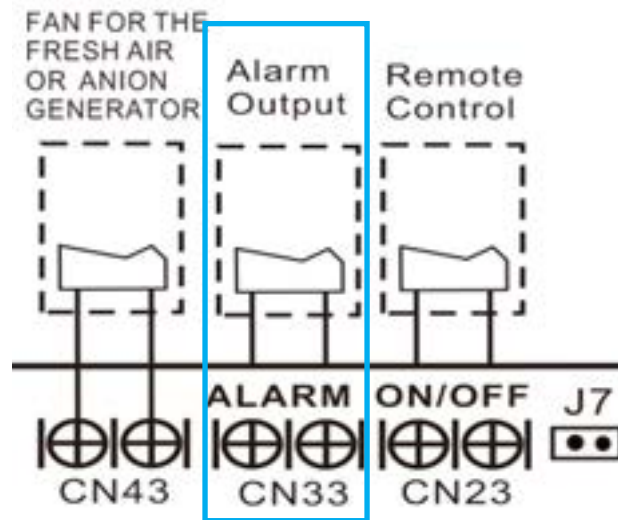
5.2 Some connectors introduce:



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

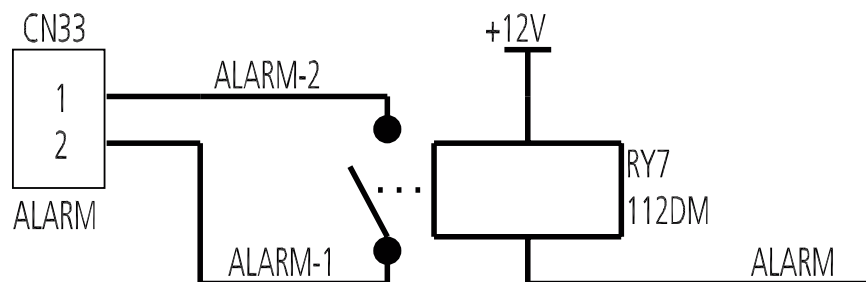
1. Connect the fan motor to the port , no need care L/N of the motor ;
2. The output voltage is the power supply;
3. The fresh motor can not exceed 200W or 1A , follow the smaller one ;
4. The new fresh motor will be worked when the indoor fan motor work ;when the indoor fan motor stops , the new fresh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

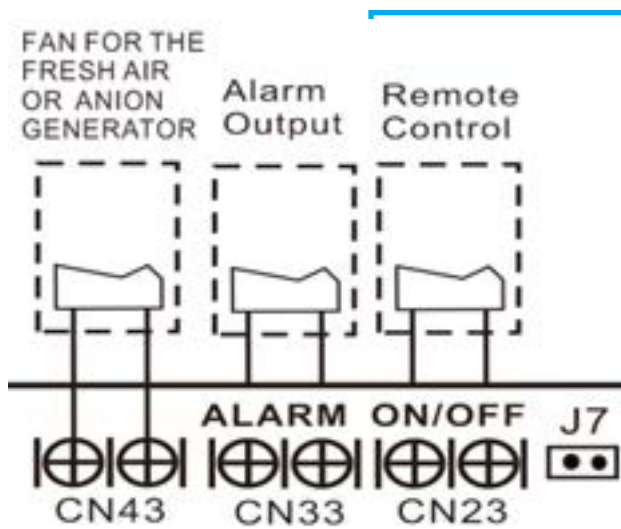




B For ALARM terminal port CN33

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



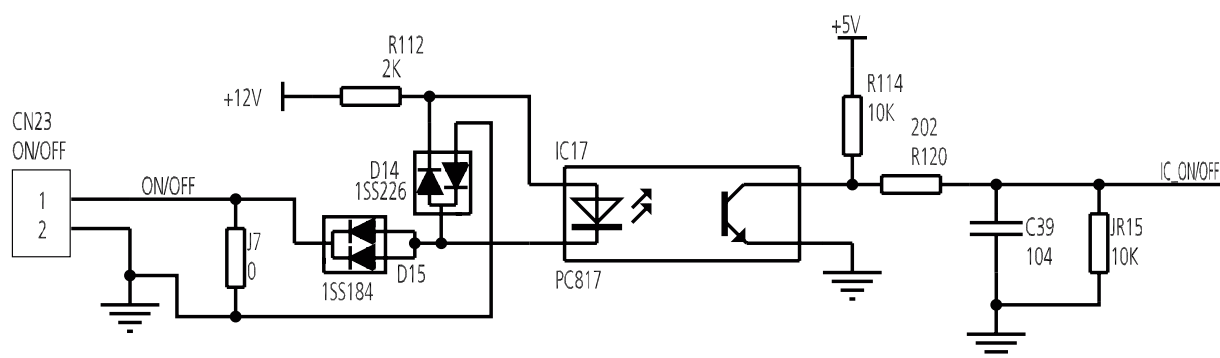


C. For remote control (ON-OFF) terminal port CN23 and short connector of J7





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.







5.3 Micro-Switch Introduce:

	FOR COOLING&HEATING OR COOLING ONLY MODE SETTING			
	SW1			
	MODE	COOLING&HEATING	COOLING ONLY	
	FACTORY SETTING	✓		







A. Micro-switch SW1 is for setting cooling & heating or cooling only.

Range: cooling & heating, cooling.

	FOR SETTING FAN MOTOR CONTROL WHEN THERE IS NO DEMAND (SOME MODELS)			
	SW1			
	MODE	FAN OFF	FAN ON	
	FACTORY SETTING	✓		







B. Micro-switch SW1 is for selection of indoor FAN ACTION if room temperature reaches the setpoint and the compressor stops.

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

	FOR MAIN-SLAVE SETTING					
	SW1					
	MODE	MAIN NO SLAVE	MAIN	MAIN	SLAVE	
	FACTORY SETTING	✓				







C. Micro-switch SW1 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

	FOR TEMP. COMPENSATION (HEATING)					
	SW2					
	CODE	6°C	2°C	4°C	EEPROM DEFAULT	
	FACTORY SETTING	✓				

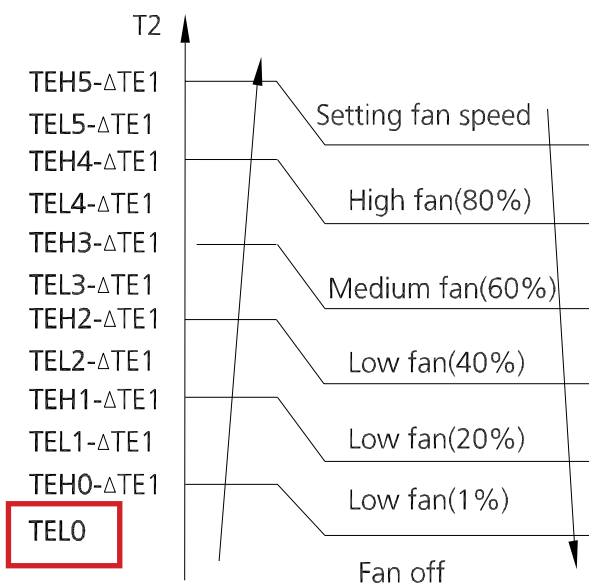
D. Micro-switch SW2 is for selection of temperature compensation in heating mode. This helps to reduce the real temperature difference between ceiling and floor so that the unit could run properly. If the height of installation is lower, smaller value could be chosen.

Range: 6°C, 4°C, 2°C, E function (reserved for special customizing)

	FOR ANTI-COLD WIND					
	SW2					
	TELO	24°C	15°C	8°C	EEPROM DEFAULT	
	FACTORY SETTING	✓				

E. Micro-switch SW2 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 EEPROM setting (reserved for special customizing).



	FOR SETTING AUTO-RESTART		
	SW8		
	MODE	AUTO-RESTART	NOT AUTO-RESTART
	FACTORY SETTING	✓	

F. Micro-switch SW8 is for selection of auto-restart function.
 Range: Active, inactive

	FOR SETTING NETADDRESS			
	S1+SW8			
	CODE	0~F	0~F	0~F
	NETADDRESS	0~15	16~31	32~47
FACTORY SETTING	✓			

G. Micro-switch SW8 and dial-switch S1 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
	POWER	20	26	32~35	36~53	54~71	72~90	91~105	106~140	141~160
FACTORY SETTING	ACCORDING TO RELATED MODEL.									

H. 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.

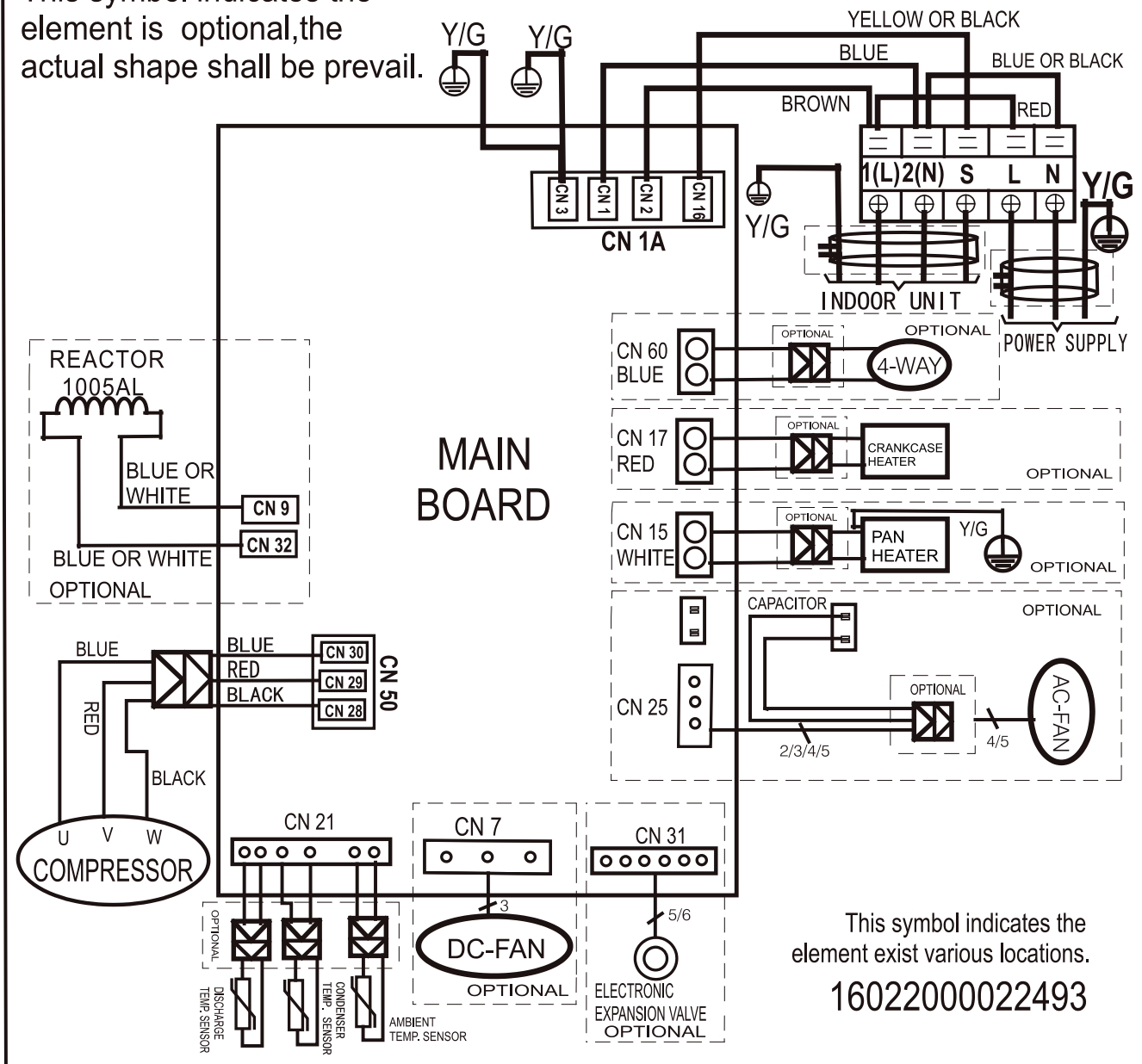
5.4 Outdoor Unit

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

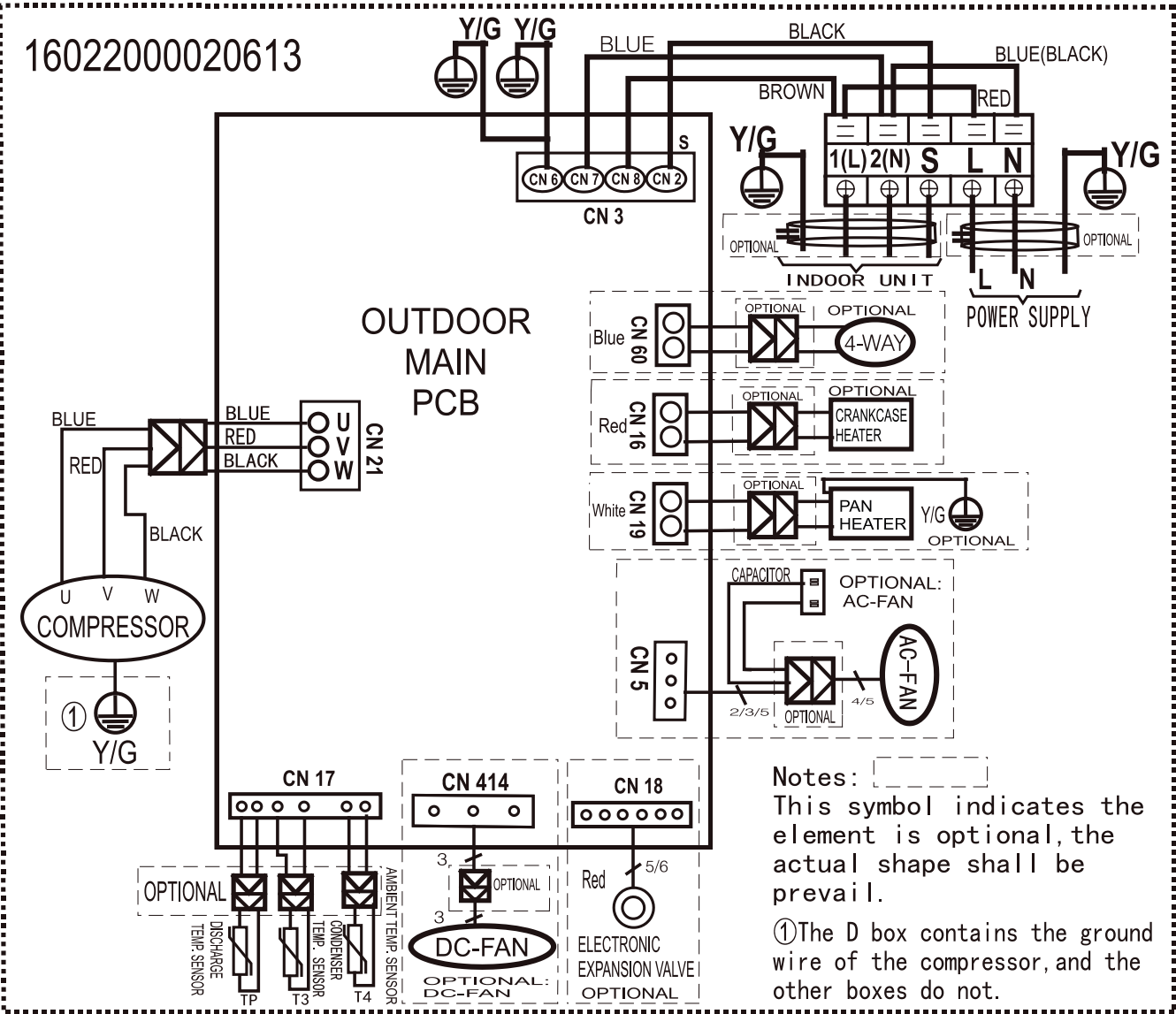
MUER-09-H14-E
 MUER-12-H14-E
 MUER-18-H14-E

Notes:

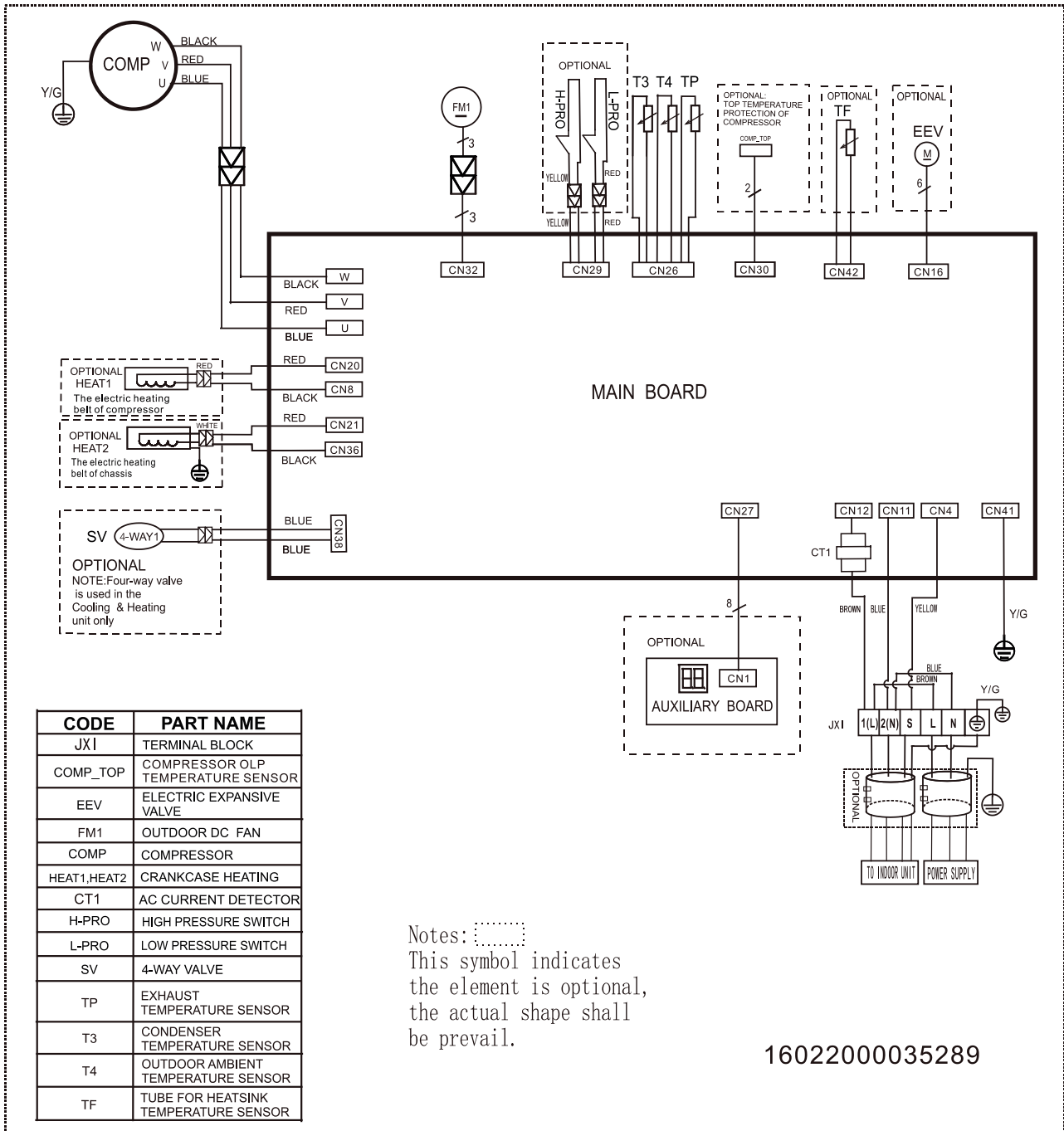
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
Specifications



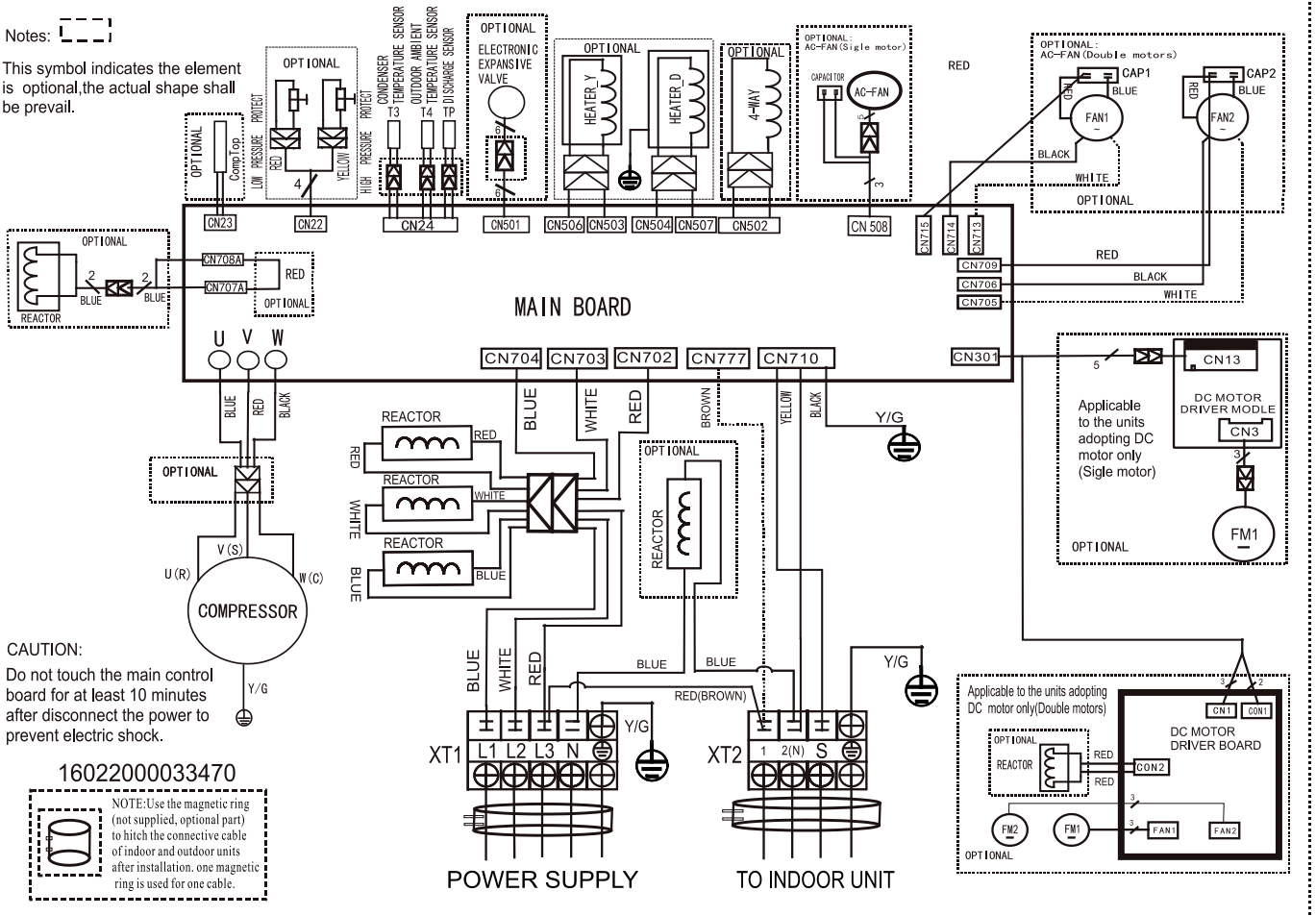
MUER-36-H14-E
MUER-42-H14-E



(none)


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.

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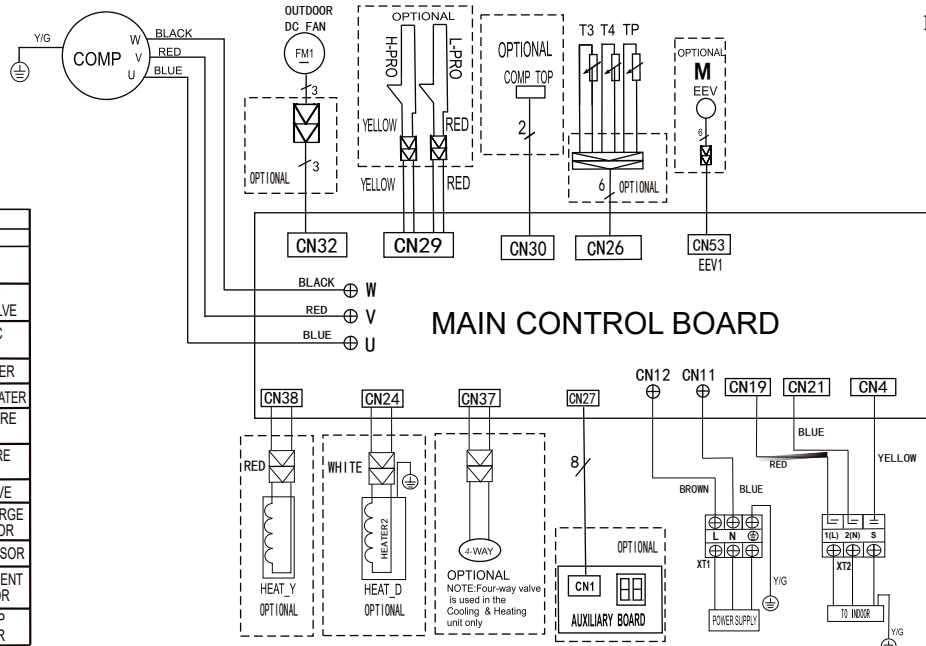
 NOTE: Use the magnetic ring (not supplied, optional part) to hitch the connective cable of indoor and outdoor units after installation. one magnetic ring is used for one cable.

MUER-48-H14-E

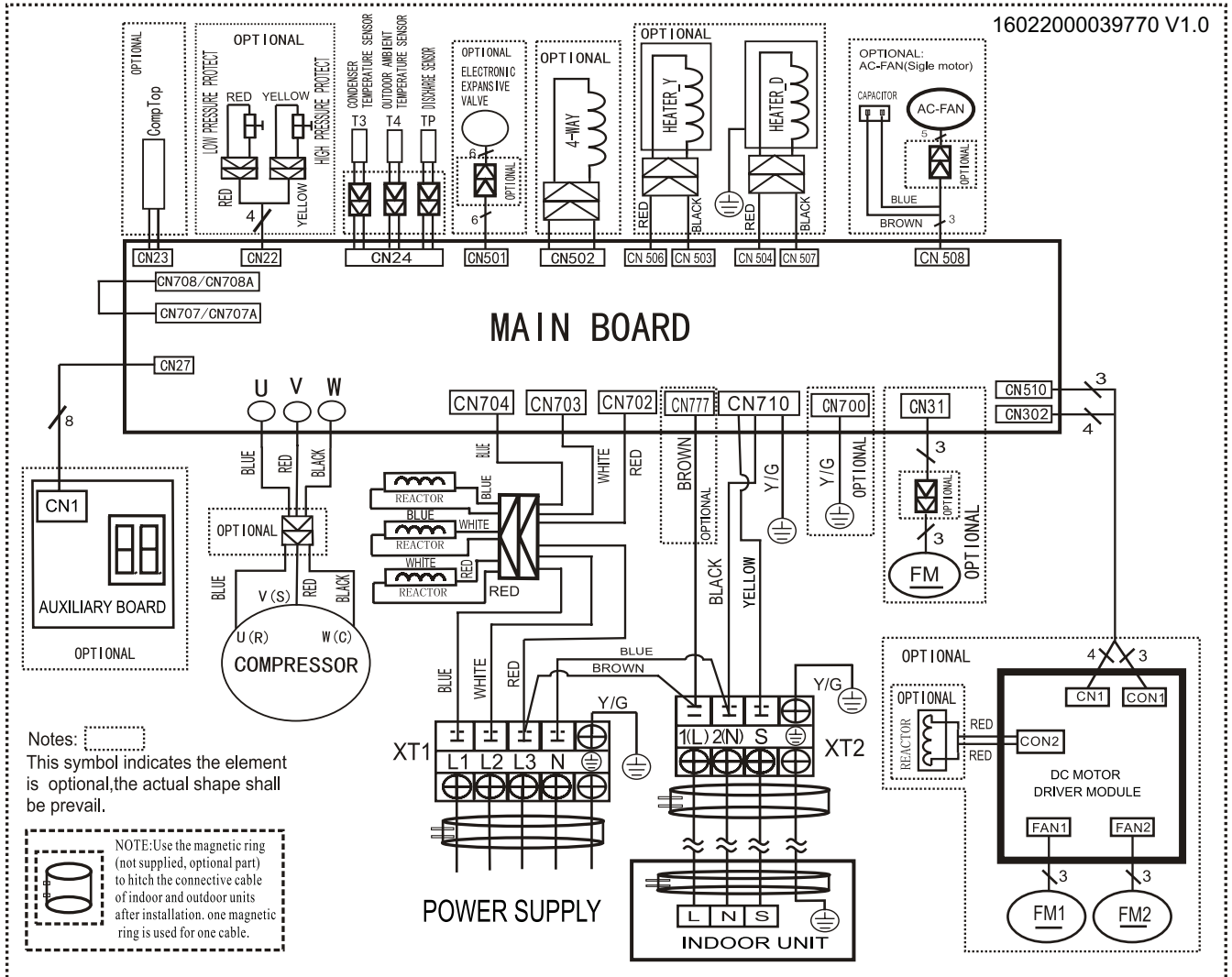
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Notes:
 This symbol indicates the element is optional, the actual shape shall be prevail.

CODE	PART NAME
COMP	COMPRESSOR
CT1	
EEV	ELECTRONIC EXPANSION VALVE
FM1	OUTDOOR DC FAN MOTOR
HEAT_D	CHASSIS HEATER
HEAT_Y	CRANKCASE HEATER
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
SV	REVERSE VALVE
TP	COMP. DISCHARGE TEMP. SENSOR
T3	COIL TEMP. SENSOR
T4	OUTDOOR AMBIENT TEMP. SENSOR
COMP TOP	COMP. TOP OLP TEMP. SENSOR

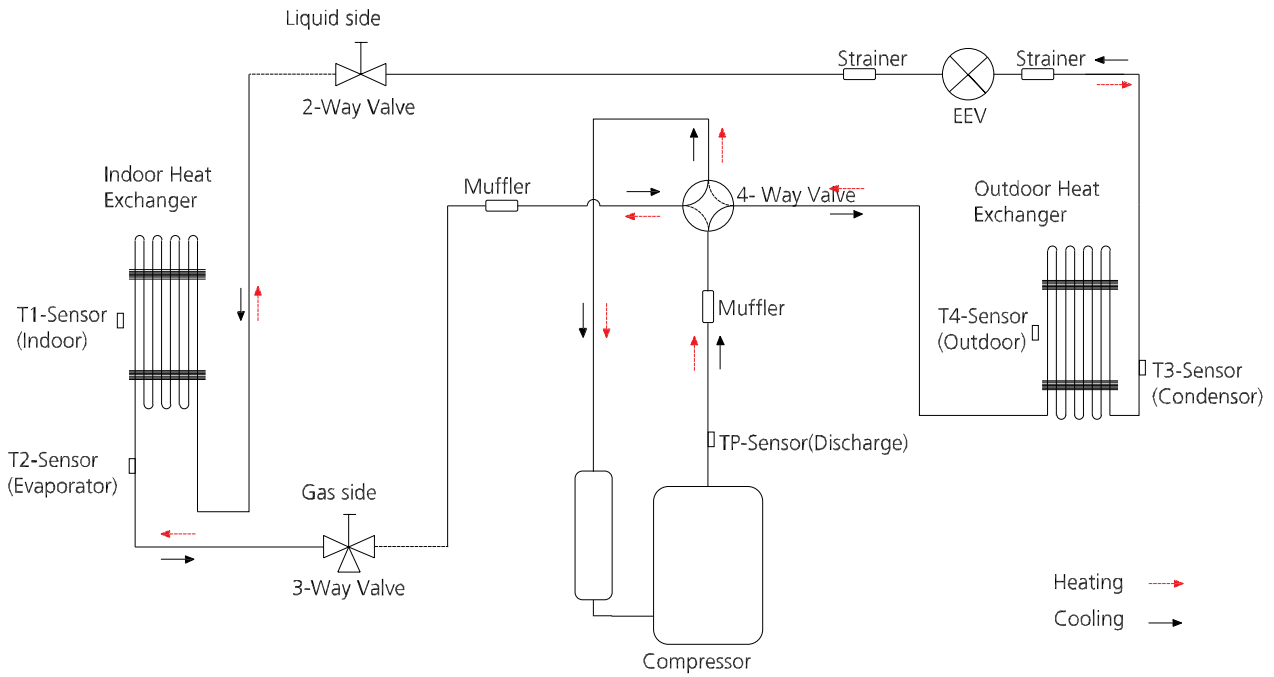


Specifications



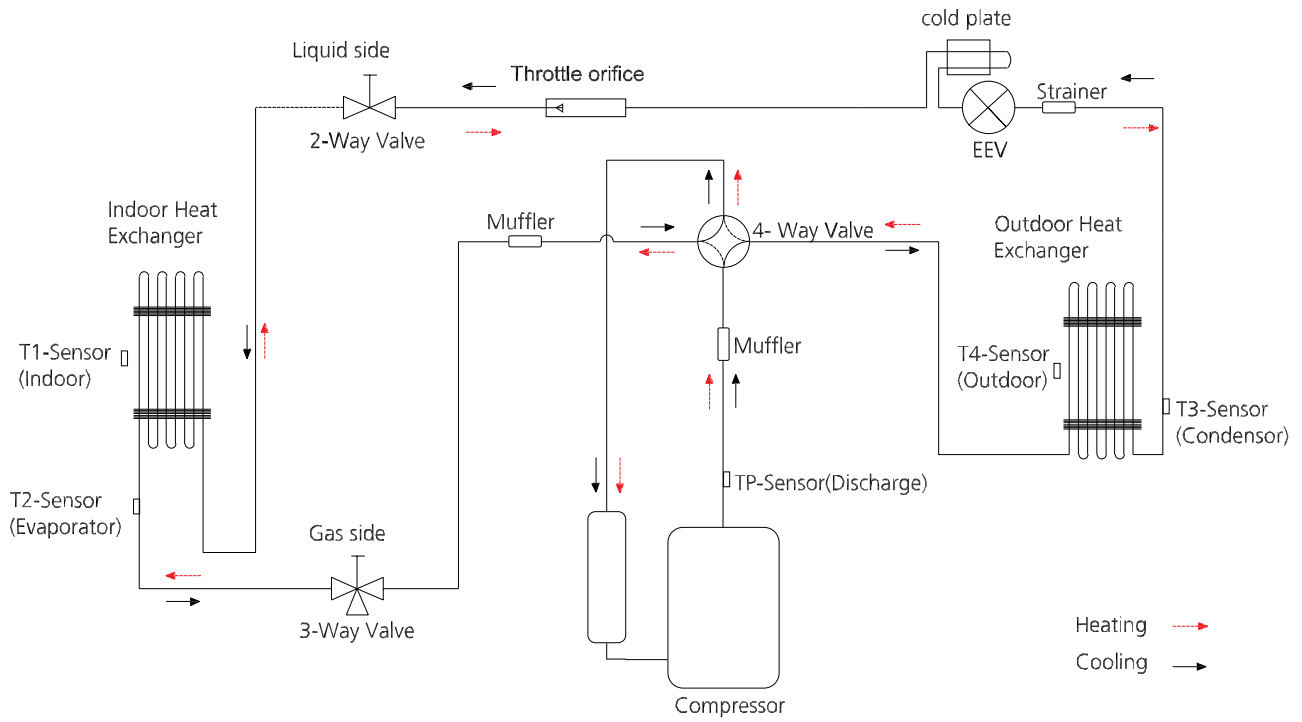
6. Refrigerant Cycle Diagrams

6.1 Heat pump



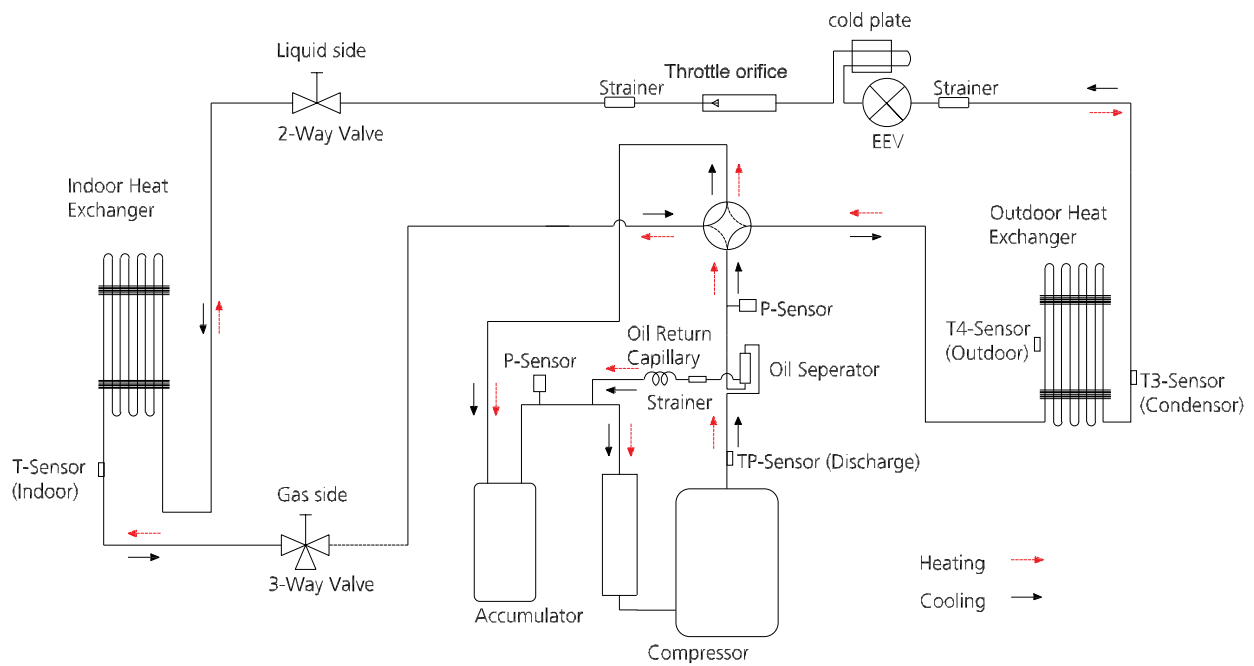
Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
MUER-09-H14-E	9.52(3/8)	6.35(1/4)	5/16.4	25/82	0	10/32.8	12g/m (0.13oz/ft)
MUER-12-H14-E	9.52(3/8)	6.35(1/4)	5/16.4	25/82	0	10/32.8	
MUER-18-H14-E	12.7(1/2)	6.35(1/4)	5/16.4	30/98.4	0	20/65.6	

For 9k&12k, There is a muffler on the low pressure side only.



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
MUER-24-H14-E	15.9(5/8)	9.52(3/8)	5/16.4	50/164	0	25/82	24g/m (0.26oz/ft)
MUER-30-H14-E	15.9(5/8)	9.52(3/8)	5/16.4	50/164	0	25/82	

For 30k, There is a muffler on the discharge pipe only.



Model	Pipe Size (Diameter:ø) mm(inch)		Piping length (m/ft)		Elevation (m/ft)		Additional Refrigerant
	Gas	Liquid	Rated	Max.	Rated	Max.	
MUER-36-H14-E	15.9(5/8)	9.52(3/8)	5/16.4	75/246.1	0	30/98.4	24g/m (0.26oz/ft)
MUER-42-H14-E	15.9(5/8)	9.52(3/8)					
MUER-48-H14-E	15.9(5/8)	9.52(3/8)					
MUER-48-H14T-E	15.9(5/8)	9.52(3/8)					
MUER-60-H14T-E	15.9(5/8)	9.52(3/8)					

7. Capacity Tables

7.1 Cooling

Specifications

		MUCR-09-H14																
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
450	-15	TC	2.75	2.76	2.79	2.82	2.89	2.95	2.98	3.01	2.97	2.97	2.97	2.97	3.14	3.14	3.14	3.14
		S/T	0.76	0.87	0.97	0.97	0.59	0.70	0.80	0.90	0.51	0.61	0.71	0.82	0.33	0.42	0.52	0.62
		PI	0.49	0.48	0.48	0.49	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
	-10	TC	2.73	2.75	2.78	2.81	2.87	2.94	2.96	2.99	2.95	2.95	2.95	2.95	3.13	3.13	3.13	3.13
		S/T	0.77	0.87	0.97	0.97	0.59	0.70	0.81	0.90	0.51	0.61	0.72	0.82	0.33	0.43	0.52	0.62
		PI	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
	-5	TC	2.71	2.73	2.76	2.79	2.86	2.92	2.95	2.98	2.94	2.94	2.94	2.94	3.12	3.12	3.12	3.12
		S/T	0.77	0.88	0.98	0.98	0.59	0.70	0.81	0.91	0.52	0.61	0.72	0.83	0.33	0.43	0.53	0.62
		PI	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.49	0.49	0.49	0.49
	0	TC	2.70	2.72	2.75	2.78	2.85	2.91	2.94	2.97	2.93	2.93	2.93	2.93	3.12	3.12	3.12	3.12
		S/T	0.77	0.88	0.98	0.98	0.60	0.71	0.81	0.91	0.52	0.62	0.73	0.83	0.33	0.43	0.53	0.63
		PI	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.49	0.49	0.49	0.49
	5	TC	2.69	2.70	2.73	2.76	2.84	2.90	2.93	2.96	2.92	2.92	2.92	2.92	3.11	3.11	3.11	3.11
		S/T	0.78	0.89	0.99	0.99	0.60	0.71	0.82	0.92	0.52	0.62	0.73	0.84	0.33	0.43	0.53	0.63
		PI	0.49	0.48	0.48	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	10	TC	2.67	2.69	2.72	2.75	2.83	2.89	2.92	2.95	2.91	2.91	2.91	2.91	3.11	3.11	3.11	3.11
		S/T	0.78	0.89	0.99	0.99	0.60	0.71	0.82	0.92	0.52	0.62	0.73	0.84	0.34	0.44	0.53	0.63
		PI	0.50	0.49	0.49	0.50	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50
	15	TC	2.65	2.67	2.70	2.72	2.81	2.87	2.90	2.93	2.89	2.89	2.89	2.89	3.09	3.09	3.09	3.09
		S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.63	0.74	0.85	0.34	0.44	0.54	0.64
		PI	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
	20	TC	2.62	2.64	2.67	2.69	2.78	2.78	2.78	2.81	2.87	2.87	2.87	2.87	3.07	3.07	3.07	3.07
		S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.63	0.74	0.85	0.34	0.44	0.54	0.64
		PI	0.53	0.52	0.52	0.53	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
	25	TC	2.49	2.52	2.55	2.58	2.67	2.67	2.67	2.69	2.72	2.72	2.72	2.72	2.95	2.95	2.95	2.95
		S/T	0.80	0.92	1.00	1.00	0.62	0.73	0.84	0.95	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65
		PI	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
	30	TC	2.38	2.41	2.44	2.46	2.52	2.52	2.52	2.55	2.61	2.61	2.61	2.64	2.81	2.81	2.81	2.81
		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	0.63	0.63	0.63	0.63	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
	35	TC	2.26	2.29	2.32	2.35	2.41	2.41	2.44	2.46	2.49	2.49	2.52	2.55	2.67	2.67	2.67	2.67
		S/T	0.83	0.96	1.00	1.00	0.64	0.76	0.88	1.00	0.54	0.66	0.78	0.90	0.33	0.45	0.56	0.67
		PI	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	40	TC	2.10	2.13	2.16	2.18	2.23	2.23	2.26	2.28	2.31	2.31	2.33	2.36	2.48	2.48	2.48	2.48
		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	0.58	0.70
		PI	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.78
	46	TC	1.95	1.97	2.00	2.03	2.06	2.06	2.09	2.12	2.14	2.14	2.14	2.17	2.31	2.31	2.31	2.31
		S/T	0.88	1.00	1.00	1.00	0.66	0.81	0.95	1.00	0.56	0.70	0.84	0.97	0.33	0.45	0.58	0.71
		PI	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.87	0.87	0.87	0.87
	50	TC	1.83	1.86	1.89	1.92	1.95	1.95	1.97	2.00	2.00	2.00	2.00	2.03	2.17	2.17	2.17	2.17
		S/T	0.91	1.00	1.00	1.00	0.68	0.83	0.97	1.00	0.57	0.72	0.87	1.00	0.32	0.46	0.60	0.73
		PI	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94	0.94

540	-15	TC	2.83	2.86	2.89	2.92	2.95	2.95	2.98	3.01	3.03	3.03	3.06	3.23	3.23	3.23	3.23	
		S/T	0.81	0.94	0.98	1.00	0.62	0.74	0.86	0.97	0.53	0.65	0.76	0.88	0.32	0.43	0.54	0.66
		PI	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	-10	TC	2.81	2.84	2.87	2.90	2.94	2.94	2.96	2.99	3.01	3.01	3.04	3.22	3.22	3.22	3.22	
		S/T	0.82	0.94	0.99	1.00	0.62	0.75	0.86	0.97	0.53	0.65	0.77	0.88	0.32	0.44	0.54	0.66
		PI	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	-5	TC	2.79	2.82	2.85	2.88	2.92	2.92	2.95	2.98	3.00	3.00	3.03	3.21	3.21	3.21	3.21	
		S/T	0.82	0.95	0.99	1.00	0.62	0.75	0.87	0.98	0.54	0.65	0.77	0.89	0.32	0.44	0.55	0.66
		PI	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
	0	TC	2.78	2.81	2.84	2.87	2.91	2.91	2.94	2.97	2.99	2.99	3.02	3.21	3.21	3.21	3.21	
		S/T	0.82	0.95	1.00	1.00	0.63	0.75	0.87	0.98	0.54	0.66	0.77	0.89	0.32	0.44	0.55	0.67
		PI	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50	0.50
	5	TC	2.76	2.79	2.82	2.85	2.90	2.90	2.93	2.96	2.98	2.98	3.01	3.20	3.20	3.20	3.20	
		S/T	0.83	0.96	1.00	1.00	0.63	0.76	0.88	0.99	0.54	0.66	0.78	0.90	0.33	0.44	0.55	0.67
		PI	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	10	TC	2.75	2.78	2.81	2.84	2.89	2.89	2.92	2.95	2.97	2.97	3.00	3.19	3.19	3.19	3.19	
		S/T	0.83	0.96	1.00	1.00	0.63	0.76	0.88	0.99	0.54	0.66	0.78	0.90	0.33	0.45	0.55	0.67
		PI	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.51	0.51	0.51	0.51	0.51
15	TC	2.73	2.75	2.78	2.81	2.87	2.87	2.90	2.93	2.95	2.95	2.98	3.18	3.18	3.18	3.18		
	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	0.51	0.51	0.51	0.51	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	
20	TC	2.70	2.72	2.75	2.78	2.84	2.84	2.87	2.90	2.92	2.92	2.95	3.15	3.15	3.15	3.15		
	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	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	
25	TC	2.55	2.58	2.61	2.64	2.72	2.72	2.75	2.78	2.81	2.81	2.84	3.01	3.01	3.01	3.01		
	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	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	
30	TC	2.44	2.47	2.49	2.52	2.58	2.58	2.61	2.64	2.67	2.67	2.70	2.87	2.87	2.87	2.87		
	S/T	0.87	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	0.71	
	PI	0.64	0.64	0.64	0.64	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	
35	TC	2.32	2.35	2.38	2.41	2.47	2.47	2.49	2.52	2.55	2.55	2.58	2.61	2.75	2.75	2.75	2.75	
	S/T	0.89	1.00	1.00	1.00	0.67	0.81	0.96	1.00	0.56	0.70	0.84	0.98	0.32	0.46	0.59	0.72	
	PI	0.70	0.70	0.70	0.70	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	
40	TC	2.20	2.23	2.26	2.29	2.34	2.34	2.37	2.40	2.43	2.43	2.46	2.49	2.62	2.62	2.62	2.62	
	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	0.75	
	PI	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	
46	TC	2.03	2.06	2.08	2.11	2.17	2.17	2.20	2.23	2.26	2.26	2.29	2.32	2.43	2.43	2.43	2.43	
	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	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.87	0.87	0.87	0.87	
50	TC	1.91	1.94	1.97	2.00	2.06	2.08	2.11	2.14	2.11	2.11	2.14	2.17	2.29	2.29	2.29	2.29	
	S/T	0.99	1.00	1.00	1.00	0.72	0.89	1.00	1.00	0.60	0.77	0.93	1.00	0.31	0.47	0.63	0.91	
	PI	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
620	-15	TC	2.89	2.92	2.95	2.98	3.01	3.01	3.04	3.07	3.09	3.09	3.12	3.29	3.29	3.29	3.29	
		S/T	0.85	0.97	1.00	1.00	0.64	0.78	0.92	0.98	0.54	0.68	0.81	0.94	0.32	0.43	0.56	0.69
		PI	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.49	0.49	0.49	0.49
	-10	TC	2.87	2.90	2.93	2.96	2.99	2.99	3.02	3.05	3.07	3.07	3.07	3.10	3.28	3.28	3.28	3.28
		S/T	0.85	0.97	1.00	1.00	0.64	0.79	0.92	0.98	0.54	0.68	0.82	0.94	0.32	0.44	0.56	0.69
		PI	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.49	0.49	0.49	0.49
	-5	TC	2.85	2.88	2.91	2.94	2.98	2.98	3.01	3.04	3.06	3.06	3.09	3.27	3.27	3.27	3.27	
		S/T	0.86	0.98	1.00	1.00	0.64	0.79	0.93	0.99	0.55	0.68	0.82	0.95	0.32	0.44	0.57	0.69
		PI	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.49	0.49	0.49	0.49
	0	TC	2.84	2.87	2.90	2.93	2.97	2.97	3.00	3.03	3.05	3.05	3.08	3.26	3.26	3.26	3.26	
		S/T	0.86	0.98	1.00	1.00	0.65	0.79	0.93	0.99	0.55	0.69	0.82	0.95	0.32	0.44	0.57	0.70
		PI	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	5	TC	2.82	2.85	2.88	2.91	2.96	2.96	2.99	3.02	3.04	3.04	3.07	3.26	3.26	3.26	3.26	
		S/T	0.87	0.99	1.00	1.00	0.65	0.80	0.94	1.00	0.55	0.69	0.83	0.96	0.33	0.44	0.57	0.70
		PI	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.51	0.51	0.51	0.51	0.50	0.50	0.50	0.50
	10	TC	2.81	2.84	2.87	2.89	2.95	2.95	2.98	3.00	3.03	3.03	3.06	3.25	3.25	3.25	3.25	
		S/T	0.87	0.99	1.00	1.00	0.65	0.80	0.94	1.00	0.55	0.69	0.83	0.96	0.33	0.45	0.57	0.70
		PI	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
15	TC	2.78	2.81	2.84	2.87	2.93	2.93	2.96	2.98	3.01	3.01	3.04	3.24	3.24	3.24	3.24		
	S/T	0.88	1.00	1.00	1.00	0.66	0.81	0.95	1.00	0.56	0.70	0.84	0.97	0.33	0.45	0.58	0.71	
	PI	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.53	0.53	0.53	0.53	0.52	0.52	0.52	0.52	
20	TC	2.75	2.78	2.81	2.84	2.90	2.90	2.92	2.95	2.98	2.98	3.01	3.21	3.21	3.21	3.21		
	S/T	0.88	1.00	1.00	1.00	0.66	0.81	0.95	1.00	0.56	0.70	0.84	0.97	0.33	0.45	0.58	0.71	
	PI	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.53	0.53	0.53	0.53	
25	TC	2.61	2.64	2.67	2.70	2.78	2.78	2.81	2.84	2.87	2.87	2.90	3.07	3.07	3.07	3.07		
	S/T	0.90	1.00	1.00	1.00	0.67	0.82	0.97	1.00	0.57	0.71	0.86	1.00	0.32	0.46	0.59	0.73	
	PI	0.60	0.60	0.60	0.60	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.60	0.60	0.60	0.60	
30	TC	2.49	2.52	2.55	2.58	2.64	2.64	2.67	2.70	2.72	2.72	2.75	2.95	2.95	2.95	2.95		
	S/T	0.92	1.00	1.00	1.00	0.69	0.84	0.99	1.00	0.57	0.73	0.88	1.00	0.32	0.46	0.60	0.74	
	PI	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	
35	TC	2.38	2.41	2.44	2.47	2.52	2.52	2.55	2.58	2.61	2.61	2.64	2.67	2.81	2.81	2.81	2.81	
	S/T	0.95	1.00	1.00	1.00	0.70	0.86	1.00	1.00	0.58	0.74	0.89	1.00	0.32	0.47	0.61	0.76	
	PI	0.71	0.71	0.71	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	
40	TC	2.26	2.29	2.32	2.34	2.40	2.42	2.44	2.47	2.48	2.48	2.51	2.53	2.68	2.68	2.68	2.68	
	S/T	1.00	1.00	1.00	1.00	0.72	0.90	1.00	1.00	0.60	0.77	0.94	1.00	0.31	0.47	0.64	0.90	
	PI	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	
46	TC	2.08	2.11	2.14	2.17	2.23	2.26	2.29	2									

MUCR-12-H14																		
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
470	-15	TC	3.71	3.72	3.75	3.78	3.90	3.96	3.96	3.99	4.00	4.00	4.00	4.00	4.25	4.25	4.25	4.25
		S/T	0.70	0.79	0.87	0.96	0.56	0.64	0.72	0.81	0.50	0.58	0.66	0.73	0.35	0.42	0.49	0.57
		PI	0.77	0.78	0.78	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
	-10	TC	3.68	3.70	3.73	3.76	3.87	3.93	3.93	3.96	3.98	3.98	3.98	3.98	4.23	4.23	4.23	4.23
		S/T	0.71	0.80	0.87	0.96	0.56	0.65	0.73	0.82	0.50	0.58	0.66	0.74	0.35	0.43	0.49	0.57
		PI	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
	-5	TC	3.66	3.67	3.70	3.73	3.86	3.92	3.92	3.95	3.96	3.96	3.96	3.96	4.22	4.22	4.22	4.22
		S/T	0.71	0.80	0.88	0.97	0.57	0.65	0.73	0.82	0.51	0.59	0.66	0.74	0.35	0.43	0.50	0.58
		PI	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
	0	TC	3.64	3.66	3.68	3.71	3.85	3.91	3.91	3.93	3.95	3.95	3.95	3.95	4.22	4.22	4.22	4.22
		S/T	0.72	0.80	0.88	0.97	0.57	0.65	0.74	0.82	0.51	0.59	0.67	0.74	0.35	0.43	0.50	0.58
		PI	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.78
	5	TC	3.62	3.64	3.67	3.70	3.83	3.89	3.89	3.92	3.94	3.94	3.94	3.94	4.21	4.21	4.21	4.21
		S/T	0.72	0.81	0.89	0.98	0.57	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.35	0.43	0.50	0.58
		PI	0.78	0.78	0.78	0.78	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
	10	TC	3.60	3.61	3.64	3.67	3.81	3.87	3.87	3.90	3.92	3.92	3.92	3.92	4.20	4.20	4.20	4.20
		S/T	0.72	0.81	0.89	0.98	0.57	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.50	0.58
		PI	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
	15	TC	3.57	3.59	3.61	3.64	3.79	3.85	3.85	3.88	3.90	3.90	3.90	3.90	4.19	4.19	4.19	4.19
		S/T	0.73	0.82	0.90	0.99	0.58	0.66	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
	20	TC	3.53	3.54	3.57	3.60	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	0.73	0.82	0.90	0.99	0.58	0.67	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	0.84	0.84	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
	25	TC	3.37	3.37	3.40	3.43	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	0.74	0.83	0.92	1.00	0.59	0.68	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.52	0.60
		PI	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
	30	TC	3.20	3.20	3.23	3.26	3.43	3.43	3.43	3.43	3.52	3.52	3.52	3.52	3.80	3.80	3.80	3.80
		S/T	0.75	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	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	35	TC	3.05	3.05	3.08	3.11	3.26	3.26	3.26	3.29	3.34	3.34	3.34	3.34	3.60	3.60	3.60	3.60
		S/T	0.76	0.86	0.96	1.00	0.60	0.69	0.79	0.88	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.61
		PI	1.11	1.11	1.11	1.11	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.13	1.13	1.13	1.13
	40	TC	2.86	2.88	2.91	2.93	3.07	3.07	3.07	3.09	3.15	3.15	3.18	3.15	3.40	3.40	3.40	3.40
		S/T	0.78	0.90	1.00	1.00	0.61	0.72	0.82	0.92	0.53	0.63	0.74	0.84	0.34	0.44	0.53	0.63
		PI	1.22	1.22	1.22	1.22	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.24	1.24	1.24	1.24
	46	TC	2.64	2.67	2.70	2.73	2.85	2.85	2.85	2.87	2.93	2.93	2.93	2.93	3.16	3.16	3.16	3.16
		S/T	0.80	0.91	1.00	1.00	0.61	0.73	0.84	0.94	0.53	0.64	0.75	0.85	0.34	0.44	0.54	0.64
		PI	1.36	1.36	1.36	1.36	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.38	1.38	1.38	1.38
	50	TC	2.50	2.53	2.56	2.59	2.67	2.67	2.67	2.70	2.76	2.76	2.76	2.76	2.99	2.99	2.99	2.99
		S/T	0.82	0.94	1.00	1.00	0.62	0.74	0.86	0.97	0.54	0.65	0.77	0.88	0.34	0.44	0.55	0.65
		PI	1.47	1.47	1.47	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.50	1.50	1.50	1.50

570	-15	TC	3.78	3.78	3.81	3.84	3.96	3.96	3.96	3.99	4.06	4.06	4.06	4.06	4.31	4.31	4.31	4.31
		S/T	0.74	0.84	0.98	1.00	0.58	0.68	0.77	0.87	0.50	0.60	0.70	0.79	0.34	0.42	0.51	0.60
		PI	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
	-10	TC	3.76	3.76	3.79	3.82	3.93	3.93	3.93	3.96	4.04	4.04	4.04	4.04	4.29	4.29	4.29	4.29
		S/T	0.75	0.84	0.99	1.00	0.58	0.68	0.78	0.87	0.50	0.60	0.70	0.80	0.34	0.43	0.51	0.60
		PI	0.79	0.79	0.79	0.79	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.79	0.79	0.79	0.79
	-5	TC	3.73	3.73	3.76	3.79	3.92	3.92	3.92	3.95	4.02	4.02	4.02	4.02	4.28	4.28	4.28	4.28
		S/T	0.75	0.85	0.99	1.00	0.59	0.68	0.78	0.88	0.51	0.60	0.70	0.80	0.34	0.43	0.52	0.60
		PI	0.79	0.79	0.79	0.79	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.79	0.79	0.79	0.79
	0	TC	3.72	3.72	3.75	3.77	3.91	3.91	3.91	3.93	4.01	4.01	4.01	4.01	4.28	4.28	4.28	4.28
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.78	0.88	0.51	0.61	0.71	0.80	0.34	0.43	0.52	0.61
		PI	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
	5	TC	3.70	3.70	3.73	3.76	3.89	3.89	3.89	3.92	4.00	4.00	4.00	4.00	4.27	4.27	4.27	4.27
		S/T	0.76	0.86	1.00	1.00	0.59	0.69	0.79	0.89	0.51	0.61	0.71	0.81	0.34	0.43	0.52	0.61
		PI	0.80	0.80	0.80	0.80	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.80
	10	TC	3.67	3.67	3.70	3.73	3.87	3.87	3.87	3.90	3.98	3.98	3.98	3.98	4.26	4.26	4.26	4.26
		S/T	0.76	0.86	1.00	1.00	0.59	0.69	0.79	0.89	0.51	0.61	0.71	0.81	0.35	0.44	0.52	0.61
		PI	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
	15	TC	3.64	3.64	3.67	3.70	3.85	3.85	3.85	3.88	3.96	3.96	3.96	3.96	4.25	4.25	4.25	4.25
		S/T	0.77	0.87	0.97	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.35	0.44	0.53	0.62
		PI	0.83	0.83	0.83	0.83	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.83	0.83	0.83	0.83
	20	TC	3.60	3.60	3.63	3.66	3.81	3.81	3.81	3.83	3.92	3.92	3.92	3.92	4.21	4.21	4.21	4.21
		S/T	0.77	0.87	0.97	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.35	0.44	0.53	0.62
		PI	0.86	0.86	0.86	0.86	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
	25	TC	3.43	3.46	3.49	3.52	3.63	3.63	3.63	3.66	3.75	3.75	3.75	3.75	4.04	4.04	4.04	4.04
		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	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.95
30	TC	3.26	3.29	3.32	3.34	3.49	3.49	3.49	3.52	3.57	3.57	3.57	3.57	3.86	3.86	3.86	3.86	
	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	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	
35	TC	3.11	3.14	3.17	3.20	3.32	3.32	3.32	3.34	3.40	3.40	3.46	3.40	3.66	3.66	3.66	3.66	
	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	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.14	1.13	1.13	1.13	1.13	1.13	
40	TC	2.92	2.95	2.98	3.01	3.11	3.11	3.12	3.15	3.20	3.20	3.23	3.21	3.46	3.46	3.46	3.46	
	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	0.67	
	PI	1.25	1.25	1.25	1.25	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	
46	TC	2.70	2.73	2.76	2.79	2.88	2.88	2.90	2.93	2.96	2.96	2.96	2.99	3.22	3.22	3.22	3.22	
	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	1.39	1.39	1.39	1.39	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.41	1.41	1.41	1.41	
50	TC	2.53	2.56	2.59	2.62	2.70	2.70	2.73	2.76	2.79	2.79	2.82	2.82	3.05	3.05	3.05	3.05	
	S/T	0.88	1.00	1.00	1.00	0.66	0.80	0.94	1.00	0.56	0.70	0.83	0.97	0.33	0.45	0.58	0.91	
	PI	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.52	1.52	1.52	1.52	1.53	1.53	1.53	1.53	
660	-15	TC	3.84	3.87	3.90	3.93	4.02	4.02	4.02	4.05	4.12	4.12	4.12	4.12	4.40	4.40	4.40	4.40
		S/T	0.77	0.89	1.00	1.00	0.60	0.71	0.82	0.98	0.52	0.63	0.73	0.84	0.33	0.42	0.53	0.63
		PI	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.81	0.81	0.81
	-10	TC	3.82	3.85	3.88	3.91	3.99	3.99	3.99	4.02	4.10	4.10	4.10	4.10	4.38	4.38	4.38	4.38
		S/T	0.78	0.89	1.00	1.00	0.60	0.72	0.82	0.98	0.52	0.63	0.74	0.84	0.33	0.43	0.53	0.63
		PI	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.81	0.81	0.81
	-5	TC	3.79	3.82	3.85	3.88	3.98	3.98	3.98	4.01	4.08	4.08	4.08	4.08	4.37	4.37	4.37	4.37
		S/T	0.78	0.90	1.00	1.00	0.60	0.72	0.83	0.99	0.53	0.63	0.74	0.85	0.33	0.43	0.54	0.63
		PI	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.81	0.81	0.81	0.81
	0	TC	3.77	3.80	3.83	3.86	3.96	3.96	3.96	3.99	4.07	4.07	4.07	4.07	4.37	4.37	4.37	4.37
		S/T	0.78	0.90	1.00	1.00	0.61	0.73	0.83	0.99	0.53	0.64	0.74	0.85	0.33	0.43	0.54	0.64
		PI	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
	5	TC	3.76	3.79	3.82	3.84	3.95	3.95	3.95	3.98	4.06	4.06	4.06	4.06	4.36	4.36	4.36	4.36
		S/T	0.79	0.91	1.00	1.00	0.61	0.73	0.84	1.00	0.53	0.64	0.75	0.86	0.33	0.43	0.54	0.64
		PI	0.82	0.82	0.82	0.82	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.82	0.82	0.82	0.82
	10	TC	3.73	3.76	3.79	3.82	3.93	3.93	3.93	3.96	4.04	4.04	4.04	4.04	4.35	4.35	4.35	4.35
		S/T	0.79	0.91	1.00	1.00	0.61	0.73	0.84	1.00	0.53	0.64	0.75	0.86	0.34	0.44	0.54	0.64
		PI	0.83	0.83	0.83	0.83	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.83	0.83	0.83	0.83
	15	TC	3.70	3.73	3.76	3.79	3.90	3.90	3.90	3.93	4.02	4.02	4.02	4.02	4.33	4.33	4.33	4.33
		S/T	0.80	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	0.85	0.85	0.85	0.85	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.85	0.85	0.85	0.85
	20	TC	3.66	3.69	3.72	3.75	3.86	3.86	3.86	3.89	3.98	3.98	3.98	3.98	4.30	4.30	4.30	4.30
		S/T	0.80	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	0.88	0.88	0.88	0.88	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
	25	TC	3.49	3.52	3.55	3.57	3.69	3.69	3.69	3.72	3.81	3.81	3.81	3.83	4.09	4.09	4.09	4.09
		S/T	0.82	0.94	1.00	1.00	0.63	0.75	0.87	0.99	0.54	0.66	0.77	0.89	0.34	0.44	0.55	0.66
		PI	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
30	TC	3.32	3.34	3.37	3.40	3.55	3.55	3.57	3.60	3.63	3.63	3.63	3.66	3.92	3.92	3.92	3.92	
	S/T	0.84	0.97	1.00	1.00	0.64	0.76	0.88	1.00	0.54	0.67	0.79	0.91	0.33	0.45	0.56	0.67	
	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	1.07	1.07	1.07	1.07	
35	TC	3.14	3.17	3.20	3.23	3.37	3.37	3.40	3.43	3.46	3.52	3.55	3.75	3.75	3.75	3.75	3.75	
	S/T	0.86	0.99	1.00	1.00	0.65	0.78	0.90	1.00	0.55	0.68	0.80	0.92	0.33	0.45	0.57	0.69	
	PI	1.15	1.15	1.15	1.15	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.17	1.17	1.17	1.17	
40	TC	2.95	2.98	3.01	3.04	3.17	3.17	3.20	3.23	3.25	3.25	3.29	3.31	3.53	3.53	3.53	3.53	
	S/T	0.89	1.00	1.00	1.00	0.67	0.81	0.95	1.00	0.56	0.70	0.84	0.98	0.33	0.46	0.59	0.90	
	PI	1.28	1.28	1														

MUCR-18-H14																			
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
650	-15	TC	5.50	5.50	5.50	5.56	5.78	5.90	5.90	5.90	5.93	5.93	5.93	5.93	6.28	6.28	6.28	6.28	
		S/T	0.69	0.77	0.85	0.93	0.56	0.63	0.70	0.78	0.49	0.57	0.64	0.71	0.36	0.42	0.49	0.56	
		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	1.05	1.05	1.05	1.05	
	-10	TC	5.46	5.47	5.47	5.53	5.75	5.87	5.87	5.87	5.90	5.90	5.90	5.90	6.25	6.25	6.25	6.25	
		S/T	0.69	0.78	0.85	0.93	0.56	0.64	0.71	0.79	0.49	0.57	0.64	0.72	0.36	0.43	0.49	0.56	
		PI	1.06	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	1.06	
	-5	TC	5.43	5.43	5.43	5.49	5.73	5.85	5.85	5.85	5.88	5.88	5.88	5.88	6.24	6.24	6.24	6.24	
		S/T	0.69	0.78	0.86	0.94	0.57	0.64	0.71	0.79	0.50	0.58	0.64	0.72	0.36	0.43	0.50	0.57	
		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	5.40	5.41	5.41	5.47	5.71	5.83	5.83	5.83	5.87	5.87	5.87	5.87	6.23	6.23	6.23	6.23	
		S/T	0.70	0.78	0.86	0.94	0.57	0.64	0.72	0.79	0.50	0.58	0.65	0.73	0.36	0.43	0.50	0.57	
		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	1.06	1.06	1.06	
	5	TC	5.38	5.38	5.38	5.44	5.68	5.80	5.80	5.80	5.85	5.85	5.85	5.85	6.23	6.23	6.23	6.23	
		S/T	0.70	0.79	0.87	0.95	0.57	0.65	0.72	0.80	0.50	0.58	0.65	0.73	0.36	0.43	0.50	0.57	
		PI	1.07	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	1.07	
	10	TC	5.34	5.35	5.35	5.41	5.66	5.78	5.78	5.78	5.82	5.82	5.82	5.82	6.21	6.21	6.21	6.21	
		S/T	0.70	0.79	0.87	0.95	0.57	0.65	0.72	0.80	0.50	0.58	0.65	0.73	0.37	0.44	0.50	0.57	
		PI	1.09	1.08	1.08	1.09	1.08	1.08	1.08	1.08	1.09	1.09	1.09	1.09	1.08	1.08	1.08	1.08	
	15	TC	5.30	5.30	5.30	5.36	5.62	5.74	5.74	5.74	5.79	5.79	5.79	5.79	6.19	6.19	6.19	6.19	
		S/T	0.71	0.80	0.88	0.96	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
		PI	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	
	20	TC	5.24	5.24	5.24	5.30	5.56	5.56	5.56	5.56	5.73	5.73	5.73	5.73	6.13	6.13	6.13	6.13	
		S/T	0.71	0.80	0.88	0.96	0.58	0.66	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
		PI	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	
	25	TC	4.99	4.99	5.04	5.10	5.30	5.30	5.30	5.30	5.47	5.47	5.47	5.47	5.87	5.87	5.87	5.87	
		S/T	0.72	0.81	0.89	0.97	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
		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	
	30	TC	4.76	4.76	4.81	4.87	5.07	5.07	5.07	5.07	5.22	5.22	5.22	5.22	5.62	5.62	5.62	5.62	
		S/T	0.73	0.82	0.91	0.99	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
		PI	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	
	35	TC	4.53	4.53	4.59	4.64	4.81	4.81	4.81	4.81	4.96	4.96	4.96	4.96	5.36	5.36	5.36	5.36	
		S/T	0.74	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	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	
	40	TC	4.23	4.23	4.27	4.31	4.50	4.50	4.50	4.51	4.64	4.64	4.68	4.64	5.01	5.01	5.01	5.01	
		S/T	0.76	0.87	0.97	1.00	0.60	0.70	0.80	0.89	0.52	0.62	0.72	0.81	0.35	0.44	0.53	0.62	
		PI	1.67	1.67	1.67	1.67	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.70	1.70	1.70	1.70	
	46	TC	3.92	3.92	3.94	3.97	4.17	4.17	4.17	4.20	4.31	4.31	4.31	4.31	4.65	4.65	4.65	4.65	
		S/T	0.77	0.88	0.99	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.62	
		PI	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.89	1.89	1.89	1.89	
	50	TC	3.66	3.69	3.72	3.75	3.92	3.92	3.92	3.94	4.06	4.06	4.06	4.06	4.40	4.40	4.40	4.40	
		S/T	0.79	0.91	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	2.02	2.02	2.02	2.02	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.05	2.05	2.05	2.05	
	780	-15	TC	5.62	5.62	5.68	5.74	5.90	5.90	5.90	5.90	6.06	6.06	6.06	6.06	6.43	6.43	6.43	6.43
			S/T	0.71	0.81	0.98	1.00	0.57	0.66	0.74	0.84	0.50	0.59	0.68	0.76	0.34	0.42	0.50	0.58
			PI	1.09	1.09	1.09	1.09	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.07
		-10	TC	5.59	5.59	5.65	5.71	5.87	5.87	5.87	5.87	6.03	6.03	6.03	6.03	6.40	6.40	6.40	6.40
			S/T	0.72	0.82	0.99	1.00	0.57	0.66	0.75	0.84	0.50	0.59	0.68	0.77	0.34	0.43	0.50	0.58
			PI	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.07	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.07
		-5	TC	5.56	5.56	5.62	5.67	5.85	5.85	5.85	5.85	6.00	6.00	6.00	6.00	6.39	6.39	6.39	6.39
			S/T	0.72	0.82	0.99	1.00	0.58	0.66	0.75	0.85	0.51	0.59	0.68	0.77	0.34	0.43	0.51	0.59
			PI	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.07	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
		0	TC	5.53	5.53	5.59	5.65	5.83	5.83	5.83	5.83	5.99	5.99	5.99	5.99	6.38	6.38	6.38	6.38
			S/T	0.73	0.82	1.00	1.00	0.58	0.67	0.75	0.85	0.51	0.60	0.69	0.77	0.34	0.43	0.51	0.59
			PI	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
		5	TC	5.50	5.50	5.56	5.62	5.80	5.80	5.80	5.80	5.97	5.97	5.97	5.97	6.38	6.38	6.38	6.38
			S/T	0.73	0.83	1.00	1.00	0.58	0.67	0.76	0.86	0.51	0.60	0.69	0.78	0.34	0.43	0.51	0.59
			PI	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
		10	TC	5.47	5.47	5.53	5.58	5.78	5.78	5.78	5.78	5.94	5.94	5.94	5.94	6.36	6.36	6.36	6.36
			S/T	0.73	0.83	1.00	1.00	0.58	0.67	0.76	0.86	0.51	0.60	0.69	0.78	0.35	0.44	0.51	0.59
			PI	1.11	1.11	1.11	1.11	1.10	1.10	1.10	1.10	1.11	1.11	1.11	1.11	1.10	1.10	1.10	1.10
15		TC	5.42	5.42	5.48	5.54	5.74	5.74	5.74	5.74	5.91	5.91	5.91	5.91	6.33	6.33	6.33	6.33	
		S/T	0.74	0.84	0.93	1.00	0.59	0.68	0.77	0.87	0.52	0.61	0.70	0.79	0.35	0.44	0.52	0.60	
		PI	1.14	1.14	1.14	1.14	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.12	1.12	1.12	1.12	
20		TC	5.36	5.36	5.42	5.48	5.68	5.68	5.68	5.68	5.85	5.85	5.85	5.85	6.28	6.28	6.28	6.28	
		S/T	0.74	0.84	0.93	1.00	0.59	0.68	0.77	0.87	0.52	0.61	0.70	0.79	0.35	0.44	0.52	0.60	
		PI	1.18	1.18	1.18	1.18	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.16	1.16	1.16	1.16	
25		TC	5.10	5.10	5.16	5.22	5.42	5.42	5.42	5.48	5.59	5.59	5.59	5.59	6.02	6.02	6.02	6.02	
		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	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	
30		TC	4.87	4.87	4.93	4.99	5.19	5.19	5.19	5.25	5.33	5.33	5.33	5.33	5.76	5.76	5.76	5.76	
		S/T	0.77	0.87	0.98	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.35	0.44	0.53	0.62	
		PI	1.41	1.41	1.41	1.41	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	
35		TC	4.62	4.67	4.73	4.79	4.93	4.93	4.93	4.99	5.07	5.07	5.16	5.07	5.48	5.48	5.48	5.48	
		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	

900	-15	TC	5.74	5.74	5.80	5.86	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	0.74	0.85	1.00	1.00	0.58	0.69	0.78	0.98	0.51	0.61	0.70	0.80	0.34	0.42	0.51	0.61
		PI	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
	-10	TC	5.71	5.71	5.77	5.83	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	0.75	0.85	1.00	1.00	0.58	0.69	0.79	0.98	0.51	0.61	0.71	0.81	0.34	0.43	0.51	0.61
		PI	1.10	1.10	1.10	1.10	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.10	1.10	1.10	1.10
	-5	TC	5.67	5.67	5.73	5.79	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	0.75	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	1.10	1.10	1.10	1.10	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.10	1.10	1.10	1.10
	0	TC	5.65	5.65	5.71	5.76	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	0.75	0.86	1.00	1.00	0.59	0.70	0.79	0.99	0.52	0.62	0.72	0.81	0.34	0.43	0.52	0.62
		PI	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.11	1.11	1.11	1.11
	5	TC	5.62	5.62	5.68	5.74	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	0.76	0.87	1.00	1.00	0.59	0.70	0.80	1.00	0.52	0.62	0.72	0.82	0.34	0.43	0.52	0.62
		PI	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
	10	TC	5.58	5.58	5.64	5.70	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	0.76	0.87	1.00	1.00	0.59	0.70	0.80	1.00	0.52	0.62	0.72	0.82	0.35	0.44	0.52	0.62
		PI	1.13	1.13	1.13	1.13	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.13	1.13	1.13	1.13
	15	TC	5.54	5.54	5.60	5.65	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	0.77	0.88	0.99	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63
		PI	1.16	1.16	1.16	1.16	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
	20	TC	5.48	5.48	5.53	5.59	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	0.77	0.88	0.99	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.63
		PI	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
	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	0.93	0.53	0.63	0.74	0.85	0.34	0.44	0.54	0.64
		PI	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
	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	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.95	0.53	0.64	0.76	0.87	0.34	0.44	0.54	0.65
		PI	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
	35	TC	4.73	4.79	4.85	4.90	5.05	5.05	5.05	5.10	5.19	5.19	5.28	5.33	5.59	5.59	5.59	5.59
		S/T	0.82	0.94	1.00	1.00	0.63	0.75	0.87	0.98	0.54	0.65	0.77	0.88	0.34	0.44	0.55	0.66
		PI	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.60
	40	TC	4.44	4.49	4.53	4.58	4.74	4.74	4.77	4.83	4.89	4.89	4.89	4.93	4.99	5.27	5.27	5.27
		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	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.75	1.75	1.75	1.75	1.76	1.76	1.76	1.76
	46	TC	4.12	4.14	4.17	4.20	4.40	4.40	4.46	4.52	4.54	4.54	4.54	4.60	4.92	4.92	4.92	4.92
		S/T	0.87	1.00	1.00	1.00	0.65	0.79	0.92	1.00	0.55	0.69	0.82	0.94	0.33	0.45	0.57	0.92
		PI	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96
	50	TC	3.86	3.89	3.92	3.94	4.12	4.12	4.14	4.17	4.26	4.26	4.26	4.29	4.63	4.63	4.63	4.63
		S/T	0.89	1.00	1.00	1.00	0.67	0.81	0.96	1.00	0.56	0.70	0.84	0.98	0.33	0.46	0.58	0.97
		PI	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.13	2.13	2.13	2.13

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.

MUCR-24-H14																		
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
700	-15	TC	7.35	7.34	7.34	7.34	7.73	7.88	7.88	7.88	7.93	7.93	7.93	7.93	8.40	8.40	8.40	8.40
		S/T	0.67	0.72	0.79	0.86	0.55	0.61	0.67	0.73	0.49	0.55	0.62	0.68	0.38	0.42	0.48	0.54
		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	1.50	1.50	1.50	1.50
	-10	TC	7.31	7.30	7.30	7.30	7.69	7.84	7.84	7.84	7.89	7.89	7.89	7.89	8.37	8.37	8.37	8.37
		S/T	0.67	0.73	0.80	0.86	0.55	0.61	0.67	0.74	0.49	0.55	0.62	0.68	0.38	0.43	0.49	0.54
		PI	1.50	1.51	1.51	1.51	1.50	1.50	1.50	1.50	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
	-5	TC	7.26	7.26	7.26	7.26	7.66	7.81	7.81	7.81	7.86	7.86	7.86	7.86	8.35	8.35	8.35	8.35
		S/T	0.67	0.73	0.80	0.87	0.56	0.62	0.67	0.74	0.50	0.56	0.62	0.68	0.38	0.43	0.49	0.55
		PI	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51
	0	TC	7.23	7.22	7.22	7.22	7.63	7.78	7.78	7.78	7.84	7.84	7.84	7.84	8.34	8.34	8.34	8.34
		S/T	0.68	0.74	0.80	0.87	0.56	0.62	0.68	0.74	0.50	0.56	0.63	0.69	0.38	0.43	0.49	0.55
		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	7.19	7.18	7.18	7.18	7.60	7.75	7.75	7.75	7.82	7.82	7.82	7.82	8.34	8.34	8.34	8.34
		S/T	0.68	0.74	0.81	0.88	0.56	0.62	0.68	0.75	0.50	0.56	0.63	0.69	0.38	0.43	0.49	0.55
		PI	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
	10	TC	7.15	7.14	7.14	7.14	7.56	7.71	7.71	7.71	7.79	7.79	7.79	7.79	8.31	8.31	8.31	8.31
		S/T	0.68	0.74	0.81	0.88	0.56	0.62	0.68	0.75	0.50	0.56	0.63	0.69	0.39	0.44	0.50	0.55
		PI	1.55	1.55	1.55	1.55	1.54	1.54	1.54	1.54	1.55	1.55	1.55	1.55	1.54	1.54	1.54	1.54
	15	TC	7.09	7.08	7.08	7.08	7.51	7.66	7.66	7.66	7.74	7.74	7.74	7.74	8.28	8.28	8.28	8.28
		S/T	0.69	0.75	0.82	0.89	0.57	0.63	0.69	0.76	0.51	0.57	0.64	0.70	0.39	0.44	0.50	0.56
		PI	1.59	1.59	1.59	1.59	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
	20	TC	7.01	7.00	7.00	7.00	7.43	7.43	7.43	7.43	7.66	7.66	7.66	7.66	8.21	8.21	8.21	8.21
		S/T	0.69	0.75	0.82	0.89	0.57	0.63	0.69	0.76	0.51	0.57	0.64	0.70	0.39	0.44	0.50	0.56
		PI	1.64	1.64	1.64	1.64	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.62	1.62	1.62	1.62
	25	TC	6.69	6.69	6.69	6.74	7.09	7.09	7.09	7.09	7.32	7.32	7.32	7.32	7.86	7.86	7.86	7.86
		S/T	0.69	0.76	0.83	0.90	0.57	0.64	0.70	0.77	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		PI	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
	30	TC	6.37	6.37	6.37	6.43	6.77	6.77	6.77	6.77	6.97	6.97	6.97	6.97	7.52	7.52	7.52	7.52
		S/T	0.70	0.77	0.84	0.91	0.57	0.64	0.71	0.78	0.51	0.58	0.65	0.71	0.38	0.44	0.50	0.56
		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	6.06	6.06	6.06	6.11	6.43	6.43	6.43	6.43	6.63	6.63	6.74	6.63	7.17	7.17	7.17	7.17
		S/T	0.70	0.78	0.86	0.93	0.57	0.65	0.72	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57
		PI	2.16	2.16	2.16	2.16	2.17	2.17	2.17	2.17	2.18	2.18	2.18	2.18	2.19	2.19	2.19	2.19
	40	TC	5.71	5.71	5.74	5.80	6.07	6.07	6.07	6.07	6.27	6.27	6.34	6.27	6.78	6.78	6.78	6.78
		S/T	0.72	0.80	0.88	0.96	0.58	0.66	0.74	0.82	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58
		PI	2.39	2.39	2.39	2.39	2.40	2.40	2.40	2.40	2.41	2.41	2.41	2.41	2.42	2.42	2.42	2.42
	46	TC	5.29	5.29	5.35	5.40	5.63	5.63	5.63	5.63	5.83	5.83	5.83	5.83	6.29	6.29	6.29	6.29
		S/T	0.73	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	2.66	2.66	2.66	2.66	2.67	2.67	2.67	2.67	2.68	2.68	2.68	2.68	2.70	2.70	2.70	2.70
	50	TC	4.94	4.94	5.00	5.06	5.29	5.29	5.29	5.29	5.49	5.49	5.49	5.49	5.95	5.95	5.95	5.95
		S/T	0.74	0.83	0.92	1.00	0.59	0.68	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.52	0.59
		PI	2.88	2.88	2.88	2.88	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.93	2.93	2.93	2.93

1000	-15	TC	7.50	7.50	7.56	7.65	7.88	7.88	7.88	7.88	8.09	8.09	8.09	8.09	8.58	8.58	8.58	8.58
		S/T	0.71	0.80	0.98	1.00	0.57	0.66	0.73	0.82	0.50	0.58	0.67	0.74	0.35	0.42	0.50	0.58
		PI	1.55	1.55	1.55	1.55	1.54	1.54	1.54	1.54	1.55	1.55	1.55	1.55	1.54	1.54	1.54	1.54
	-10	TC	7.45	7.45	7.51	7.60	7.84	7.84	7.84	7.84	8.05	8.05	8.05	8.05	8.55	8.55	8.55	8.55
		S/T	0.72	0.81	0.99	1.00	0.57	0.66	0.74	0.82	0.50	0.58	0.67	0.75	0.35	0.43	0.50	0.58
		PI	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
	-5	TC	7.41	7.41	7.47	7.56	7.81	7.81	7.81	7.81	8.02	8.02	8.02	8.02	8.53	8.53	8.53	8.53
		S/T	0.72	0.81	0.99	1.00	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.35	0.43	0.51	0.59
		PI	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
	0	TC	7.37	7.37	7.43	7.52	7.78	7.78	7.78	7.78	7.99	7.99	7.99	7.99	8.52	8.52	8.52	8.52
		S/T	0.73	0.81	1.00	1.00	0.58	0.67	0.74	0.83	0.51	0.59	0.68	0.75	0.35	0.43	0.51	0.59
		PI	1.55	1.55	1.55	1.55	1.54	1.54	1.54	1.54	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
	5	TC	7.33	7.33	7.39	7.48	7.75	7.75	7.75	7.75	7.97	7.97	7.97	7.97	8.51	8.51	8.51	8.51
		S/T	0.73	0.82	1.00	1.00	0.58	0.67	0.75	0.84	0.51	0.59	0.68	0.76	0.35	0.43	0.51	0.59
		PI	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
	10	TC	7.29	7.29	7.35	7.44	7.71	7.71	7.71	7.71	7.93	7.93	7.93	7.93	8.49	8.49	8.49	8.49
		S/T	0.73	0.82	1.00	1.00	0.58	0.67	0.75	0.84	0.51	0.59	0.68	0.76	0.36	0.44	0.51	0.59
		PI	1.59	1.59	1.59	1.59	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
	15	TC	7.23	7.23	7.29	7.38	7.66	7.66	7.66	7.66	7.89	7.89	7.89	7.89	8.46	8.46	8.46	8.46
		S/T	0.74	0.83	0.92	1.00	0.59	0.68	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.52	0.60
		PI	1.63	1.63	1.63	1.63	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62
	20	TC	7.15	7.15	7.21	7.29	7.58	7.58	7.58	7.58	7.81	7.81	7.81	7.81	8.38	8.38	8.38	8.38
		S/T	0.74	0.83	0.92	1.00	0.59	0.68	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.52	0.60
		PI	1.68	1.68	1.68	1.68	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.66	1.66	1.66	1.66
	25	TC	6.83	6.83	6.89	6.95	7.26	7.26	7.26	7.26	7.46	7.46	7.46	7.46	8.04	8.04	8.04	8.04
		S/T	0.75	0.84	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	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
30	TC	6.52	6.52	6.57	6.63	6.92	6.92	6.92	6.98	7.12	7.12	7.12	7.12	7.69	7.69	7.69	7.69	
	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	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.05	2.05	2.05	2.05	
35	TC	6.17	6.17	6.23	6.29	6.57	6.57	6.57	6.63	6.78	6.78	6.78	6.78	7.32	7.32	7.32	7.32	
	S/T	0.77	0.88	0.98	1.00	0.60	0.70	0.81	0.91	0.53	0.62	0.72	0.82	0.35	0.44	0.53	0.62	
	PI	2.21	2.21	2.21	2.21	2.22	2.22	2.22	2.22	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	
40	TC	5.77	5.80	5.86	5.91	6.15	6.15	6.15	6.20	6.35	6.35	6.41	6.35	6.86	6.86	6.86	6.86	
	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	2.44	2.44	2.44	2.44	2.45	2.45	2.45	2.45	2.46	2.46	2.46	2.46	2.47	2.47	2.47	2.47	
46	TC	5.35	5.41	5.47	5.53	5.70	5.70	5.70	5.75	5.90	5.90	5.90	5.90	6.38	6.38	6.38	6.38	
	S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.86	0.97	0.54	0.65	0.76	0.87	0.34	0.44	0.55	0.65	
	PI	2.72	2.72	2.72	2.72	2.73	2.73	2.73	2.73	2.74	2.74	2.74	2.74	2.76	2.76	2.76	2.76	
50	TC	5.01	5.07	5.13	5.18	5.35	5.35	5.35	5.41	5.55	5.55	5.55	5.61	6.01	6.01	6.01	6.01	
	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	0.34	0.45	0.56	0.91	
	PI	2.95	2.95	2.95	2.95	2.96	2.96	2.96	2.96	2.97	2.97	2.97	2.97	2.99	2.99	2.99	2.99	
1200	-15	TC	7.68	7.68	7.77	7.86	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	0.74	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	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.57	1.57	1.57	1.57	1.58	1.58	1.58	1.58
	-10	TC	7.63	7.63	7.72	7.81	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	0.75	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	1.57	1.57	1.57	1.57	1.58	1.58	1.58	1.58	1.57	1.57	1.57	1.57	1.58	1.58	1.58	1.58
	-5	TC	7.59	7.59	7.68	7.77	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	0.75	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	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.58	1.58	1.58	1.58
	0	TC	7.55	7.55	7.64	7.73	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	0.75	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	1.57	1.57	1.57	1.57	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.59	1.59	1.59	1.59
	5	TC	7.51	7.51	7.60	7.69	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	0.76	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	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.60
	10	TC	7.47	7.47	7.55	7.64	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	0.76	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	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.61	1.61	1.61	1.61	1.62	1.62	1.62	1.62
	15	TC	7.40	7.40	7.49	7.58	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	0.77	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	1.65	1.65	1.65	1.65	1.66	1.66	1.66	1.66	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
	20	TC	7.32	7.32	7.41	7.49	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	0.77	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	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
	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	0.90	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	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
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	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.96	0.53	0.64	0.75	0.87	0.34	0.44	0.54	0.65	
	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	2.08	2.08	2.08	2.08	
35	TC	6.32	6.37	6.43	6.49	6.72	6.72	6.72	6.78	6.92	6.92	7.03	7.09	7.46	7.46	7.46	7.46	
	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	2.26	2.26	2.26	2.26	2.27	2.27	2.27	2.27	2.28	2.28	2.28	2.28	2.29	2.29	2.29	2.29	
40	TC	5.90	5.96	6.02	6.07	6.29	6.29	6.32	6.37	6.48	6.48	6.54	6.60	7.00	7.00	7.00	7.00	
	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	2.50	2.50	2.50	2.50	2.51	2.51	2.										

MUCR-30-H14																		
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
900	-15	TC	9.20	9.22	9.22	9.31	9.68	9.89	9.89	9.89	9.90	9.90	9.90	9.90	10.52	10.52	10.52	10.52
		S/T	0.67	0.73	0.80	0.86	0.55	0.61	0.68	0.73	0.49	0.56	0.62	0.68	0.37	0.42	0.48	0.54
		PI	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
	-10	TC	9.15	9.16	9.16	9.25	9.62	9.83	9.83	9.83	9.85	9.85	9.85	9.85	10.49	10.49	10.49	10.49
		S/T	0.67	0.74	0.81	0.86	0.55	0.62	0.68	0.74	0.49	0.56	0.62	0.68	0.37	0.43	0.49	0.54
		PI	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
	-5	TC	9.09	9.11	9.11	9.20	9.59	9.80	9.80	9.80	9.82	9.82	9.82	9.82	10.46	10.46	10.46	10.46
		S/T	0.67	0.74	0.81	0.87	0.56	0.62	0.68	0.74	0.50	0.57	0.62	0.68	0.37	0.43	0.49	0.55
		PI	1.85	1.85	1.85	1.85	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
	0	TC	9.05	9.06	9.06	9.15	9.55	9.76	9.76	9.76	9.79	9.79	9.79	9.79	10.45	10.45	10.45	10.45
		S/T	0.68	0.74	0.81	0.87	0.56	0.62	0.69	0.74	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		PI	1.85	1.85	1.85	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
	5	TC	9.00	9.02	9.02	9.11	9.51	9.72	9.72	9.72	9.76	9.76	9.76	9.76	10.44	10.44	10.44	10.44
		S/T	0.68	0.75	0.82	0.88	0.56	0.62	0.69	0.75	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		PI	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87
	10	TC	8.95	8.96	8.96	9.05	9.47	9.68	9.68	9.68	9.72	9.72	9.72	9.72	10.42	10.42	10.42	10.42
		S/T	0.68	0.75	0.82	0.88	0.56	0.63	0.69	0.75	0.50	0.57	0.63	0.69	0.38	0.44	0.50	0.55
		PI	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
	15	TC	8.87	8.89	8.89	8.98	9.41	9.61	9.61	9.61	9.66	9.66	9.66	9.66	10.37	10.37	10.37	10.37
		S/T	0.69	0.76	0.83	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		PI	1.95	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
	20	TC	8.77	8.79	8.79	8.88	9.31	9.31	9.31	9.31	9.56	9.56	9.56	9.56	10.28	10.28	10.28	10.28
		S/T	0.69	0.76	0.83	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		PI	2.02	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00
	25	TC	8.36	8.36	8.36	8.44	8.90	8.90	8.90	8.90	9.16	9.16	9.16	9.16	9.85	9.85	9.85	9.85
		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	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22
	30	TC	7.98	7.98	7.98	8.07	8.47	8.47	8.47	8.47	8.73	8.73	8.73	8.73	9.42	9.42	9.42	9.42
		S/T	0.70	0.77	0.85	0.92	0.57	0.64	0.71	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57
		PI	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.45	2.45	2.45	2.45	2.46	2.46	2.46	2.46
	35	TC	7.58	7.58	7.58	7.67	8.07	8.07	8.07	8.07	8.33	8.33	8.44	8.33	8.96	8.96	8.96	8.96
		S/T	0.71	0.79	0.87	0.94	0.57	0.65	0.72	0.80	0.51	0.58	0.65	0.73	0.37	0.44	0.50	0.57
		PI	2.66	2.66	2.66	2.66	2.67	2.67	2.67	2.67	2.68	2.68	2.68	2.68	2.69	2.69	2.69	2.69
	40	TC	7.12	7.12	7.14	7.21	7.59	7.59	7.59	7.59	7.82	7.82	7.88	7.82	8.44	8.44	8.44	8.44
		S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58
		PI	2.93	2.93	2.93	2.93	2.94	2.94	2.94	2.94	2.95	2.95	2.95	2.95	2.97	2.97	2.97	2.97
	46	TC	6.58	6.58	6.64	6.70	7.04	7.04	7.04	7.04	7.24	7.24	7.24	7.24	7.84	7.84	7.84	7.84
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	3.26	3.26	3.26	3.26	3.27	3.27	3.27	3.27	3.28	3.28	3.28	3.28	3.31	3.31	3.31	3.31
	50	TC	6.18	6.18	6.24	6.30	6.61	6.61	6.61	6.61	6.81	6.81	6.81	6.81	7.39	7.39	7.39	7.39
		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	3.54	3.54	3.54	3.54	3.55	3.55	3.55	3.55	3.56	3.56	3.56	3.56	3.58	3.58	3.58	3.58

1200	-15	TC	9.40	9.40	9.49	9.58	9.89	9.89	9.89	9.89	10.12	10.12	10.12	10.12	10.76	10.76	10.76	10.76
		S/T	0.70	0.79	0.98	1.00	0.56	0.65	0.72	0.81	0.50	0.58	0.66	0.73	0.35	0.42	0.49	0.57
		PI	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
	-10	TC	9.35	9.35	9.44	9.53	9.83	9.83	9.83	9.83	10.06	10.06	10.06	10.06	10.73	10.73	10.73	10.73
		S/T	0.71	0.80	0.99	1.00	0.56	0.65	0.73	0.82	0.50	0.58	0.66	0.74	0.35	0.43	0.49	0.57
		PI	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90
	-5	TC	9.29	9.29	9.38	9.47	9.80	9.80	9.80	9.80	10.03	10.03	10.03	10.03	10.70	10.70	10.70	10.70
		S/T	0.71	0.80	0.99	1.00	0.57	0.65	0.73	0.82	0.51	0.59	0.66	0.74	0.35	0.43	0.50	0.58
		PI	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90
	0	TC	9.24	9.24	9.33	9.42	9.76	9.76	9.76	9.76	10.00	10.00	10.00	10.00	10.69	10.69	10.69	10.69
		S/T	0.72	0.80	1.00	1.00	0.57	0.66	0.74	0.82	0.51	0.59	0.67	0.74	0.35	0.43	0.50	0.58
		PI	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.91	1.91	1.91	1.91
	5	TC	9.20	9.20	9.29	9.37	9.72	9.72	9.72	9.72	9.97	9.97	9.97	9.97	10.68	10.68	10.68	10.68
		S/T	0.72	0.81	1.00	1.00	0.57	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.35	0.43	0.50	0.58
		PI	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92
	10	TC	9.14	9.14	9.23	9.32	9.68	9.68	9.68	9.68	9.93	9.93	9.93	9.93	10.65	10.65	10.65	10.65
		S/T	0.72	0.81	1.00	1.00	0.57	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.50	0.58
		PI	1.95	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95
	15	TC	9.07	9.07	9.15	9.24	9.61	9.61	9.61	9.61	9.87	9.87	9.87	9.87	10.61	10.61	10.61	10.61
		S/T	0.73	0.82	0.90	0.99	0.58	0.67	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99
	20	TC	8.96	8.96	9.05	9.14	9.51	9.51	9.51	9.51	9.77	9.77	9.77	9.77	10.52	10.52	10.52	10.52
		S/T	0.73	0.82	0.90	0.99	0.58	0.67	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	2.07	2.07	2.07	2.07	2.06	2.06	2.06	2.06	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
25	TC	8.53	8.53	8.62	8.71	9.08	9.08	9.08	9.08	9.34	9.34	9.34	9.34	10.06	10.06	10.06	10.06	
	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	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	
30	TC	8.13	8.13	8.22	8.30	8.65	8.65	8.65	8.65	8.91	8.91	8.91	8.91	9.63	9.63	9.63	9.63	
	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	2.49	2.49	2.49	2.49	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.51	2.51	2.51	2.51	
35	TC	7.73	7.73	7.82	7.90	8.25	8.25	8.25	8.33	8.48	8.48	8.62	8.48	9.17	9.17	9.17	9.17	
	S/T	0.76	0.86	0.96	1.00	0.60	0.69	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.61	
	PI	2.72	2.72	2.72	2.72	2.73	2.73	2.73	2.73	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	
40	TC	7.21	7.23	7.31	7.38	7.69	7.69	7.69	7.73	7.92	7.92	8.00	7.92	8.57	8.57	8.57	8.57	
	S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.82	0.93	0.53	0.63	0.74	0.84	0.34	0.44	0.54	0.63	
	PI	3.01	3.01	3.01	3.01	3.02	3.02	3.02	3.03	3.03	3.03	3.03	3.03	3.04	3.04	3.04	3.04	
46	TC	6.68	6.74	6.79	6.85	7.14	7.14	7.14	7.22	7.36	7.36	7.36	7.36	7.96	7.96	7.96	7.96	
	S/T	0.80	0.91	1.00	1.00	0.62	0.73	0.84	0.95	0.53	0.64	0.75	0.86	0.34	0.44	0.54	0.64	
	PI	3.34	3.34	3.34	3.34	3.36	3.36	3.36	3.36	3.37	3.37	3.37	3.37	3.39	3.39	3.39	3.39	
50	TC	6.25	6.31	6.37	6.43	6.68	6.68	6.68	6.74	6.91	6.91	6.91	6.91	7.51	7.51	7.51	7.51	
	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	0.91	
	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	3.68	3.68	3.68	3.68	
1500	-15	TC	9.58	9.58	9.67	9.76	10.07	10.07	10.07	10.16	10.32	10.32	10.32	10.32	10.97	10.97	10.97	10.97
		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	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
	-10	TC	9.53	9.53	9.62	9.71	10.01	10.01	10.01	10.10	10.27	10.27	10.27	10.27	10.93	10.93	10.93	10.93
		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	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
	-5	TC	9.47	9.47	9.56	9.65	9.98	9.98	9.98	10.06	10.23	10.23	10.23	10.23	10.90	10.90	10.90	10.90
		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	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94
	0	TC	9.42	9.42	9.51	9.60	9.94	9.94	9.94	10.03	10.21	10.21	10.21	10.21	10.89	10.89	10.89	10.89
		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	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
	5	TC	9.37	9.37	9.46	9.55	9.90	9.90	9.90	9.99	10.17	10.17	10.17	10.17	10.88	10.88	10.88	10.88
		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	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96
	10	TC	9.32	9.32	9.41	9.49	9.85	9.85	9.85	9.94	10.13	10.13	10.13	10.13	10.86	10.86	10.86	10.86
		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	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
	15	TC	9.24	9.24	9.33	9.42	9.79	9.79	9.79	9.87	10.07	10.07	10.07	10.07	10.81	10.81	10.81	10.81
		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	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.02
	20	TC	9.14	9.14	9.22	9.31	9.68	9.68	9.68	9.77	9.97	9.97	9.97	9.97	10.72	10.72	10.72	10.72
		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	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.09	2.09	2.09	2.09
25	TC	8.71	8.79	8.88	8.96	9.25	9.25	9.25	9.34	9.54	9.54	9.54	9.54	10.26	10.26	10.26	10.26	
	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	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	
30	TC	8.30	8.39	8.48	8.56	8.82	8.82	8.82	8.91	9.11	9.11	9.11	9.11	9.80	9.80	9.80	9.80	
	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	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.56	2.56	2.56	2.56	2.57	2.57	2.57	2.57	
35	TC	7.90	7.99	8.07	8.16	8.39	8.39	8.39	8.48	8.65	8.65	8.79	8.88	9.34	9.34	9.34	9.34	
	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	2.78	2.78	2.78	2.78	2.79	2.79	2.79	2.79	2.80	2.80	2.80	2.80	2.81	2.81	2.81	2.81	
40	TC	7.35	7.43	7.50	7.57	7.84	7.84	7.88	7.96	8.08	8.08	8.16	8.24	8.74	8.74	8.74	8.74	
	S/T	0.85	0.99	1.00	1.00	0.65	0.78	0.90	1									

MUCR-36-H14																		
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
1100	-15	TC	11.05	11.06	11.06	11.18	11.63	11.87	11.87	11.87	11.90	11.90	11.90	11.90	12.65	12.65	12.65	12.65
		S/T	0.67	0.73	0.80	0.87	0.55	0.61	0.68	0.74	0.49	0.56	0.62	0.68	0.37	0.42	0.48	0.54
		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
	-10	TC	10.99	11.00	11.00	11.11	11.56	11.80	11.80	11.80	11.84	11.84	11.84	11.84	12.60	12.60	12.60	12.60
		S/T	0.67	0.74	0.81	0.87	0.55	0.62	0.68	0.75	0.49	0.56	0.62	0.68	0.37	0.43	0.49	0.54
		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	10.93	11.05	11.52	11.76	11.76	11.76	11.80	11.80	11.80	11.80	12.57	12.57	12.57	12.57
		S/T	0.67	0.74	0.81	0.88	0.56	0.62	0.68	0.75	0.50	0.57	0.62	0.68	0.37	0.43	0.49	0.55
		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	10.87	10.99	11.47	11.71	11.71	11.71	11.77	11.77	11.77	11.77	12.56	12.56	12.56	12.56
		S/T	0.68	0.74	0.81	0.88	0.56	0.62	0.69	0.75	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		PI	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	10.82	10.94	11.43	11.67	11.67	11.67	11.73	11.73	11.73	11.73	12.55	12.55	12.55	12.55
		S/T	0.68	0.75	0.82	0.89	0.56	0.63	0.69	0.76	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		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	10.75	10.87	11.38	11.61	11.61	11.61	11.68	11.68	11.68	11.68	12.52	12.52	12.52	12.52
		S/T	0.68	0.75	0.82	0.89	0.56	0.63	0.69	0.76	0.50	0.57	0.63	0.69	0.38	0.44	0.50	0.55
		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	10.67	10.78	11.30	11.54	11.54	11.54	11.61	11.61	11.61	11.61	12.46	12.46	12.46	12.46
		S/T	0.69	0.76	0.83	0.90	0.57	0.63	0.70	0.77	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		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	10.55	10.66	11.18	11.18	11.18	11.18	11.50	11.50	11.50	11.50	12.36	12.36	12.36	12.36
		S/T	0.69	0.76	0.83	0.90	0.57	0.64	0.70	0.77	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		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	10.06	10.17	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	0.70	0.77	0.84	0.91	0.57	0.64	0.71	0.78	0.51	0.58	0.65	0.71	0.38	0.44	0.50	0.56
		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	9.57	9.66	10.20	10.20	10.20	10.20	10.49	10.49	10.49	10.49	11.32	11.32	11.32	11.32
		S/T	0.70	0.78	0.86	0.93	0.57	0.64	0.72	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57
		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	9.11	9.11	9.20	9.68	9.68	9.68	9.68	10.00	10.00	10.14	10.00	10.78	10.78	10.78	10.78
		S/T	0.71	0.79	0.87	0.95	0.58	0.65	0.73	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.51	0.57
		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	8.58	8.58	8.61	8.70	9.14	9.14	9.14	9.14	9.43	9.43	9.51	9.43	10.18	10.18	10.18	10.18
		S/T	0.73	0.81	0.90	0.98	0.58	0.67	0.75	0.83	0.51	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		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	7.93	7.93	8.02	8.10	8.48	8.48	8.48	8.48	8.74	8.74	8.74	8.74	9.46	9.46	9.46	9.46
		S/T	0.73	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.51	0.59
		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	7.44	7.44	7.53	7.62	7.96	7.96	7.96	7.96	8.22	8.22	8.22	8.22	8.91	8.91	8.91	8.91
		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	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

1400	-15	TC	11.28	11.28	11.40	11.52	11.87	11.87	11.87	11.87	12.15	12.15	12.15	12.15	12.92	12.92	12.92	12.92
		S/T	0.70	0.78	0.98	1.00	0.56	0.64	0.71	0.80	0.49	0.57	0.65	0.72	0.35	0.42	0.49	0.56
		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	11.21	11.33	11.45	11.80	11.80	11.80	11.80	12.08	12.08	12.08	12.08	12.87	12.87	12.87	12.87
		S/T	0.70	0.79	0.99	1.00	0.56	0.64	0.72	0.81	0.49	0.57	0.65	0.73	0.35	0.43	0.49	0.56
		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	11.14	11.26	11.38	11.76	11.76	11.76	11.76	12.04	12.04	12.04	12.04	12.84	12.84	12.84	12.84
		S/T	0.70	0.79	0.99	1.00	0.57	0.64	0.72	0.81	0.50	0.58	0.65	0.73	0.35	0.43	0.50	0.57
		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	11.09	11.21	11.32	11.71	11.71	11.71	11.71	12.01	12.01	12.01	12.01	12.83	12.83	12.83	12.83
		S/T	0.71	0.79	1.00	1.00	0.57	0.65	0.73	0.81	0.50	0.58	0.66	0.74	0.35	0.43	0.50	0.57
		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	11.03	11.15	11.27	11.67	11.67	11.67	11.67	11.97	11.97	11.97	11.97	12.82	12.82	12.82	12.82
		S/T	0.71	0.80	1.00	1.00	0.57	0.65	0.73	0.82	0.50	0.58	0.66	0.74	0.35	0.43	0.50	0.57
		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	10.96	11.08	11.20	11.61	11.61	11.61	11.61	11.92	11.92	11.92	11.92	12.78	12.78	12.78	12.78
		S/T	0.71	0.80	1.00	1.00	0.57	0.65	0.73	0.82	0.50	0.58	0.66	0.74	0.36	0.44	0.50	0.57
		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	10.87	10.99	11.11	11.54	11.54	11.54	11.54	11.85	11.85	11.85	11.85	12.73	12.73	12.73	12.73
		S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58
		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	10.75	10.87	10.98	11.41	11.41	11.41	11.41	11.73	11.73	11.73	11.73	12.62	12.62	12.62	12.62
		S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58
		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	2.88	2.88
	25	TC	10.26	10.26	10.38	10.49	10.90	10.90	10.90	10.90	11.21	11.21	11.21	11.21	12.07	12.07	12.07	12.07
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59
		PI	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
	30	TC	9.77	9.77	9.86	9.95	10.41	10.41	10.41	10.41	10.72	10.72	10.72	10.72	11.53	11.53	11.53	11.53
		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	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.53	3.53	3.53	3.53	3.54	3.54	3.54	3.54
35	TC	9.29	9.29	9.37	9.46	9.89	9.89	9.89	9.89	10.18	10.18	10.35	10.18	10.98	10.98	10.98	10.98	
	S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.80	0.35	0.44	0.52	0.61	
	PI	3.84	3.84	3.84	3.84	3.86	3.86	3.86	3.86	3.86	3.86	3.87	3.86	3.86	3.86	3.86	3.86	3.86
40	TC	8.67	8.71	8.79	8.88	9.24	9.24	9.24	9.28	9.51	9.51	9.61	9.51	10.28	10.28	10.28	10.28	
	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	0.35	0.44	0.53	0.63	
	PI	4.24	4.24	4.24	4.24	4.26	4.26	4.26	4.26	4.27	4.27	4.27	4.27	4.28	4.28	4.28	4.28	4.28
46	TC	8.03	8.12	8.20	8.29	8.57	8.57	8.57	8.66	8.83	8.83	8.83	8.83	9.57	9.57	9.57	9.57	
	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	0.63	
	PI	4.71	4.71	4.71	4.71	4.74	4.74	4.74	4.74	4.75	4.75	4.75	4.75	4.79	4.79	4.79	4.79	4.79
50	TC	7.52	7.60	7.69	7.78	8.06	8.06	8.06	8.15	8.32	8.32	8.32	8.32	9.03	9.03	9.03	9.03	
	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	0.61	
	PI	5.10	5.10	5.10	5.10	5.13	5.13	5.13	5.13	5.14	5.14	5.14	5.14	5.18	5.18	5.18	5.18	5.18
1700	-15	TC	11.49	11.49	11.61	11.73	12.08	12.08	12.08	12.20	12.38	12.38	12.38	12.38	13.15	13.15	13.15	13.15
		S/T	0.73	0.83	1.00	1.00	0.58	0.68	0.76	0.98	0.50	0.60	0.69	0.78	0.34	0.42	0.51	0.60
		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	11.42	11.54	11.66	12.01	12.01	12.01	12.13	12.32	12.32	12.32	12.32	13.11	13.11	13.11	13.11
		S/T	0.74	0.83	1.00	1.00	0.58	0.68	0.77	0.98	0.50	0.60	0.69	0.79	0.34	0.43	0.51	0.60
		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	11.35	11.47	11.59	11.97	11.97	11.97	12.08	12.28	12.28	12.28	12.28	13.07	13.07	13.07	13.07
		S/T	0.74	0.84	1.00	1.00	0.59	0.68	0.77	0.99	0.51	0.60	0.69	0.79	0.34	0.43	0.52	0.60
		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	11.29	11.41	11.53	11.92	11.92	11.92	12.04	12.24	12.24	12.24	12.24	13.06	13.06	13.06	13.06
		S/T	0.74	0.84	1.00	1.00	0.59	0.69	0.77	0.99	0.51	0.61	0.70	0.79	0.34	0.43	0.52	0.61
		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	11.24	11.36	11.47	11.87	11.87	11.87	11.99	12.20	12.20	12.20	12.20	13.05	13.05	13.05	13.05
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.78	1.00	0.51	0.61	0.70	0.80	0.34	0.43	0.52	0.61
		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	11.17	11.29	11.40	11.82	11.82	11.82	11.94	12.15	12.15	12.15	12.15	13.02	13.02	13.02	13.02
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.78	1.00	0.51	0.61	0.70	0.80	0.35	0.44	0.52	0.61
		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	11.08	11.19	11.31	11.74	11.74	11.74	11.86	12.08	12.08	12.08	12.08	12.96	12.96	12.96	12.96
		S/T	0.76	0.86	0.96	1.00	0.60	0.70	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62
		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
	20	TC	10.95	10.95	11.07	11.18	11.61	11.61	11.61	11.73	11.96	11.96	11.96	11.96	12.85	12.85	12.85	12.85
		S/T	0.76	0.86	0.96	1.00	0.60	0.70	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62
		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
	25	TC	10.46	10.46	10.58	10.69	11.10	11.10	11.10	11.21	11.44	11.44	11.44	11.44	12.30	12.30	12.30	12.30
		S/T	0.77	0.88	0.98	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.62
		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
	30	TC	9.98	10.06	10.18	10.29	10.61	10.61	10.61	10.72	10.92	10.92	10.92	10.92	11.76	11.76	11.76	11.76
		S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.63	0.74	0.84	0.34	0.44	0.54	0.63
		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

(none)																		
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
		1100	-15	TC	11.05	11.06	11.06	11.18	11.63	11.87	11.87	11.87	11.90	11.90	11.90	11.90	12.65	12.65
		S/T	0.67	0.73	0.80	0.87	0.55	0.61	0.68	0.74	0.49	0.56	0.62	0.68	0.37	0.42	0.48	0.54
		PI	2.60	2.59	2.59	2.60	2.58	2.58	2.58	2.58	2.59	2.59	2.59	2.59	2.58	2.58	2.58	2.58
	-10	TC	10.99	11.00	11.00	11.11	11.56	11.80	11.80	11.80	11.84	11.84	11.84	11.84	12.60	12.60	12.60	12.60
		S/T	0.67	0.74	0.81	0.87	0.55	0.62	0.68	0.75	0.49	0.56	0.62	0.68	0.37	0.43	0.49	0.54
		PI	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
	-5	TC	10.92	10.93	10.93	11.05	11.52	11.76	11.76	11.76	11.80	11.80	11.80	11.80	12.57	12.57	12.57	12.57
		S/T	0.67	0.74	0.81	0.88	0.56	0.62	0.68	0.75	0.50	0.57	0.62	0.68	0.37	0.43	0.49	0.55
		PI	2.58	2.57	2.57	2.58	2.57	2.57	2.57	2.57	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
	0	TC	10.87	10.87	10.87	10.99	11.47	11.71	11.71	11.71	11.77	11.77	11.77	11.77	12.56	12.56	12.56	12.56
		S/T	0.68	0.74	0.81	0.88	0.56	0.62	0.69	0.75	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		PI	2.59	2.58	2.58	2.59	2.58	2.58	2.58	2.58	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
	5	TC	10.81	10.82	10.82	10.94	11.43	11.67	11.67	11.67	11.73	11.73	11.73	11.73	12.55	12.55	12.55	12.55
		S/T	0.68	0.75	0.82	0.89	0.56	0.63	0.69	0.76	0.50	0.57	0.63	0.69	0.37	0.43	0.49	0.55
		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	2.61	2.61	2.61	2.61
	10	TC	10.75	10.75	10.75	10.87	11.38	11.61	11.61	11.61	11.68	11.68	11.68	11.68	12.52	12.52	12.52	12.52
		S/T	0.68	0.75	0.82	0.89	0.56	0.63	0.69	0.76	0.50	0.57	0.63	0.69	0.38	0.44	0.50	0.55
		PI	2.66	2.65	2.65	2.66	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.64	2.64	2.64	2.64
	15	TC	10.66	10.67	10.67	10.78	11.30	11.54	11.54	11.54	11.61	11.61	11.61	11.61	12.46	12.46	12.46	12.46
		S/T	0.69	0.76	0.83	0.90	0.57	0.63	0.70	0.77	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		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	2.70	2.70	2.70	2.70
	20	TC	10.54	10.55	10.55	10.66	11.18	11.18	11.18	11.18	11.50	11.50	11.50	11.50	12.36	12.36	12.36	12.36
		S/T	0.69	0.76	0.83	0.90	0.57	0.64	0.70	0.77	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56
		PI	2.82	2.81	2.81	2.82	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.78	2.78	2.78	2.78
	25	TC	10.06	10.06	10.06	10.17	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	0.70	0.77	0.84	0.91	0.57	0.64	0.71	0.78	0.51	0.58	0.65	0.71	0.38	0.44	0.50	0.56
		PI	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
	30	TC	9.57	9.57	9.57	9.66	10.20	10.20	10.20	10.20	10.49	10.49	10.49	10.49	11.32	11.32	11.32	11.32
		S/T	0.70	0.78	0.86	0.93	0.57	0.64	0.72	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57
		PI	3.40	3.40	3.40	3.40	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.42	3.42	3.42	3.42
	35	TC	9.11	9.11	9.11	9.20	9.68	9.68	9.68	9.68	10.00	10.00	10.14	10.00	10.78	10.78	10.78	10.78
		S/T	0.71	0.79	0.87	0.95	0.58	0.65	0.73	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.51	0.57
		PI	3.71	3.71	3.71	3.71	3.73	3.73	3.73	3.73	3.73	3.73	3.74	3.73	3.76	3.76	3.76	3.76
	40	TC	8.58	8.58	8.61	8.70	9.14	9.14	9.14	9.14	9.43	9.43	9.51	9.43	10.18	10.18	10.18	10.18
		S/T	0.73	0.81	0.90	0.98	0.58	0.67	0.75	0.83	0.51	0.60	0.68	0.76	0.36	0.44	0.51	0.59
		PI	4.10	4.10	4.10	4.10	4.12	4.12	4.12	4.12	4.12	4.12	4.13	4.12	4.16	4.16	4.16	4.16
	46	TC	7.93	7.93	8.02	8.10	8.48	8.48	8.48	8.48	8.74	8.74	8.74	8.74	9.46	9.46	9.46	9.46
		S/T	0.73	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.51	0.59
		PI	4.56	4.56	4.56	4.56	4.58	4.58	4.58	4.58	4.59	4.59	4.59	4.59	4.63	4.63	4.63	4.63
	50	TC	7.44	7.44	7.53	7.62	7.96	7.96	7.96	7.96	8.22	8.22	8.22	8.22	8.91	8.91	8.91	8.91
		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	4.93	4.93	4.93	4.93	4.95	4.95	4.95	4.95	4.97	4.97	4.97	4.97	5.01	5.01	5.01	5.01

1400	-15	TC	11.28	11.28	11.40	11.52	11.87	11.87	11.87	11.87	12.15	12.15	12.15	12.15	12.92	12.92	12.92	12.92
		S/T	0.70	0.78	0.98	1.00	0.56	0.64	0.71	0.80	0.49	0.57	0.65	0.72	0.35	0.42	0.49	0.56
		PI	2.66	2.66	2.66	2.66	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.63	2.63	2.63
	-10	TC	11.21	11.21	11.33	11.45	11.80	11.80	11.80	11.80	12.08	12.08	12.08	12.08	12.87	12.87	12.87	12.87
		S/T	0.70	0.79	0.99	1.00	0.56	0.64	0.72	0.81	0.49	0.57	0.65	0.73	0.35	0.43	0.49	0.56
		PI	2.64	2.64	2.64	2.64	2.63	2.63	2.63	2.63	2.64	2.64	2.64	2.64	2.63	2.63	2.63	2.63
	-5	TC	11.14	11.14	11.26	11.38	11.76	11.76	11.76	11.76	12.04	12.04	12.04	12.04	12.84	12.84	12.84	12.84
		S/T	0.70	0.79	0.99	1.00	0.57	0.64	0.72	0.81	0.50	0.58	0.65	0.73	0.35	0.43	0.50	0.57
		PI	2.64	2.64	2.64	2.64	2.63	2.63	2.63	2.63	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64
	0	TC	11.09	11.09	11.21	11.32	11.71	11.71	11.71	11.71	12.01	12.01	12.01	12.01	12.83	12.83	12.83	12.83
		S/T	0.71	0.79	1.00	1.00	0.57	0.65	0.73	0.81	0.50	0.58	0.66	0.74	0.35	0.43	0.50	0.57
		PI	2.65	2.65	2.65	2.65	2.64	2.64	2.64	2.64	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
	5	TC	11.03	11.03	11.15	11.27	11.67	11.67	11.67	11.67	11.97	11.97	11.97	11.97	12.82	12.82	12.82	12.82
		S/T	0.71	0.80	1.00	1.00	0.57	0.65	0.73	0.82	0.50	0.58	0.66	0.74	0.35	0.43	0.50	0.57
		PI	2.67	2.67	2.67	2.67	2.66	2.66	2.66	2.66	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
	10	TC	10.96	10.96	11.08	11.20	11.61	11.61	11.61	11.61	11.92	11.92	11.92	11.92	12.78	12.78	12.78	12.78
		S/T	0.71	0.80	1.00	1.00	0.57	0.65	0.73	0.82	0.50	0.58	0.66	0.74	0.36	0.44	0.50	0.57
		PI	2.72	2.72	2.72	2.72	2.70	2.70	2.70	2.70	2.71	2.71	2.71	2.71	2.70	2.70	2.70	2.70
15	TC	10.87	10.87	10.99	11.11	11.54	11.54	11.54	11.54	11.85	11.85	11.85	11.85	12.73	12.73	12.73	12.73	
	S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
	PI	2.78	2.78	2.78	2.78	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.76	2.76	2.76	2.76	
20	TC	10.75	10.75	10.87	10.98	11.41	11.41	11.41	11.41	11.73	11.73	11.73	11.73	12.62	12.62	12.62	12.62	
	S/T	0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
	PI	2.88	2.88	2.88	2.88	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.84	2.84	2.84	2.84	
25	TC	10.26	10.26	10.38	10.49	10.90	10.90	10.90	10.90	11.21	11.21	11.21	11.21	12.07	12.07	12.07	12.07	
	S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
	PI	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	
30	TC	9.77	9.77	9.86	9.95	10.41	10.41	10.41	10.41	10.72	10.72	10.72	10.72	11.53	11.53	11.53	11.53	
	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	3.47	3.47	3.47	3.47	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.50	3.50	3.50	3.50	
35	TC	9.29	9.29	9.37	9.46	9.89	9.89	9.89	9.89	10.18	10.18	10.35	10.18	10.98	10.98	10.98	10.98	
	S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.80	0.35	0.44	0.52	0.61	
	PI	3.79	3.79	3.79	3.79	3.81	3.81	3.81	3.81	3.81	3.81	3.82	3.81	3.81	3.81	3.81	3.81	
40	TC	8.67	8.71	8.79	8.88	9.24	9.24	9.24	9.28	9.51	9.51	9.61	9.51	10.28	10.28	10.28	10.28	
	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	0.35	0.44	0.53	0.63	
	PI	4.18	4.18	4.18	4.18	4.20	4.20	4.20	4.20	4.21	4.21	4.22	4.21	4.23	4.23	4.23	4.23	
46	TC	8.03	8.12	8.20	8.29	8.57	8.57	8.57	8.66	8.83	8.83	8.83	8.83	9.57	9.57	9.57	9.57	
	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	0.63	
	PI	4.65	4.65	4.65	4.65	4.67	4.67	4.67	4.67	4.69	4.69	4.69	4.69	4.73	4.73	4.73	4.73	
50	TC	7.52	7.60	7.69	7.78	8.06	8.06	8.06	8.15	8.32	8.32	8.32	8.32	9.03	9.03	9.03	9.03	
	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	0.91	
	PI	5.04	5.04	5.04	5.04	5.06	5.06	5.06	5.06	5.07	5.07	5.07	5.07	5.11	5.11	5.11	5.11	
1700	-15	TC	11.49	11.49	11.61	11.73	12.08	12.08	12.08	12.20	12.38	12.38	12.38	12.38	13.15	13.15	13.15	13.15
		S/T	0.73	0.83	1.00	1.00	0.58	0.68	0.76	0.98	0.50	0.60	0.69	0.78	0.34	0.42	0.51	0.60
		PI	2.71	2.71	2.71	2.71	2.69	2.69	2.69	2.69	2.70	2.70	2.70	2.70	2.69	2.69	2.69	2.69
	-10	TC	11.42	11.42	11.54	11.66	12.01	12.01	12.01	12.13	12.32	12.32	12.32	12.32	13.11	13.11	13.11	13.11
		S/T	0.74	0.83	1.00	1.00	0.58	0.68	0.77	0.98	0.50	0.60	0.69	0.79	0.34	0.43	0.51	0.60
		PI	2.70	2.70	2.70	2.70	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69
	-5	TC	11.35	11.35	11.47	11.59	11.97	11.97	11.97	12.08	12.28	12.28	12.28	12.28	13.07	13.07	13.07	13.07
		S/T	0.74	0.84	1.00	1.00	0.59	0.68	0.77	0.99	0.51	0.60	0.69	0.79	0.34	0.43	0.52	0.60
		PI	2.69	2.69	2.69	2.69	2.68	2.68	2.68	2.68	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69
	0	TC	11.29	11.29	11.41	11.53	11.92	11.92	11.92	12.04	12.24	12.24	12.24	12.24	13.06	13.06	13.06	13.06
		S/T	0.74	0.84	1.00	1.00	0.59	0.69	0.77	0.99	0.51	0.61	0.70	0.79	0.34	0.43	0.52	0.61
		PI	2.70	2.70	2.70	2.70	2.69	2.69	2.69	2.69	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
	5	TC	11.24	11.24	11.36	11.47	11.87	11.87	11.87	11.99	12.20	12.20	12.20	12.20	13.05	13.05	13.05	13.05
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.78	1.00	0.51	0.61	0.70	0.80	0.34	0.43	0.52	0.61
		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
	10	TC	11.17	11.17	11.29	11.40	11.82	11.82	11.82	11.94	12.15	12.15	12.15	12.15	13.02	13.02	13.02	13.02
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.78	1.00	0.51	0.61	0.70	0.80	0.35	0.44	0.52	0.61
		PI	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	2.76	2.76	2.76
15	TC	11.08	11.08	11.19	11.31	11.74	11.74	11.74	11.86	12.08	12.08	12.08	12.08	12.96	12.96	12.96	12.96	
	S/T	0.76	0.86	0.96	1.00	0.60	0.70	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62	
	PI	2.84	2.84	2.84	2.84	2.82	2.82	2.82	2.82	2.83	2.83	2.83	2.83	2.82	2.82	2.82	2.82	
20	TC	10.95	10.95	11.07	11.18	11.61	11.61	11.61	11.73	11.96	11.96	11.96	11.96	12.85	12.85	12.85	12.85	
	S/T	0.76	0.86	0.96	1.00	0.60	0.70	0.79	0.89	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62	
	PI	2.94	2.94	2.94	2.94	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.90	2.90	2.90	2.90	
25	TC	10.46	10.46	10.58	10.69	11.10	11.10	11.10	11.21	11.44	11.44	11.44	11.44	12.30	12.30	12.30	12.30	
	S/T	0.77	0.88	0.98	1.00	0.60	0.71	0.81	0.91	0.53	0.63	0.73	0.83	0.35	0.44	0.53	0.62	
	PI	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	
30	TC	9.98	10.06	10.18	10.29	10.61	10.61	10.61	10.72	10.92	10.92	10.92	10.92	11.76	11.76	11.76	11.76	
	S/T	0.79	0.90	1.00	1.00	0.61	0.72	0.83	0.93	0.53	0.63	0.74	0.84	0.34	0.44	0.54	0.63	
	PI	3.54	3.54	3.54	3.54	3.55	3.55	3.55	3.55	3.56	3.56	3.56	3.56	3.57	3.57	3.57	3.57	
35	TC	9.46	9.54	9.63	9.72	10.06	10.06	10.06	10.18	10.38	10.38	10.55	10.38	11.21	11.21	11.21	11.21	
	S/T	0.80	0.92	1.00	1.00	0.62	0.73	0.85	0.95	0.53	0.64	0.75	0.86	0.34	0.44	0.54	0.65	
	PI	3.87	3.87	3.87	3.87	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.92	3.92	3.92	3.92	
40	TC	8.83	8.91															

MUCR-42-H14																			
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
				TC	S/T	PI	TC	S/T	PI	TC	S/T	PI	TC	S/T	PI	TC	S/T	PI	TC
1300	-15	TC	12.69	12.69	12.69	12.81	13.34	13.60	13.60	13.60	13.66	13.66	13.66	13.66	14.53	14.53	14.53	14.53	
		S/T	0.67	0.74	0.81	0.88	0.55	0.62	0.69	0.74	0.49	0.56	0.62	0.69	0.37	0.42	0.48	0.54	
		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	12.61	12.61	12.61	12.73	13.26	13.53	13.53	13.53	13.59	13.59	13.59	13.59	14.48	14.48	14.48	14.48	
		S/T	0.67	0.75	0.82	0.88	0.55	0.62	0.69	0.75	0.49	0.56	0.62	0.69	0.37	0.43	0.49	0.54	
		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	12.54	12.54	12.54	12.66	13.21	13.48	13.48	13.48	13.54	13.54	13.54	13.54	14.44	14.44	14.44	14.44	
		S/T	0.67	0.75	0.82	0.89	0.56	0.62	0.69	0.75	0.50	0.57	0.62	0.69	0.37	0.43	0.49	0.55	
		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	
	0	TC	12.47	12.48	12.48	12.59	13.16	13.43	13.43	13.43	13.50	13.50	13.50	13.50	14.43	14.43	14.43	14.43	
		S/T	0.68	0.75	0.82	0.89	0.56	0.63	0.70	0.75	0.50	0.57	0.63	0.70	0.37	0.43	0.49	0.55	
		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	
	5	TC	12.41	12.41	12.41	12.53	13.11	13.37	13.37	13.37	13.46	13.46	13.46	13.46	14.42	14.42	14.42	14.42	
		S/T	0.68	0.76	0.83	0.90	0.56	0.63	0.70	0.76	0.50	0.57	0.63	0.70	0.37	0.43	0.49	0.55	
		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	
	10	TC	12.34	12.34	12.34	12.46	13.05	13.31	13.31	13.31	13.40	13.40	13.40	13.40	14.38	14.38	14.38	14.38	
		S/T	0.68	0.76	0.83	0.90	0.56	0.63	0.70	0.76	0.50	0.57	0.63	0.70	0.38	0.44	0.50	0.55	
		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	
	15	TC	12.23	12.24	12.24	12.35	12.96	13.22	13.22	13.22	13.32	13.32	13.32	13.32	14.32	14.32	14.32	14.32	
		S/T	0.69	0.77	0.84	0.91	0.57	0.63	0.71	0.77	0.51	0.58	0.64	0.71	0.38	0.44	0.50	0.56	
		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	
	20	TC	12.10	12.10	12.10	12.21	12.83	12.82	12.82	12.82	13.19	13.19	13.19	13.19	14.20	14.20	14.20	14.20	
		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	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	
	25	TC	11.52	11.52	11.52	11.64	12.24	12.24	12.24	12.24	12.62	12.62	12.62	12.62	13.57	13.57	13.57	13.57	
		S/T	0.70	0.77	0.85	0.92	0.57	0.64	0.71	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57	
		PI	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	11.01	11.01	11.01	11.12	11.70	11.70	11.70	11.70	12.04	12.04	12.04	12.04	12.99	12.99	12.99	12.99	
		S/T	0.71	0.78	0.86	0.94	0.57	0.65	0.72	0.80	0.51	0.58	0.66	0.73	0.37	0.44	0.50	0.57	
		PI	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	
	35	TC	10.43	10.43	10.43	10.55	11.12	11.12	11.12	11.12	11.47	11.47	11.47	11.47	12.36	12.36	12.36	12.36	
		S/T	0.71	0.80	0.88	0.96	0.58	0.66	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
		PI	3.81	3.81	3.81	3.81	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.86	3.86	3.86	3.86	
	40	TC	9.83	9.83	9.87	9.97	10.48	10.48	10.48	10.48	10.81	10.81	10.91	10.81	11.68	11.68	11.68	11.68	
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59	
		PI	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	
	46	TC	9.11	9.11	9.19	9.28	9.71	9.71	9.71	9.71	10.03	10.03	10.03	10.03	10.86	10.86	10.86	10.86	
		S/T	0.74	0.84	0.93	1.00	0.59	0.68	0.77	0.86	0.52	0.60	0.69	0.78	0.36	0.44	0.52	0.60	
		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	
	50	TC	8.53	8.53	8.62	8.71	9.14	9.14	9.14	9.14	9.42	9.42	9.42	9.42	10.23	10.23	10.23	10.23	
		S/T	0.76	0.86	0.96	1.00	0.59	0.69	0.79	0.88	0.52	0.61	0.71	0.80	0.35	0.44	0.52	0.61	
		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	
	1700	-15	TC	12.94	12.94	13.06	13.18	13.60	13.60	13.60	13.60	13.93	13.93	13.93	13.93	14.80	14.80	14.80	14.80
			S/T	0.70	0.80	0.98	1.00	0.57	0.65	0.73	0.82	0.50	0.58	0.67	0.74	0.35	0.42	0.49	0.57
			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	12.86	12.86	12.98	13.10	13.53	13.53	13.53	13.53	13.86	13.86	13.86	13.86	14.75	14.75	14.75	14.75
			S/T	0.71	0.81	0.99	1.00	0.57	0.65	0.74	0.82	0.50	0.58	0.67	0.75	0.35	0.43	0.49	0.57
			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	12.78	12.78	12.90	13.02	13.48	13.48	13.48	13.48	13.81	13.81	13.81	13.81	14.71	14.71	14.71	14.71
			S/T	0.71	0.81	0.99	1.00	0.58	0.65	0.74	0.83	0.51	0.59	0.67	0.75	0.35	0.43	0.50	0.58
			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
		0	TC	12.72	12.72	12.84	12.95	13.43	13.43	13.43	13.43	13.77	13.77	13.77	13.77	14.70	14.70	14.70	14.70
			S/T	0.72	0.81	1.00	1.00	0.58	0.66	0.74	0.83	0.51	0.59	0.68	0.75	0.35	0.43	0.50	0.58
			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
5		TC	12.65	12.65	12.77	12.89	13.37	13.37	13.37	13.37	13.73	13.73	13.73	13.73	14.69	14.69	14.69	14.69	
		S/T	0.72	0.82	1.00	1.00	0.58	0.66	0.75	0.84	0.51	0.59	0.68	0.76	0.35	0.43	0.50	0.58	
		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	
10		TC	12.58	12.58	12.69	12.81	13.31	13.31	13.31	13.31	13.67	13.67	13.67	13.67	14.65	14.65	14.65	14.65	
		S/T	0.72	0.82	1.00	1.00	0.58	0.66	0.75	0.84	0.51	0.59	0.68	0.76	0.36	0.44	0.50	0.58	
		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	
15		TC	12.47	12.47	12.59	12.71	13.22	13.22	13.22	13.22	13.59	13.59	13.59	13.59	14.59	14.59	14.59	14.59	
		S/T	0.73	0.83	0.91	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.51	0.59	
		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	
20		TC	12.33	12.33	12.45	12.56	13.08	13.08	13.08	13.08	13.46	13.46	13.46	13.46	14.46	14.46	14.46	14.46	
		S/T	0.73	0.83	0.91	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.51	0.59	
		PI	2.95	2.95	2.95	2.95	2.94	2.94	2.94	2.94	2.93	2.93	2.93	2.93	2.92	2.92	2.92	2.92	
25		TC	11.76	11.76	11.87	11.99	12.51	12.51	12.51	12.51	12.88	12.88	12.88	12.88	13.86	13.86	13.86	13.86	
		S/T	0.74	0.84	0.93	1.00	0.59	0.68	0.77	0.86	0.52	0.61	0.70	0.78	0.35	0.44	0.52	0.60	
		PI	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	
30		TC	11.21	11.21	11.33	11.44	11.93	11.93	11.93	11.93	12.28	12.28	12.28	12.28	13.25	13.25	13.25	13.25	
		S/T	0.75	0.86	0.95	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	3.56	3.56	3.56	3.56	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.59	3.59	3.59	3.59	
35		TC	10.67	10.67</															

2000	-15	TC	13.18	13.18	13.30	13.42	13.87	13.87	13.87	14.02	14.23	14.23	14.23	14.23	15.09	15.09	15.09	15.09
		S/T	0.74	0.84	1.00	1.00	0.58	0.68	0.77	0.98	0.50	0.60	0.70	0.79	0.34	0.42	0.51	0.60
		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
	-10	TC	13.10	13.10	13.22	13.34	13.80	13.80	13.80	13.94	14.16	14.16	14.16	14.16	15.04	15.04	15.04	15.04
		S/T	0.75	0.84	1.00	1.00	0.58	0.68	0.78	0.98	0.50	0.60	0.70	0.80	0.34	0.43	0.51	0.60
		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
	-5	TC	13.02	13.02	13.14	13.26	13.74	13.74	13.74	13.89	14.11	14.11	14.11	14.11	15.00	15.00	15.00	15.00
		S/T	0.75	0.85	1.00	1.00	0.59	0.68	0.78	0.99	0.51	0.60	0.70	0.80	0.34	0.43	0.52	0.60
		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	2.77	2.77	2.77
	0	TC	12.95	12.95	13.07	13.19	13.69	13.69	13.69	13.84	14.07	14.07	14.07	14.07	14.99	14.99	14.99	14.99
		S/T	0.75	0.85	1.00	1.00	0.59	0.69	0.78	0.99	0.51	0.61	0.71	0.80	0.34	0.43	0.52	0.61
		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	2.78	2.78	2.78	2.78
	5	TC	12.89	12.89	13.01	13.13	13.64	13.64	13.64	13.79	14.02	14.02	14.02	14.02	14.98	14.98	14.98	14.98
		S/T	0.76	0.86	1.00	1.00	0.59	0.69	0.79	1.00	0.51	0.61	0.71	0.81	0.34	0.43	0.52	0.61
		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
	10	TC	12.81	12.81	12.93	13.05	13.57	13.57	13.57	13.72	13.96	13.96	13.96	13.96	14.94	14.94	14.94	14.94
		S/T	0.76	0.86	1.00	1.00	0.59	0.69	0.79	1.00	0.51	0.61	0.71	0.81	0.35	0.44	0.52	0.61
		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
	15	TC	12.71	12.71	12.82	12.94	13.48	13.48	13.48	13.63	13.88	13.88	13.88	13.88	14.88	14.88	14.88	14.88
		S/T	0.77	0.87	0.98	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.35	0.44	0.53	0.62
		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
	20	TC	12.56	12.56	12.68	12.79	13.34	13.34	13.34	13.48	13.74	13.74	13.74	13.74	14.75	14.75	14.75	14.75
		S/T	0.77	0.87	0.98	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.72	0.82	0.35	0.44	0.53	0.62
		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
	25	TC	11.99	12.10	12.22	12.33	12.74	12.74	12.74	12.85	13.11	13.11	13.11	13.11	14.12	14.12	14.12	14.12
		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	3.31	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	11.44	11.56	11.67	11.79	12.16	12.16	12.16	12.28	12.54	12.54	12.54	12.54	13.48	13.48	13.48	13.48
		S/T	0.79	0.91	1.00	1.00	0.61	0.72	0.84	0.94	0.53	0.64	0.75	0.85	0.34	0.44	0.54	0.64
		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
	35	TC	10.87	10.98	11.10	11.21	11.56	11.56	11.56	11.67	11.93	11.93	12.10	11.93	12.85	12.85	12.85	12.85
		S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.85	0.97	0.54	0.65	0.76	0.87	0.34	0.44	0.55	0.65
		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
	40	TC	10.11	10.21	10.31	10.42	10.78	10.78	10.83	10.95	11.13	11.13	11.22	11.18	12.01	12.01	12.01	12.01
		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	0.90
		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
	46	TC	9.35	9.44	9.52	9.61	10.01	10.01	10.12	10.23	10.32	10.32	10.32	10.43	11.17	11.17	11.17	11.17
		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	0.92
		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
	50	TC	8.78	8.87	8.96	9.04	9.38	9.38	9.47	9.55	9.69	9.69	9.69	9.78	10.52	10.52	10.52	10.52
		S/T	0.88	1.00	1.00	1.00	0.66	0.80	0.94	1.00	0.56	0.70	0.83	0.97	0.33	0.45	0.58	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

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.

MUCR-48-H14																			
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
1300	-15	TC	14.70	14.69	14.69	14.69	15.46	15.79	15.79	15.79	15.84	15.84	15.84	15.84	16.83	16.83	16.83	16.83	
		S/T	0.66	0.71	0.77	0.84	0.55	0.61	0.67	0.71	0.50	0.55	0.61	0.67	0.38	0.43	0.48	0.53	
		PI	3.14	3.14	3.14	3.14	3.13	3.13	3.13	3.13	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12
	-10	TC	14.61	14.60	14.60	14.60	15.37	15.71	15.71	15.71	15.76	15.76	15.76	15.76	16.77	16.77	16.77	16.77	
		S/T	0.66	0.72	0.78	0.84	0.55	0.61	0.67	0.72	0.50	0.55	0.61	0.67	0.38	0.44	0.49	0.53	
		PI	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12
	-5	TC	14.52	14.51	14.51	14.51	15.31	15.65	15.65	15.65	15.70	15.70	15.70	15.70	16.73	16.73	16.73	16.73	
		S/T	0.66	0.72	0.78	0.85	0.56	0.61	0.67	0.72	0.51	0.56	0.61	0.67	0.38	0.44	0.49	0.54	
		PI	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12
	0	TC	14.45	14.44	14.44	14.44	15.26	15.59	15.59	15.59	15.66	15.66	15.66	15.66	16.71	16.71	16.71	16.71	
		S/T	0.67	0.73	0.78	0.85	0.56	0.61	0.68	0.73	0.51	0.56	0.62	0.68	0.38	0.44	0.49	0.54	
		PI	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13
	5	TC	14.38	14.37	14.37	14.37	15.20	15.53	15.53	15.53	15.61	15.61	15.61	15.61	16.70	16.70	16.70	16.70	
		S/T	0.67	0.73	0.79	0.86	0.56	0.62	0.68	0.73	0.51	0.56	0.62	0.68	0.38	0.44	0.49	0.54	
		PI	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16	3.16
	10	TC	14.29	14.28	14.28	14.28	15.13	15.45	15.45	15.45	15.54	15.54	15.54	15.54	16.66	16.66	16.66	16.66	
		S/T	0.67	0.73	0.79	0.86	0.56	0.62	0.68	0.73	0.51	0.56	0.62	0.68	0.39	0.45	0.50	0.54	
		PI	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
	15	TC	14.18	14.16	14.16	14.16	15.02	15.35	15.35	15.35	15.45	15.45	15.45	15.45	16.59	16.59	16.59	16.59	
		S/T	0.68	0.74	0.80	0.87	0.57	0.62	0.69	0.74	0.52	0.57	0.63	0.69	0.39	0.45	0.50	0.55	
		PI	3.29	3.29	3.29	3.29	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.27	3.27	3.27	3.27	
	20	TC	14.02	14.00	14.00	14.00	14.87	14.87	14.87	14.87	15.30	15.30	15.30	15.30	16.44	16.44	16.44	16.44	
		S/T	0.68	0.74	0.80	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	3.40	3.40	3.40	3.40	3.39	3.39	3.39	3.39	3.38	3.38	3.38	3.38	3.36	3.36	3.36	3.36	
	25	TC	13.37	13.37	13.37	13.37	14.21	14.21	14.21	14.21	14.64	14.64	14.64	14.64	15.73	15.73	15.73	15.73	
		S/T	0.68	0.75	0.81	0.88	0.57	0.63	0.69	0.75	0.51	0.57	0.63	0.69	0.39	0.44	0.50	0.55	
		PI	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
	30	TC	12.74	12.74	12.74	12.86	13.55	13.55	13.55	13.55	13.95	13.95	13.95	13.95	15.04	15.04	15.04	15.04	
		S/T	0.69	0.76	0.82	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56	
		PI	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.12	4.12	4.12	4.12	4.14	4.14	4.14	4.14	
	35	TC	12.11	12.11	12.11	12.23	12.89	12.89	12.89	12.89	13.29	13.29	13.29	13.29	14.32	14.32	14.32	14.32	
		S/T	0.69	0.76	0.84	0.91	0.57	0.64	0.70	0.77	0.51	0.58	0.64	0.71	0.38	0.44	0.50	0.56	
		PI	4.49	4.49	4.49	4.49	4.50	4.50	4.50	4.50	4.51	4.51	4.52	4.51	4.54	4.54	4.54	4.54	
	40	TC	11.40	11.40	11.40	11.51	12.13	12.13	12.13	12.13	12.52	12.52	12.63	12.52	13.52	13.52	13.52	13.52	
		S/T	0.71	0.78	0.86	0.94	0.57	0.65	0.72	0.80	0.51	0.58	0.66	0.73	0.37	0.44	0.50	0.57	
		PI	4.96	4.96	4.96	4.96	4.97	4.97	4.97	4.97	4.98	4.98	4.99	4.98	5.02	5.02	5.02	5.02	
	46	TC	10.55	10.55	10.55	10.67	11.24	11.24	11.24	11.24	11.61	11.61	11.61	11.61	12.59	12.59	12.59	12.59	
		S/T	0.71	0.79	0.88	0.96	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.57	
		PI	5.51	5.51	5.51	5.51	5.53	5.53	5.53	5.53	5.55	5.55	5.55	5.55	5.59	5.59	5.59	5.59	
	50	TC	9.89	9.89	9.98	10.06	10.58	10.58	10.58	10.58	10.92	10.92	10.92	10.92	11.84	11.84	11.84	11.84	
		S/T	0.72	0.81	0.90	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
		PI	5.96	5.96	5.96	5.96	5.99	5.99	5.99	5.99	6.01	6.01	6.01	6.01	6.05	6.05	6.05	6.05	
	1700	-15	TC	15.02	15.02	15.02	15.17	15.79	15.79	15.79	15.79	16.17	16.17	16.17	16.17	17.19	17.19	17.19	17.19
			S/T	0.69	0.76	0.98	1.00	0.55	0.63	0.70	0.77	0.49	0.57	0.64	0.70	0.36	0.42	0.48	0.55
			PI	3.20	3.20	3.20	3.20	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.18	3.18	3.18	3.18
		-10	TC	14.94	14.94	14.94	15.08	15.71	15.71	15.71	15.71	16.09	16.09	16.09	16.09	17.13	17.13	17.13	17.13
			S/T	0.69	0.77	0.99	1.00	0.55	0.63	0.70	0.78	0.49	0.57	0.64	0.71	0.36	0.43	0.49	0.55
			PI	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18
-5		TC	14.85	14.85	14.85	14.99	15.65	15.65	15.65	15.65	16.03	16.03	16.03	16.03	17.09	17.09	17.09	17.09	
		S/T	0.69	0.77	0.99	1.00	0.56	0.63	0.70	0.78	0.50	0.58	0.64	0.71	0.36	0.43	0.49	0.56	
		PI	3.18	3.18	3.18	3.18	3.17	3.17	3.17	3.17	3.18	3.18	3.18	3.18	3.19	3.19	3.19	3.19	
0		TC	14.77	14.77	14.77	14.92	15.59	15.59	15.59	15.59	15.99	15.99	15.99	15.99	17.07	17.07	17.07	17.07	
		S/T	0.70	0.77	1.00	1.00	0.56	0.64	0.71	0.78	0.50	0.58	0.65	0.72	0.36	0.43	0.49	0.56	
		PI	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
5		TC	14.70	14.70	14.70	14.84	15.53	15.53	15.53	15.53	15.94	15.94	15.94	15.94	17.06	17.06	17.06	17.06	
		S/T	0.70	0.78	1.00	1.00	0.56	0.64	0.71	0.79	0.50	0.58	0.65	0.72	0.36	0.43	0.49	0.56	
		PI	3.22	3.22	3.22	3.22	3.21	3.21	3.21	3.21	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22
10		TC	14.61	14.61	14.61	14.75	15.45	15.45	15.45	15.45	15.87	15.87	15.87	15.87	17.01	17.01	17.01	17.01	
		S/T	0.70	0.78	1.00	1.00	0.56	0.64	0.71	0.79	0.50	0.58	0.65	0.72	0.37	0.44	0.50	0.56	
		PI	3.28	3.28	3.28	3.28	3.26	3.26	3.26	3.26	3.27	3.27	3.27	3.27	3.26	3.26	3.26	3.26	
15		TC	14.49	14.49	14.49	14.63	15.35	15.35	15.35	15.35	15.77	15.77	15.77	15.77	16.94	16.94	16.94	16.94	
		S/T	0.71	0.79	0.87	0.94	0.57	0.65	0.72	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.50	0.57	
		PI	3.36	3.36	3.36	3.36	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.33	3.33	3.33	3.33	
20		TC	14.33	14.33	14.33	14.47	15.19	15.19	15.19	15.19	15.62	15.62	15.62	15.62	16.80	16.80	16.80	16.80	
		S/T	0.71	0.79	0.87	0.94	0.57	0.65	0.72	0.80	0.51	0.59	0.66						

2000	-15	TC	15.33	15.33	15.48	15.63	16.12	16.12	16.12	16.12	16.53	16.53	16.53	16.53	17.54	17.54	17.54	17.54
		S/T	0.70	0.79	1.00	1.00	0.56	0.65	0.73	0.98	0.50	0.58	0.66	0.74	0.35	0.42	0.49	0.57
		PI	3.26	3.26	3.26	3.26	3.25	3.25	3.25	3.25	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24
	-10	TC	15.23	15.23	15.38	15.53	16.03	16.03	16.03	16.03	16.45	16.45	16.45	16.45	17.48	17.48	17.48	17.48
		S/T	0.71	0.80	1.00	1.00	0.56	0.65	0.74	0.98	0.50	0.58	0.66	0.75	0.35	0.43	0.49	0.57
		PI	3.25	3.25	3.25	3.25	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.25	3.25	3.25	3.25
	-5	TC	15.14	15.14	15.29	15.44	15.97	15.97	15.97	15.97	16.38	16.38	16.38	16.38	17.44	17.44	17.44	17.44
		S/T	0.71	0.80	1.00	1.00	0.57	0.65	0.74	0.99	0.51	0.59	0.66	0.75	0.35	0.43	0.50	0.58
		PI	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.25	3.25	3.25	3.25
	0	TC	15.07	15.07	15.22	15.36	15.91	15.91	15.91	15.91	16.34	16.34	16.34	16.34	17.42	17.42	17.42	17.42
		S/T	0.72	0.80	1.00	1.00	0.57	0.66	0.74	0.99	0.51	0.59	0.67	0.75	0.35	0.43	0.50	0.58
		PI	3.26	3.26	3.26	3.26	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.26	3.26	3.26	3.26
	5	TC	14.99	14.99	15.14	15.29	15.85	15.85	15.85	15.85	16.29	16.29	16.29	16.29	17.41	17.41	17.41	17.41
		S/T	0.72	0.81	1.00	1.00	0.57	0.66	0.75	1.00	0.51	0.59	0.67	0.76	0.35	0.43	0.50	0.58
		PI	3.29	3.29	3.29	3.29	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.29	3.29	3.29	3.29
	10	TC	14.90	14.90	15.05	15.19	15.78	15.78	15.78	15.78	16.22	16.22	16.22	16.22	17.36	17.36	17.36	17.36
		S/T	0.72	0.81	1.00	1.00	0.57	0.66	0.75	1.00	0.51	0.59	0.67	0.76	0.36	0.44	0.50	0.58
		PI	3.34	3.34	3.34	3.34	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33
	15	TC	14.78	14.78	14.93	15.07	15.67	15.67	15.67	15.67	16.12	16.12	16.12	16.12	17.29	17.29	17.29	17.29
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59
		PI	3.42	3.42	3.42	3.42	3.41	3.41	3.41	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
	20	TC	14.61	14.61	14.76	14.90	15.50	15.50	15.50	15.50	15.96	15.96	15.96	15.96	17.14	17.14	17.14	17.14
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59
		PI	3.54	3.54	3.54	3.54	3.52	3.52	3.52	3.52	3.51	3.51	3.51	3.51	3.50	3.50	3.50	3.50
	25	TC	13.95	13.95	14.10	14.24	14.81	14.81	14.81	14.81	15.25	15.25	15.25	15.25	16.42	16.42	16.42	16.42
		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	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
30	TC	13.29	13.29	13.44	13.58	14.13	14.13	14.13	14.13	14.56	14.56	14.56	14.56	15.68	15.68	15.68	15.68	
	S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.80	0.35	0.44	0.52	0.61	
	PI	4.27	4.27	4.27	4.27	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.30	4.30	4.30	4.30	
35	TC	12.63	12.63	12.75	12.86	13.44	13.44	13.44	13.58	13.87	13.87	14.07	13.87	14.96	14.96	14.96	14.96	
	S/T	0.76	0.87	0.97	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62	
	PI	4.67	4.67	4.67	4.67	4.68	4.68	4.68	4.68	4.69	4.69	4.70	4.69	4.72	4.72	4.72	4.72	
40	TC	11.91	11.96	12.07	12.19	12.69	12.69	12.69	12.82	13.09	13.09	13.09	13.20	13.09	14.14	14.14	14.14	
	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	0.90	
	PI	5.15	5.15	5.15	5.15	5.17	5.17	5.17	5.17	5.18	5.18	5.19	5.18	5.22	5.22	5.22	5.22	
46	TC	11.01	11.13	11.24	11.36	11.76	11.76	11.76	11.87	12.13	12.13	12.13	12.13	13.14	13.14	13.14	13.14	
	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	0.92	
	PI	5.73	5.73	5.73	5.73	5.75	5.75	5.75	5.75	5.77	5.77	5.77	5.77	5.82	5.82	5.82	5.82	
50	TC	10.35	10.47	10.58	10.70	11.07	11.07	11.07	11.18	11.41	11.41	11.41	11.53	12.39	12.39	12.39	12.39	
	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	0.44	0.55	0.97	
	PI	6.20	6.20	6.20	6.20	6.23	6.23	6.23	6.23	6.25	6.25	6.25	6.25	6.30	6.30	6.30	6.30	

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.

MUCR-48-H14T																			
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
1300	-15	TC	14.70	14.69	14.69	14.69	15.46	15.79	15.79	15.79	15.84	15.84	15.84	15.84	16.83	16.83	16.83	16.83	
		S/T	0.66	0.71	0.77	0.84	0.55	0.61	0.67	0.71	0.50	0.55	0.61	0.67	0.38	0.43	0.48	0.53	
		PI	3.00	3.00	3.00	3.00	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.98	2.98	2.98	2.98
	-10	TC	14.61	14.60	14.60	14.60	15.37	15.71	15.71	15.71	15.76	15.76	15.76	15.76	16.77	16.77	16.77	16.77	
		S/T	0.66	0.72	0.78	0.84	0.55	0.61	0.67	0.72	0.50	0.55	0.61	0.67	0.38	0.44	0.49	0.53	
		PI	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
	-5	TC	14.52	14.51	14.51	14.51	15.31	15.65	15.65	15.65	15.70	15.70	15.70	15.70	16.73	16.73	16.73	16.73	
		S/T	0.66	0.72	0.78	0.85	0.56	0.61	0.67	0.72	0.51	0.56	0.61	0.67	0.38	0.44	0.49	0.54	
		PI	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
	0	TC	14.45	14.44	14.44	14.44	15.26	15.59	15.59	15.59	15.66	15.66	15.66	15.66	16.71	16.71	16.71	16.71	
		S/T	0.67	0.73	0.78	0.85	0.56	0.61	0.68	0.73	0.51	0.56	0.62	0.68	0.38	0.44	0.49	0.54	
		PI	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99
	5	TC	14.38	14.37	14.37	14.37	15.20	15.53	15.53	15.53	15.61	15.61	15.61	15.61	16.70	16.70	16.70	16.70	
		S/T	0.67	0.73	0.79	0.86	0.56	0.62	0.68	0.73	0.51	0.56	0.62	0.68	0.38	0.44	0.49	0.54	
		PI	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02
	10	TC	14.29	14.28	14.28	14.28	15.13	15.45	15.45	15.45	15.54	15.54	15.54	15.54	16.66	16.66	16.66	16.66	
		S/T	0.67	0.73	0.79	0.86	0.56	0.62	0.68	0.73	0.51	0.56	0.62	0.68	0.39	0.45	0.50	0.54	
		PI	3.07	3.07	3.07	3.07	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06
	15	TC	14.18	14.16	14.16	14.16	15.02	15.35	15.35	15.35	15.45	15.45	15.45	15.45	16.59	16.59	16.59	16.59	
		S/T	0.68	0.74	0.80	0.87	0.57	0.62	0.69	0.74	0.52	0.57	0.63	0.69	0.39	0.45	0.50	0.55	
		PI	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.13	3.13	3.13	3.13	3.12	3.12	3.12	3.12	
	20	TC	14.02	14.00	14.00	14.00	14.87	14.87	14.87	14.87	15.30	15.30	15.30	15.30	16.44	16.44	16.44	16.44	
		S/T	0.68	0.74	0.80	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	3.25	3.25	3.25	3.25	3.24	3.24	3.24	3.24	3.23	3.23	3.23	3.23	3.21	3.21	3.21	3.21	
	25	TC	13.37	13.37	13.37	13.37	14.21	14.21	14.21	14.21	14.64	14.64	14.64	14.64	15.73	15.73	15.73	15.73	
		S/T	0.68	0.75	0.81	0.88	0.57	0.63	0.69	0.75	0.51	0.57	0.63	0.69	0.39	0.44	0.50	0.55	
		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	3.58	3.59	3.59	3.59	3.59
	30	TC	12.74	12.74	12.74	12.86	13.55	13.55	13.55	13.55	13.95	13.95	13.95	13.95	15.04	15.04	15.04	15.04	
		S/T	0.69	0.76	0.82	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56	
		PI	3.92	3.92	3.92	3.92	3.93	3.93	3.93	3.93	3.94	3.94	3.94	3.94	3.95	3.95	3.95	3.95	
	35	TC	12.11	12.11	12.11	12.23	12.89	12.89	12.89	12.89	13.29	13.29	13.29	13.29	14.32	14.32	14.32	14.32	
		S/T	0.69	0.76	0.84	0.91	0.57	0.64	0.70	0.77	0.51	0.58	0.64	0.71	0.38	0.44	0.50	0.56	
		PI	4.29	4.29	4.29	4.29	4.30	4.30	4.30	4.30	4.31	4.31	4.31	4.31	4.34	4.34	4.34	4.34	
	40	TC	11.40	11.40	11.40	11.51	12.13	12.13	12.13	12.13	12.52	12.52	12.52	12.52	13.52	13.52	13.52	13.52	
		S/T	0.71	0.78	0.86	0.94	0.57	0.65	0.72	0.80	0.51	0.58	0.66	0.73	0.37	0.44	0.50	0.57	
		PI	4.73	4.73	4.73	4.73	4.75	4.75	4.75	4.75	4.76	4.76	4.77	4.76	4.80	4.80	4.80	4.80	
	46	TC	10.55	10.55	10.55	10.67	11.24	11.24	11.24	11.24	11.61	11.61	11.61	11.61	12.59	12.59	12.59	12.59	
		S/T	0.71	0.79	0.88	0.96	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.57	
		PI	5.26	5.26	5.26	5.26	5.29	5.29	5.29	5.29	5.30	5.30	5.30	5.30	5.35	5.35	5.35	5.35	
	50	TC	9.89	9.89	9.98	10.06	10.58	10.58	10.58	10.58	10.92	10.92	10.92	10.92	11.84	11.84	11.84	11.84	
		S/T	0.72	0.81	0.90	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
		PI	5.70	5.70	5.70	5.70	5.73	5.73	5.73	5.73	5.74	5.74	5.74	5.74	5.79	5.79	5.79	5.79	
	1700	-15	TC	15.02	15.02	15.02	15.17	15.79	15.79	15.79	15.79	16.17	16.17	16.17	16.17	17.19	17.19	17.19	17.19
			S/T	0.69	0.76	0.98	1.00	0.55	0.63	0.70	0.77	0.49	0.57	0.64	0.70	0.36	0.42	0.48	0.55
			PI	3.06	3.06	3.06	3.06	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.04	3.04	3.04	3.04
		-10	TC	14.94	14.94	14.94	15.08	15.71	15.71	15.71	15.71	16.09	16.09	16.09	16.09	17.13	17.13	17.13	17.13
			S/T	0.69	0.77	0.99	1.00	0.55	0.63	0.70	0.78	0.49	0.57	0.64	0.71	0.36	0.43	0.49	0.55
			PI	3.05	3.05	3.05	3.05	3.04	3.04	3.04	3.04	3.04	3.05	3.05	3.05	3.05	3.04	3.04	3.04
-5		TC	14.85	14.85	14.85	14.99	15.65	15.65	15.65	15.65	16.03	16.03	16.03	16.03	17.09	17.09	17.09	17.09	
		S/T	0.69	0.77	0.99	1.00	0.56	0.63	0.70	0.78	0.50	0.58	0.64	0.71	0.36	0.43	0.49	0.56	
		PI	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05
0		TC	14.77	14.77	14.77	14.92	15.59	15.59	15.59	15.59	15.99	15.99	15.99	15.99	17.07	17.07	17.07	17.07	
		S/T	0.70	0.77	1.00	1.00	0.56	0.64	0.71	0.78	0.50	0.58	0.65	0.72	0.36	0.43	0.49	0.56	
		PI	3.06	3.06	3.06	3.06	3.05	3.05	3.05	3.05	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06
5		TC	14.70	14.70	14.70	14.84	15.53	15.53	15.53	15.53	15.94	15.94	15.94	15.94	17.06	17.06	17.06	17.06	
		S/T	0.70	0.78	1.00	1.00	0.56	0.64	0.71	0.79	0.50	0.58	0.65	0.72	0.36	0.43	0.49	0.56	
		PI	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08
10		TC	14.61	14.61	14.61	14.75	15.45	15.45	15.45	15.45	15.87	15.87	15.87	15.87	17.01	17.01	17.01	17.01	
		S/T	0.70	0.78	1.00	1.00	0.56	0.64	0.71	0.79	0.50	0.58	0.65	0.72	0.37	0.44	0.50	0.56	
		PI	3.14	3.14	3.14	3.14	3.12	3.12	3.12	3.12	3.13	3.13	3.13	3.13	3.12	3.12	3.12	3.12	
15		TC	14.49	14.49	14.49	14.63	15.35	15.35	15.35	15.35	15.77	15.77	15.77	15.77	16.94	16.94	16.94	16.94	
		S/T	0.71	0.79	0.87	0.94	0.57	0.65	0.72	0.80	0.51	0.59	0.66	0.73	0.37	0.44	0.50	0.57	
		PI	3.21	3.21	3.21	3.21	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.19	3.19	3.19	3.19	
20		TC	14.33	14.33	14.33	14.47	15.19	15.19	15.19	15.19	15.62	15.62	15.62	15.62	16.80	16.80	16.80	16.80	
		S/T	0.71	0.79	0.87	0.94	0.57	0.65	0.72	0.80	0.51	0.59</							

2000	-15	TC	15.33	15.33	15.48	15.63	16.12	16.12	16.12	16.12	16.53	16.53	16.53	17.54	17.54	17.54	17.54	
		S/T	0.70	0.79	1.00	1.00	0.56	0.65	0.73	0.98	0.50	0.58	0.66	0.74	0.35	0.42	0.49	0.57
		PI	3.12	3.12	3.12	3.12	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.10	3.10	3.10	3.10
	-10	TC	15.23	15.23	15.38	15.53	16.03	16.03	16.03	16.03	16.45	16.45	16.45	16.45	17.48	17.48	17.48	17.48
		S/T	0.71	0.80	1.00	1.00	0.56	0.65	0.74	0.98	0.50	0.58	0.66	0.75	0.35	0.43	0.49	0.57
		PI	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.11	3.11	3.11	3.11
	-5	TC	15.14	15.14	15.29	15.44	15.97	15.97	15.97	15.97	16.38	16.38	16.38	16.38	17.44	17.44	17.44	17.44
		S/T	0.71	0.80	1.00	1.00	0.57	0.65	0.74	0.99	0.51	0.59	0.66	0.75	0.35	0.43	0.50	0.58
		PI	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.11	3.11	3.11	3.11
	0	TC	15.07	15.07	15.22	15.36	15.91	15.91	15.91	15.91	16.34	16.34	16.34	16.34	17.42	17.42	17.42	17.42
		S/T	0.72	0.80	1.00	1.00	0.57	0.66	0.74	0.99	0.51	0.59	0.67	0.75	0.35	0.43	0.50	0.58
		PI	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.12	3.12	3.12	3.12
	5	TC	14.99	14.99	15.14	15.29	15.85	15.85	15.85	15.85	16.29	16.29	16.29	16.29	17.41	17.41	17.41	17.41
		S/T	0.72	0.81	1.00	1.00	0.57	0.66	0.75	1.00	0.51	0.59	0.67	0.76	0.35	0.43	0.50	0.58
		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	3.15	3.15	3.15	3.15
	10	TC	14.90	14.90	15.05	15.19	15.78	15.78	15.78	15.78	16.22	16.22	16.22	16.22	17.36	17.36	17.36	17.36
		S/T	0.72	0.81	1.00	1.00	0.57	0.66	0.75	1.00	0.51	0.59	0.67	0.76	0.36	0.44	0.50	0.58
		PI	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.19	3.18	3.18	3.18	3.18	3.19	3.19	3.19	3.19
	15	TC	14.78	14.78	14.93	15.07	15.67	15.67	15.67	15.67	16.12	16.12	16.12	16.12	17.29	17.29	17.29	17.29
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59
		PI	3.27	3.27	3.27	3.27	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26
	20	TC	14.61	14.61	14.76	14.90	15.50	15.50	15.50	15.50	15.96	15.96	15.96	15.96	17.14	17.14	17.14	17.14
		S/T	0.73	0.82	0.91	1.00	0.58	0.67	0.76	0.84	0.52	0.60	0.68	0.77	0.36	0.44	0.51	0.59
		PI	3.38	3.38	3.38	3.38	3.37	3.37	3.37	3.37	3.36	3.36	3.36	3.36	3.35	3.35	3.35	3.35
25	TC	13.95	13.95	14.10	14.24	14.81	14.81	14.81	14.81	15.25	15.25	15.25	15.25	16.42	16.42	16.42	16.42	
	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	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.74	3.74	3.74	3.74	
30	TC	13.29	13.29	13.44	13.58	14.13	14.13	14.13	14.13	14.56	14.56	14.56	14.56	15.68	15.68	15.68	15.68	
	S/T	0.75	0.85	0.95	1.00	0.59	0.69	0.78	0.88	0.52	0.61	0.70	0.80	0.35	0.44	0.52	0.61	
	PI	4.09	4.09	4.09	4.09	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.12	4.12	4.12	4.12	
35	TC	12.63	12.63	12.75	12.86	13.44	13.44	13.44	13.58	13.87	13.87	14.07	13.87	14.96	14.96	14.96	14.96	
	S/T	0.76	0.87	0.97	1.00	0.60	0.70	0.80	0.90	0.52	0.62	0.71	0.81	0.35	0.44	0.53	0.62	
	PI	4.47	4.47	4.47	4.47	4.48	4.48	4.48	4.48	4.49	4.49	4.50	4.49	4.52	4.52	4.52	4.52	
40	TC	11.91	11.96	12.07	12.19	12.69	12.69	12.69	12.82	13.09	13.09	13.20	13.09	14.14	14.14	14.14	14.14	
	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	0.90	
	PI	4.93	4.93	4.93	4.93	4.95	4.95	4.95	4.95	4.96	4.96	4.96	4.96	5.00	5.00	5.00	5.00	
46	TC	11.01	11.13	11.24	11.36	11.76	11.76	11.76	11.87	12.13	12.13	12.13	12.13	13.14	13.14	13.14	13.14	
	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	0.92	
	PI	5.48	5.48	5.48	5.48	5.51	5.51	5.51	5.51	5.52	5.52	5.52	5.52	5.57	5.57	5.57	5.57	
50	TC	10.35	10.47	10.58	10.70	11.07	11.07	11.07	11.18	11.41	11.41	11.41	11.41	11.53	12.39	12.39	12.39	
	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	0.44	0.55	0.97	
	PI	5.94	5.94	5.94	5.94	5.96	5.96	5.96	5.96	5.98	5.98	5.98	5.98	6.03	6.03	6.03	6.03	

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.

MUCR-60-H14T																			
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	15.98	15.98	15.98	15.98	16.80	17.13	17.13	17.13	17.20	17.20	17.20	17.20	18.27	18.27	18.27
S/T	0.66			0.72	0.79	0.85	0.55	0.61	0.67	0.72	0.49	0.55	0.61	0.68	0.38	0.42	0.48	0.54	
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	15.88	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		0.66	0.73	0.80	0.86	0.55	0.61	0.67	0.73	0.49	0.55	0.61	0.68	0.38	0.43	0.49	0.54	
	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	15.79	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		0.66	0.73	0.80	0.86	0.56	0.61	0.67	0.73	0.50	0.56	0.61	0.68	0.38	0.43	0.49	0.55	
	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	15.71	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		0.67	0.74	0.80	0.86	0.56	0.62	0.68	0.74	0.50	0.56	0.62	0.69	0.38	0.43	0.49	0.55	
	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	15.63	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		0.67	0.74	0.81	0.87	0.56	0.62	0.68	0.74	0.50	0.56	0.62	0.69	0.38	0.43	0.49	0.55	
	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	15.53	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		0.67	0.74	0.81	0.87	0.56	0.62	0.68	0.74	0.50	0.56	0.62	0.69	0.39	0.44	0.50	0.55	
	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	15.41	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		0.68	0.75	0.82	0.88	0.57	0.63	0.69	0.75	0.51	0.57	0.63	0.70	0.39	0.44	0.50	0.56	
	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	15.23	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		0.68	0.75	0.82	0.88	0.57	0.63	0.69	0.75	0.51	0.57	0.63	0.70	0.39	0.44	0.50	0.56	
	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		0.69	0.76	0.83	0.89	0.57	0.63	0.70	0.76	0.51	0.58	0.64	0.70	0.38	0.44	0.50	0.56	
	PI		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	13.85	14.00	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		0.69	0.77	0.84	0.91	0.57	0.64	0.71	0.78	0.51	0.58	0.64	0.71	0.38	0.44	0.50	0.56	
	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	13.17	13.31	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		0.70	0.78	0.85	0.93	0.57	0.64	0.72	0.79	0.51	0.58	0.65	0.72	0.37	0.44	0.50	0.57	
	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	12.46	12.59	13.22	13.22	13.22	13.22	13.64	13.64	13.76	13.64	14.74	14.74	14.74	14.74	
	S/T		0.72	0.80	0.88	0.96	0.58	0.66	0.73	0.81	0.51	0.59	0.67	0.74	0.37	0.44	0.51	0.58	
	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		0.72	0.81	0.89	0.98	0.58	0.66	0.74	0.83	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
	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	10.77	10.88	11.00	11.51	11.51	11.51	11.51	11.92	11.92	11.92	11.92	12.90	12.90	12.90	12.90	
	S/T		0.74	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.51	0.59	
	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	
1900	-15		TC	16.28	16.28	16.28	16.43	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	0.69	0.76	0.98	1.00	0.56	0.63	0.70	0.78	0.49	0.57	0.64	0.71	0.36	0.42	0.49	0.56
			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	16.19	16.34	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	0.69	0.77	0.99	1.00	0.56	0.63	0.71	0.79	0.49	0.57	0.64	0.72	0.36	0.43	0.49	0.56
			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	16.09	16.24	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	0.69	0.77	0.99	1.00	0.57	0.63	0.71	0.79	0.50	0.58	0.64	0.72	0.36	0.43	0.50	0.57	
		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	16.01	16.16	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	0.70	0.77	1.00	1.00	0.57	0.64	0.72	0.79	0.50	0.58	0.65	0.73	0.36	0.43	0.50	0.57	
		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	15.93	16.08	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	0.70	0.78	1.00	1.00	0.57	0.64	0.72	0.80	0.50	0.58	0.65	0.73	0.36	0.43	0.50	0.57	
		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	15.83	15.98	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	0.70	0.78	1.00	1.00	0.57	0.64	0.72	0.80	0.50	0.58	0.65	0.73	0.37	0.44	0.50	0.57	
		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	15.70	15.85	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	0.71	0.79	0.88	0.95	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
		PI	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	15.53	15.67	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	0.71	0.79	0.88	0.95	0.58	0.65	0.73	0.81	0.51	0.59	0.66	0.74	0.37	0.44	0.51	0.58	
		PI	3.87	3.87	3.87	3.87	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.83	3.83	3.83	3.83	
	25	TC	14.81	14.81	14.95	15.10	15.73	15.73	15.73	15.73	16.22	16.22	16.22	16.22	17.45	17.45	17.45	17.45	
		S/T	0.72	0.81	0.89	0.97	0.58	0.66	0.74	0.82	0.51	0.59	0.67	0.75	0.36	0.44	0.51	0.58	
		PI	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	
	30	TC	14.12	14.12	14.26	14.41	15.01	15.01	15.01	15.01	15.47	15.47	15.47	15.47	16.68	16.68	16.68	16.68	
		S/T	0.73	0.82	0.91	0.99	0.58	0.67	0.75	0.84	0.52	0.60	0.68	0.76	0.36	0.44	0.51	0.59	
		PI	4.67	4.67	4.67	4.67													

2200	-15	TC	16.62	16.62	16.80	16.98	17.46	17.46	17.46	17.46	17.89	17.89	17.89	19.01	19.01	19.01	19.01	
		S/T	0.70	0.80	1.00	1.00	0.57	0.65	0.73	0.98	0.50	0.58	0.67	0.74	0.35	0.42	0.50	0.58
		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	17.37	17.80	17.80	17.80	17.80	18.95	18.95	18.95	18.95
		S/T	0.71	0.81	1.00	1.00	0.57	0.65	0.74	0.98	0.50	0.58	0.67	0.75	0.35	0.43	0.50	0.58
		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	17.30	17.74	17.74	17.74	17.74	18.90	18.90	18.90	18.90
		S/T	0.71	0.81	1.00	1.00	0.58	0.65	0.74	0.99	0.51	0.59	0.67	0.75	0.35	0.43	0.51	0.59
		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	17.23	17.69	17.69	17.69	17.69	18.88	18.88	18.88	18.88
		S/T	0.72	0.81	1.00	1.00	0.58	0.66	0.74	0.99	0.51	0.59	0.68	0.75	0.35	0.43	0.51	0.59
		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	17.17	17.63	17.63	17.63	17.63	18.87	18.87	18.87	18.87
		S/T	0.72	0.82	1.00	1.00	0.58	0.66	0.75	1.00	0.51	0.59	0.68	0.76	0.35	0.43	0.51	0.59
		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	17.09	17.56	17.56	17.56	17.56	18.82	18.82	18.82	18.82
		S/T	0.72	0.82	1.00	1.00	0.58	0.66	0.75	1.00	0.51	0.59	0.68	0.76	0.36	0.44	0.51	0.59
		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	16.97	17.45	17.45	17.45	17.45	18.74	18.74	18.74	18.74
		S/T	0.73	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.52	0.60
		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	16.79	17.28	17.28	17.28	17.28	18.58	18.58	18.58	18.58
		S/T	0.73	0.83	0.92	1.00	0.59	0.67	0.76	0.85	0.52	0.60	0.69	0.77	0.36	0.44	0.52	0.60
		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	15.10	15.24	15.38	16.05	16.05	16.05	16.05	16.53	16.53	16.53	16.53	17.77	17.77	17.77	17.77
		S/T	0.75	0.84	0.94	1.00	0.59	0.68	0.77	0.87	0.52	0.61	0.70	0.79	0.35	0.44	0.52	0.60
		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	14.41	14.55	14.69	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	0.76	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	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	13.66	13.80	13.95	14.55	14.55	14.55	14.69	15.01	15.01	15.24	15.01	16.19	16.19	16.19	16.19
		S/T	0.77	0.88	0.98	1.00	0.60	0.70	0.81	0.90	0.52	0.62	0.72	0.82	0.35	0.44	0.53	0.62
		PI	5.21	5.21	5.21	5.21	5.23	5.23	5.23	5.23	5.24	5.24	5.25	5.24	5.28	5.28	5.28	5.28
	40	TC	12.86	12.92	13.05	13.18	13.72	13.72	13.72	13.85	14.15	14.15	14.27	14.15	15.29	15.29	15.29	15.29
		S/T	0.80	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	0.90
		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	11.92	12.04	12.15	12.27	12.73	12.73	12.73	12.84	13.13	13.13	13.13	13.13	14.22	14.22	14.22	14.22
		S/T	0.81	0.93	1.00	1.00	0.62	0.74	0.85	0.97	0.54	0.65	0.76	0.87	0.34	0.44	0.55	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	11.18	11.29	11.41	11.52	11.95	11.95	11.95	12.07	12.35	12.35	12.35	12.47	13.39	13.39	13.39	13.39
		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	0.34	0.45	0.56	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.

7.2 Heating

MUCR-09-H14								[SI_Unit]	
INDOOR AIRFLOW (CMH)	OUTDOOR DB(°C)	HEATING PERFORMANCE AT INDOOR DRY BULB TEMPERATURE							
		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
450	-20.0	2.12	2.09	2.09	2.07	0.83	0.86	0.84	0.85
	-15.0	2.29	2.26	2.26	2.24	0.90	0.94	0.92	0.93
	-10.0	2.44	2.42	2.42	2.39	0.96	1.00	0.98	0.99
	-7.0	2.56	2.53	2.53	2.50	1.02	1.06	1.04	1.05
	-5.6	2.56	2.53	2.53	2.50	1.00	1.01	1.02	1.03
	-2.8	2.56	2.53	2.53	2.50	0.96	0.97	0.98	0.98
	0.0	2.53	2.50	2.47	2.47	0.92	0.93	0.93	0.94
	2.8	2.59	2.56	2.53	2.53	0.90	0.90	0.90	0.90
	5.6	2.74	2.71	2.68	2.65	0.87	0.87	0.88	0.88
	7.0	2.87	2.84	2.81	2.79	0.84	0.83	0.85	0.85
	11.1	2.96	2.90	2.90	2.87	0.79	0.79	0.79	0.79
	13.9	3.02	2.96	2.93	2.93	0.75	0.75	0.75	0.75
	16.7	3.08	3.02	2.99	2.96	0.72	0.72	0.71	0.71
18.0	3.08	3.05	3.02	2.99	0.70	0.70	0.70	0.70	
540	-20.0	2.12	2.12	2.10	2.10	0.84	0.87	0.86	0.87
	-15.0	2.30	2.30	2.27	2.27	0.92	0.95	0.94	0.95
	-10.0	2.45	2.45	2.43	2.43	0.98	1.01	1.00	1.01
	-7.0	2.57	2.57	2.54	2.54	1.04	1.08	1.06	1.07
	-5.6	2.59	2.59	2.56	2.56	1.01	1.03	1.03	1.04
	-2.8	2.59	2.59	2.56	2.56	0.97	0.98	0.99	1.00
	0.0	2.59	2.53	2.53	2.50	0.93	0.94	0.95	0.95
	2.8	2.65	2.59	2.59	2.56	0.90	0.91	0.91	0.91
	5.6	2.79	2.74	2.74	2.71	0.88	0.88	0.89	0.89
	7.0	2.96	2.90	2.87	2.84	0.85	0.84	0.86	0.86
	11.1	3.02	2.96	2.96	2.93	0.80	0.80	0.80	0.80
	13.9	3.08	3.02	3.02	2.99	0.76	0.76	0.76	0.76
	16.7	3.13	3.08	3.05	3.05	0.72	0.72	0.72	0.72
18.0	3.16	3.10	3.08	3.08	0.71	0.70	0.70	0.70	
620	-20.0	2.16	2.14	2.14	2.12	0.84	0.87	0.86	0.87
	-15.0	2.34	2.32	2.32	2.29	0.92	0.96	0.94	0.95
	-10.0	2.50	2.47	2.47	2.44	0.98	1.02	1.00	1.01
	-7.0	2.62	2.59	2.59	2.56	1.04	1.08	1.06	1.07
	-5.6	2.62	2.59	2.59	2.56	1.02	1.03	1.04	1.05
	-2.8	2.62	2.59	2.59	2.56	0.98	0.99	1.00	1.00
	0.0	2.59	2.56	2.56	2.53	0.94	0.95	0.95	0.96
	2.8	2.65	2.62	2.62	2.59	0.91	0.92	0.92	0.92
	5.6	2.82	2.76	2.76	2.74	0.89	0.89	0.90	0.90
	7.0	2.99	2.93	2.90	2.87	0.86	0.85	0.87	0.87
	11.1	3.05	2.99	2.99	2.96	0.81	0.81	0.81	0.81
	13.9	3.10	3.05	3.05	3.02	0.77	0.77	0.77	0.77
	16.7	3.16	3.10	3.10	3.08	0.74	0.74	0.73	0.73
18.0	3.19	3.13	3.13	3.10	0.72	0.72	0.72	0.72	

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

MUCR-12-H14								[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)							
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
470	-20.0	2.37	2.35	2.32	2.32	1.05	1.09	1.09	1.09
	-15.0	2.57	2.54	2.52	2.52	1.15	1.19	1.19	1.20
	-10.0	2.74	2.71	2.69	2.69	1.23	1.27	1.27	1.28
	-7.0	2.87	2.84	2.81	2.81	1.31	1.35	1.35	1.36
	-5.6	2.96	2.93	2.90	2.90	1.29	1.32	1.33	1.35
	-2.8	3.02	2.99	2.96	2.96	1.27	1.30	1.31	1.33
	0.0	3.05	3.02	2.99	2.99	1.25	1.28	1.29	1.30
	2.8	3.19	3.16	3.13	3.10	1.24	1.27	1.28	1.30
	5.6	3.45	3.42	3.39	3.36	1.24	1.26	1.27	1.29
	7.0	3.73	3.69	3.61	3.61	1.24	1.26	1.27	1.28
	11.1	3.90	3.84	3.81	3.81	1.22	1.24	1.25	1.26
	13.9	4.04	3.98	3.96	3.93	1.20	1.22	1.24	1.25
	16.7	4.19	4.13	4.10	4.07	1.19	1.21	1.22	1.23
18.0	4.25	4.19	4.16	4.13	1.18	1.20	1.21	1.22	
570	-20.0	2.42	2.39	2.37	2.37	1.06	1.10	1.09	1.11
	-15.0	2.62	2.59	2.57	2.57	1.16	1.20	1.20	1.21
	-10.0	2.79	2.77	2.74	2.74	1.24	1.28	1.28	1.30
	-7.0	2.93	2.90	2.87	2.87	1.32	1.36	1.36	1.38
	-5.6	3.02	2.99	2.96	2.96	1.31	1.34	1.35	1.36
	-2.8	3.07	3.05	3.02	3.02	1.29	1.32	1.33	1.34
	0.0	3.13	3.07	3.07	3.05	1.27	1.29	1.31	1.32
	2.8	3.28	3.22	3.22	3.19	1.26	1.29	1.30	1.31
	5.6	3.54	3.48	3.45	3.45	1.25	1.28	1.29	1.30
	7.0	3.84	3.78	3.69	3.66	1.25	1.27	1.29	1.29
	11.1	3.98	3.96	3.93	3.90	1.23	1.25	1.27	1.28
	13.9	4.16	4.10	4.07	4.04	1.22	1.24	1.25	1.26
	16.7	4.30	4.25	4.22	4.19	1.20	1.22	1.23	1.25
18.0	4.36	4.30	4.28	4.25	1.19	1.22	1.23	1.24	
660	-20.0	2.44	2.42	2.40	2.40	1.08	1.11	1.11	1.12
	-15.0	2.64	2.62	2.59	2.59	1.18	1.21	1.21	1.22
	-10.0	2.82	2.80	2.77	2.77	1.26	1.30	1.30	1.30
	-7.0	2.96	2.93	2.90	2.90	1.34	1.38	1.38	1.39
	-5.6	3.05	3.02	2.99	2.99	1.32	1.35	1.36	1.38
	-2.8	3.10	3.07	3.05	3.05	1.30	1.33	1.34	1.36
	0.0	3.16	3.10	3.10	3.07	1.28	1.31	1.32	1.33
	2.8	3.31	3.25	3.22	3.22	1.27	1.30	1.31	1.33
	5.6	3.57	3.51	3.48	3.48	1.27	1.29	1.30	1.32
	7.0	3.87	3.81	3.72	3.69	1.27	1.29	1.29	1.31
	11.1	4.01	3.98	3.96	3.93	1.24	1.27	1.28	1.29
	13.9	4.19	4.13	4.10	4.07	1.23	1.25	1.27	1.28
	16.7	4.33	4.28	4.25	4.19	1.22	1.24	1.25	1.26
18.0	4.39	4.33	4.30	4.28	1.21	1.23	1.24	1.25	

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

MUCR-18-H14								[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
650	-20.0	3.95	3.90	3.87	3.85	1.44	1.49	1.48	1.49
	-15.0	4.27	4.22	4.19	4.17	1.57	1.63	1.62	1.63
	-10.0	4.56	4.50	4.48	4.45	1.68	1.73	1.72	1.73
	-7.0	4.78	4.72	4.69	4.66	1.78	1.84	1.83	1.84
	-5.6	4.86	4.81	4.78	4.75	1.75	1.78	1.80	1.81
	-2.8	4.92	4.86	4.84	4.81	1.70	1.73	1.74	1.76
	0.0	4.95	4.89	4.84	4.81	1.65	1.68	1.69	1.70
	2.8	5.12	5.07	5.04	5.01	1.62	1.64	1.66	1.67
	5.6	5.50	5.41	5.39	5.36	1.59	1.61	1.62	1.63
	7.0	5.93	5.83	5.72	5.69	1.58	1.59	1.62	1.62
	11.1	6.12	6.04	6.01	5.95	1.52	1.54	1.55	1.56
	13.9	6.33	6.24	6.18	6.12	1.48	1.50	1.51	1.52
	16.7	6.50	6.41	6.36	6.33	1.44	1.46	1.46	1.47
18.0	6.59	6.50	6.44	6.41	1.42	1.44	1.44	1.45	
780	-20.0	4.02	3.97	3.95	3.92	1.45	1.50	1.49	1.50
	-15.0	4.35	4.30	4.27	4.24	1.59	1.64	1.63	1.64
	-10.0	4.64	4.59	4.56	4.53	1.70	1.75	1.74	1.75
	-7.0	4.86	4.80	4.78	4.75	1.80	1.86	1.85	1.86
	-5.6	4.95	4.89	4.86	4.84	1.77	1.80	1.82	1.83
	-2.8	5.01	4.95	4.92	4.89	1.72	1.75	1.76	1.78
	0.0	5.04	4.98	4.95	4.92	1.67	1.70	1.71	1.72
	2.8	5.24	5.15	5.12	5.10	1.64	1.66	1.67	1.69
	5.6	5.62	5.53	5.50	5.44	1.60	1.63	1.64	1.65
	7.0	6.04	5.95	5.83	5.81	1.60	1.60	1.62	1.63
	11.1	6.24	6.15	6.12	6.07	1.54	1.56	1.56	1.57
	13.9	6.44	6.36	6.30	6.27	1.50	1.51	1.52	1.53
	16.7	6.65	6.53	6.50	6.44	1.45	1.47	1.47	1.48
18.0	6.73	6.65	6.59	6.53	1.43	1.45	1.45	1.46	
900	-20.0	4.06	4.02	3.99	3.97	1.47	1.52	1.51	1.52
	-15.0	4.40	4.35	4.32	4.30	1.61	1.66	1.65	1.66
	-10.0	4.70	4.64	4.62	4.59	1.72	1.77	1.76	1.77
	-7.0	4.92	4.86	4.84	4.81	1.82	1.88	1.87	1.88
	-5.6	5.01	4.95	4.92	4.89	1.79	1.82	1.83	1.85
	-2.8	5.07	5.01	4.98	4.95	1.74	1.77	1.78	1.79
	0.0	5.10	5.04	5.01	4.95	1.69	1.71	1.73	1.74
	2.8	5.30	5.21	5.18	5.15	1.65	1.68	1.69	1.70
	5.6	5.65	5.59	5.56	5.50	1.62	1.64	1.65	1.66
	7.0	6.07	6.01	5.89	5.86	1.61	1.62	1.64	1.65
	11.1	6.30	6.21	6.18	6.12	1.55	1.57	1.58	1.59
	13.9	6.50	6.41	6.36	6.33	1.51	1.53	1.53	1.54
	16.7	6.70	6.59	6.56	6.50	1.47	1.48	1.49	1.50
18.0	6.79	6.70	6.65	6.59	1.45	1.46	1.47	1.47	

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

MUCR-24-H14								[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)							
		16.0	20.0	22.0	24.0	16.0	20.0	22.0	24.0
700	-20.0	5.92	5.85	5.83	5.80	2.31	2.39	2.33	2.34
	-15.0	6.41	6.33	6.31	6.28	2.53	2.62	2.55	2.56
	-10.0	6.85	6.76	6.73	6.71	2.70	2.79	2.72	2.73
	-7.0	7.17	7.08	7.05	7.02	2.87	2.97	2.89	2.90
	-5.6	7.08	7.00	6.97	6.94	2.77	2.79	2.79	2.80
	-2.8	7.00	6.91	6.88	6.85	2.60	2.61	2.61	2.62
	0.0	6.82	6.74	6.71	6.68	2.43	2.43	2.43	2.43
	2.8	6.88	6.79	6.76	6.71	2.29	2.28	2.28	2.27
	5.6	7.17	7.08	7.03	7.00	2.14	2.12	2.12	2.11
	7.0	7.48	7.39	7.33	7.30	2.07	1.96	2.04	2.03
	11.1	7.56	7.48	7.42	7.36	1.83	1.80	1.78	1.77
	13.9	7.65	7.53	7.48	7.42	1.67	1.63	1.61	1.59
	16.7	7.71	7.59	7.53	7.48	1.51	1.47	1.45	1.43
18.0	7.74	7.62	7.53	7.48	1.44	1.39	1.37	1.34	
1000	-20.0	6.01	5.96	5.94	5.91	2.33	2.42	2.35	2.36
	-15.0	6.51	6.45	6.43	6.40	2.55	2.64	2.58	2.58
	-10.0	6.95	6.89	6.86	6.83	2.72	2.82	2.75	2.76
	-7.0	7.28	7.22	7.19	7.16	2.89	3.00	2.92	2.93
	-5.6	7.20	7.14	7.11	7.08	2.80	2.81	2.82	2.83
	-2.8	7.11	7.05	7.00	6.97	2.63	2.63	2.64	2.64
	0.0	6.97	6.88	6.85	6.79	2.45	2.45	2.45	2.45
	2.8	7.03	6.94	6.88	6.85	2.31	2.30	2.30	2.30
	5.6	7.32	7.23	7.17	7.11	2.16	2.15	2.14	2.13
	7.0	7.62	7.53	7.48	7.45	2.09	1.98	2.06	2.05
	11.1	7.74	7.62	7.56	7.50	1.85	1.82	1.80	1.79
	13.9	7.79	7.68	7.62	7.56	1.69	1.65	1.63	1.61
	16.7	7.85	7.74	7.68	7.62	1.52	1.49	1.47	1.44
18.0	7.88	7.77	7.71	7.65	1.46	1.41	1.38	1.36	
1200	-20.0	6.09	6.02	6.00	5.97	2.35	2.44	2.38	2.39
	-15.0	6.59	6.51	6.49	6.46	2.58	2.67	2.60	2.61
	-10.0	7.04	6.96	6.93	6.90	2.75	2.85	2.78	2.78
	-7.0	7.38	7.29	7.26	7.23	2.92	3.03	2.95	2.96
	-5.6	7.29	7.20	7.17	7.14	2.83	2.84	2.85	2.86
	-2.8	7.20	7.11	7.08	7.05	2.65	2.66	2.66	2.67
	0.0	7.03	6.94	6.91	6.88	2.48	2.48	2.48	2.48
	2.8	7.08	7.00	6.97	6.91	2.34	2.33	2.32	2.32
	5.6	7.40	7.29	7.26	7.20	2.18	2.17	2.16	2.15
	7.0	7.74	7.62	7.56	7.53	2.11	2.00	2.08	2.07
	11.1	7.82	7.71	7.65	7.59	1.87	1.84	1.82	1.80
	13.9	7.88	7.77	7.71	7.65	1.70	1.66	1.64	1.63
	16.7	7.94	7.82	7.77	7.71	1.54	1.50	1.48	1.46
18.0	7.97	7.85	7.79	7.74	1.47	1.42	1.40	1.37	

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

MUCR-30-H14								[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
900	-20.0	6.17	6.10	6.07	6.05	2.26	2.34	2.31	2.33
	-15.0	6.68	6.60	6.57	6.55	2.48	2.56	2.53	2.55
	-10.0	7.13	7.05	7.02	6.99	2.64	2.74	2.70	2.72
	-7.0	7.47	7.38	7.35	7.32	2.81	2.91	2.87	2.89
	-5.6	7.59	7.50	7.47	7.44	2.76	2.79	2.81	2.83
	-2.8	7.70	7.61	7.59	7.53	2.66	2.69	2.71	2.72
	0.0	7.73	7.64	7.59	7.56	2.56	2.59	2.60	2.62
	2.8	8.05	7.93	7.88	7.82	2.48	2.51	2.52	2.53
	5.6	8.60	8.51	8.46	8.40	2.40	2.43	2.44	2.45
	7.0	9.21	9.12	8.94	8.89	2.38	2.36	2.41	2.42
	11.1	9.58	9.44	9.38	9.32	2.25	2.26	2.27	2.28
	13.9	9.87	9.73	9.67	9.61	2.16	2.17	2.18	2.18
	16.7	10.16	10.02	9.96	9.87	2.07	2.08	2.08	2.08
18.0	10.31	10.16	10.10	10.02	2.03	2.03	2.04	2.04	
1200	-20.0	6.28	6.21	6.19	6.17	2.29	2.37	2.34	2.35
	-15.0	6.80	6.72	6.70	6.67	2.50	2.59	2.56	2.57
	-10.0	7.26	7.18	7.15	7.12	2.67	2.76	2.73	2.75
	-7.0	7.61	7.52	7.49	7.46	2.84	2.93	2.90	2.92
	-5.6	7.73	7.64	7.61	7.59	2.78	2.82	2.84	2.86
	-2.8	7.85	7.76	7.73	7.67	2.68	2.71	2.73	2.75
	0.0	7.88	7.79	7.73	7.70	2.58	2.61	2.62	2.64
	2.8	8.20	8.08	8.02	7.99	2.50	2.53	2.54	2.55
	5.6	8.78	8.66	8.60	8.54	2.42	2.45	2.46	2.47
	7.0	9.42	9.29	9.12	9.06	2.40	2.38	2.43	2.44
	11.1	9.76	9.61	9.55	9.49	2.27	2.28	2.29	2.30
	13.9	10.08	9.93	9.84	9.79	2.18	2.19	2.19	2.20
	16.7	10.37	10.22	10.13	10.08	2.09	2.10	2.10	2.10
18.0	10.51	10.37	10.28	10.22	2.05	2.05	2.05	2.05	
1500	-20.0	6.31	6.27	6.22	6.20	2.31	2.39	2.36	2.38
	-15.0	6.83	6.78	6.73	6.70	2.53	2.62	2.58	2.60
	-10.0	7.29	7.24	7.19	7.16	2.70	2.79	2.75	2.77
	-7.0	7.64	7.59	7.53	7.50	2.87	2.97	2.93	2.95
	-5.6	7.79	7.73	7.67	7.64	2.81	2.85	2.87	2.89
	-2.8	7.93	7.85	7.79	7.76	2.71	2.74	2.76	2.78
	0.0	7.96	7.85	7.82	7.76	2.60	2.64	2.65	2.67
	2.8	8.25	8.17	8.11	8.05	2.53	2.55	2.56	2.58
	5.6	8.86	8.75	8.69	8.63	2.45	2.47	2.48	2.49
	7.0	9.50	9.38	9.20	9.15	2.42	2.40	2.45	2.46
	11.1	9.84	9.73	9.64	9.58	2.29	2.30	2.31	2.31
	13.9	10.16	10.02	9.96	9.87	2.20	2.20	2.21	2.21
	16.7	10.48	10.31	10.25	10.16	2.10	2.11	2.11	2.11
18.0	10.63	10.45	10.39	10.31	2.06	2.06	2.06	2.07	

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

MUCR-36-H14								[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
1100	-20.0	7.37	7.30	7.26	7.21	3.08	3.19	3.15	3.17
	-15.0	7.98	7.90	7.85	7.80	3.37	3.49	3.44	3.47
	-10.0	8.52	8.44	8.38	8.33	3.60	3.72	3.67	3.70
	-7.0	8.92	8.84	8.78	8.73	3.82	3.95	3.90	3.93
	-5.6	9.16	9.07	9.01	8.96	3.74	3.79	3.82	3.84
	-2.8	9.36	9.24	9.19	9.16	3.61	3.66	3.68	3.70
	0.0	9.45	9.33	9.27	9.22	3.48	3.52	3.54	3.56
	2.8	9.88	9.77	9.71	9.62	3.37	3.40	3.42	3.44
	5.6	10.66	10.52	10.46	10.38	3.26	3.29	3.31	3.32
	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	11.67	3.04	3.06	3.07	3.07
	13.9	12.45	12.27	12.19	12.10	2.92	2.93	2.94	2.94
	16.7	12.88	12.68	12.59	12.51	2.80	2.80	2.81	2.81
18.0	13.09	12.88	12.80	12.71	2.74	2.74	2.74	2.75	
1400	-20.0	7.55	7.46	7.41	7.39	3.12	3.22	3.18	3.20
	-15.0	8.17	8.07	8.02	7.99	3.41	3.52	3.48	3.51
	-10.0	8.72	8.62	8.56	8.54	3.64	3.76	3.71	3.74
	-7.0	9.14	9.03	8.97	8.94	3.86	3.99	3.94	3.97
	-5.6	9.36	9.24	9.19	9.16	3.78	3.83	3.86	3.88
	-2.8	9.56	9.45	9.39	9.33	3.65	3.70	3.71	3.73
	0.0	9.65	9.53	9.48	9.42	3.51	3.55	3.57	3.59
	2.8	10.09	9.97	9.88	9.82	3.40	3.44	3.46	3.47
	5.6	10.90	10.75	10.66	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	11.98	11.93	3.07	3.08	3.09	3.10
	13.9	12.68	12.51	12.42	12.33	2.94	2.96	2.96	2.97
	16.7	13.12	12.94	12.86	12.77	2.82	2.83	2.83	2.83
18.0	13.35	13.15	13.06	12.97	2.76	2.77	2.77	2.77	
1700	-20.0	7.61	7.54	7.49	7.45	3.15	3.25	3.21	3.24
	-15.0	8.24	8.16	8.11	8.06	3.44	3.56	3.51	3.54
	-10.0	8.79	8.71	8.66	8.61	3.67	3.79	3.75	3.78
	-7.0	9.21	9.13	9.07	9.02	3.90	4.03	3.98	4.01
	-5.6	9.45	9.36	9.30	9.24	3.81	3.87	3.89	3.92
	-2.8	9.65	9.56	9.51	9.45	3.68	3.72	3.74	3.77
	0.0	9.77	9.62	9.56	9.51	3.54	3.58	3.60	3.63
	2.8	10.20	10.06	10.00	9.94	3.44	3.47	3.49	3.51
	5.6	10.98	10.84	10.78	10.69	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	12.19	12.13	12.04	3.10	3.11	3.12	3.13
	13.9	12.80	12.62	12.54	12.45	2.97	2.98	2.99	3.00
	16.7	13.26	13.06	12.97	12.88	2.85	2.85	2.86	2.86
18.0	13.46	13.26	13.17	13.09	2.79	2.79	2.79	2.79	

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

(none)								[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
1100	-20.0	7.10	7.03	6.99	6.94	3.07	3.17	3.14	3.16
	-15.0	7.69	7.61	7.56	7.51	3.36	3.47	3.44	3.46
	-10.0	8.21	8.13	8.07	8.02	3.58	3.70	3.66	3.69
	-7.0	8.60	8.51	8.46	8.40	3.80	3.93	3.89	3.92
	-5.6	8.89	8.80	8.74	8.69	3.73	3.78	3.81	3.84
	-2.8	9.15	9.04	8.98	8.95	3.61	3.66	3.69	3.70
	0.0	9.30	9.18	9.12	9.06	3.48	3.53	3.55	3.57
	2.8	9.79	9.67	9.62	9.53	3.39	3.43	3.45	3.47
	5.6	10.63	10.49	10.43	10.34	3.30	3.33	3.35	3.37
	7.0	11.53	11.38	11.11	11.03	3.26	3.24	3.30	3.32
	11.1	12.07	11.90	11.81	11.72	3.09	3.12	3.13	3.14
	13.9	12.56	12.39	12.30	12.22	2.98	3.00	3.01	3.02
	16.7	13.06	12.86	12.77	12.68	2.87	2.89	2.89	2.90
18.0	13.29	13.09	13.00	12.91	2.82	2.83	2.84	2.84	
1400	-20.0	7.28	7.18	7.14	7.11	3.10	3.21	3.17	3.20
	-15.0	7.88	7.78	7.72	7.70	3.39	3.51	3.47	3.50
	-10.0	8.41	8.30	8.25	8.22	3.62	3.74	3.70	3.73
	-7.0	8.81	8.70	8.64	8.61	3.84	3.97	3.93	3.96
	-5.6	9.09	8.98	8.92	8.89	3.77	3.82	3.85	3.88
	-2.8	9.36	9.24	9.18	9.12	3.65	3.70	3.71	3.74
	0.0	9.50	9.38	9.33	9.27	3.52	3.56	3.59	3.61
	2.8	9.99	9.88	9.79	9.73	3.42	3.46	3.48	3.50
	5.6	10.87	10.72	10.63	10.58	3.33	3.36	3.38	3.40
	7.0	11.76	11.61	11.35	11.26	3.29	3.27	3.33	3.35
	11.1	12.30	12.13	12.07	11.98	3.12	3.14	3.16	3.17
	13.9	12.80	12.62	12.54	12.45	3.01	3.03	3.04	3.05
	16.7	13.29	13.12	13.03	12.94	2.90	2.91	2.92	2.92
18.0	13.55	13.35	13.26	13.17	2.84	2.85	2.86	2.87	
1700	-20.0	7.32	7.25	7.20	7.15	3.13	3.24	3.20	3.22
	-15.0	7.92	7.84	7.79	7.74	3.43	3.54	3.51	3.52
	-10.0	8.46	8.38	8.32	8.27	3.65	3.78	3.74	3.76
	-7.0	8.86	8.77	8.72	8.66	3.88	4.01	3.97	3.99
	-5.6	9.15	9.06	9.01	8.95	3.80	3.86	3.89	3.91
	-2.8	9.44	9.33	9.27	9.21	3.68	3.72	3.75	3.77
	0.0	9.59	9.47	9.41	9.36	3.55	3.60	3.62	3.64
	2.8	10.11	9.97	9.91	9.82	3.46	3.50	3.52	3.54
	5.6	10.95	10.81	10.75	10.66	3.36	3.39	3.41	3.43
	7.0	11.88	11.72	11.46	11.38	3.32	3.30	3.36	3.38
	11.1	12.42	12.27	12.19	12.10	3.15	3.17	3.19	3.20
	13.9	12.94	12.77	12.68	12.59	3.04	3.05	3.06	3.07
	16.7	13.44	13.26	13.17	13.06	2.92	2.94	2.94	2.95
18.0	13.70	13.49	13.41	13.29	2.87	2.88	2.88	2.89	

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

MUCR-42-H14								[SL_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
1300	-20.0	8.03	7.93	7.89	7.84	3.24	3.36	3.32	3.35
	-15.0	8.68	8.58	8.53	8.48	3.55	3.67	3.64	3.66
	-10.0	9.27	9.17	9.11	9.06	3.79	3.92	3.88	3.91
	-7.0	9.71	9.60	9.55	9.49	4.02	4.16	4.12	4.15
	-5.6	10.07	9.95	9.89	9.83	3.95	4.01	4.04	4.07
	-2.8	10.39	10.27	10.21	10.15	3.82	3.88	3.91	3.94
	0.0	10.59	10.47	10.39	10.33	3.71	3.75	3.77	3.80
	2.8	11.20	11.05	10.97	10.91	3.62	3.66	3.69	3.71
	5.6	12.18	12.04	11.95	11.87	3.53	3.57	3.59	3.61
	7.0	13.23	13.08	12.76	12.67	3.48	3.47	3.53	3.55
	11.1	13.89	13.71	13.63	13.51	3.32	3.35	3.36	3.38
	13.9	14.50	14.29	14.18	14.09	3.21	3.23	3.25	3.26
	16.7	15.08	14.87	14.76	14.67	3.11	3.12	3.13	3.14
18.0	15.37	15.16	15.05	14.93	3.06	3.07	3.08	3.09	
1700	-20.0	8.18	8.09	8.04	8.00	3.28	3.39	3.36	3.38
	-15.0	8.85	8.75	8.70	8.65	3.58	3.71	3.67	3.70
	-10.0	9.45	9.35	9.29	9.24	3.82	3.95	3.92	3.94
	-7.0	9.90	9.79	9.74	9.68	4.06	4.20	4.16	4.19
	-5.6	10.27	10.15	10.10	10.04	3.99	4.05	4.08	4.11
	-2.8	10.62	10.47	10.42	10.36	3.86	3.92	3.95	3.98
	0.0	10.82	10.68	10.62	10.53	3.74	3.79	3.81	3.84
	2.8	11.43	11.26	11.20	11.11	3.65	3.70	3.71	3.74
	5.6	12.42	12.27	12.18	12.10	3.56	3.61	3.63	3.65
	7.0	13.49	13.34	13.02	12.93	3.51	3.51	3.57	3.59
	11.1	14.18	13.97	13.89	13.80	3.35	3.39	3.40	3.42
	13.9	14.79	14.58	14.47	14.38	3.25	3.27	3.29	3.30
	16.7	15.40	15.16	15.08	14.96	3.14	3.16	3.17	3.18
18.0	15.69	15.45	15.34	15.25	3.10	3.11	3.11	3.12	
2000	-20.0	8.29	8.17	8.13	8.08	3.31	3.42	3.39	3.41
	-15.0	8.97	8.84	8.79	8.74	3.62	3.74	3.71	3.73
	-10.0	9.58	9.44	9.39	9.34	3.86	3.99	3.95	3.98
	-7.0	10.03	9.89	9.84	9.78	4.10	4.24	4.20	4.23
	-5.6	10.39	10.24	10.18	10.13	4.03	4.09	4.12	4.15
	-2.8	10.71	10.59	10.53	10.47	3.90	3.96	3.99	4.02
	0.0	10.94	10.79	10.71	10.65	3.77	3.83	3.85	3.88
	2.8	11.55	11.40	11.31	11.23	3.69	3.73	3.75	3.78
	5.6	12.56	12.39	12.30	12.24	3.60	3.65	3.67	3.69
	7.0	13.67	13.48	13.16	13.08	3.55	3.55	3.61	3.63
	11.1	14.32	14.12	14.03	13.95	3.39	3.43	3.44	3.46
	13.9	14.93	14.73	14.64	14.53	3.28	3.31	3.33	3.34
	16.7	15.57	15.34	15.22	15.13	3.18	3.20	3.21	3.22
18.0	15.86	15.63	15.51	15.40	3.12	3.14	3.15	3.16	

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

MUCR-48-H14									[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
1300	-20.0	11.41	11.32	11.25	11.20	4.63	4.79	4.71	4.73
	-15.0	12.35	12.25	12.17	12.12	5.06	5.24	5.15	5.17
	-10.0	13.19	13.08	13.00	12.94	5.40	5.59	5.49	5.52
	-7.0	13.82	13.70	13.61	13.56	5.74	5.93	5.84	5.86
	-5.6	13.87	13.76	13.67	13.61	5.60	5.66	5.69	5.72
	-2.8	13.90	13.76	13.70	13.61	5.35	5.40	5.43	5.45
	0.0	13.79	13.61	13.56	13.47	5.10	5.14	5.16	5.18
	2.8	14.14	13.96	13.87	13.76	4.90	4.93	4.94	4.96
	5.6	14.95	14.75	14.66	14.54	4.70	4.72	4.73	4.74
	7.0	15.84	15.63	15.42	15.34	4.60	4.50	4.62	4.63
	11.1	16.24	16.00	15.89	15.80	4.26	4.26	4.26	4.26
	13.9	16.58	16.35	16.24	16.09	4.05	4.03	4.03	4.02
	16.7	16.93	16.67	16.55	16.41	3.82	3.80	3.78	3.77
18.0	17.08	16.82	16.70	16.55	3.71	3.68	3.67	3.65	
1700	-20.0	11.66	11.54	11.49	11.42	4.67	4.84	4.75	4.79
	-15.0	12.62	12.49	12.44	12.36	5.11	5.29	5.20	5.24
	-10.0	13.47	13.34	13.28	13.20	5.45	5.64	5.55	5.59
	-7.0	14.12	13.97	13.91	13.83	5.80	6.00	5.89	5.93
	-5.6	14.17	14.02	13.96	13.87	5.66	5.72	5.75	5.78
	-2.8	14.19	14.05	13.96	13.87	5.41	5.46	5.48	5.51
	0.0	14.08	13.90	13.82	13.73	5.15	5.20	5.22	5.24
	2.8	14.43	14.22	14.14	14.05	4.95	4.98	5.00	5.01
	5.6	15.24	15.04	14.95	14.86	4.75	4.77	4.78	4.78
	7.0	16.16	15.95	15.74	15.63	4.65	4.55	4.67	4.68
	11.1	16.55	16.35	16.24	16.12	4.31	4.31	4.31	4.31
	13.9	16.90	16.67	16.55	16.44	4.09	4.08	4.07	4.07
	16.7	17.28	17.02	16.87	16.76	3.86	3.84	3.83	3.82
18.0	17.42	17.16	17.05	16.90	3.75	3.72	3.71	3.70	
2000	-20.0	11.77	11.65	11.58	11.53	4.72	4.88	4.80	4.83
	-15.0	12.74	12.61	12.53	12.48	5.17	5.34	5.25	5.28
	-10.0	13.60	13.47	13.38	13.33	5.51	5.70	5.60	5.63
	-7.0	14.25	14.11	14.02	13.96	5.85	6.05	5.95	5.98
	-5.6	14.31	14.17	14.08	14.02	5.71	5.78	5.81	5.84
	-2.8	14.34	14.19	14.11	14.02	5.46	5.51	5.54	5.56
	0.0	14.22	14.05	13.96	13.87	5.21	5.25	5.27	5.29
	2.8	14.57	14.40	14.28	14.19	5.00	5.03	5.05	5.06
	5.6	15.41	15.21	15.12	15.01	4.79	4.81	4.82	4.84
	7.0	16.33	16.12	15.92	15.80	4.70	4.60	4.72	4.73
	11.1	16.76	16.53	16.41	16.29	4.36	4.36	4.36	4.36
	13.9	17.11	16.87	16.73	16.61	4.14	4.13	4.12	4.12
	16.7	17.45	17.19	17.08	16.96	3.91	3.89	3.88	3.86
18.0	17.63	17.37	17.25	17.11	3.80	3.77	3.76	3.74	

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

MUCR-48-H14T									[SLUnit]
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
1300	-20.0	10.82	10.70	10.65	10.58	4.54	4.70	4.63	4.65
	-15.0	11.71	11.58	11.53	11.45	4.97	5.14	5.06	5.09
	-10.0	12.50	12.37	12.31	12.23	5.30	5.49	5.40	5.43
	-7.0	13.10	12.96	12.90	12.81	5.63	5.83	5.74	5.77
	-5.6	13.27	13.13	13.07	12.98	5.50	5.57	5.60	5.63
	-2.8	13.42	13.27	13.19	13.13	5.27	5.32	5.35	5.38
	0.0	13.42	13.25	13.19	13.10	5.04	5.09	5.11	5.13
	2.8	13.88	13.71	13.62	13.54	4.86	4.89	4.91	4.93
	5.6	14.81	14.64	14.52	14.44	4.67	4.69	4.71	4.72
	7.0	15.81	15.63	15.37	15.28	4.58	4.50	4.61	4.62
	11.1	16.35	16.15	16.03	15.92	4.27	4.27	4.28	4.28
	13.9	16.82	16.58	16.47	16.35	4.07	4.06	4.06	4.06
	16.7	17.31	17.05	16.93	16.79	3.86	3.84	3.84	3.83
18.0	17.51	17.25	17.13	17.02	3.76	3.74	3.73	3.72	
1700	-20.0	11.03	10.92	10.87	10.80	4.59	4.75	4.68	4.70
	-15.0	11.94	11.81	11.76	11.68	5.02	5.19	5.12	5.14
	-10.0	12.75	12.61	12.56	12.48	5.36	5.54	5.46	5.49
	-7.0	13.36	13.21	13.16	13.07	5.69	5.88	5.80	5.83
	-5.6	13.54	13.39	13.33	13.25	5.56	5.62	5.65	5.69
	-2.8	13.68	13.54	13.45	13.39	5.32	5.38	5.40	5.43
	0.0	13.68	13.54	13.45	13.36	5.10	5.14	5.16	5.19
	2.8	14.18	14.00	13.88	13.80	4.91	4.94	4.96	4.98
	5.6	15.13	14.93	14.84	14.73	4.72	4.74	4.76	4.77
	7.0	16.16	15.95	15.68	15.57	4.63	4.55	4.66	4.67
	11.1	16.70	16.47	16.35	16.24	4.32	4.32	4.33	4.33
	13.9	17.16	16.93	16.82	16.70	4.11	4.11	4.11	4.11
	16.7	17.66	17.40	17.28	17.13	3.90	3.89	3.88	3.88
18.0	17.89	17.63	17.48	17.37	3.80	3.78	3.77	3.77	
2000	-20.0	11.13	11.01	10.97	10.92	4.64	4.80	4.73	4.75
	-15.0	12.05	11.92	11.87	11.82	5.07	5.25	5.17	5.19
	-10.0	12.86	12.73	12.67	12.62	5.41	5.60	5.51	5.54
	-7.0	13.48	13.33	13.28	13.22	5.75	5.95	5.86	5.89
	-5.6	13.65	13.51	13.45	13.39	5.61	5.68	5.71	5.75
	-2.8	13.83	13.68	13.59	13.51	5.38	5.43	5.46	5.49
	0.0	13.83	13.65	13.57	13.48	5.15	5.19	5.21	5.23
	2.8	14.32	14.15	14.03	13.94	4.96	5.00	5.02	5.03
	5.6	15.28	15.08	14.99	14.90	4.77	4.80	4.81	4.82
	7.0	16.34	16.12	15.86	15.74	4.68	4.60	4.71	4.72
	11.1	16.87	16.64	16.53	16.41	4.36	4.37	4.37	4.38
	13.9	17.37	17.13	16.99	16.87	4.15	4.15	4.15	4.14
	16.7	17.86	17.60	17.48	17.34	3.95	3.93	3.93	3.92
18.0	18.09	17.83	17.69	17.57	3.84	3.83	3.82	3.81	

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

MUCR-60-H14T									[SLUnit]
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	-20.0	11.48	11.36	11.29	11.22	4.59	4.74	4.71	4.74
	-15.0	12.42	12.29	12.22	12.14	5.02	5.18	5.15	5.18
	-10.0	13.26	13.13	13.04	12.96	5.35	5.53	5.49	5.53
	-7.0	13.89	13.75	13.67	13.58	5.69	5.87	5.83	5.87
	-5.6	14.24	14.10	14.01	13.92	5.60	5.69	5.74	5.78
	-2.8	14.56	14.39	14.30	14.22	5.44	5.53	5.57	5.62
	0.0	14.71	14.51	14.42	14.33	5.28	5.37	5.41	5.45
	2.8	15.38	15.17	15.06	14.97	5.18	5.25	5.29	5.33
	5.6	16.56	16.33	16.25	16.13	5.07	5.14	5.18	5.21
	7.0	17.90	17.65	17.30	17.18	5.03	5.05	5.13	5.16
	11.1	18.61	18.37	18.23	18.11	4.84	4.90	4.92	4.95
	13.9	19.27	19.01	18.90	18.75	4.71	4.76	4.78	4.81
	16.7	19.94	19.68	19.54	19.39	4.59	4.63	4.65	4.67
18.0	20.26	19.97	19.83	19.71	4.52	4.57	4.59	4.61	
1900	-20.0	11.72	11.60	11.53	11.46	4.63	4.79	4.75	4.79
	-15.0	12.68	12.55	12.48	12.40	5.07	5.24	5.20	5.24
	-10.0	13.54	13.40	13.32	13.24	5.41	5.59	5.55	5.59
	-7.0	14.18	14.04	13.96	13.87	5.75	5.94	5.89	5.94
	-5.6	14.53	14.39	14.30	14.22	5.66	5.75	5.79	5.84
	-2.8	14.85	14.68	14.59	14.51	5.50	5.59	5.63	5.67
	0.0	15.00	14.80	14.71	14.62	5.34	5.42	5.46	5.50
	2.8	15.67	15.46	15.38	15.26	5.23	5.31	5.35	5.38
	5.6	16.88	16.68	16.56	16.45	5.12	5.20	5.23	5.27
	7.0	18.22	18.00	17.62	17.50	5.08	5.10	5.18	5.22
	11.1	18.98	18.72	18.61	18.46	4.89	4.94	4.97	5.00
	13.9	19.65	19.39	19.25	19.13	4.75	4.80	4.83	4.86
	16.7	20.35	20.06	19.91	19.77	4.63	4.67	4.69	4.71
18.0	20.67	20.38	20.23	20.09	4.57	4.61	4.63	4.64	
2200	-20.0	11.84	11.72	11.65	11.58	4.67	4.83	4.79	4.83
	-15.0	12.81	12.68	12.61	12.53	5.11	5.29	5.24	5.29
	-10.0	13.68	13.54	13.46	13.38	5.45	5.64	5.59	5.64
	-7.0	14.33	14.19	14.10	14.02	5.79	5.99	5.94	5.99
	-5.6	14.68	14.53	14.45	14.36	5.71	5.80	5.84	5.89
	-2.8	15.00	14.82	14.74	14.65	5.55	5.64	5.68	5.73
	0.0	15.14	14.97	14.85	14.77	5.39	5.47	5.52	5.56
	2.8	15.84	15.61	15.52	15.40	5.28	5.36	5.40	5.44
	5.6	17.06	16.83	16.71	16.62	5.17	5.25	5.28	5.32
	7.0	18.42	18.17	17.79	17.68	5.13	5.15	5.23	5.27
	11.1	19.16	18.90	18.78	18.64	4.93	4.99	5.02	5.05
	13.9	19.85	19.56	19.45	19.30	4.80	4.85	4.88	4.90
	16.7	20.52	20.23	20.09	19.94	4.67	4.71	4.74	4.76
18.0	20.87	20.55	20.41	20.26	4.61	4.64	4.67	4.69	

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

8. Capacity Correction Factor for Height Difference

Model	09		Pipe Length (m)			
Cooling			5	10	20	25
Height difference H (m)	Indoor Upper than Outdoor	10		0.969	0.936	0.920
		5	0.995	0.979	0.946	0.929
		0	1.000	0.984	0.951	0.934
	Outdoor Upper than Indoor	-5	1.000	0.984	0.951	0.934
		-10		0.984	0.951	0.934
Heating			5	10	15	20
Height difference H (m)	Indoor Upper than Outdoor	10		0.989	0.967	0.956
		5	1.000	0.989	0.967	0.956
		0	1.000	0.989	0.967	0.956
	Outdoor Upper than Indoor	-5	0.992	0.981	0.959	0.948
		-10		0.973	0.952	0.941

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

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

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

Model	30		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	

Model	36		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	75
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	

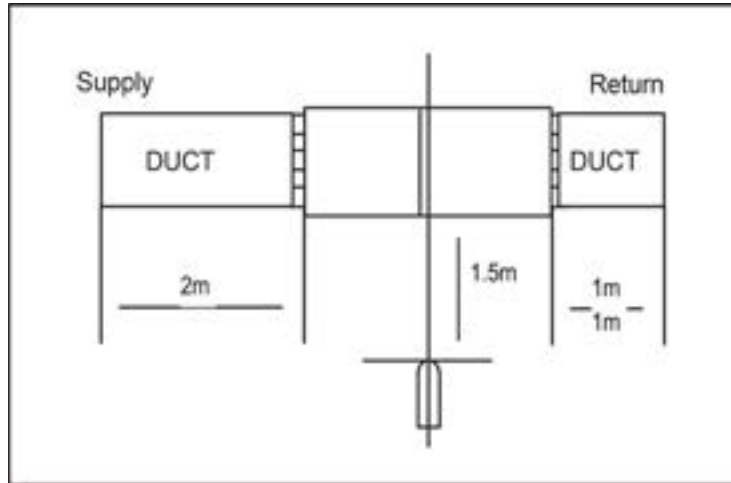
Model	42		Pipe Length (m)							
Cooling			5	15	25	35	50	65	75	
Height difference H (m)	Indoor Upper than Outdoor	30	/	/	/	0.881	0.839	0.797	0.769	
		20	/	/	0.919	0.890	0.848	0.806	0.777	
		10	/	0.956	0.928	0.899	0.857	0.814	0.785	
		5	0.995	0.966	0.937	0.908	0.865	0.822	0.793	
			0	1.000	0.971	0.942	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	75	
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		

Model	48		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	75
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	

Model	60		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

9. Noise Criterion Curves

9.1 Indoor Unit

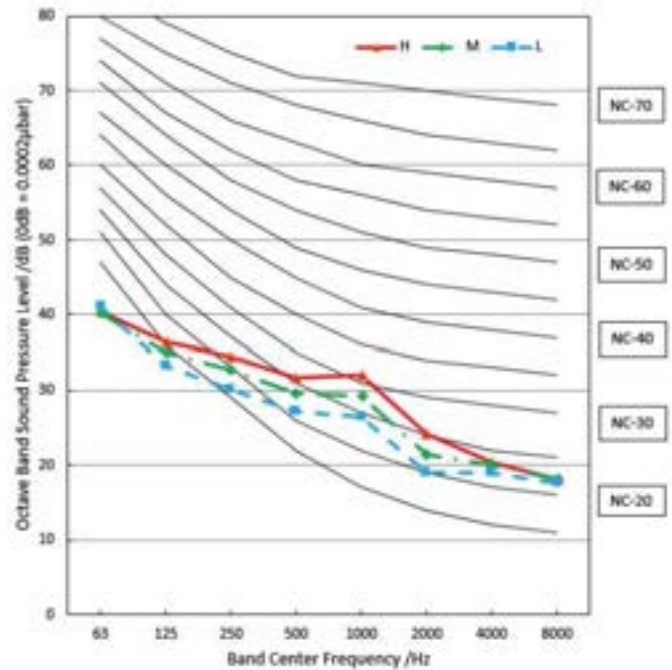
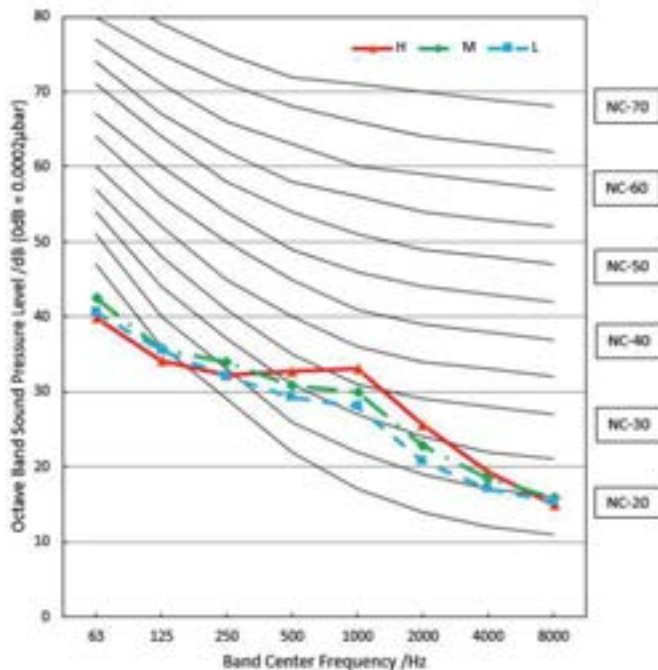


Notes:

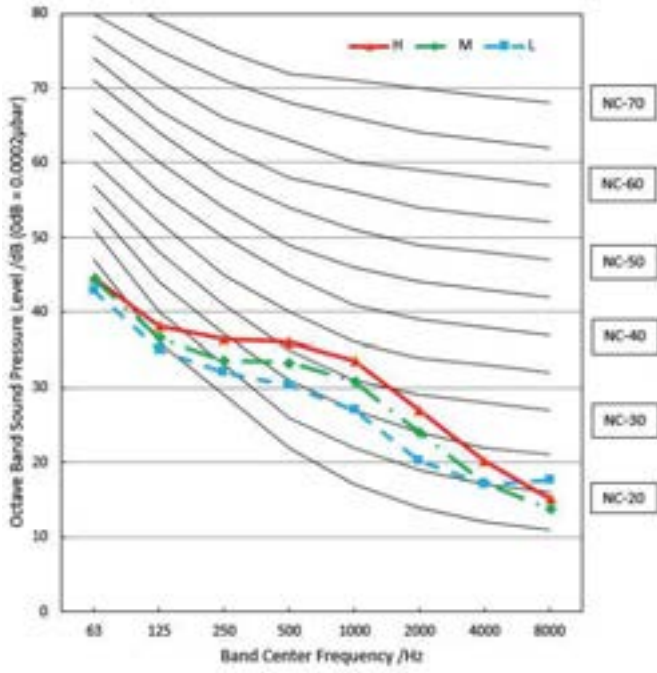
- Sound measured at 1.5m away from the center of the unit.
- Data is valid at free field condition
- Data is valid at nominal operation condition
- Reference acoustic pressure $OdB = 20\mu Pa$
- Sound level will vary depending on a range of factors such as the construction -(acoustic absorption coefficient) of particular room in which the equipment is installed.
- The operating conditions are assumed to be standard.

09

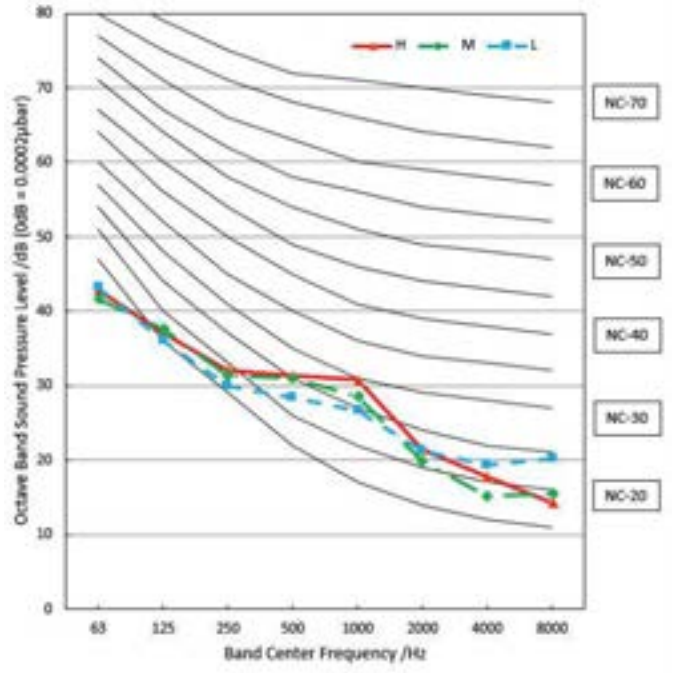
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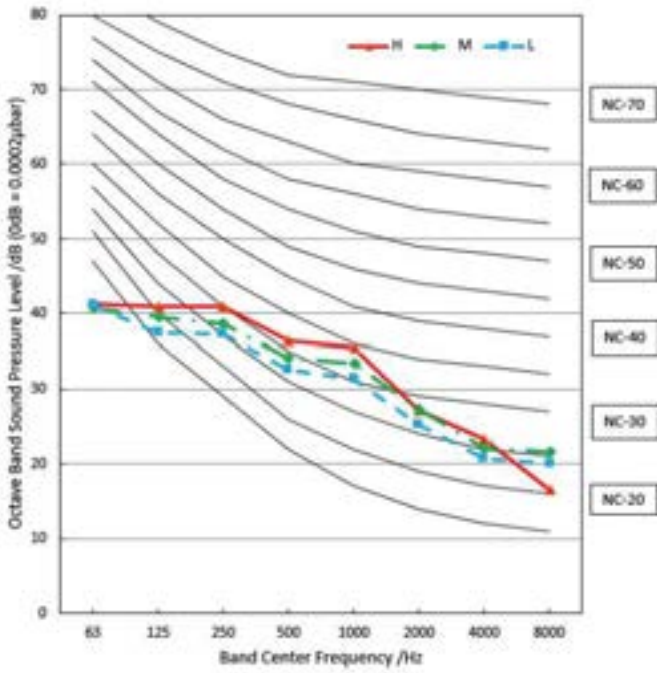
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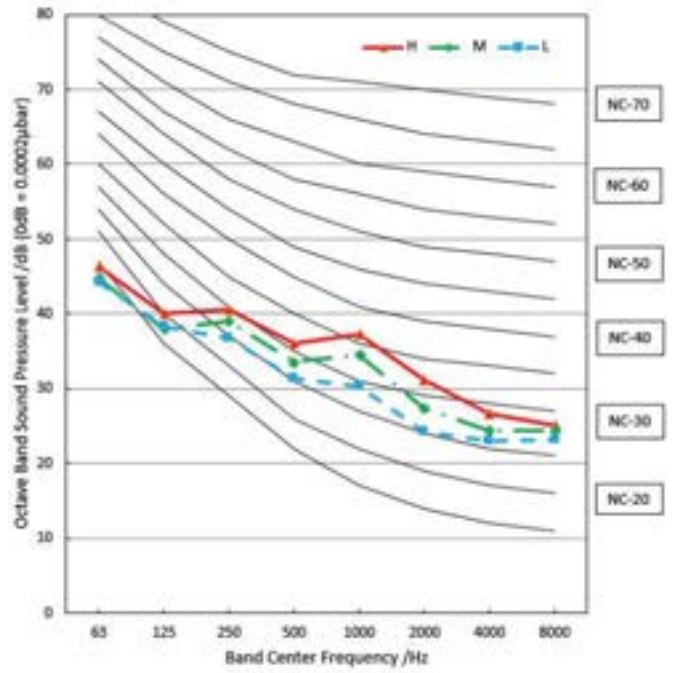
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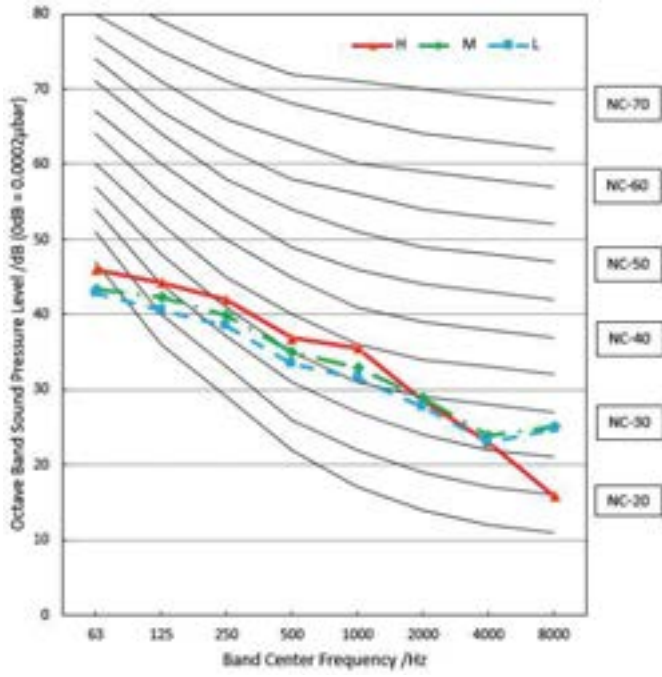
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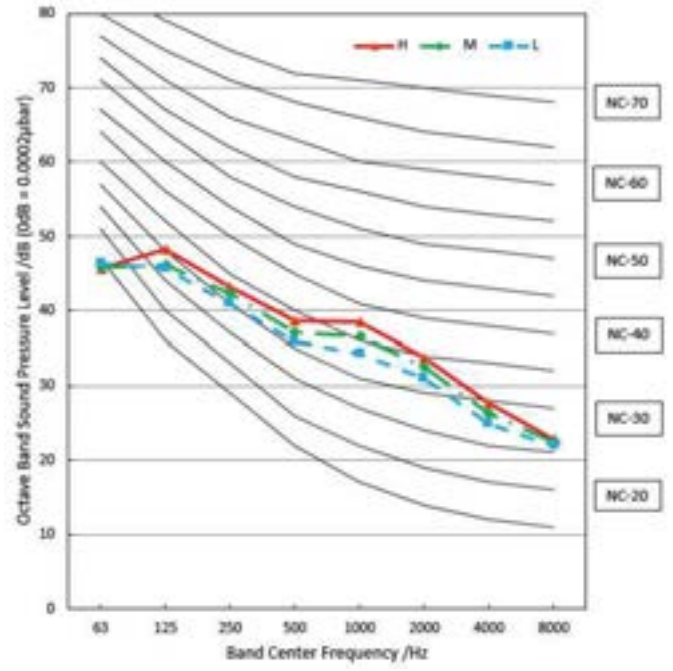
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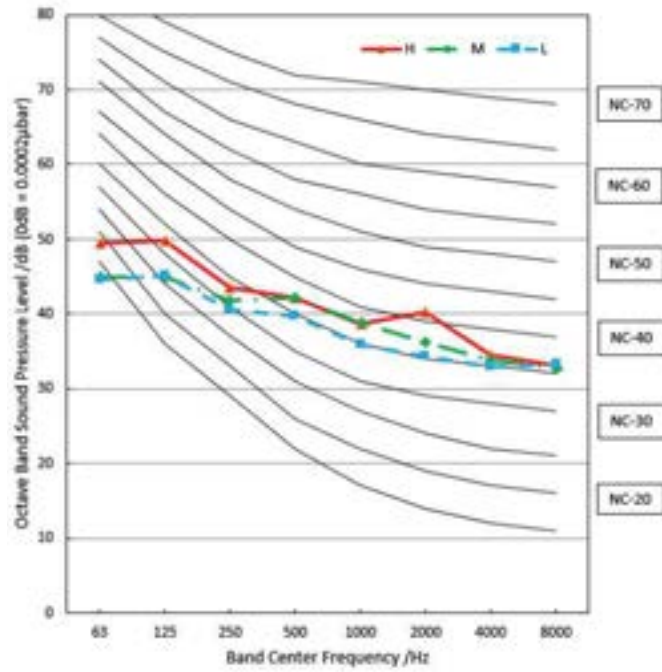
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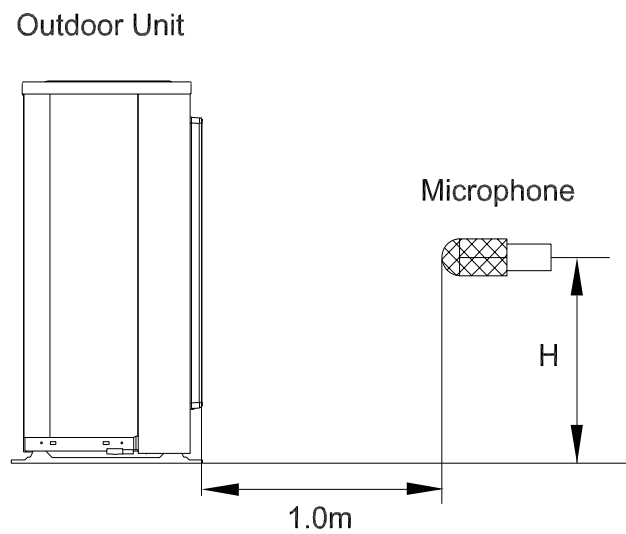
48



60



9.2 Outdoor Unit

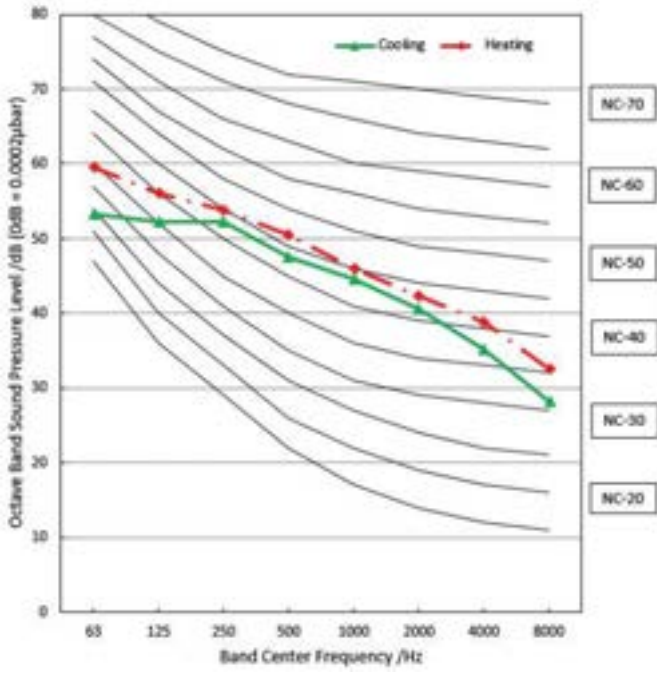


Note: $H = 0.5 \times$ height of outdoor unit

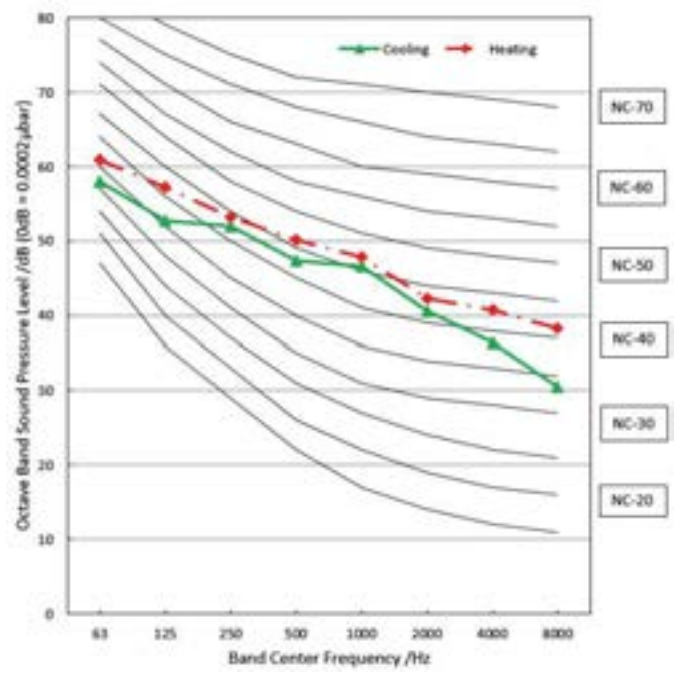
Notes:

- 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 arrangement 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.

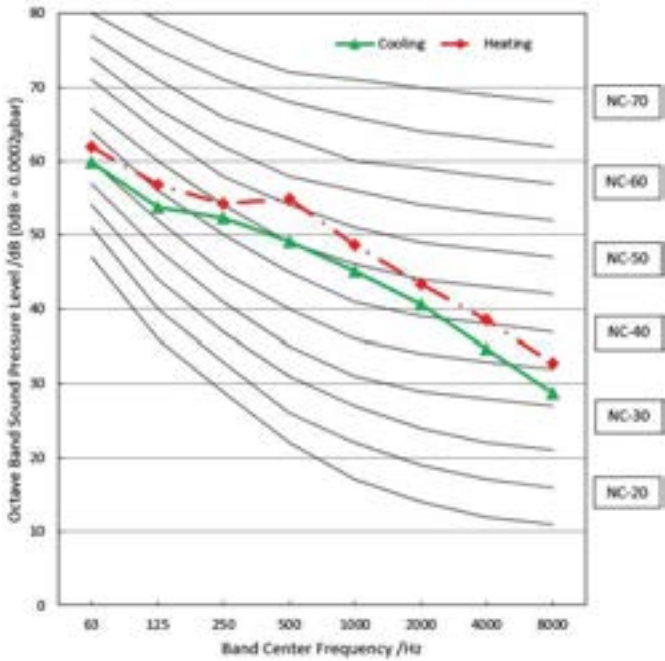
MUER-09-H14-E



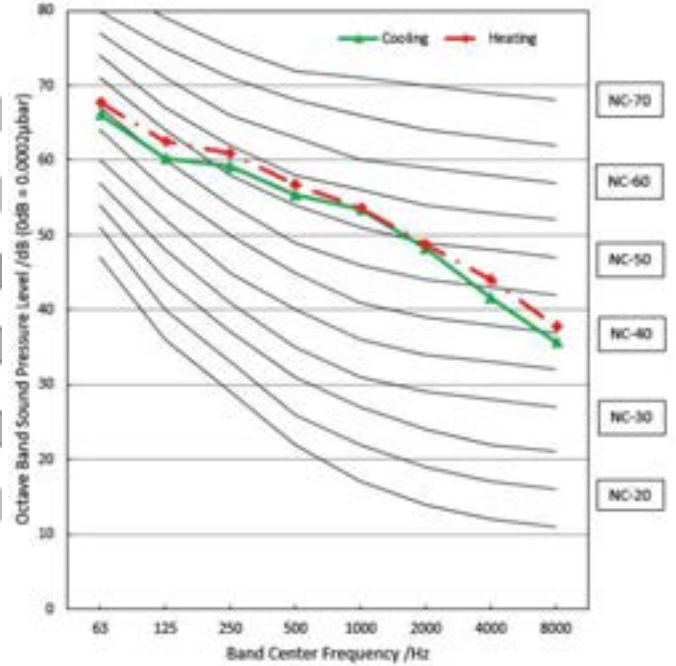
MUER-12-H14-E



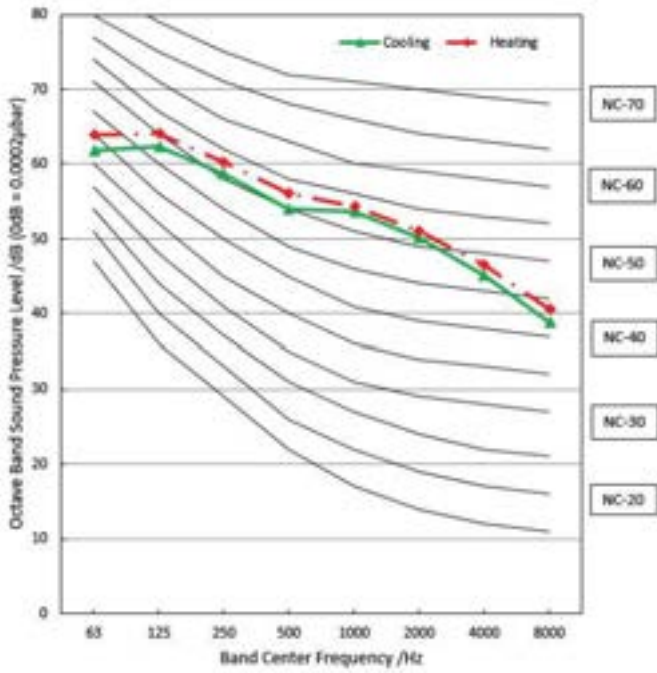
MUER-18-H14-E



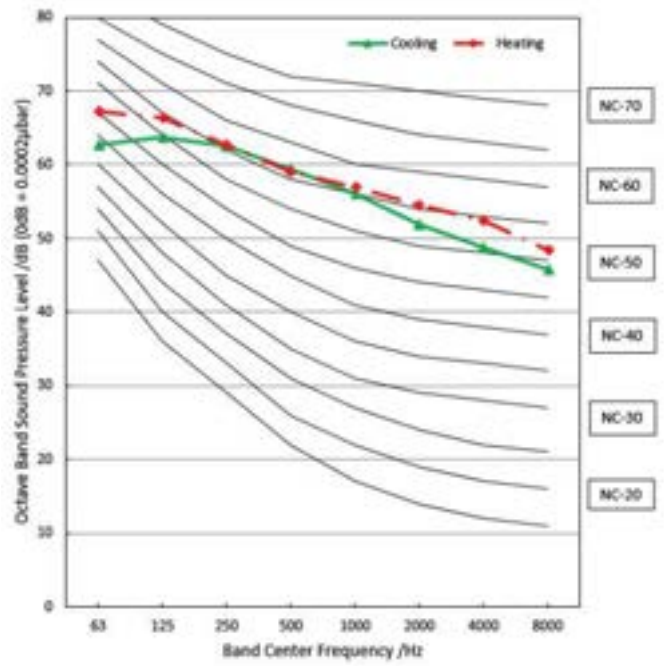
MUER-24-H14-E



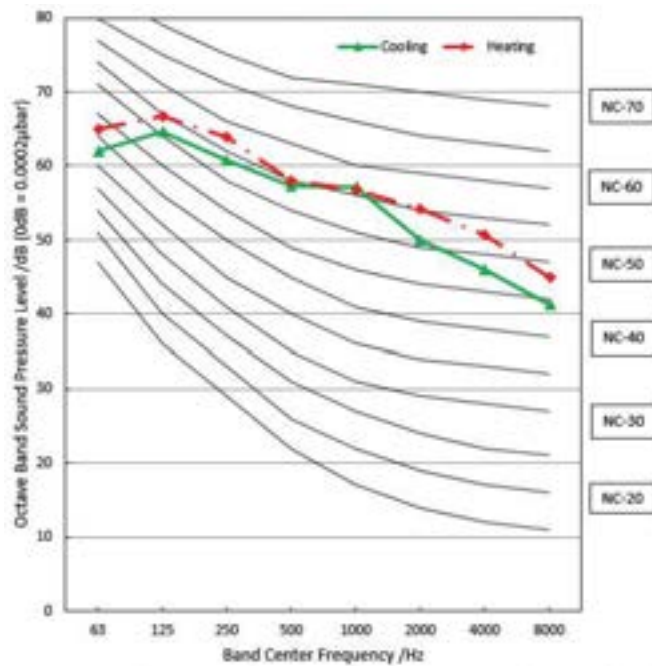
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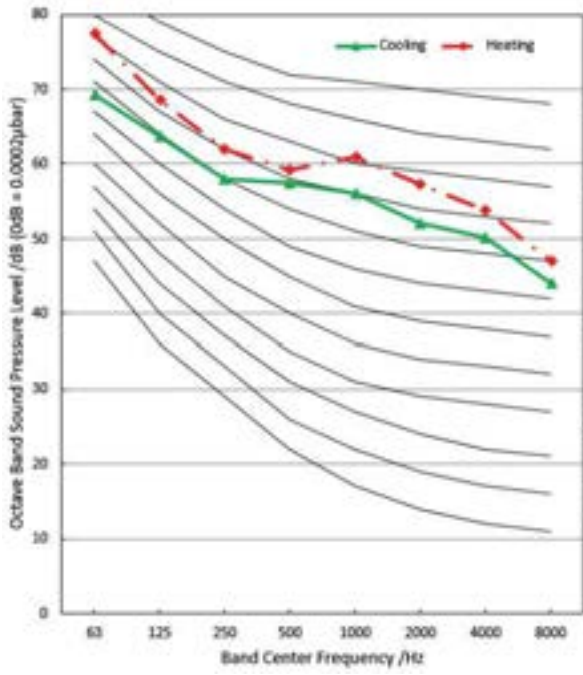
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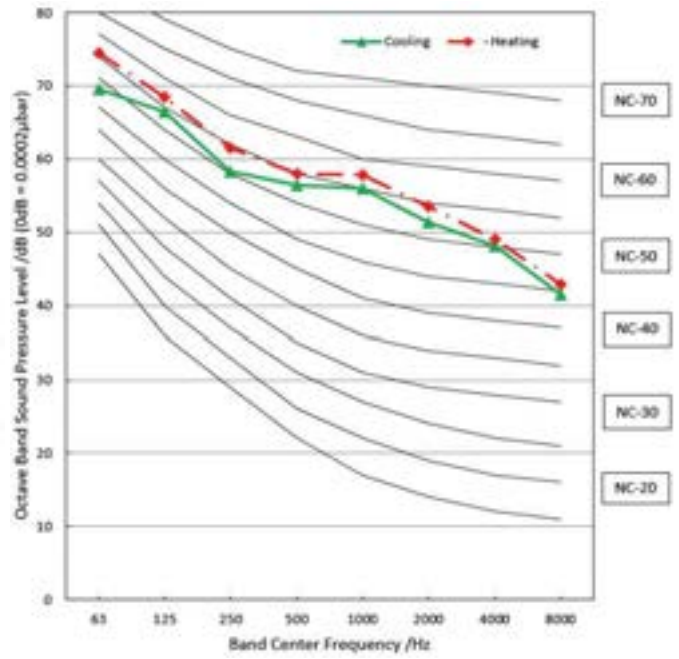
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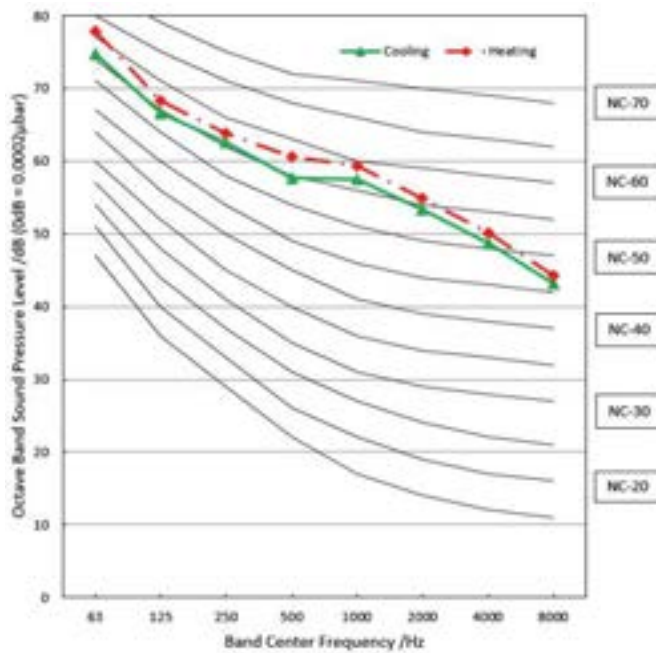
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MUER-48-H14T-E



MUER-60-H14T-E



10. Electrical Characteristics

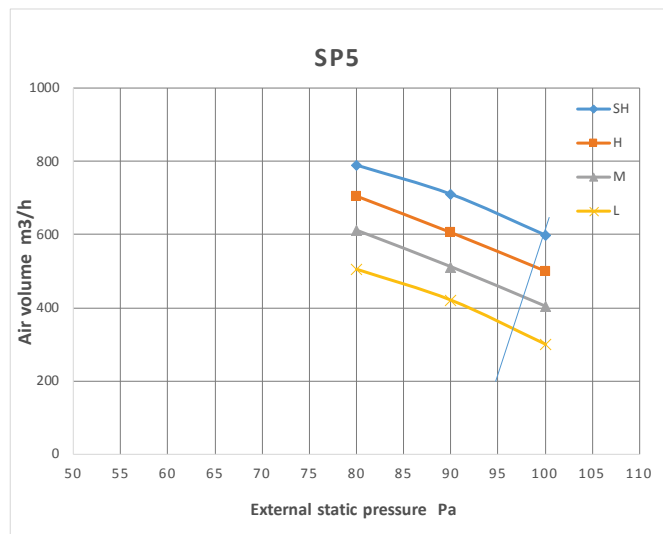
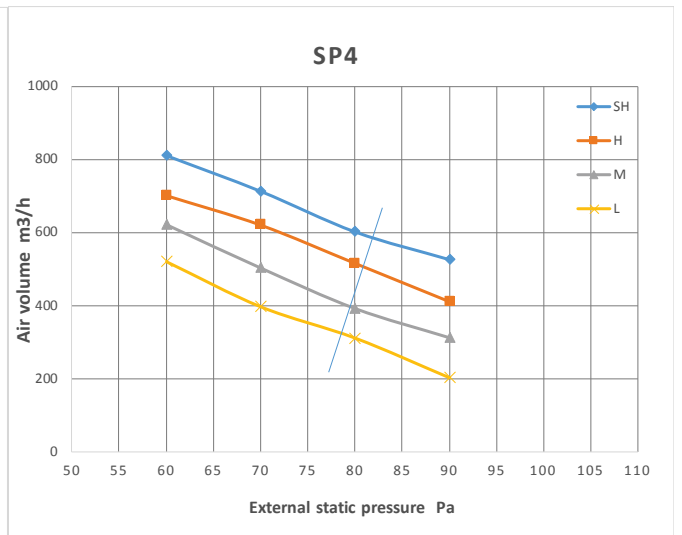
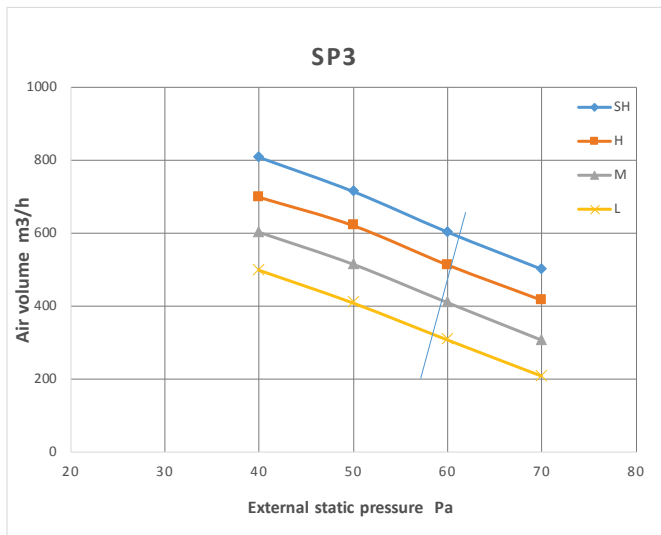
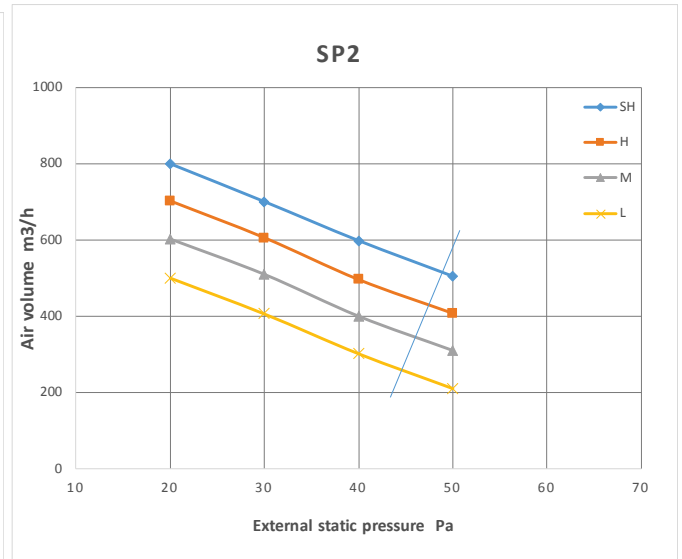
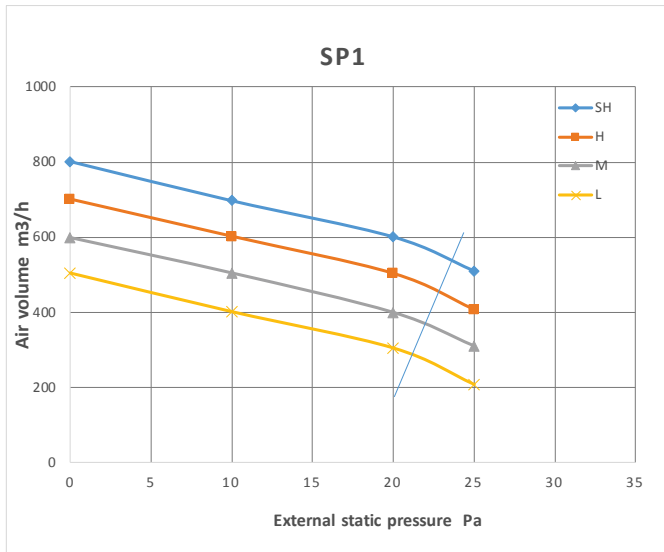
Model		09~18	24	30	36
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	Power Wiring (mm ²)	3×1.5	3×2.5	3×2.5	3×4.0
	Circuit Breaker/ Fuse (A)	25/20	25/20	40/30	40/30
Indoor/Outdoor Connecting Wiring	Weak Electric Signal)(mm ²)	/	/	/	/
	Strong Electric Signal)(mm ²)	4×1.0	4×1.0	4×1.0	4×1.0

Capacity (Btu/h)		42	48	48-60
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	380-415V, 50Hz
	Power Wiring (mm ²)	3×4.0	3×6.0	5×2.5
	Circuit Breaker/ Fuse (A)	50/40	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

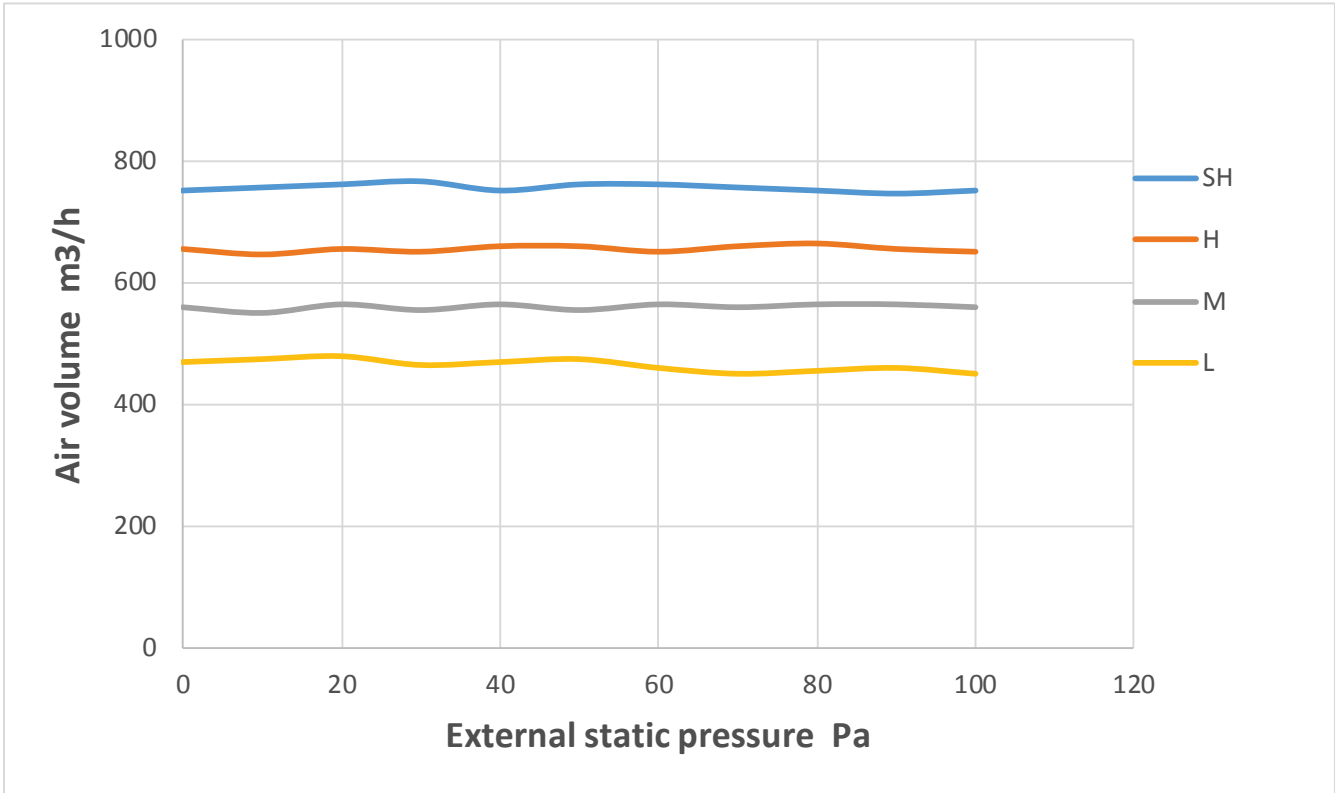
NOTE: Electric auxiliary heating type circuit breaker/fuse need to add more than 10 A.

11. Static Pressure

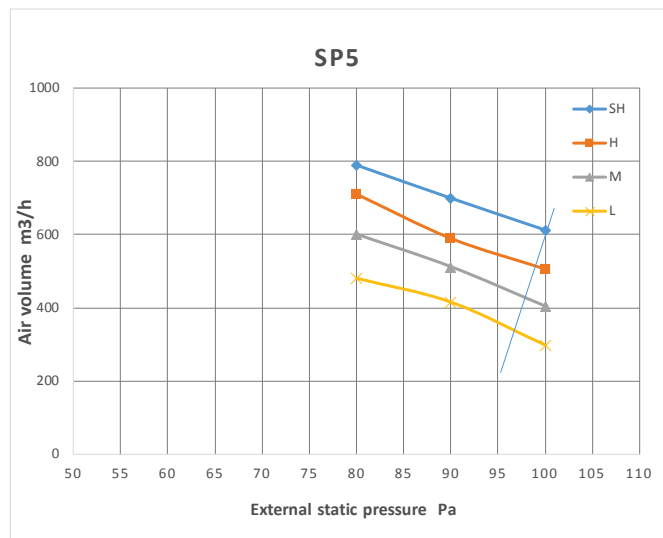
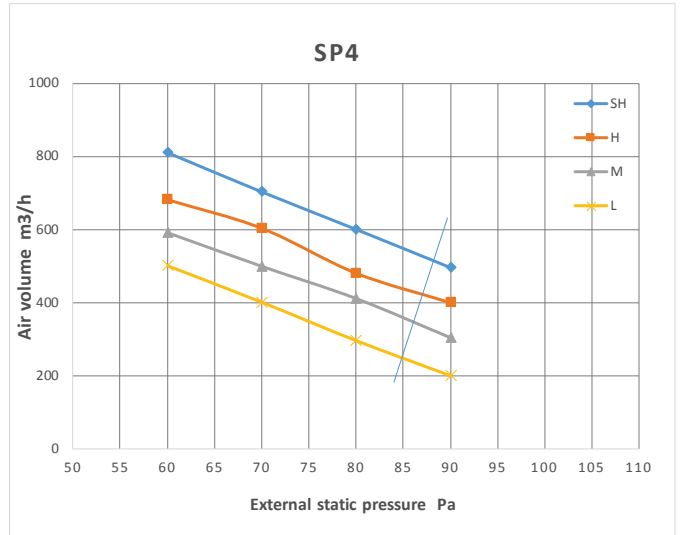
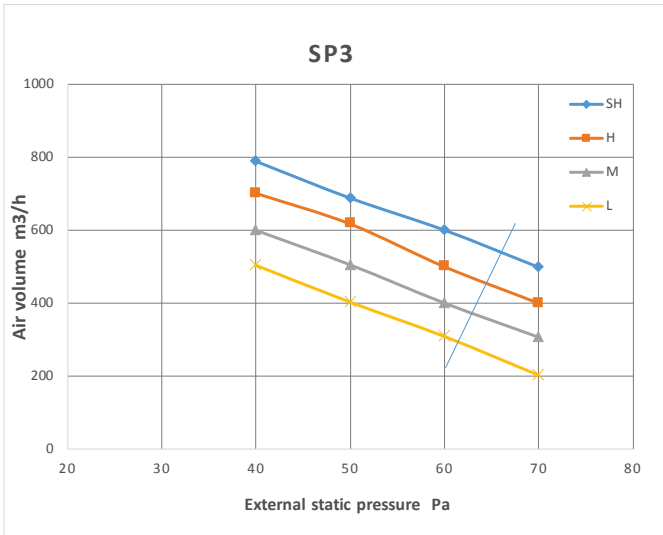
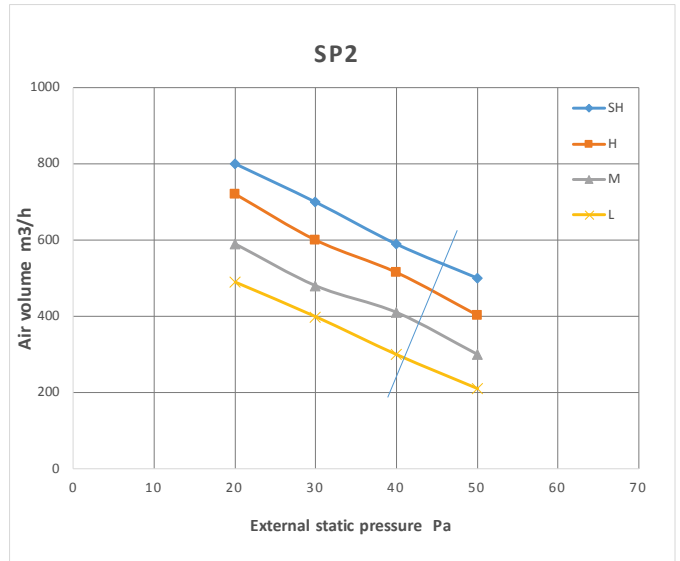
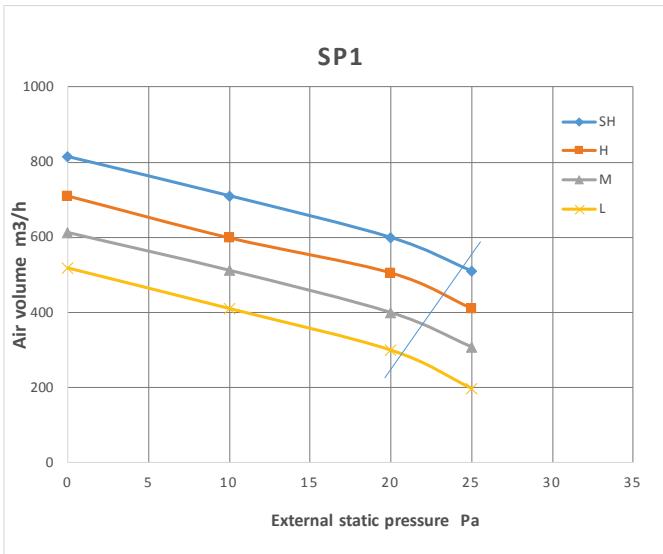
MUCR-09-H14-I



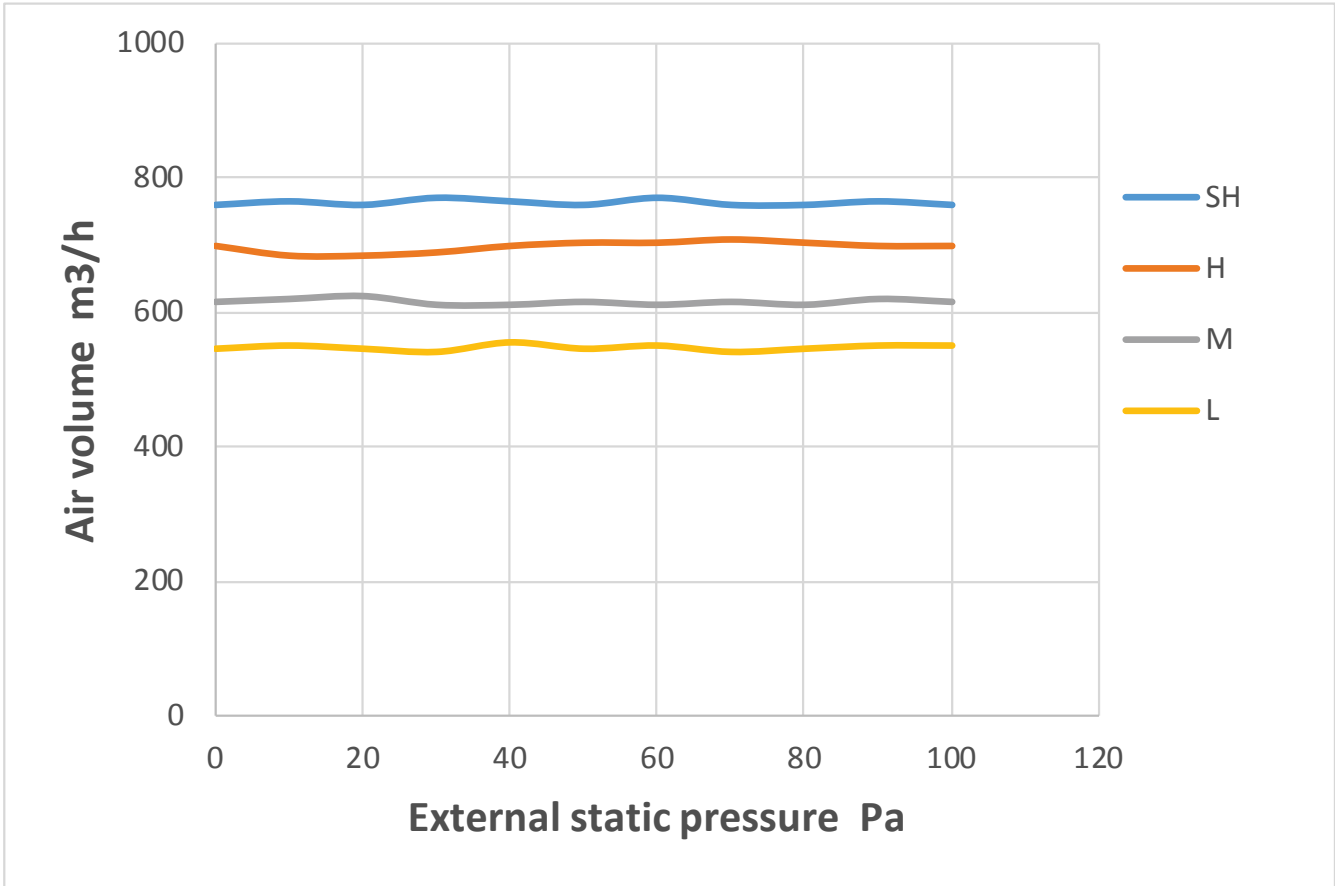
Constant air volume



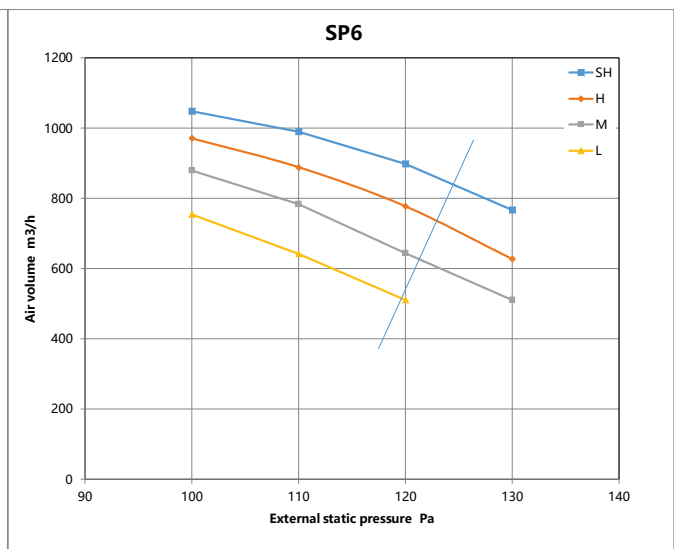
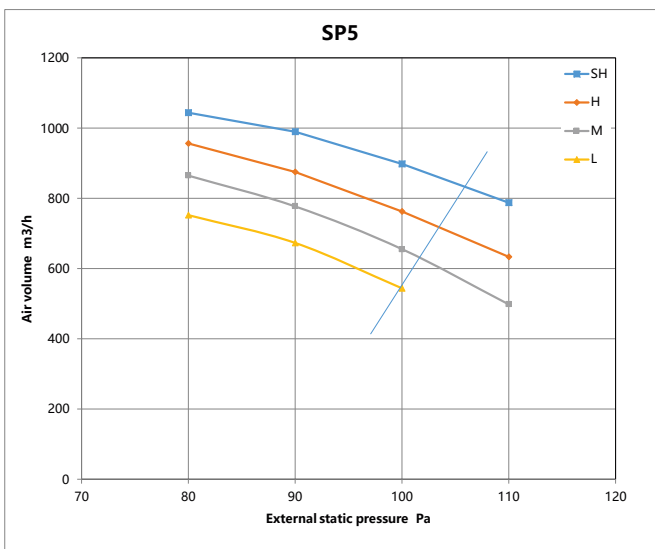
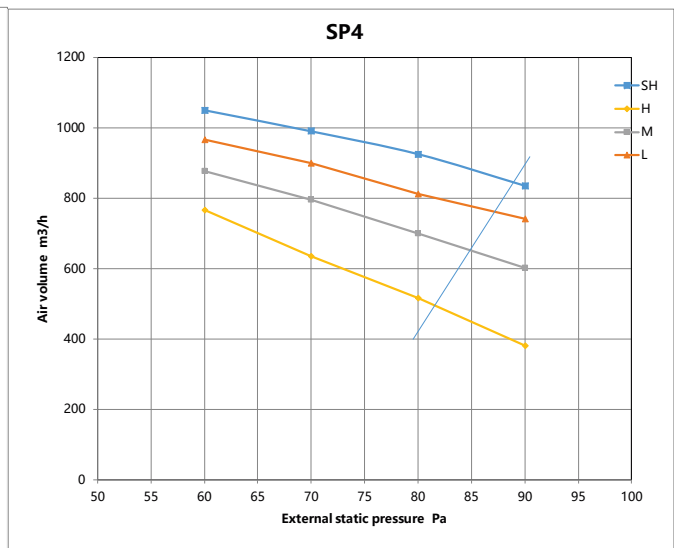
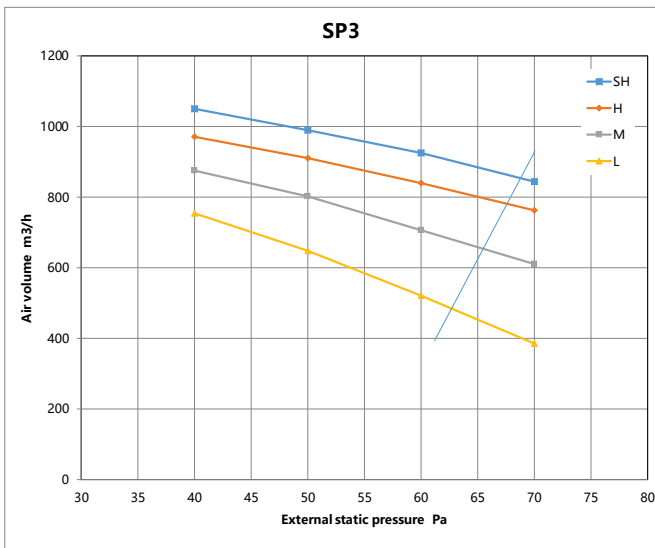
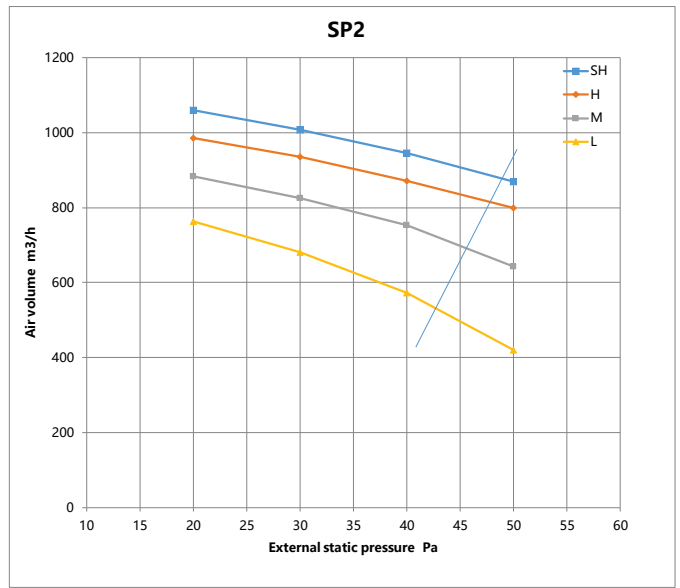
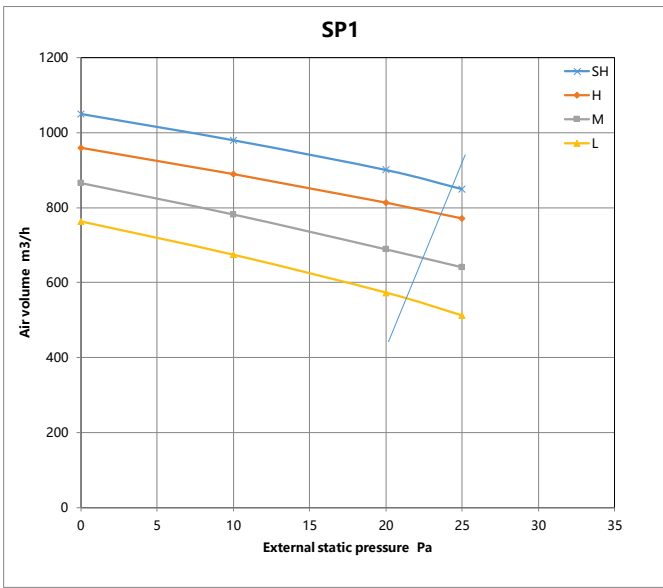
MUCR-12-H14-I

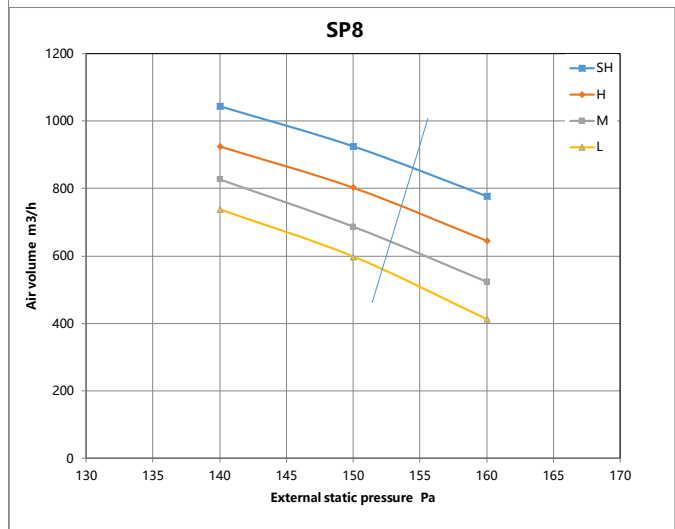
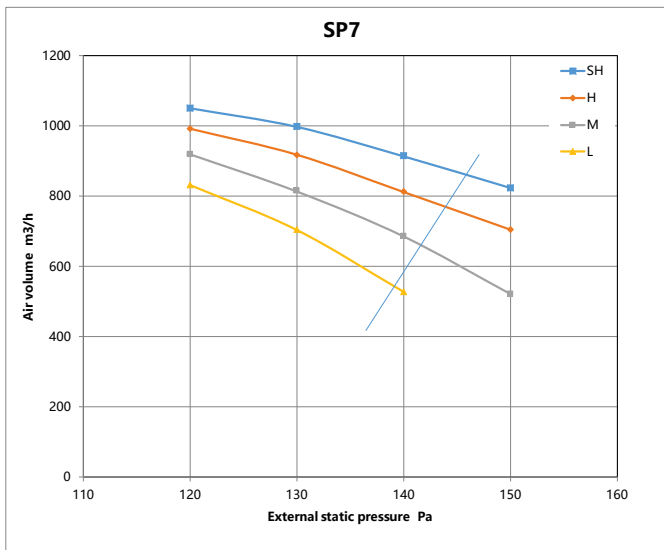


Constant air volume

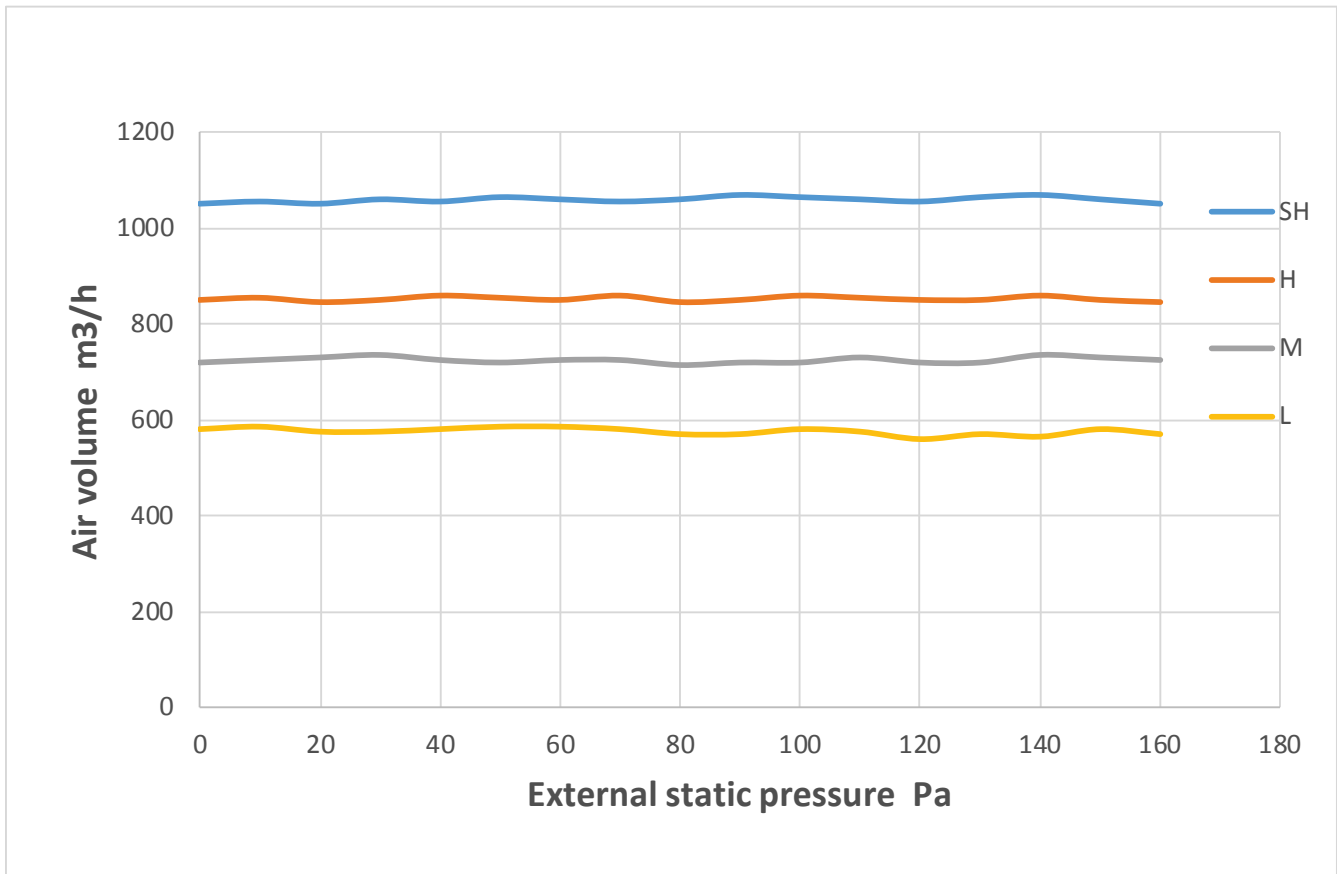


MUCR-18-H14-I

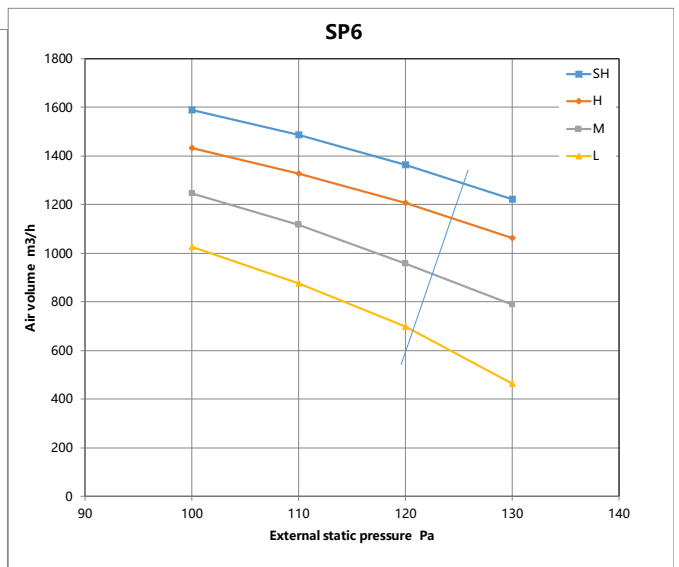
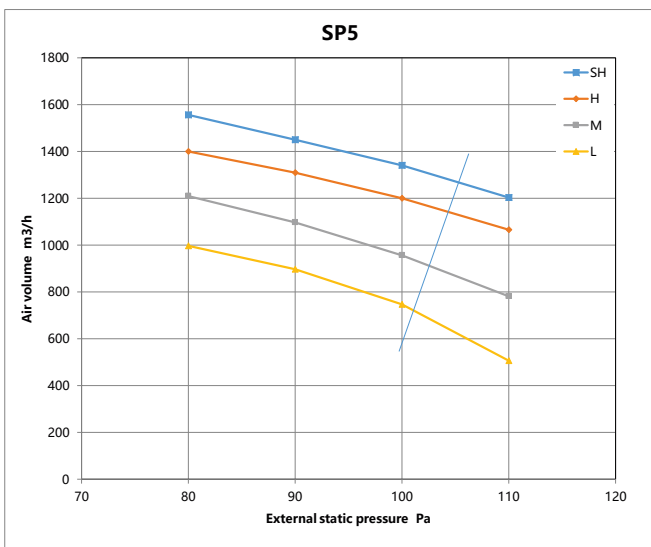
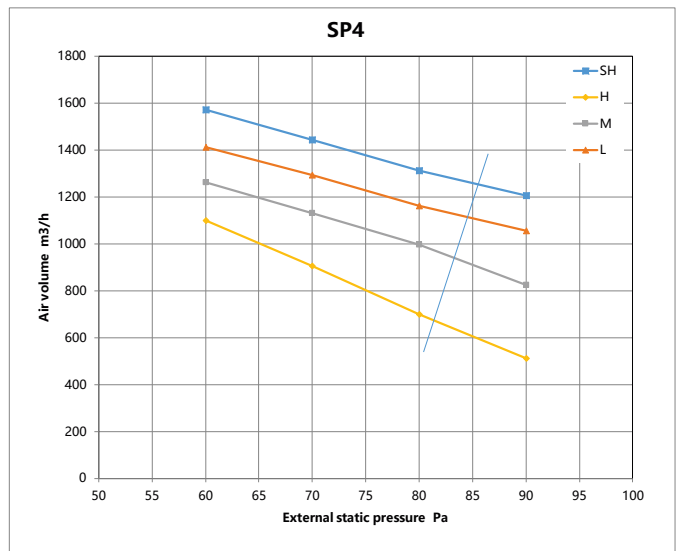
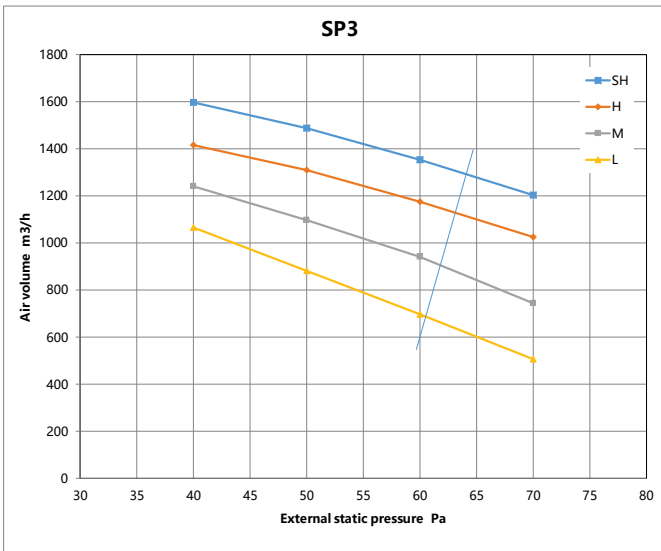
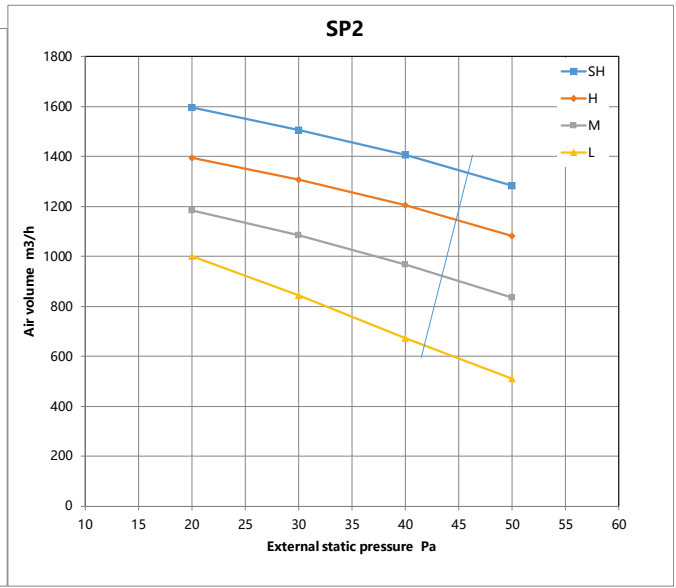
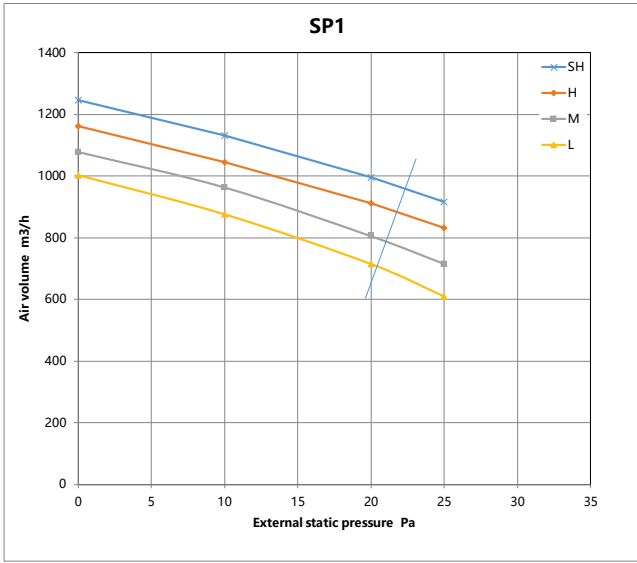


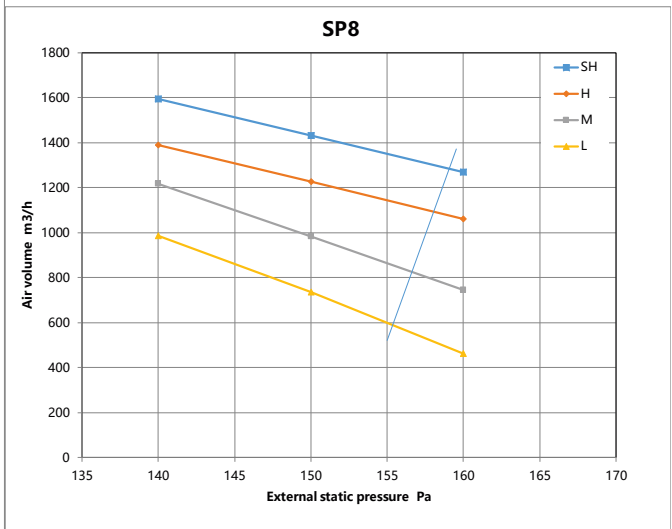
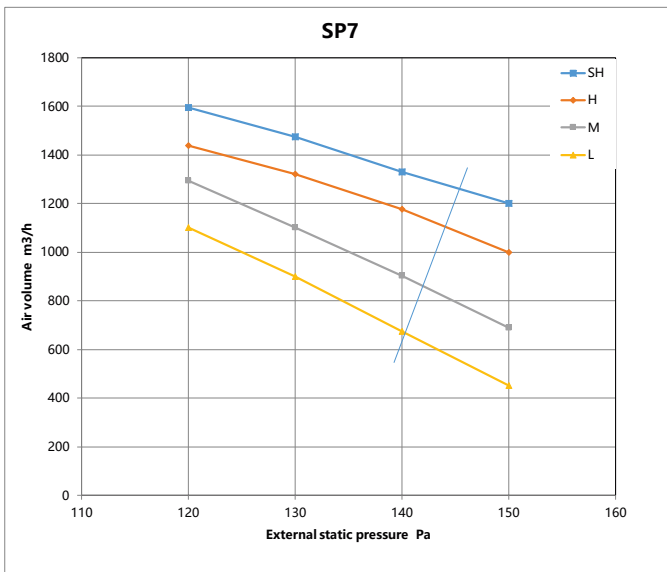


Constant air volume

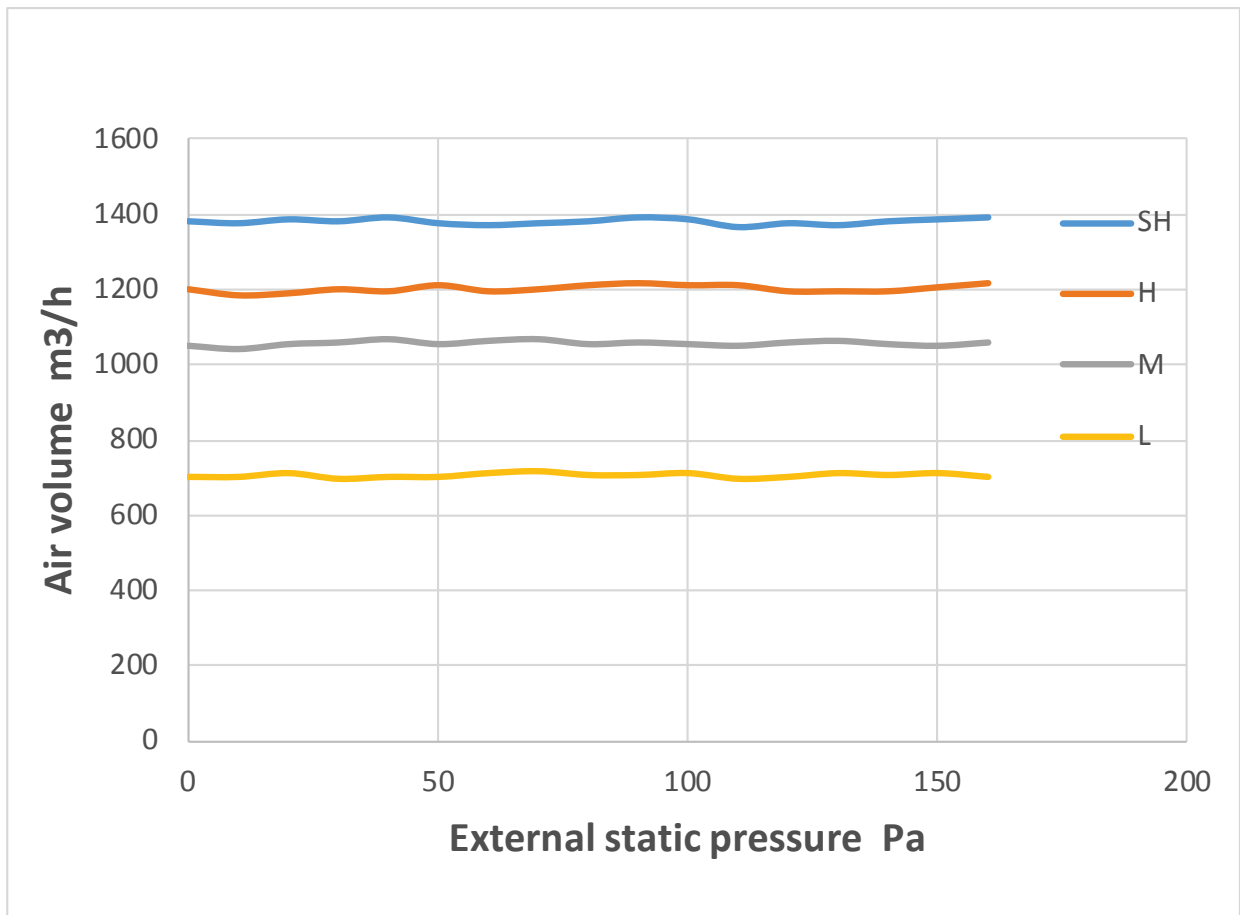


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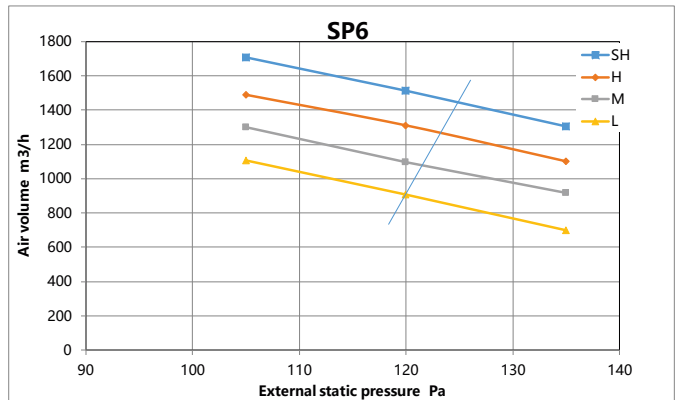
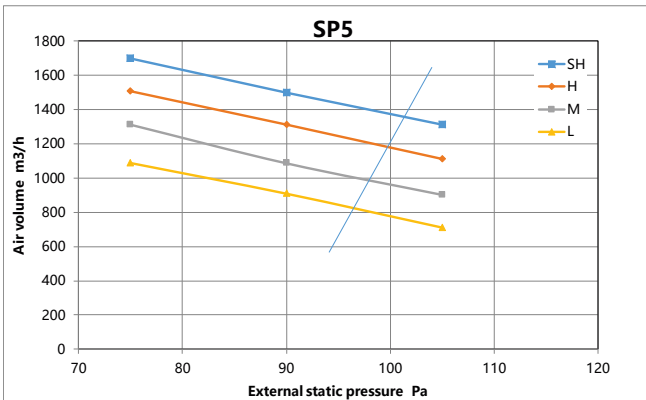
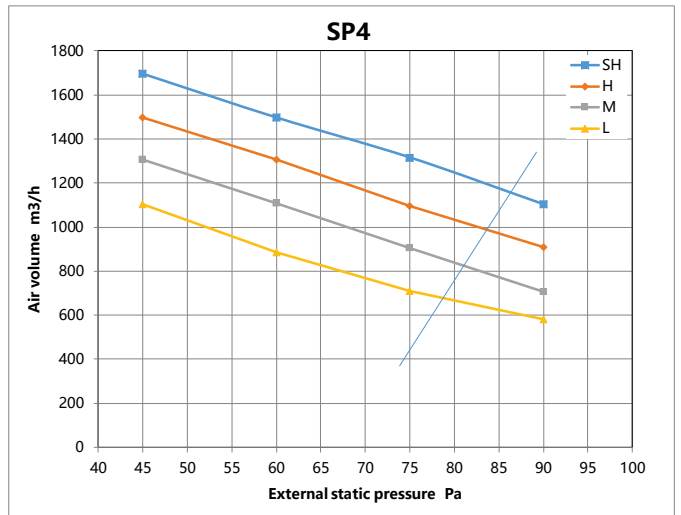
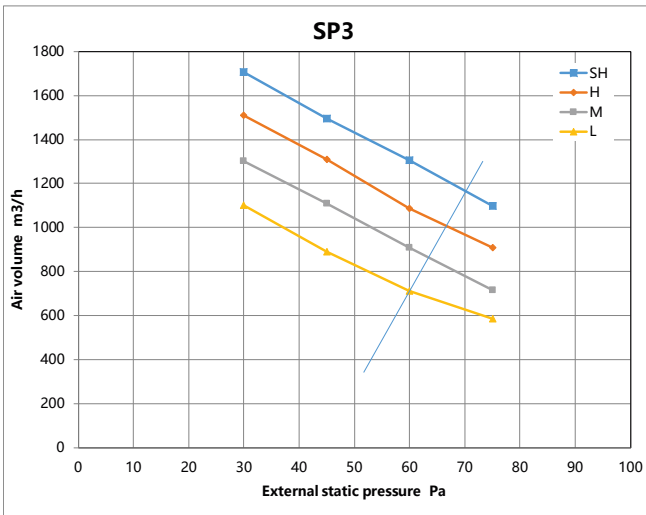
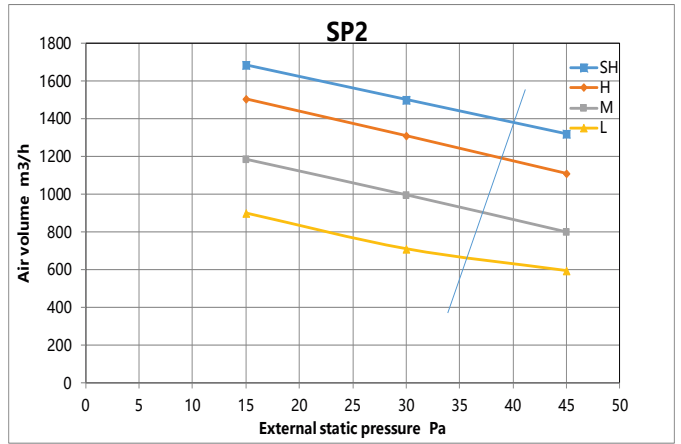
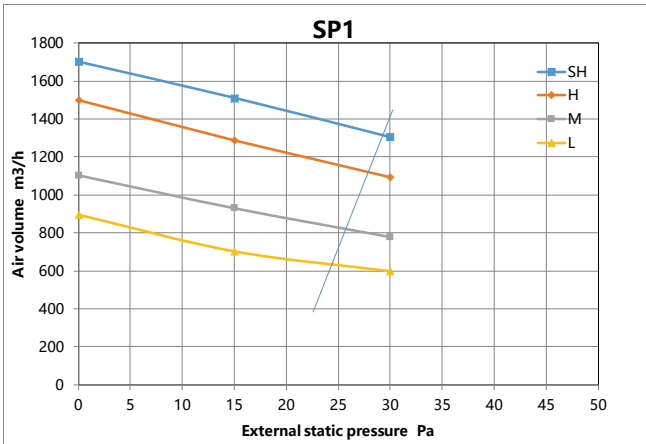


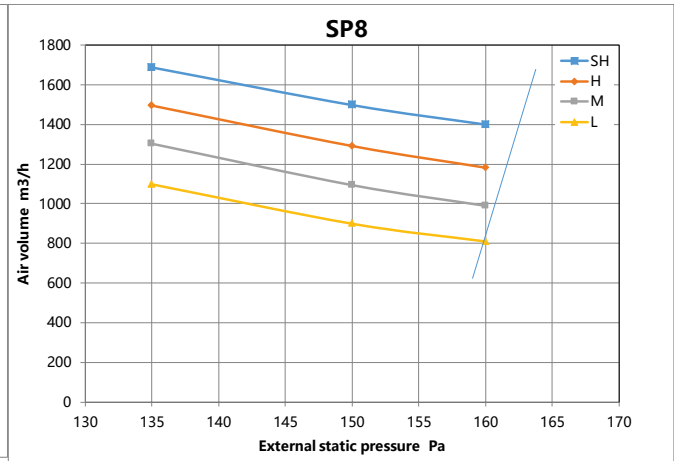
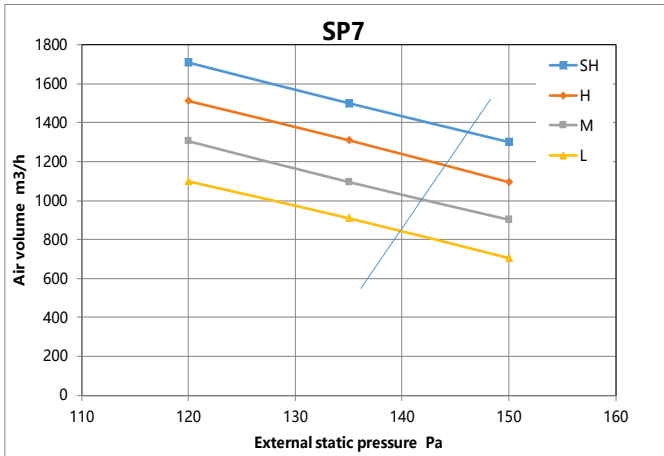


Constant air volume

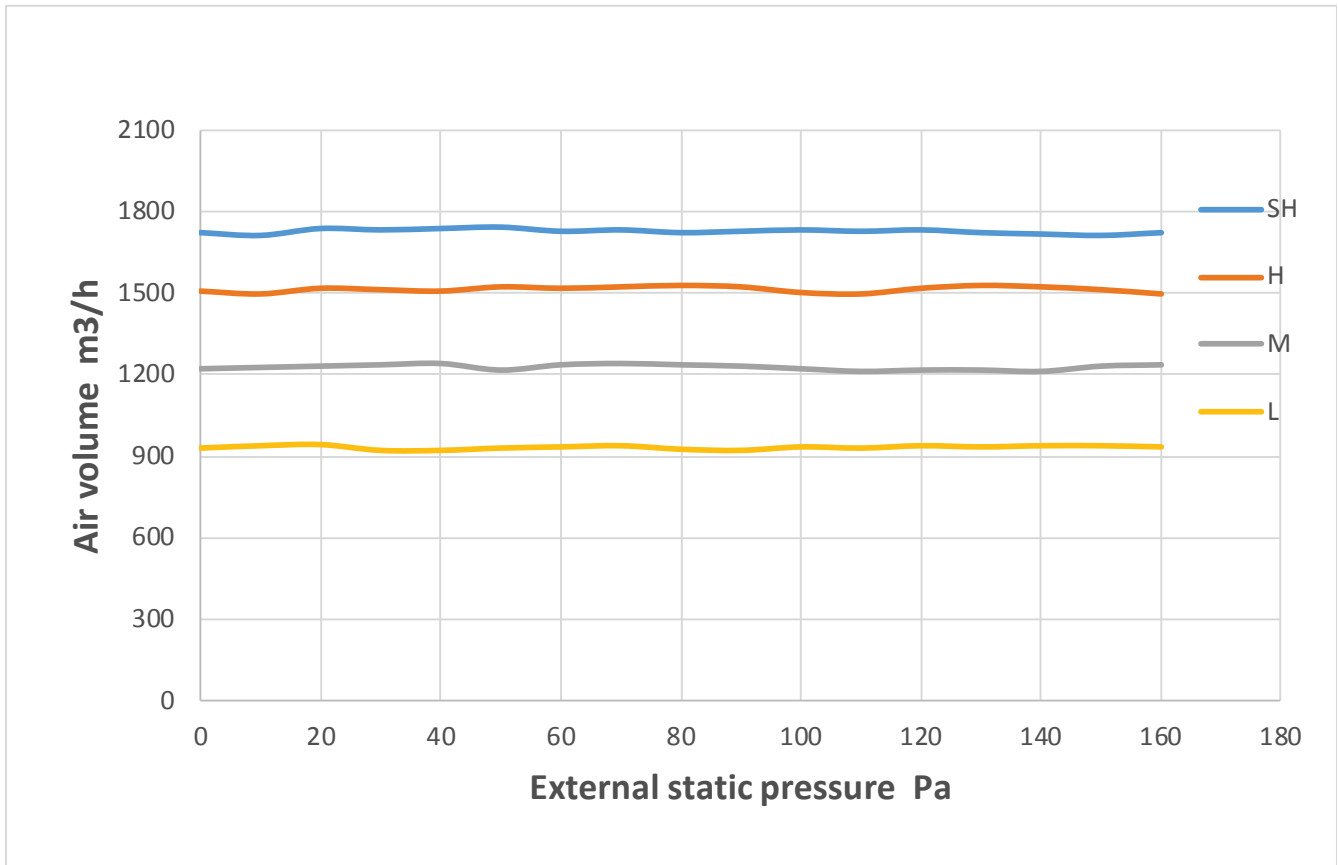


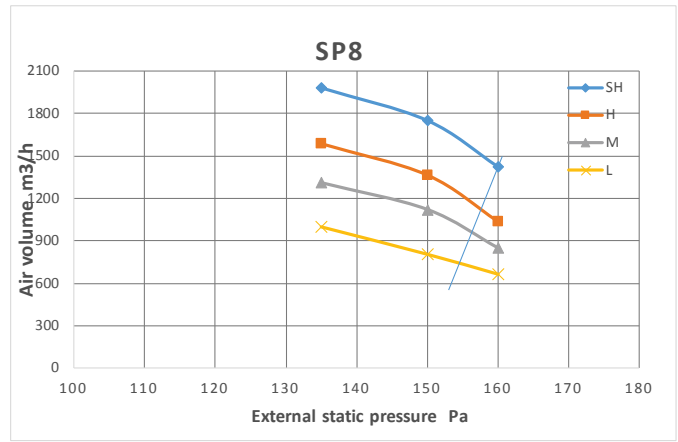
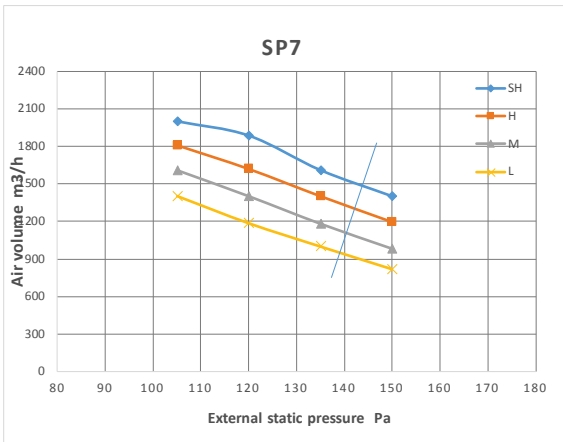
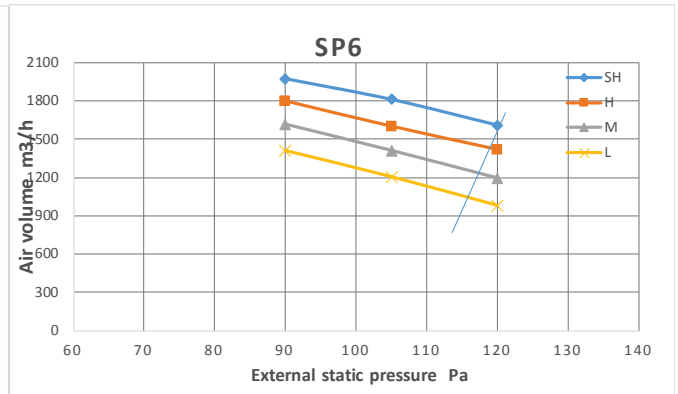
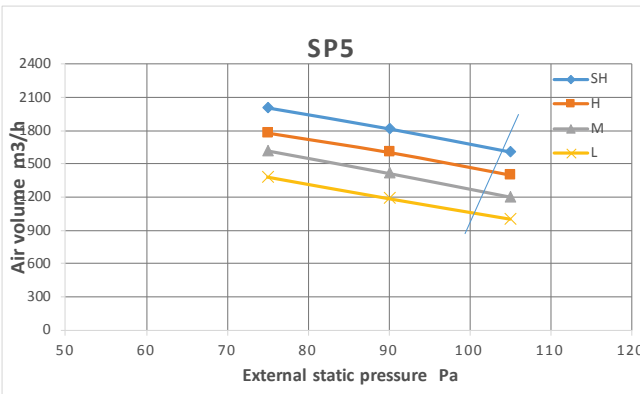
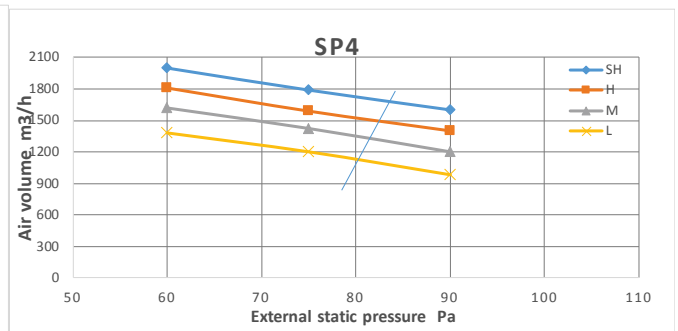
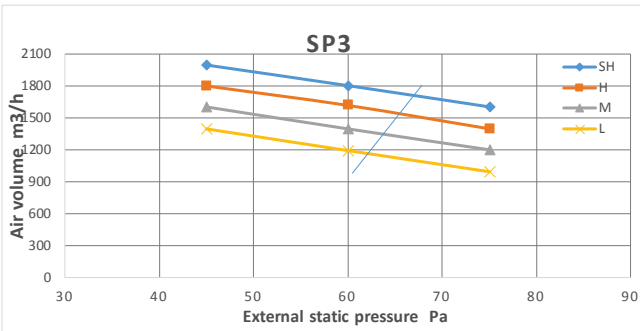
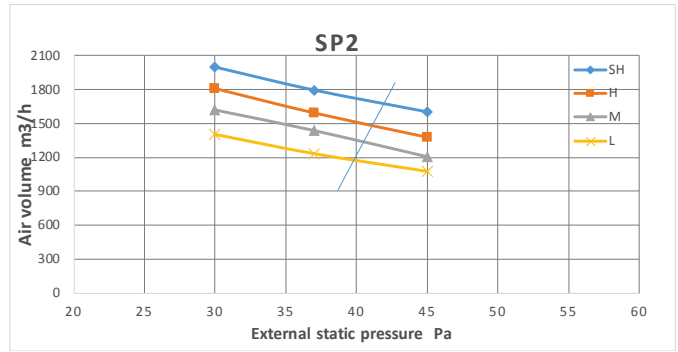
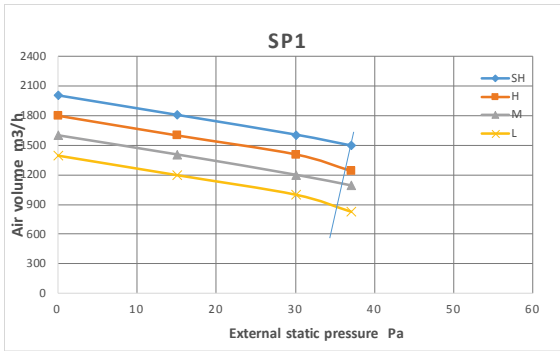
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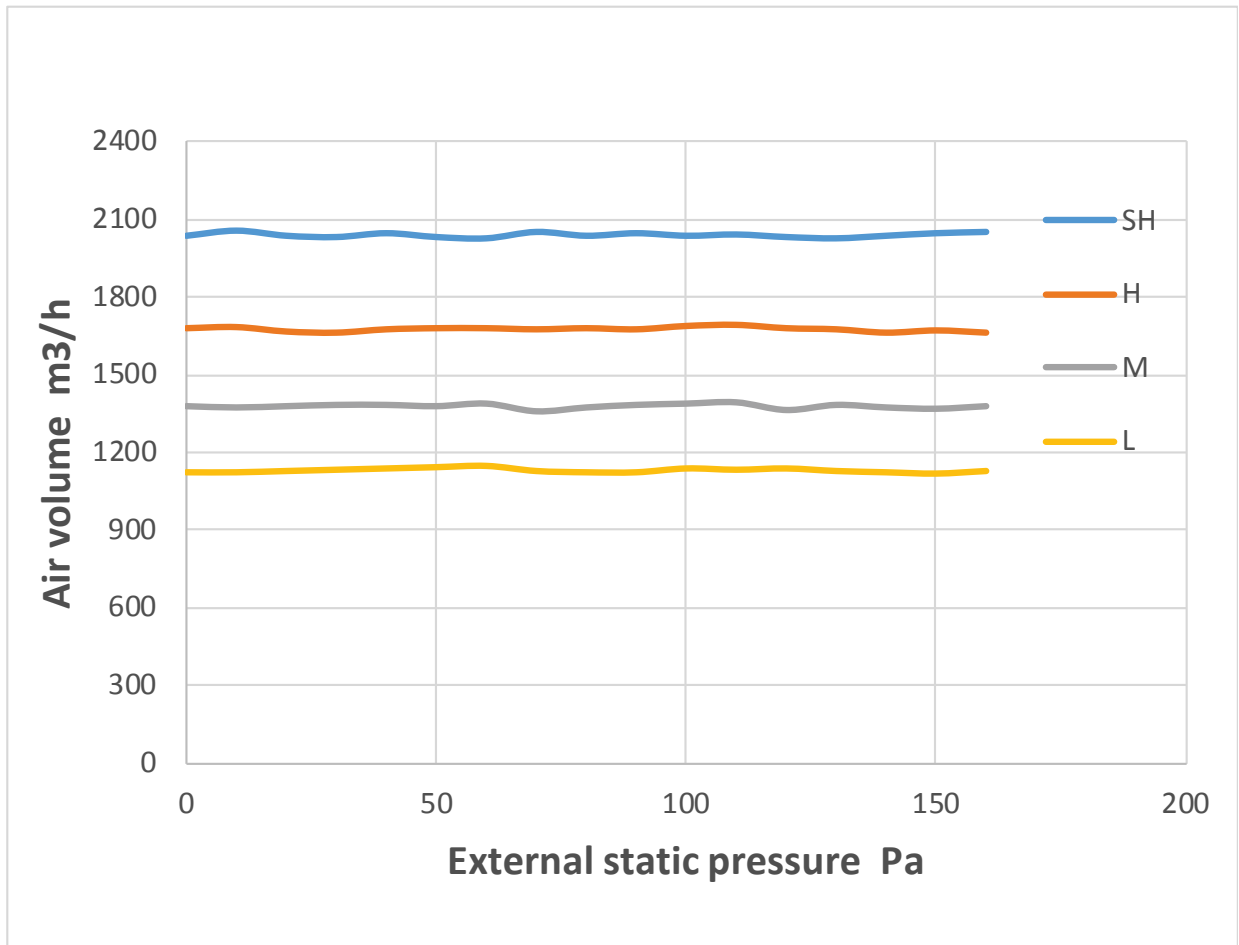


Constant air volume

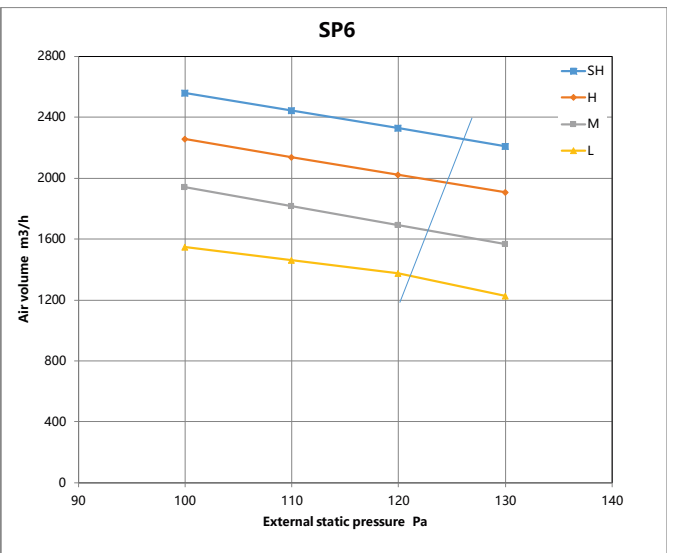
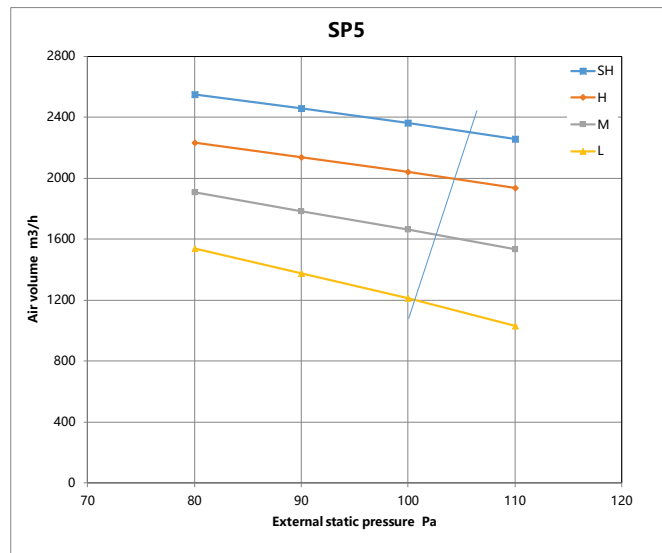
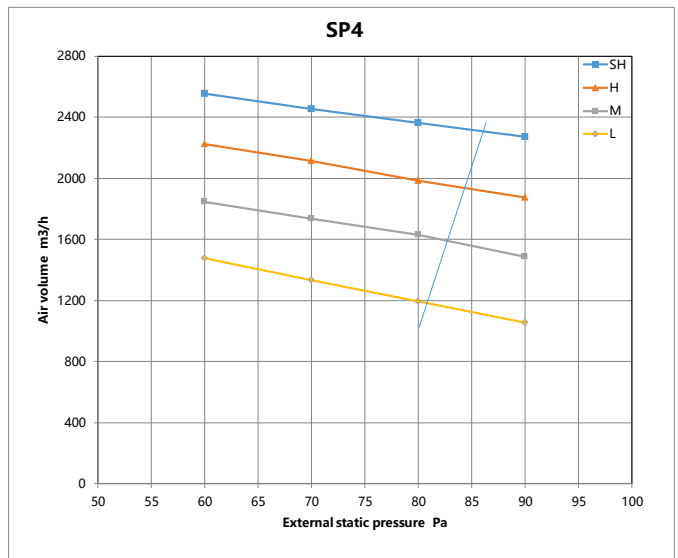
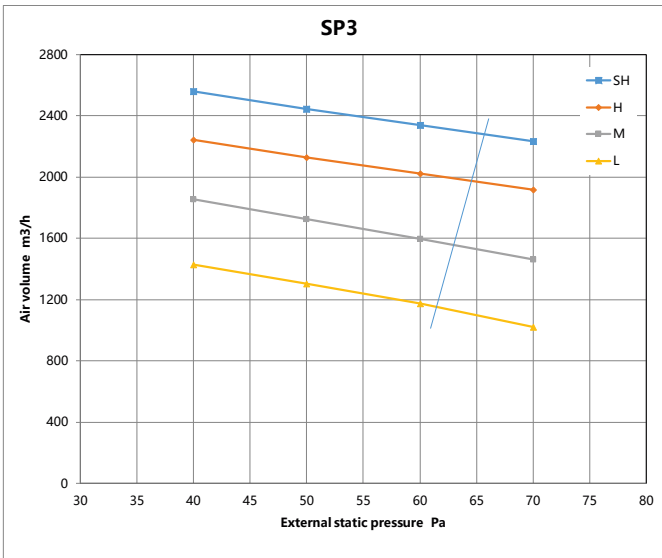
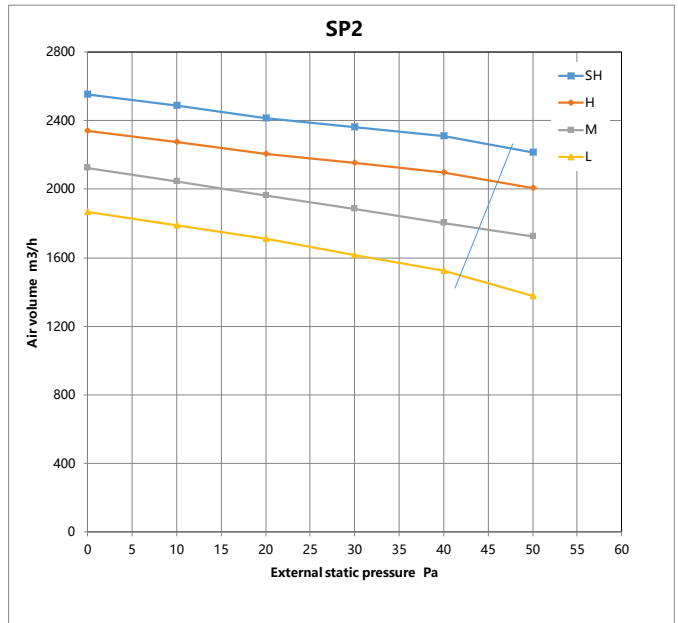
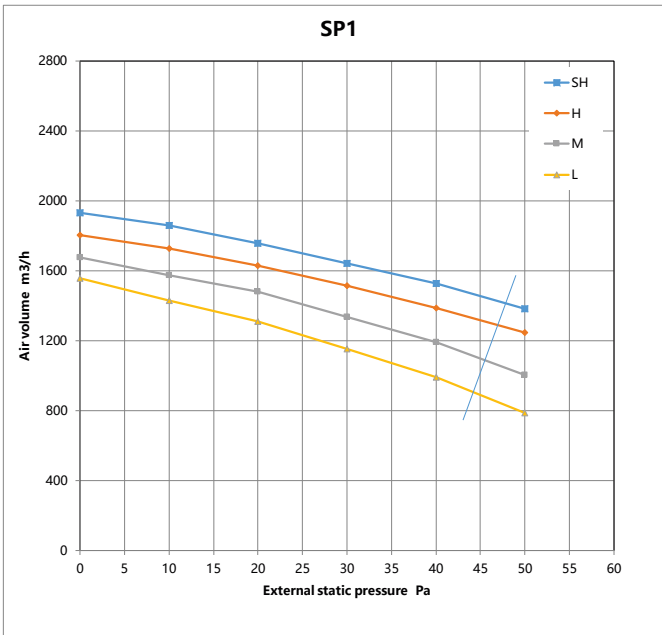


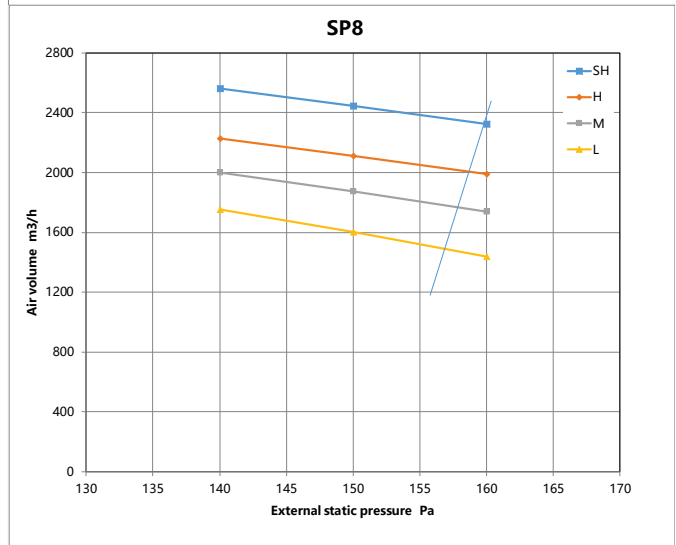
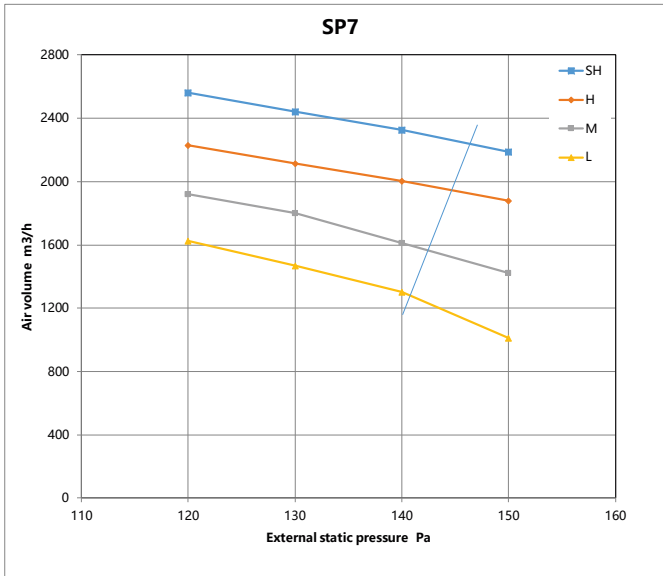


Constant air volume

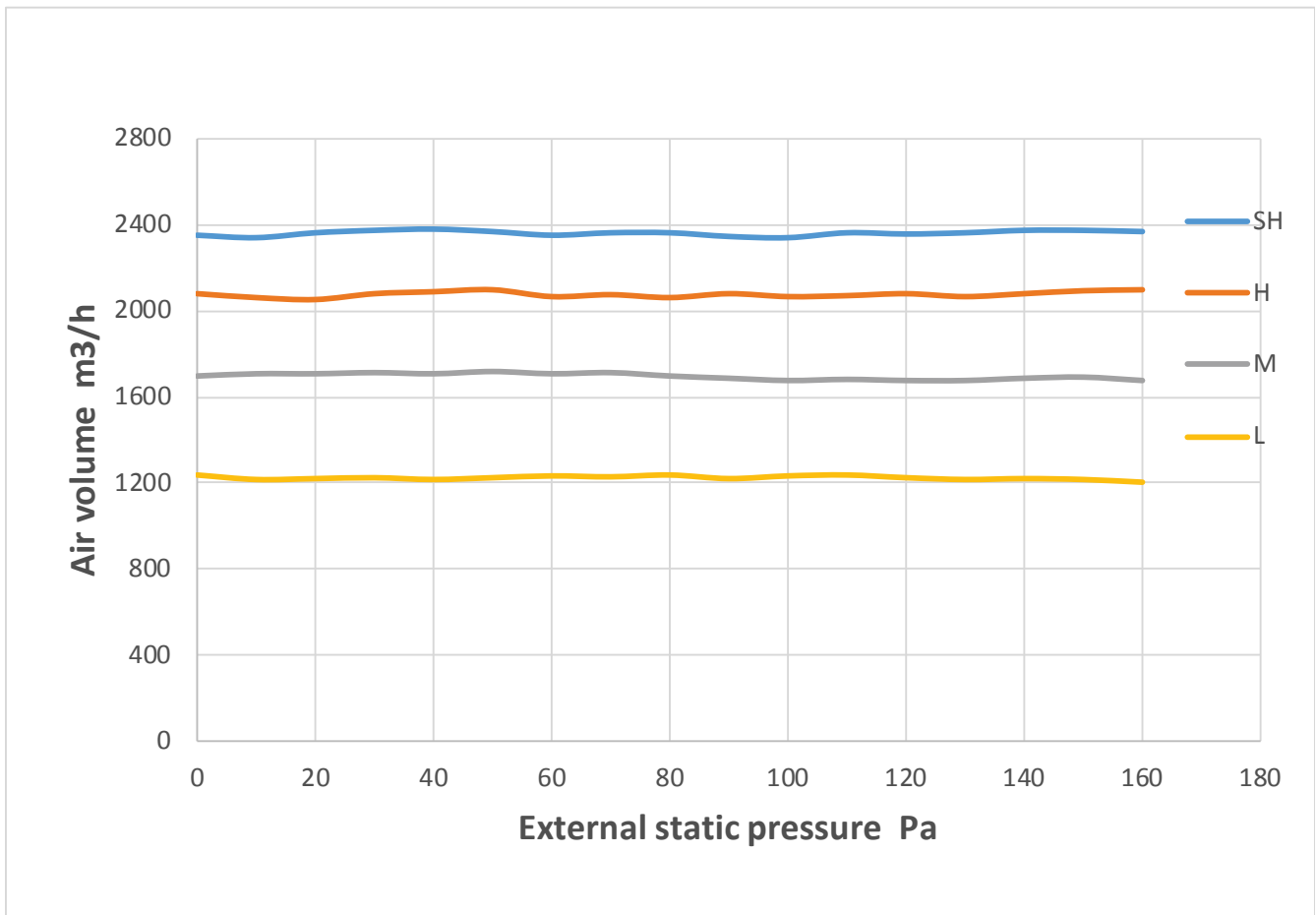


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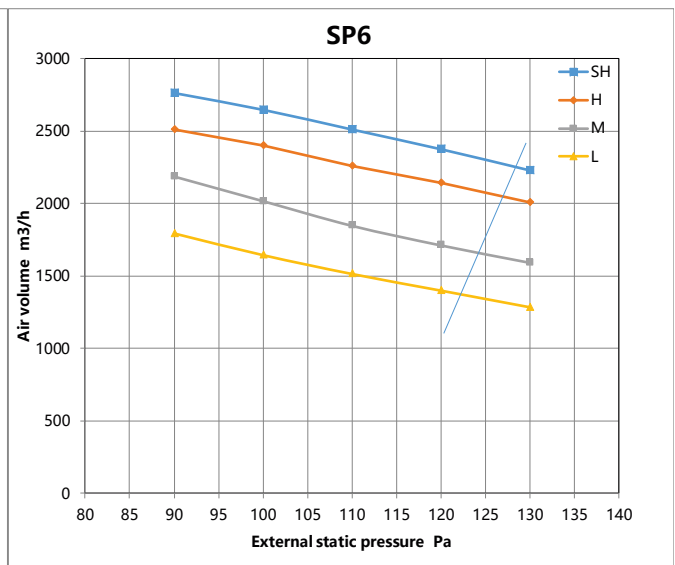
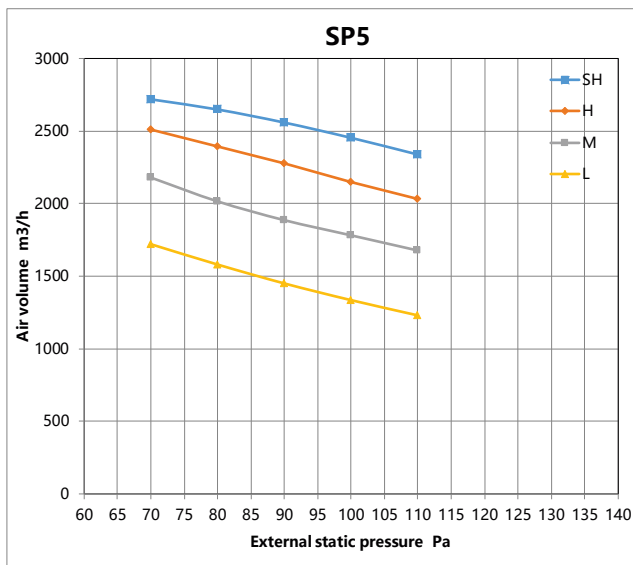
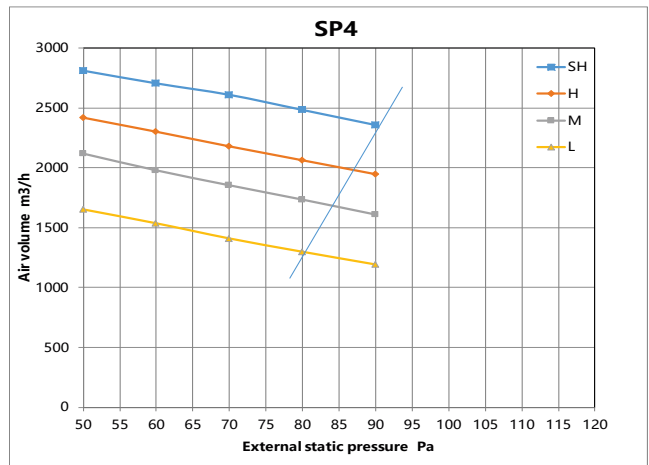
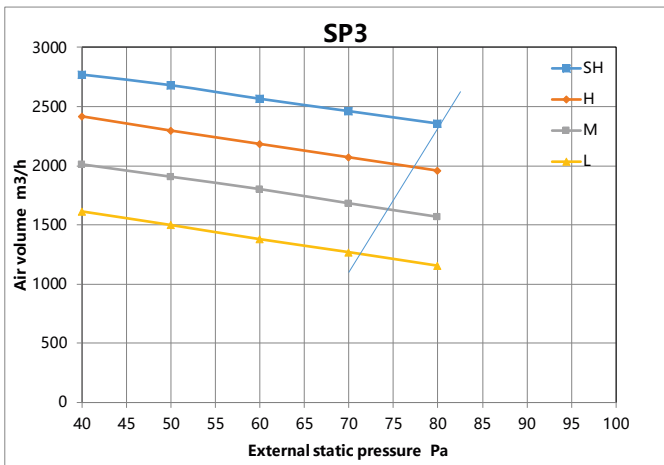
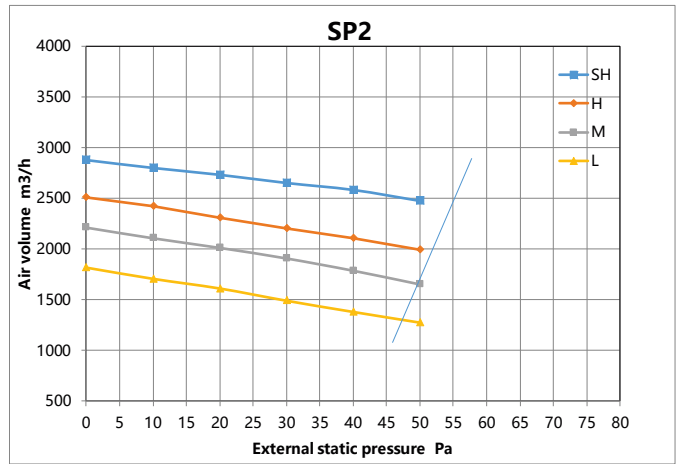
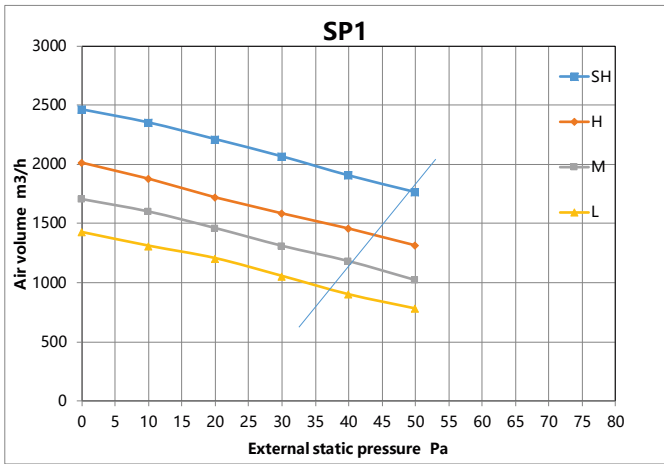


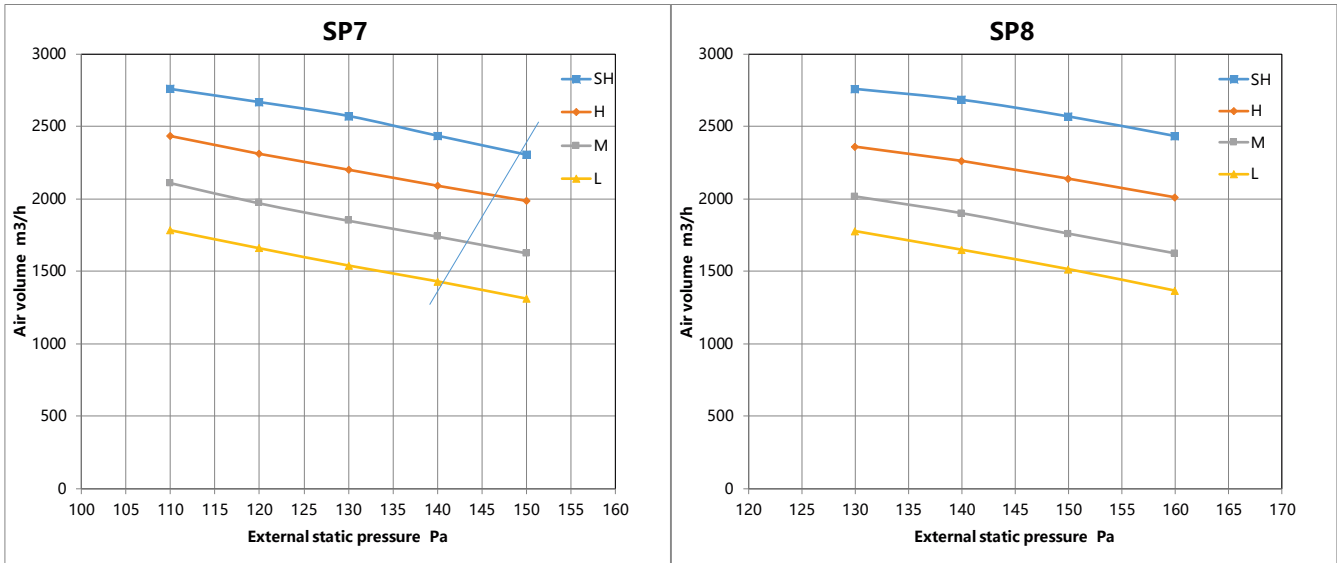


Constant air volume

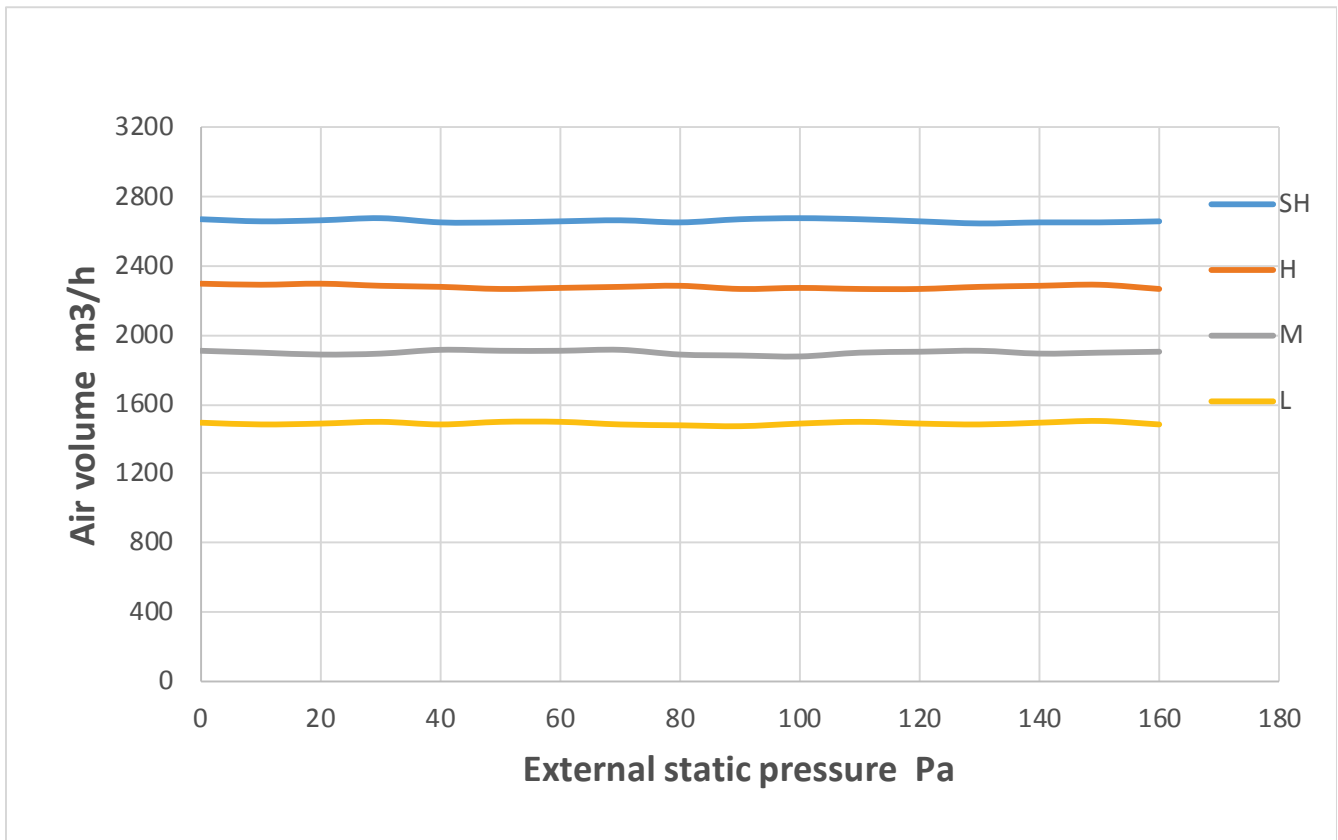


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Constant air volume



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
CDIFTEMP	Cooling shutdown temperature
HDIFTEMP2	Heating shutdown temperature
TCDE1	Exit defrost temperature1
TCDE2	Exit defrost temperature2 (maintain for a period of time)
TIMING_DEFROST_TIME	Enter defrost time

In this manual, such as CDIFTEMP, HDIFTEMP2, TCDE1, TCDE2, TIMING_DEFROST_TIME...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

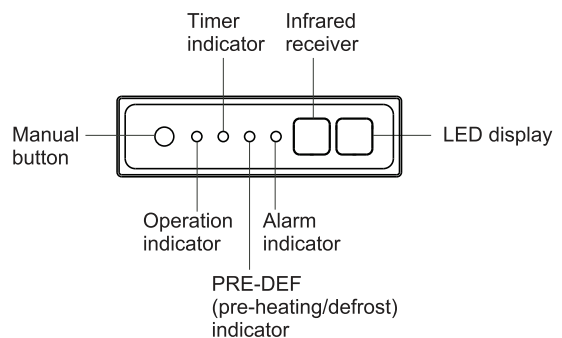
Preheating is automatically activated when T4 sensor is lower than setting temperature.

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.
- Auto fan: In fan-only mode, AC operates the same as auto fan in cooling mode with the temperature set at 24°C.

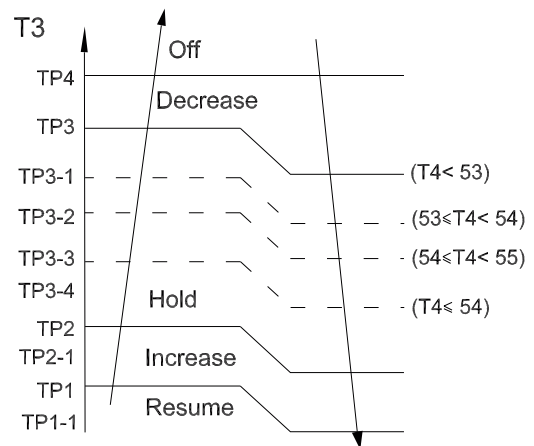
1.5 Cooling Mode

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.
 - Turning on/off turbo or sleep function
 - Various frequency limit shutdown occurs.



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

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:

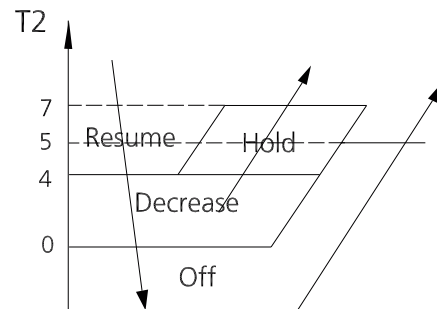
- Descent curve
 - When T1-Tsc is lower than or equal to 3.5°C, fan speed reduces to 80%;
 - When T1-Tsc is lower than or equal to 1°C, fan speed reduces to 60%;
 - When T1-Tsc is lower than or equal to 0.5°C, fan speed reduces to 40%;
 - When T1-Tsc is lower than or equal to 0°C, fan speed reduces to 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

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.

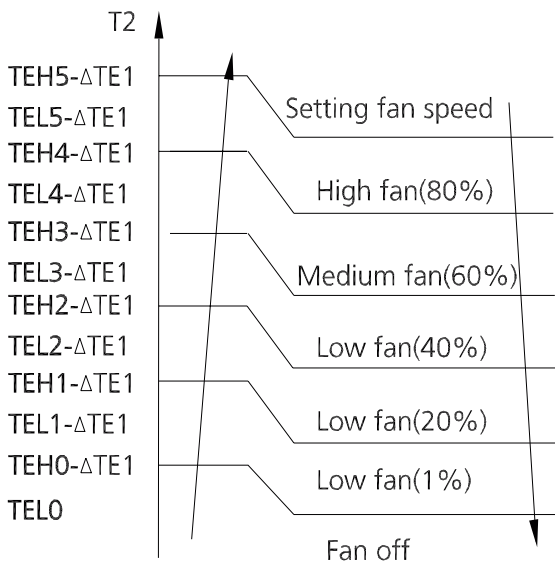
- Change setting temperature.
- Turning on/off turbo or sleep function

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%.

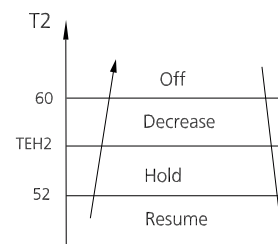
1.6.3 Outdoor Fan Control:

- 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.

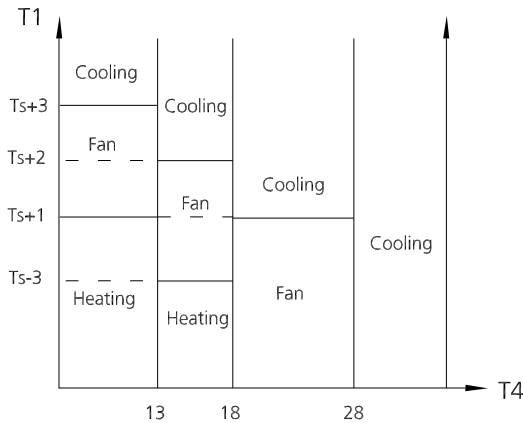
1.6.5 Evaporator Coil Temperature Protection



- 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.
- In auto mode, the machine selects cooling, heating or fan-only mode on the basis of T1, Ts and T4.



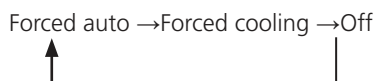
1.8 Drying mode

- 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 (Optional)

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(Optional)

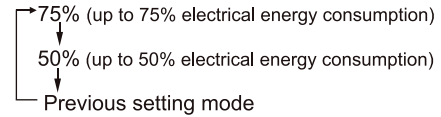
- Press “Silence” or keep pressing Fan button for more than 2 seconds on the remote control to enable the SILENCE function. While this function is active, the compressor frequency is maintained at a lower level than F3. The indoor unit will run at faint breeze(1%), which reduces noise to the lowest possible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

1.16 ECO Function(Optional)

- 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(Optional)

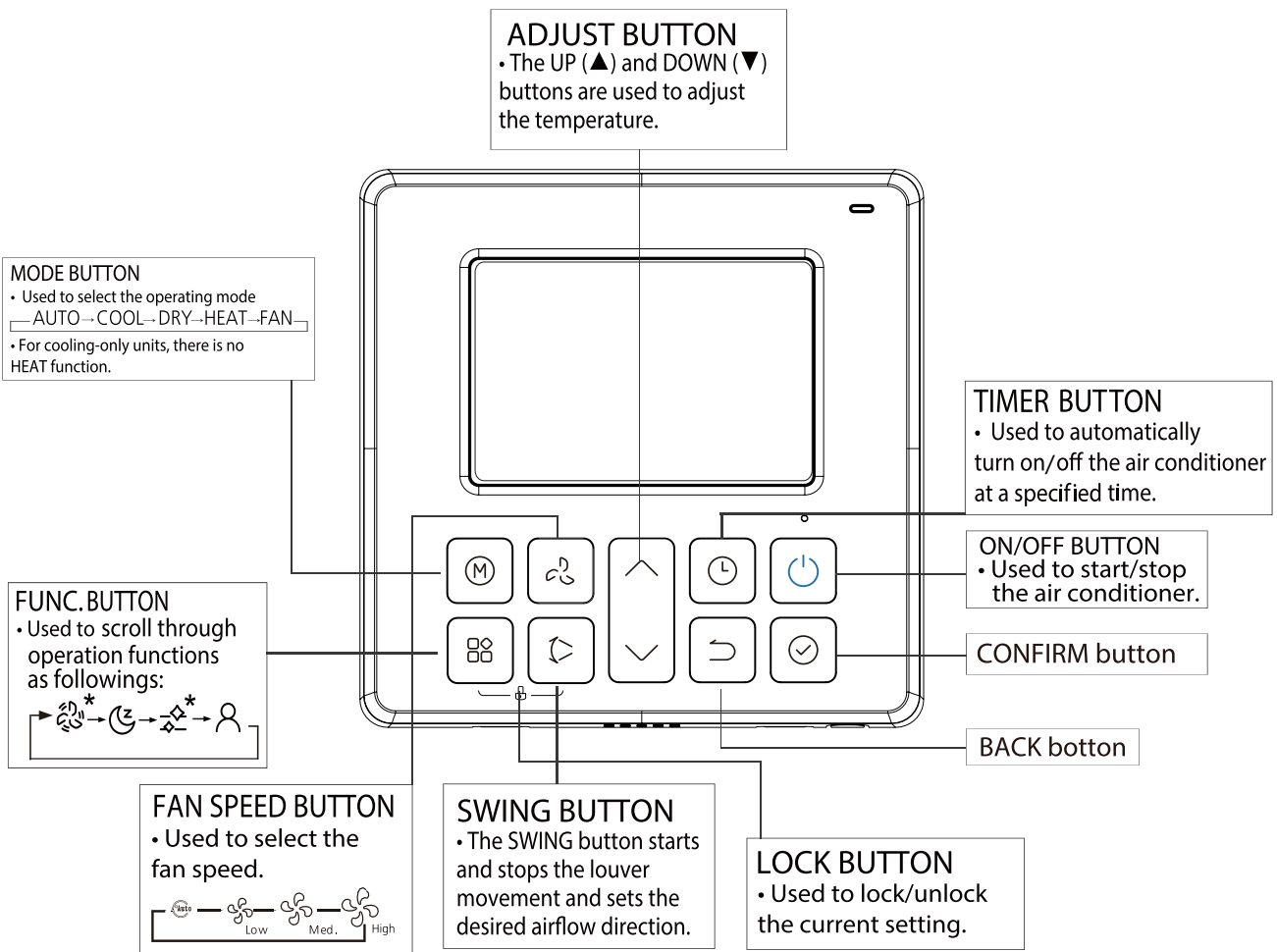
- The Active Clean Technology washes away dust, mold, and grease that may cause odors when it adheres to the heat exchanger by automatically freezing and then rapidly thawing the frost. The internal wind wheel then keeps operating to blow-dry the evaporator, thus preventing the growth of mold and keeping 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

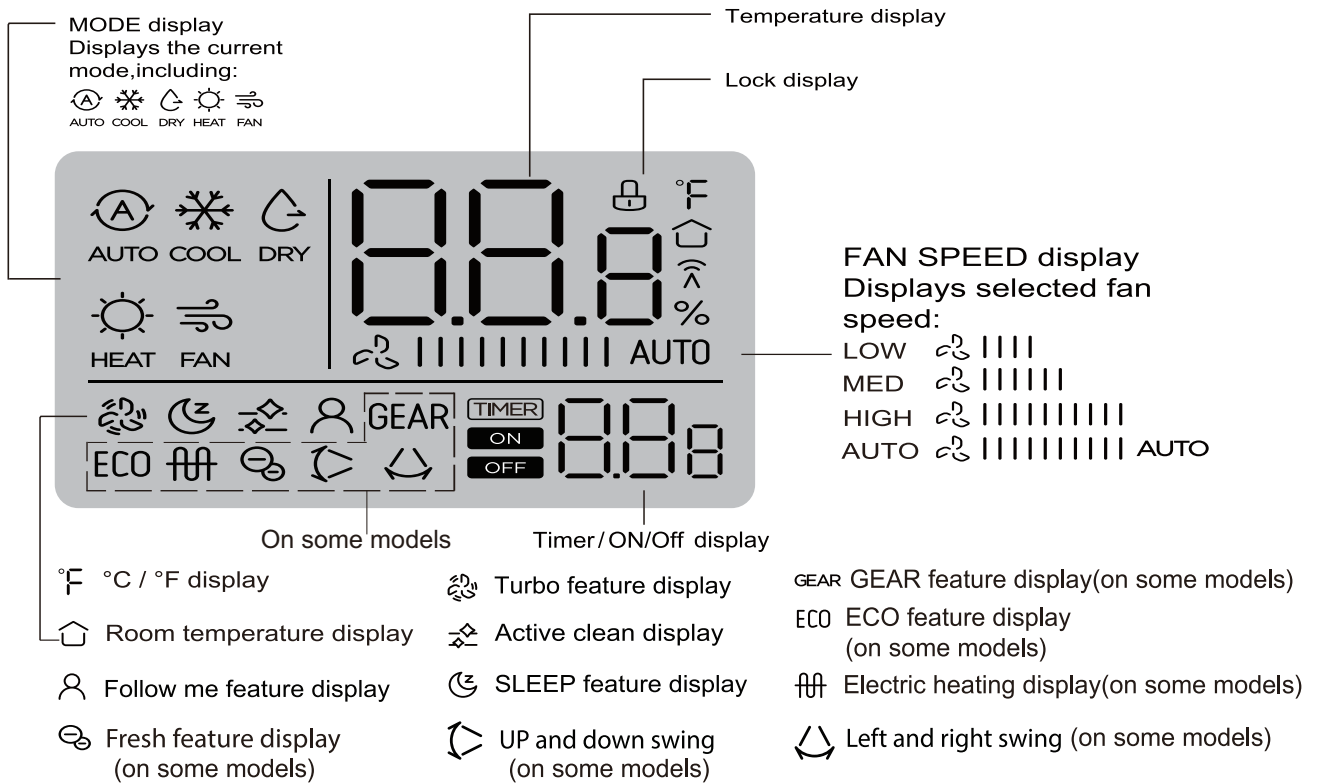
2.1 LCD Wired Remote Controller

2.1.1 LCD Wired Remote Controller KJR-120L/F-E

i) Buttons and Functions

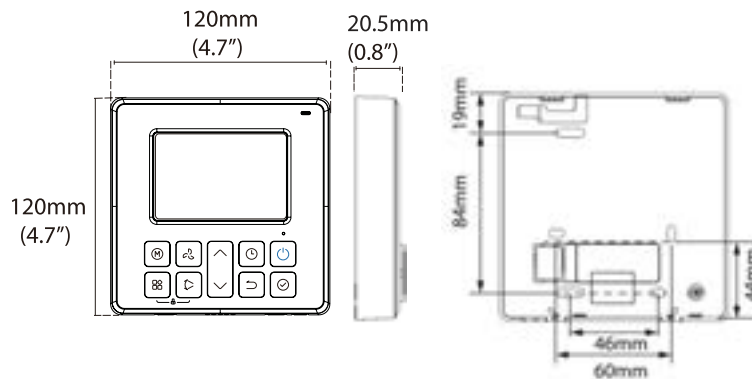


ii) LCD Screen



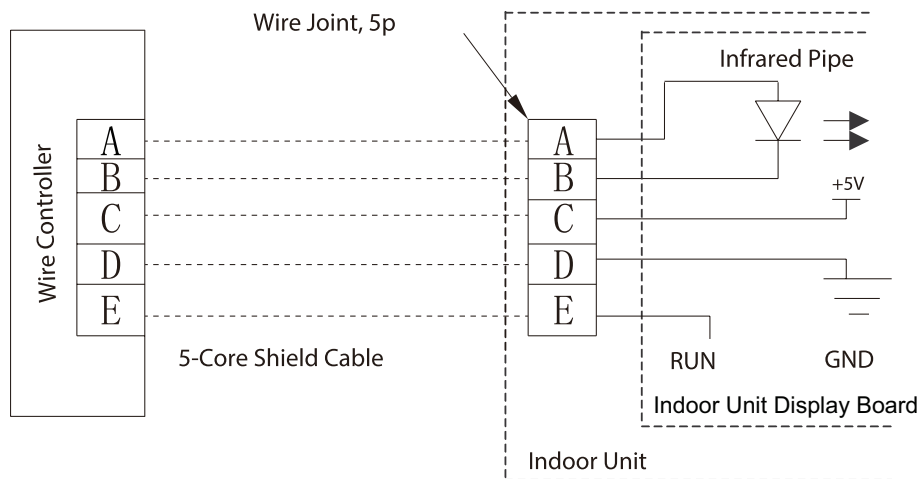
iii) Installation

- Dimensions



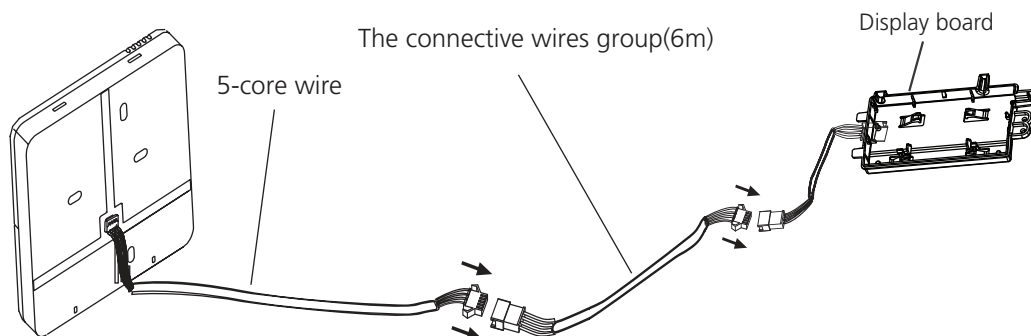
- Wiring diagram

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



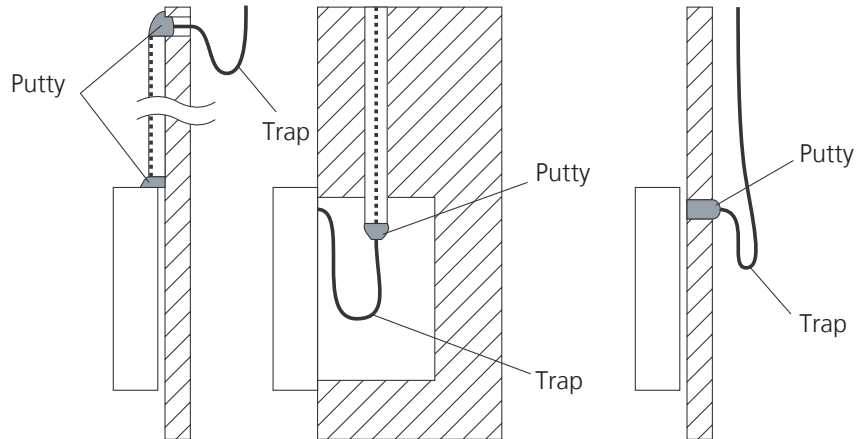
- Installation Diagram

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.



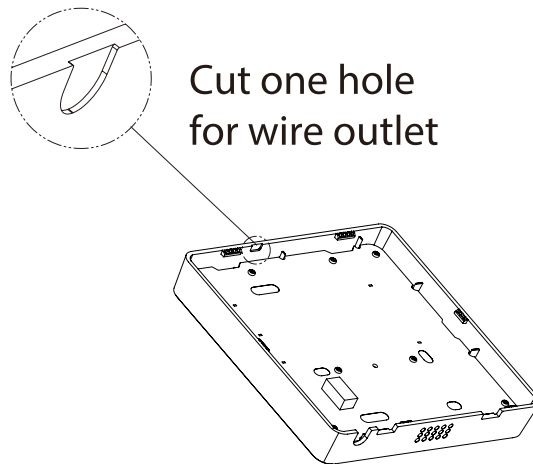
Note: Be sure to reserve a length of the connecting wire for periodic maintenance.

If there is a connection lug at the end of shielded wire, the connection lug should be properly grounded.



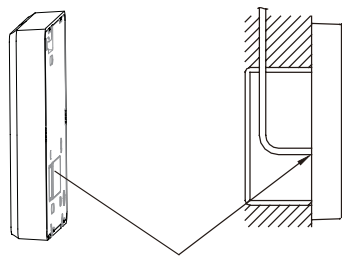
Note: DO NOT allow water to enter the remote control. Use the trap and putty to seal the wires.

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



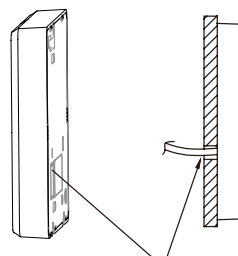
- For shielded wiring, please refer to the picture below.

Embedded switch box wiring



Wiring hole

Wiring through the wall

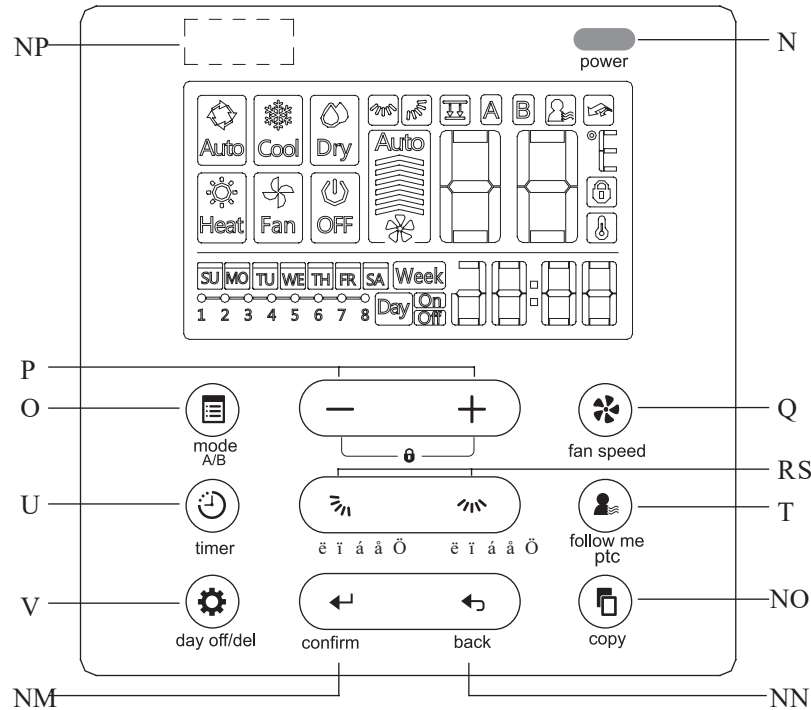


Wall hole and wiring hole
Diameter of wall hole: Φ 2cm

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

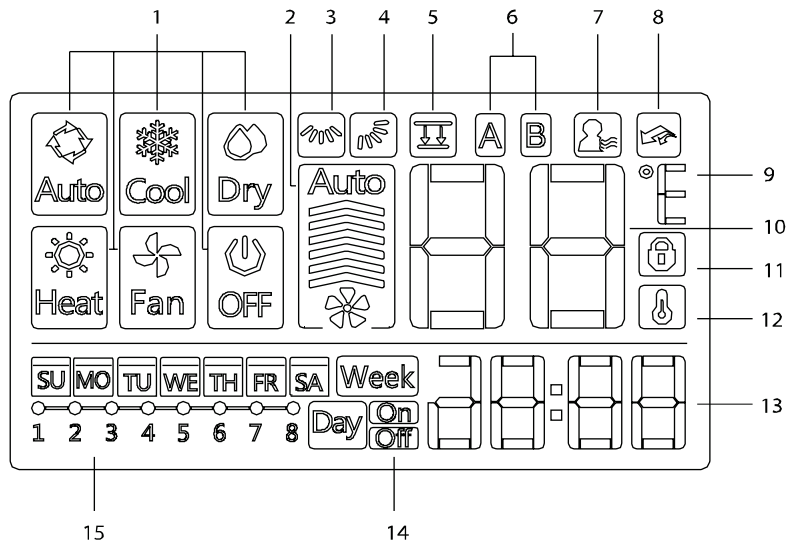
Back to previous operation or superior menu

12. COPY button

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

13 Infrared remote receiver (on some models)

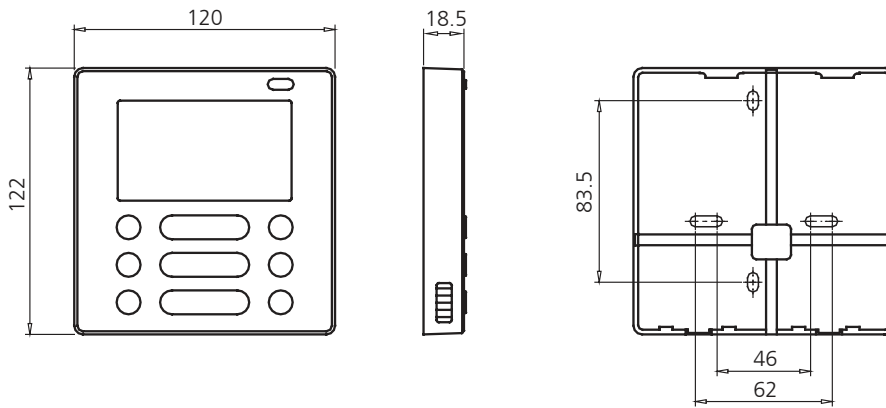
ii) LCD Screen



- | | |
|---|--------------------------------|
| 1 Operation mode indication | 9 C° / F° indication |
| 2 Fan speed indication | 10 Temperature display |
| 3 Left-right swing indication | 11 Lock indication |
| 4 Up-down swing indication | 12 Room temperature indication |
| 5 Faceplate function indication | 13 Clock display |
| 6 Main unit and secondary unit indication | 14 On/Off timer |
| 7 Follow me function indication | 15 Timer display |
| 8 PTC function indication | |

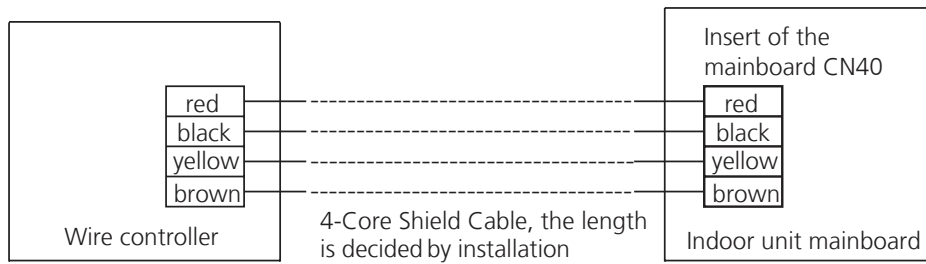
iii) Installation

- Dimensions



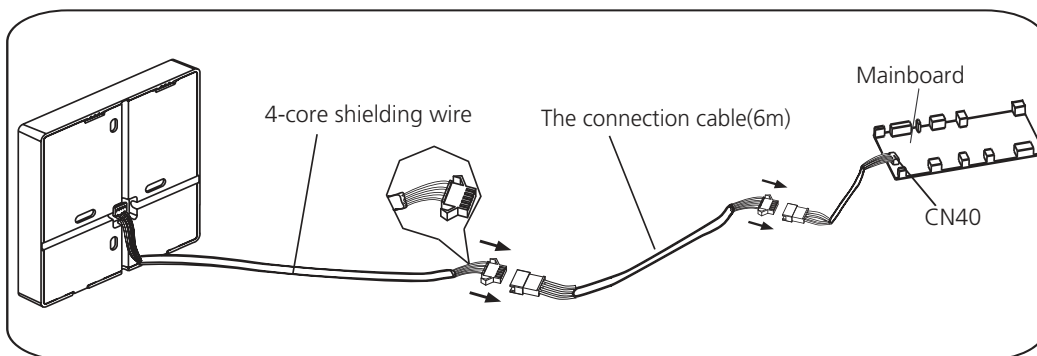
- Wiring diagram

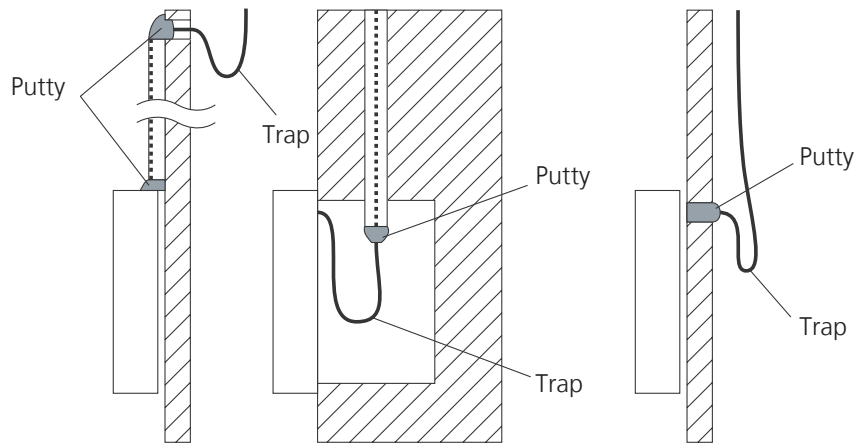
Refer to the following diagram to wire the wall-mounted remote control to the indoor unit.



- Installation Diagram

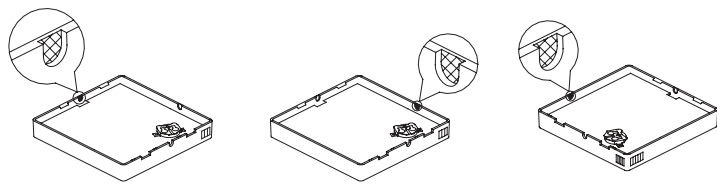
Connect the female joint of wires group from the mainboard with the male joint of connective wires group. Then connect the other side of connective wires group with the male joint of wires group leads from wire controller.





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.



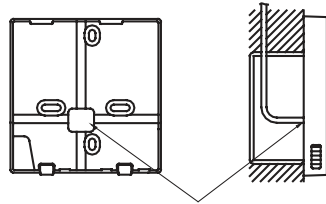
Cutting place of top side wire outlet

Cutting place of left side wire outlet

Cutting place of right side wire outlet

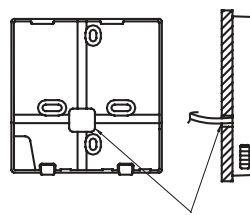
- For shielded wiring, please refer to the picture below.

Embedded switch box wiring



Wiring hole

Wiring through the wall

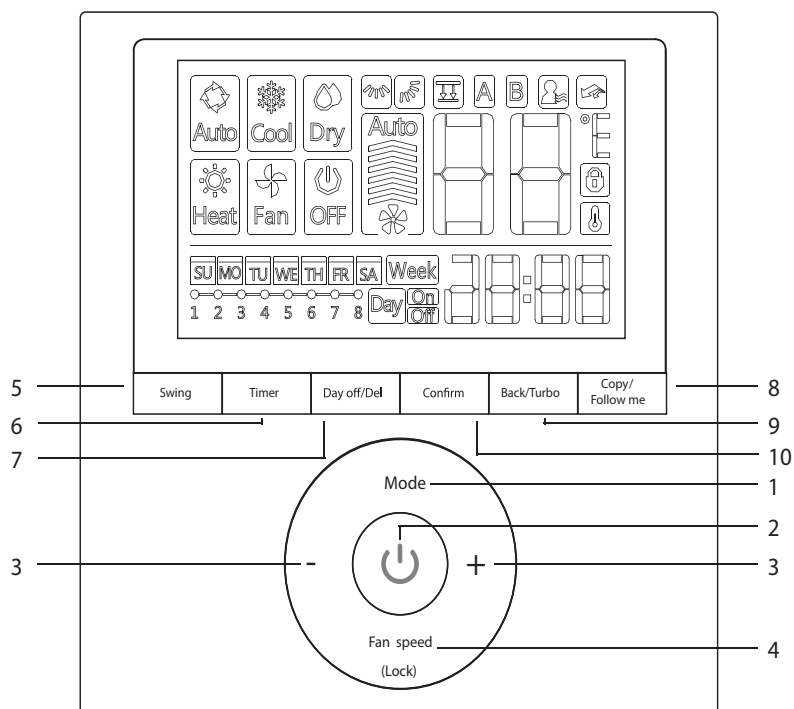


Wall hole and wiring hole
Diameter of wall hole: $\Phi 2\text{cm}$

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 activate the operation of auto-lifting panel when off

2. POWER button

Turn on or 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

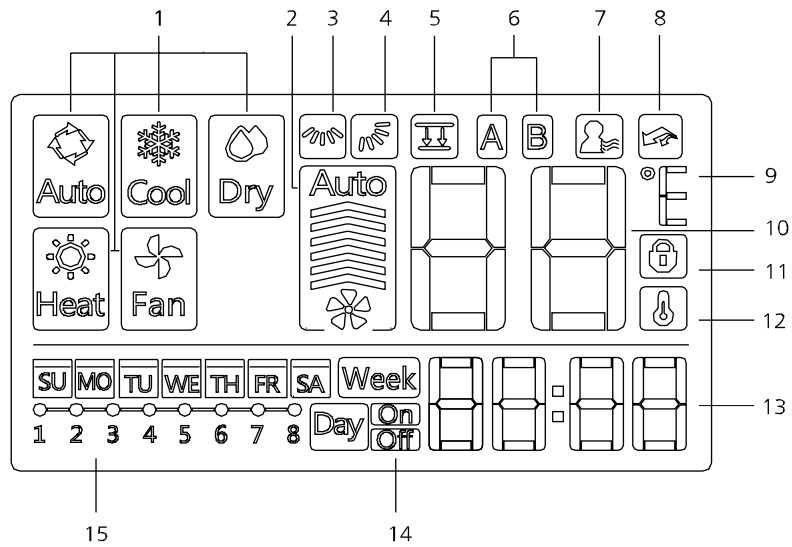
Back to previous operation or superior menu

To active turbo mode while in normal operation

10. CONFIRM button

To confirm an setting or call up the superior menu

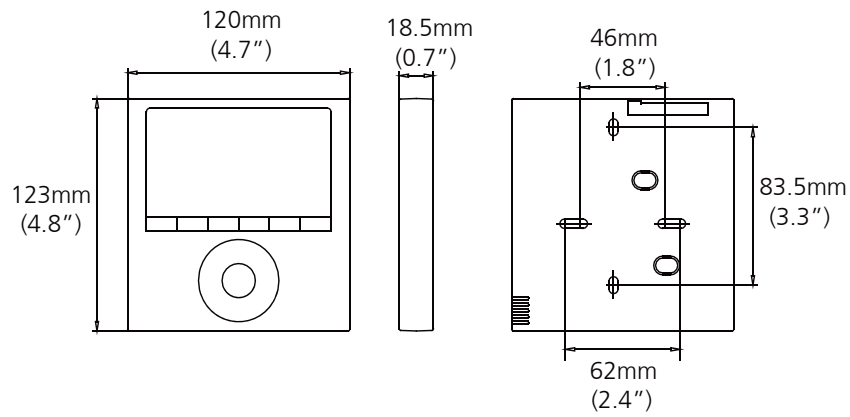
ii) LCD Screen



- | | |
|---|---------------------------------|
| 1 Operation mode indication | 8 Turbo/PTC function indication |
| 2 Fan speed indication | 9 C° / F° indication |
| 3 Left-right swing indication | 10 Temperature display |
| 4 Up-down swing indication | 11 Lock indication |
| 5 Faceplate function indication | 12 Room temperature indication |
| 6 Main unit and secondary unit indication | 13 Clock display |
| 7 Follow me function indication | 14 On/Off timer |
| | 15 Timer display |

iii) Installation

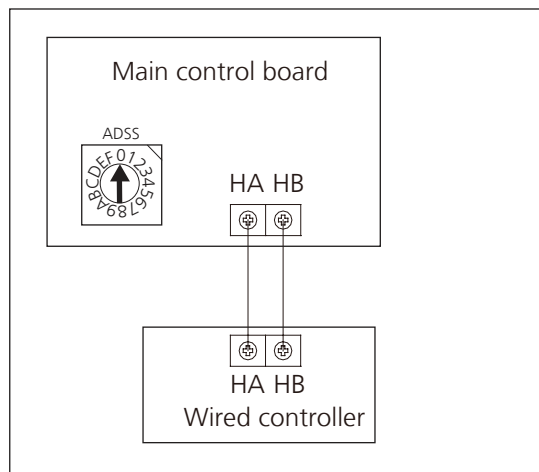
- Dimensions



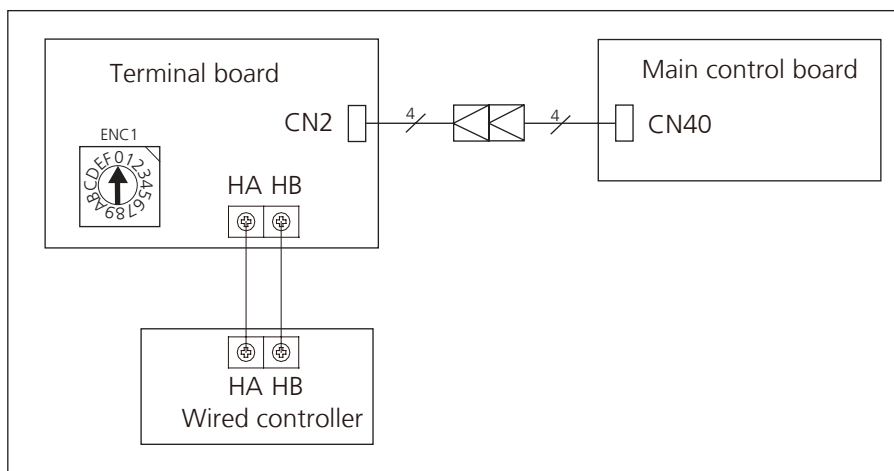
- Wiring diagram

3) Connection

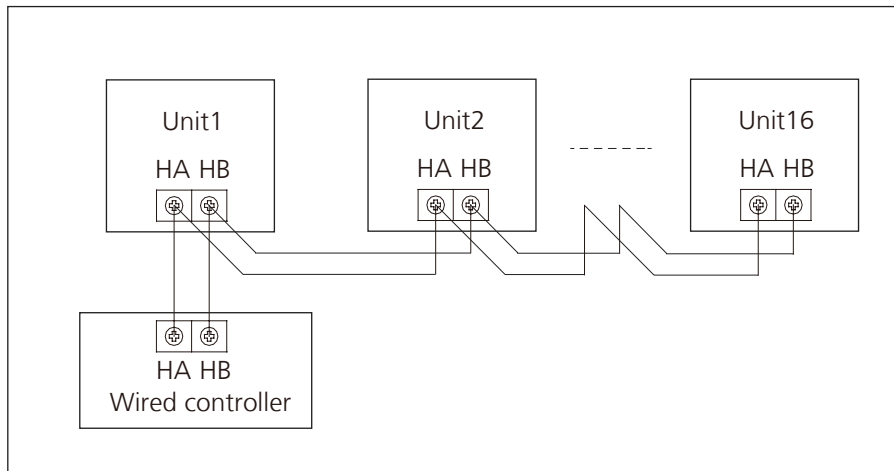
For some models: The wired controller connects to main control board directly.



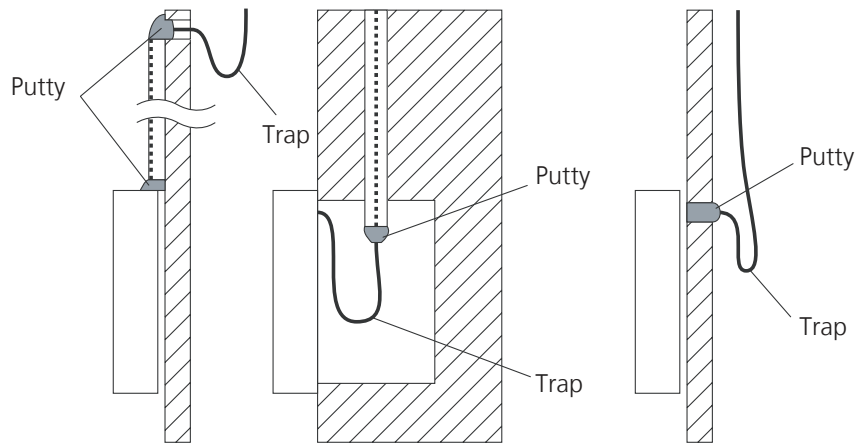
For some models, Ceiling& floor: The wired controller connects to terminal board, terminal board connects to main control board.



4) Address setting

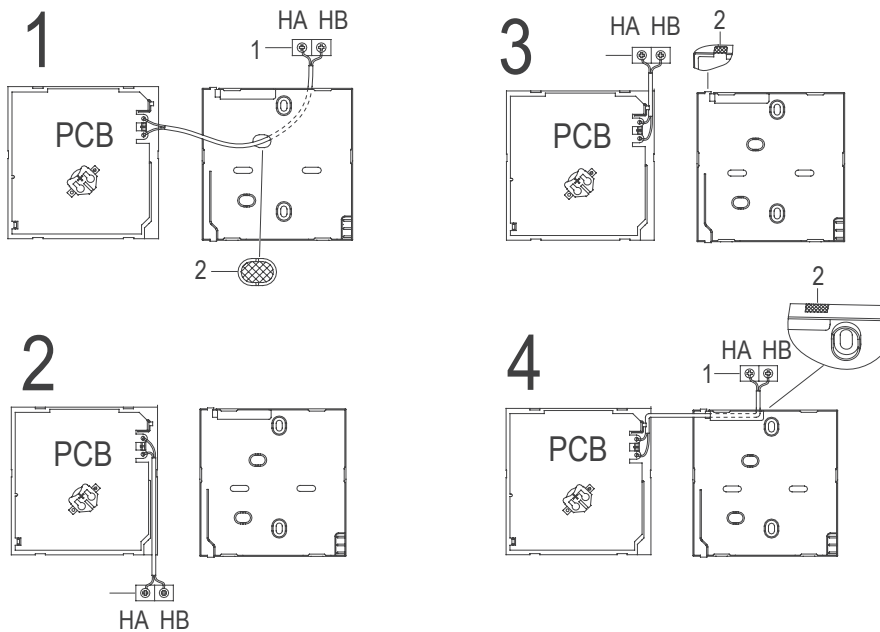


- One non-polarity controller can control up to 16 indoor units.
- When the non-polarity controller is connected to several units, every air-conditioner in network has only one network address to distinguish each other.
- Address code of air-conditioner in LAN is set by code switch ENC1(Duct and Ceiling&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

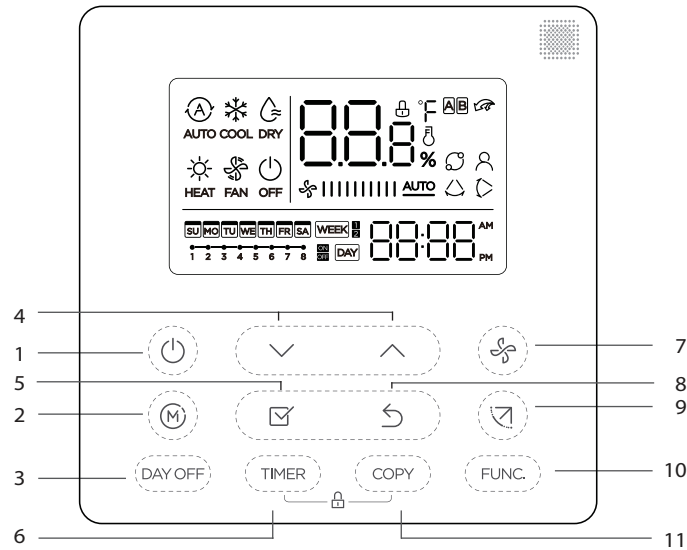


- 1: Indoor Unit.
- 2: Notch the part for the wiring to pass through with a nipper tool.
- Connect the terminals on the remote controller (HA ,HB), and the terminals of the indoor unit. (HA ,HB). (HA and HB do not have polarity.)

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

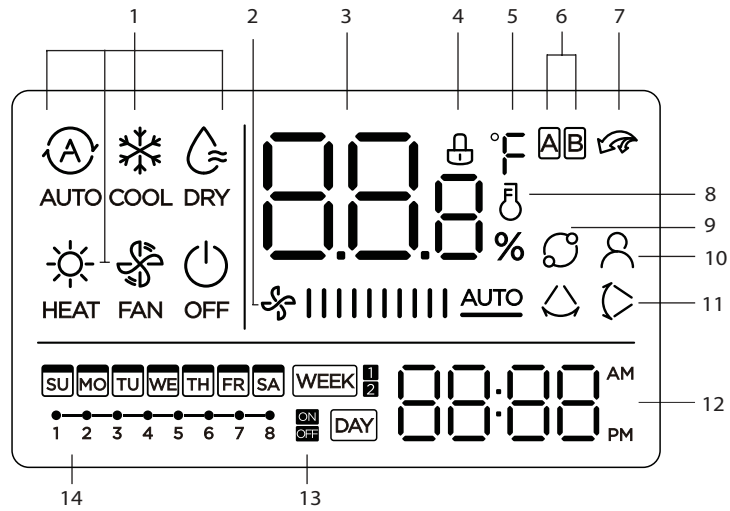
10. FUNC. button

Press the FUNC. button to set the turbo or rotating or I feel function.

11. COPY button

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

ii) LCD Screen

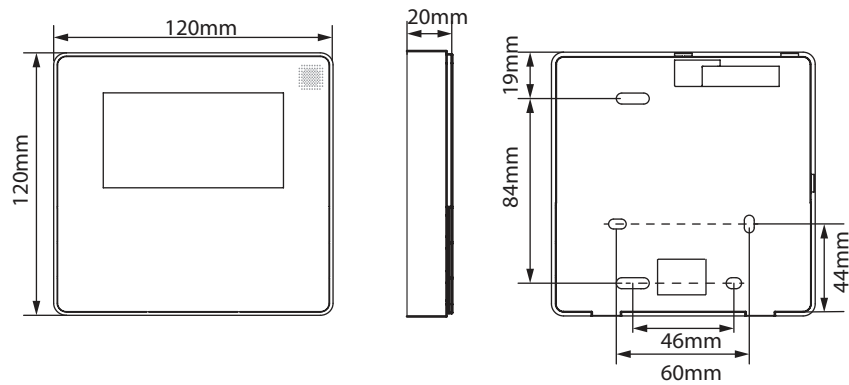


- 1 Operation mode indication
- 2 Fan speed indication
- 3 Temperature display
- 4 Lock indication
- 5 °C / °F indication
- 6 Main unit and secondary unit indication
- 7 Turbo function indication

- 8 Room temperature indication
- 9 Rotating indication
- 10 Follow Me function indication
- 11 Left-right swing indication
(some models)
- 12 Clock display
- 13 On/Of timer
- 14 Timer display

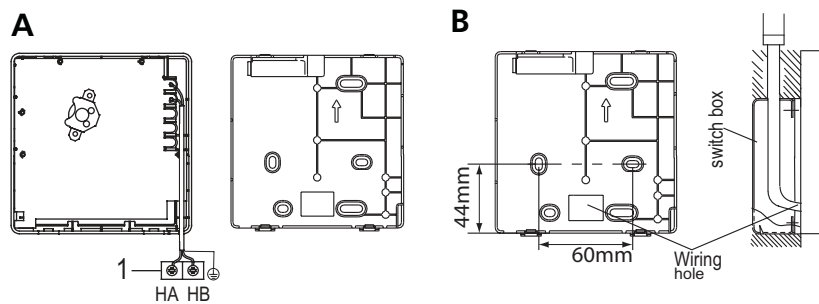
iii) Installation

- Dimensions



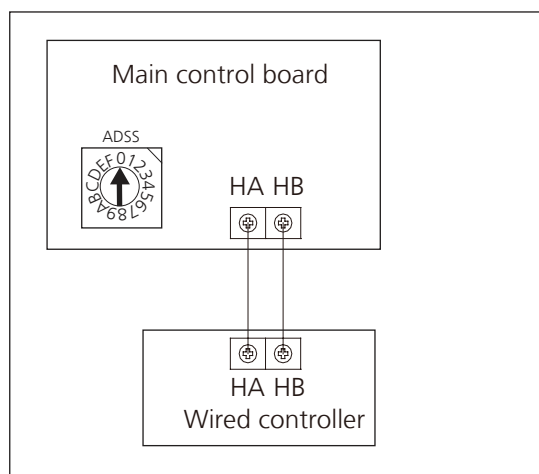
5) Connection

- Wire with the indoor unit:

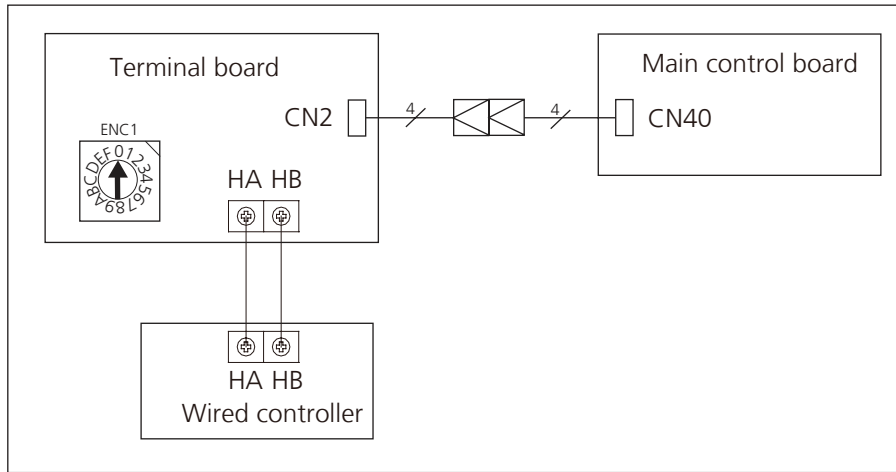


- 1: Indoor Unit.
- 2: Notch the part for the wiring to pass through with a nipper tool.
- Connect the terminals on the remote controller (HA ,HB), and the terminals of the indoor unit. (HA ,HB). (HA and HB do not have polarity.)

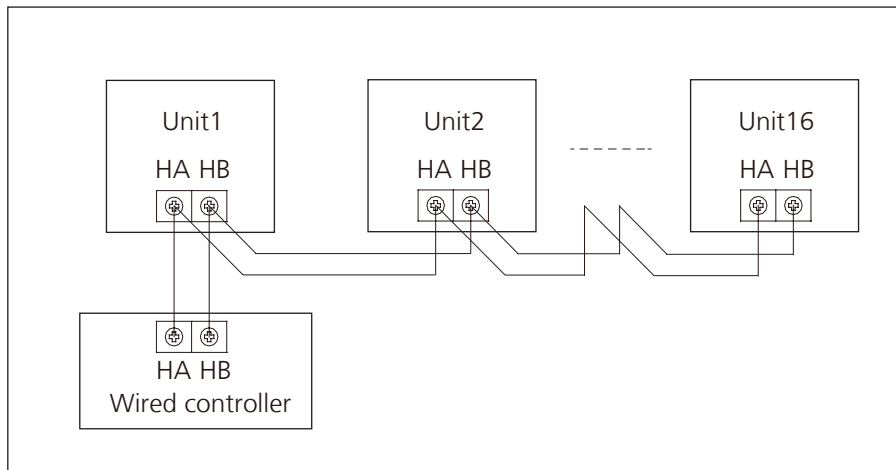
For some models: The wired controller connects to main control board directly.



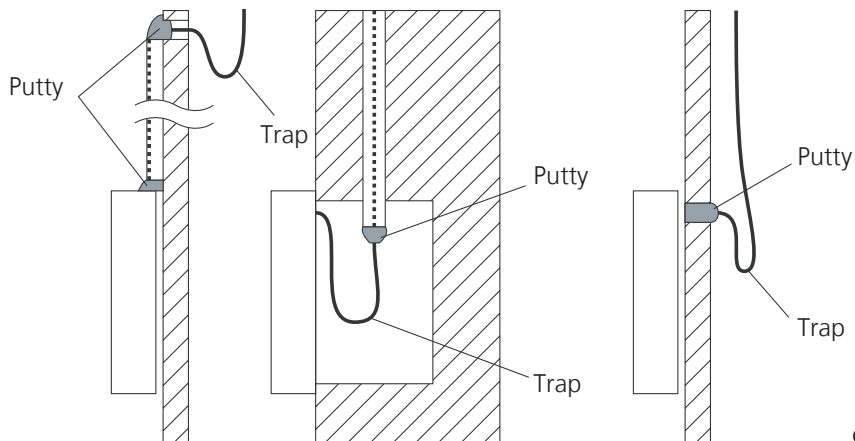
For some models: The wired controller connects to terminal board, terminal board connects to main control board.



6) Address setting



- a. One non-polarity controller can control up to 16 indoor units.
- b. When the non-polarity controller is connected to several units, every air-conditioner in network has only one network address to distinguish each other.
- c. Address code of air-conditioner in LAN is set by code switch ENC1(Duct and Ceiling& Floor) or ADSS(Cassette) of the indoor unit, and the set range is 0-15.
- d. Note: The indoor units are controlled at the same time, not independently. The purpose of setting network address is identify the unit when error occurs.

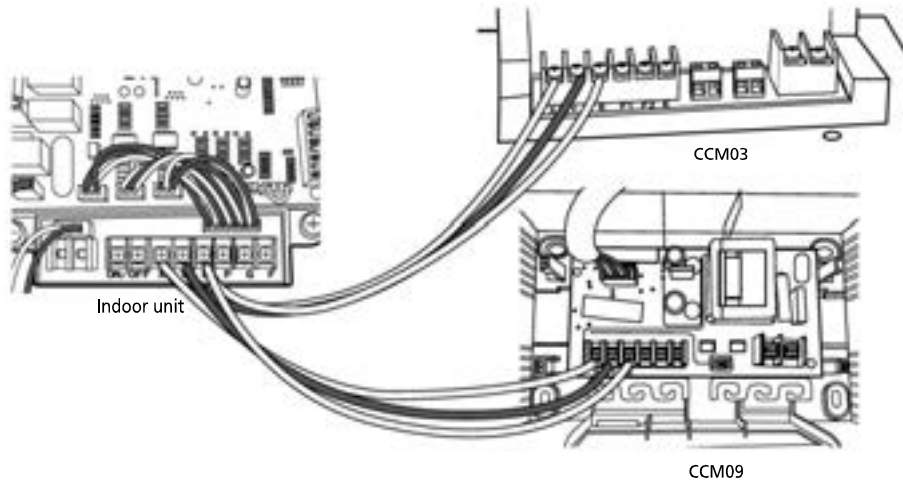


Note: DO NOT allow water to enter the remote control. Use the trap and putty to seal the wires.

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.

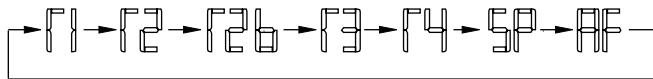
2. Check that both power supply wiring and duct installation have been completed. Check that any closing dampers are open. Check that the air filter is properly attached to the air suction side passage of the unit.

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:

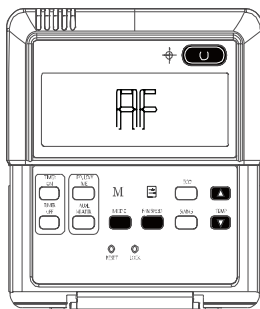
- When the unit is turned off, hold the MODE button and FAN button down together for three seconds. ("AF" indicator flashes for 3 times.)(for 12B wired controller) or long press COPY button for 3 seconds(for 120X/120G/120C/120M/120N wired controller).

- 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.

For 120L/120K wired controller, perform the following steps:

- In power-on or standby mode, long press ON/FF and FAN together for 7 seconds to engineer mode

- Press "Δ" or "∇" to select the channel "8".

- Press "On/Off" for 2s to enter the Static Pressure Selector, the code displayed is "Ch".

- Press "Δ" or "∇" to select the AF.

- Press "Confirm" to confirm.

- Press "On/Off" for 2s to exit.

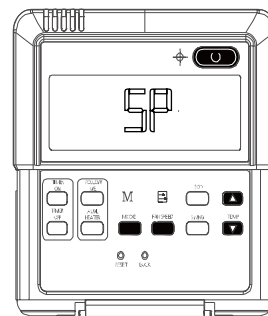
2.4 Using the wire controller to set airflow rate

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

1. Press "MODE" and "FAN" for 3 seconds(for 12B wired controller) or long press COPY button for 3 seconds(for 120X/120G/120C/120M/120N wired controller).

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 "Δ" or "∇" to confirm airflow rate.(for 120 series wired remote controller, Press "confirm" to confirm airflow rate).

5.Press "ON/OFF" or do not touch the button for 6 minutes to exit the airflow setting.

6. Shut off the power supply and then turn it on.

For 120L/120K wired controller, perform the following steps:

- In power-on or standby mode, long press ON/FF and FAN together for 7 seconds to engineer mode

- Press "Δ" or "∇" to select the channel "8".

- Press "On/Off" for 2s to enter the Static Pressure Selector, the code displayed is "Ch".

- Press "Δ" or "∇" to select the 0~4(A6 Duct).or 0~8(A7 Duct).

- Press "Confirm" to confirm.


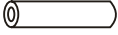




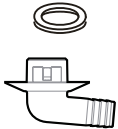
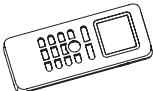



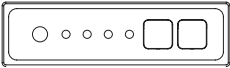
- Press "On/Off" for 2s to exit.

Installation

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10. Engineering of Electrical Wiring	146
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Accessories

Name	Shape	Quantity
Manual		2-4
Refrigerant in/out pipe protection cover		2
Copper nut		2
Wired remote controller(with packing)		1
Outlet pipe sheath (some models)		1
Outlet pipe clasp (some models)		1-2
Drain joint & Seal ring (some models)		1
Remote controller (some models)		1
Connecting wire for display (2m)	-	1(on some models)
Magnetic ring(Wrap the electric wires S1 & S2 (P & Q & E) around the magnetic ring twice) (some models)	 S1&S2(P&Q&E)	1
Magnetic ring(Hitch on the connective cable between the indoor unit and outdoor unit after installation.)		Varies by model
Cord protection rubber ring(some models)		1
Display panel *Just for testing purposes only		1(on some models- KJR-120G,KJR-120H)

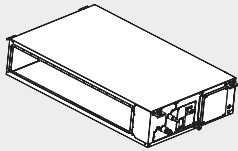
Optional accessories:

- 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

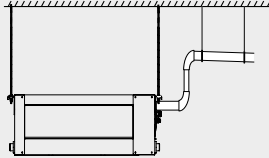
Installation Order

1



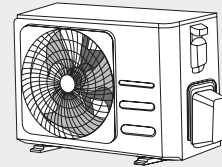
Install the indoor unit

2



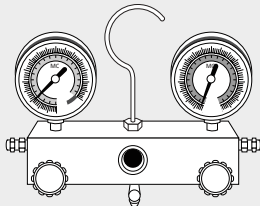
Install the drainpipe

3



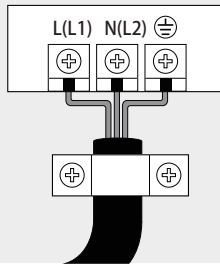
Install the outdoor unit

6



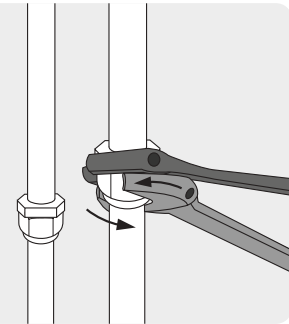
Evacuate the refrigeration system

5



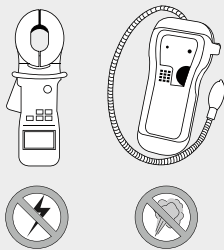
Connect the wires

4



Connect the refrigerant pipes

7



Perform a test run

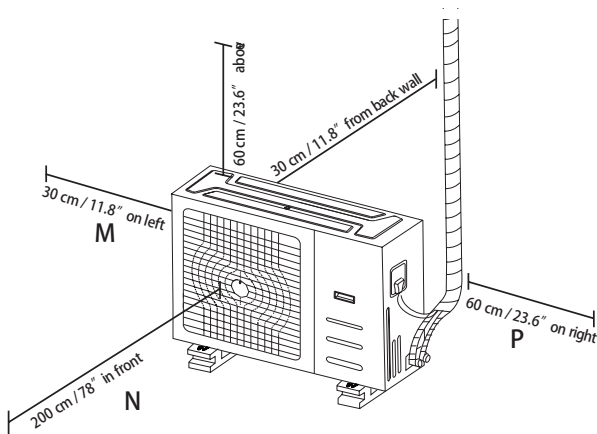
2. Location selection

2.1 Unit location selection can refer to installation manual.

2.2 DO NOT install the unit in the following locations:

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

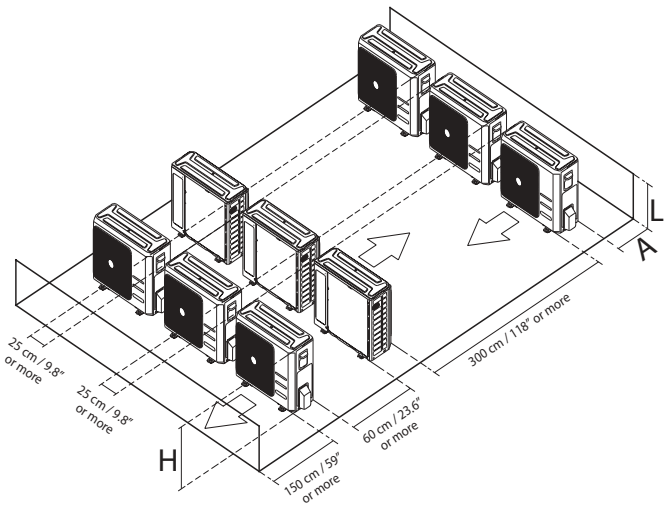
2.3 The minimum distance between the outdoor unit and walls described in the installation guide does not apply to airtight rooms. Be sure to keep the unit unobstructed in at least two of the three directions (M, N, P)



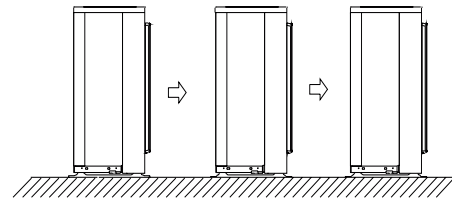
2.4 Rows of series installation

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

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

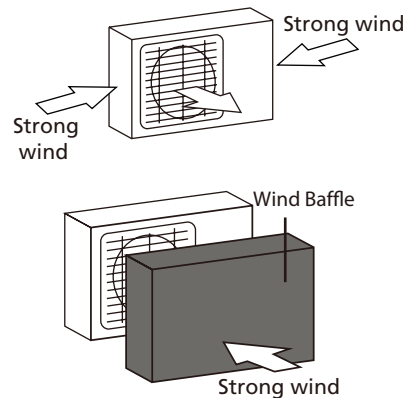


DO NOT install the rows of series like following figure.



2.5 If the unit is exposed to heavy wind:

- Install unit so that air outlet fan is at a 90° angle to the direction of the wind. If needed, build a barrier in front of the unit to protect it from extremely heavy winds.



2.6 If the unit is frequently exposed to heavy rain or snow:

Build a shelter above the unit to protect it from the rain or snow. Be careful not to obstruct air flow around the unit.

2.7 If the unit is frequently exposed to salty air (seaside):

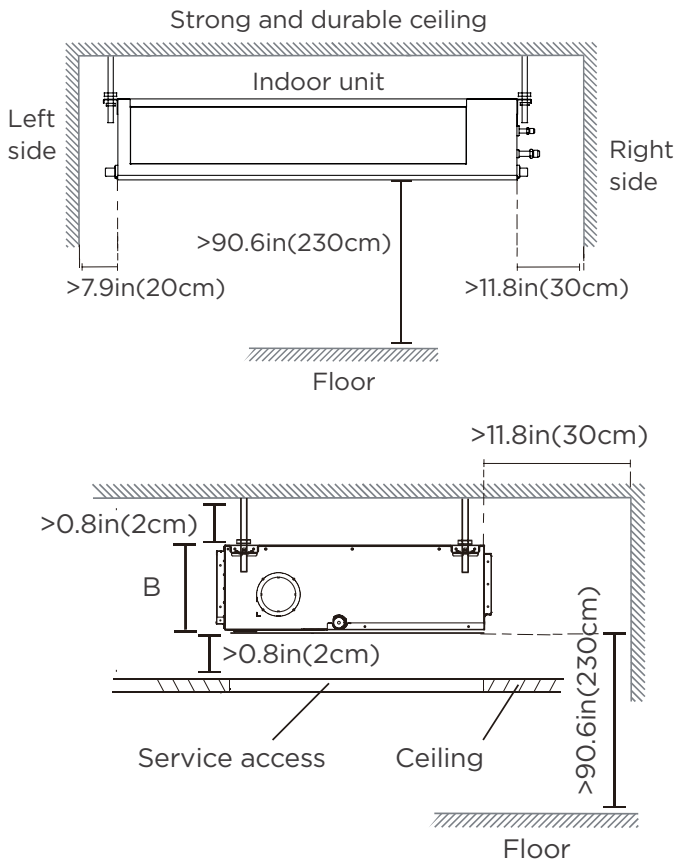
Use outdoor unit that is specially designed to resist corrosion.

3. Indoor Unit Installation

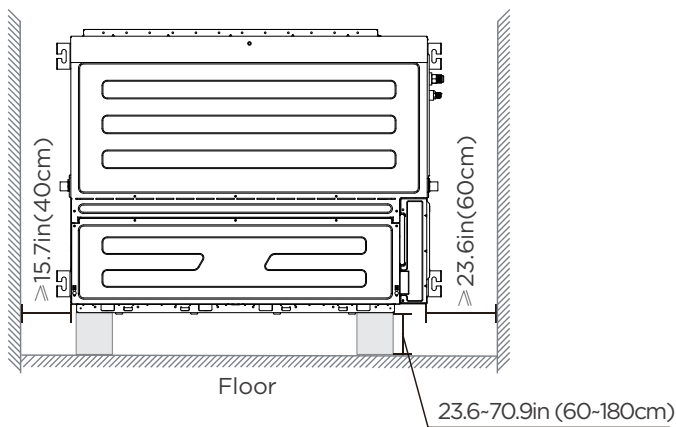
Installation place

The distance between the mounted indoor unit should meet the specifications illustrated in the following diagram.

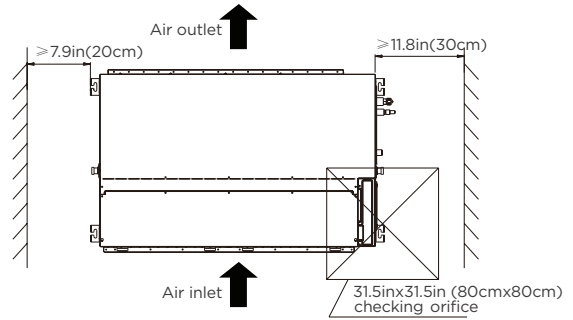
1) Ceiling-mounted



2) Wall-mounted

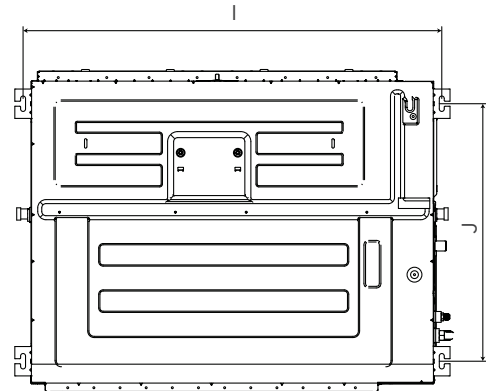


3.2 Service space for indoor unit



3.3 Hang Indoor Unit

1. Please refer to the following diagrams to locate the four positioning screw bolt holes on the ceiling. Be sure to mark the places where you will drill ceiling hook holes.



Model	Size of mounted lug(mm/inch)	
	I	J
9/12	741/29.2	360/14.2
18	740/29.1	640/25.2
24/30	1040/40.9	640/25.2
36/42/48	1240/48.8	640/25.2
60	1240/48.8	640/25.2

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

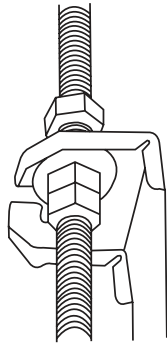
mounting the unit..

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.

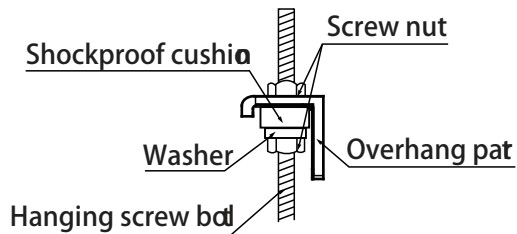
6. Secure the bolt using the included washers and nuts.

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.

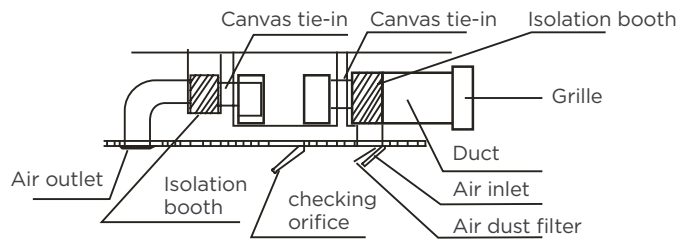


Note: Confirm the minimum drain tilt is 1/100 or more.

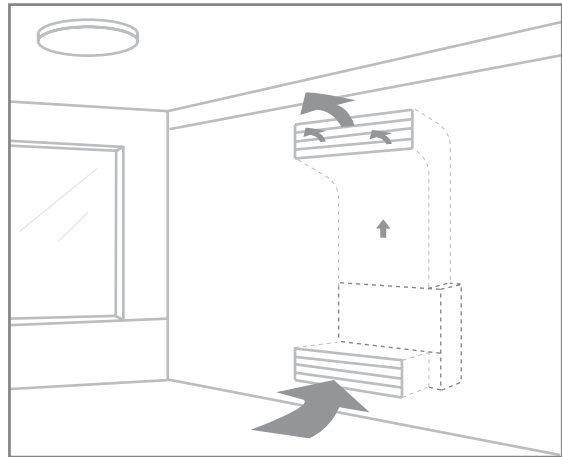
3.4 Duct installation

1. Install the filter(optional) according to the size of the air inlet.
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 avoid air passage short-circuit.
4. Connect the duct according to the following diagram.

Ceiling-mounted



Wall-mounted



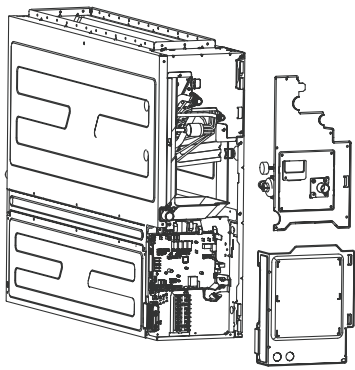
NOTE:

1. The min. length of the duct should be more than 1m, and fix on the air inlet by screws (applicable to the unit that the air inlet filter is not fasten by screws).
2. The inlet of the air duct needs to be installed with a grille, which needs to be fixed to the air duct with screws.
3. Do not place the connecting duct weight on the indoor unit.
4. When connecting the duct, use a nonflammable canvas tie-in to prevent vibrating.
5. Insulation foam must be wrapped outside the duct to avoid condensate. An internal duct underlayer can be added to reduce noise, if the end-user requires.
6. When the machine is wall-mounted, the machine should be concealed mounting, and the air inlet and outlet should be grille, and the grille should be fixed firmly with screws.

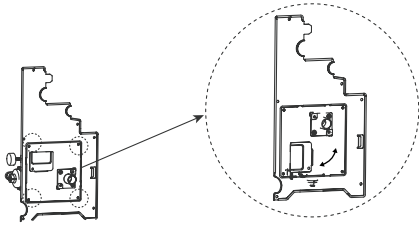
3.5 Wall mounted installation

The unit supports wall mounted, if the unit is purchased with a pump and requires vertical mounting, please follow the steps below:

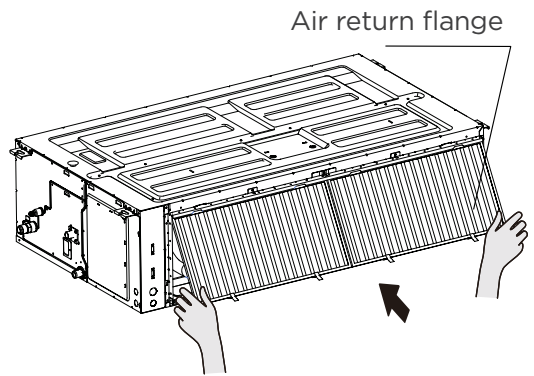
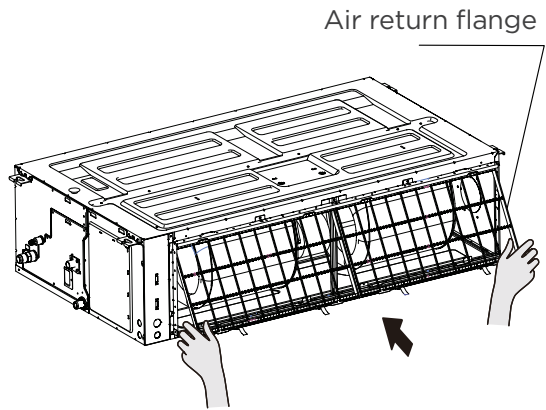
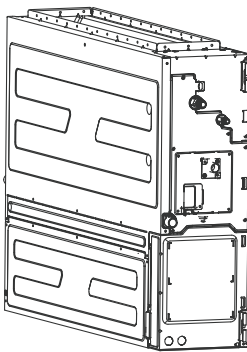
1. Remove the electrical control box cover, unplug the pump and water level switch terminals from the main control board.
2. Disassemble the pump components.



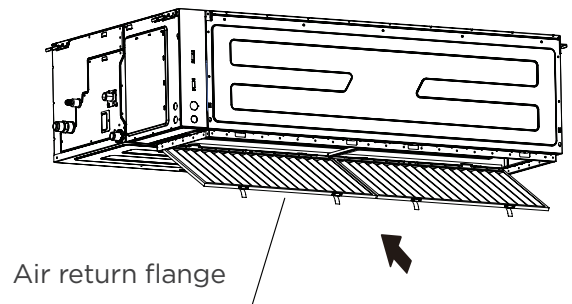
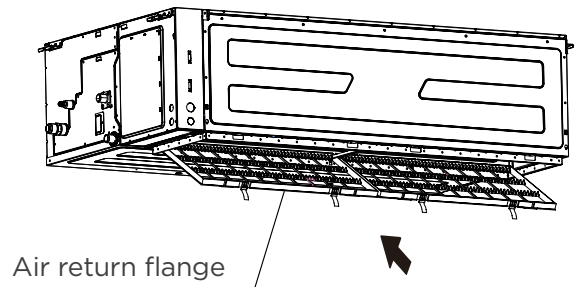
3. Remove the 4 screws, rotate the water pump components by 90° and fix them to the water pump mounting plate again.



4. Install the pump parts to the machine and connect the wiring set.

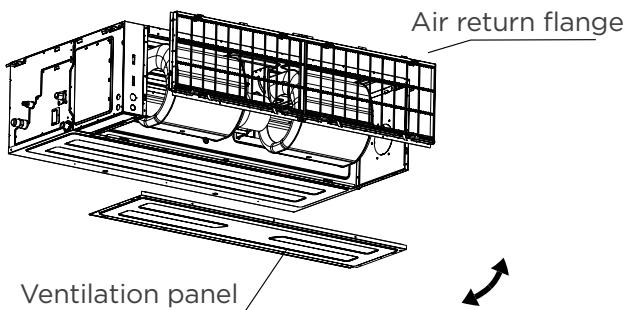


or



3.6 Filter installation

1. Take off ventilation panel and flange,

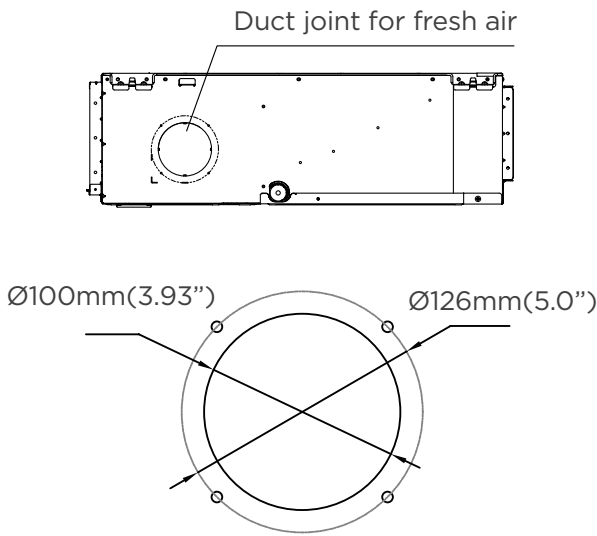


2. Change the mounting positions of the ventilation panel and air return flange.

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

3.7 Fresh air duct installation

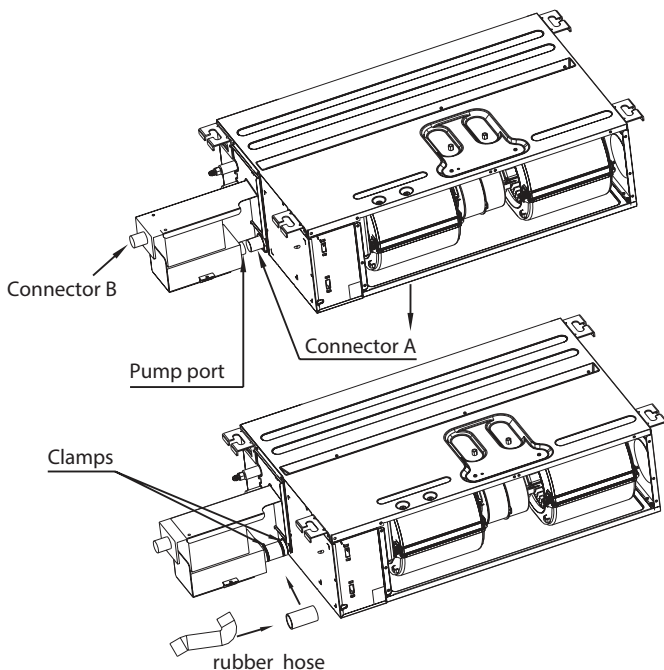
Dimension :



3.8 Horizontal Installation

3.8.1 With external pump (MUCR-09-H14-l)

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.

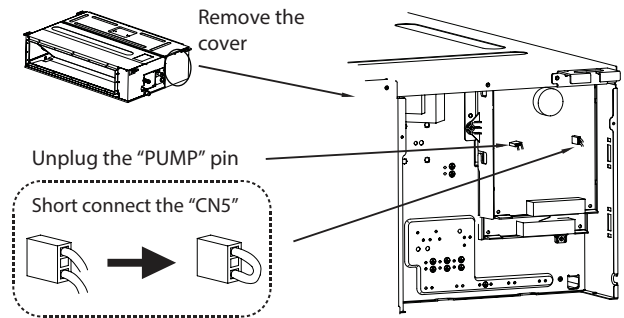


3.9 Vertical Installation

3.9.1 No need pump (Disable pump)

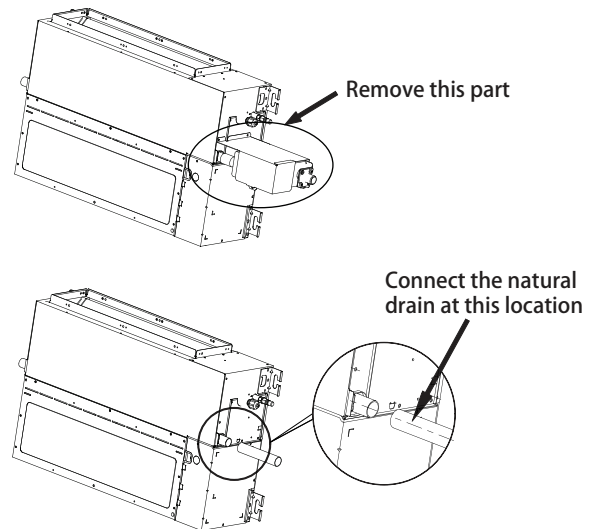
The pump must be disabled while the unit is installed vertically or the pump assembly is removed from its original position.

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.



3.9.2 Drain pipe connecting

When installed vertically (up flow), the pump must be disabled firstly. Follow the 3.9.1 steps to disable the pump. For the unit with external pump (9K&12K models), the whole pump assembly can be removed. Then take the cap on drain connector off and connect the drainpipe to drain connector.



4. Connect drain hose

The drainpipe is used to drain water away from the unit. Improper installation may cause unit and property damage.

⚠ CAUTION

- Insulate all piping to prevent condensation, which could lead to water damage.
- If the drainpipe is bent or installed incorrectly, water may leak and cause a water-level switch malfunction.
- In HEAT mode, the outdoor unit will discharge water. Ensure that the drain hose is placed in an appropriate area to avoid water damage and slippage.

- DO NOT pull the drainpipe forcefully. This could disconnect it.

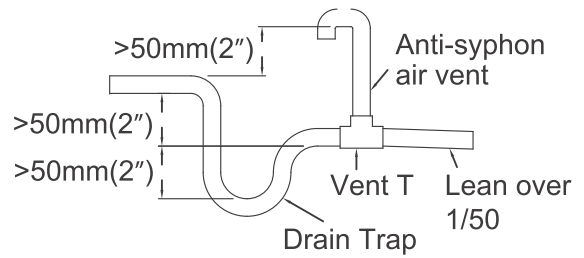
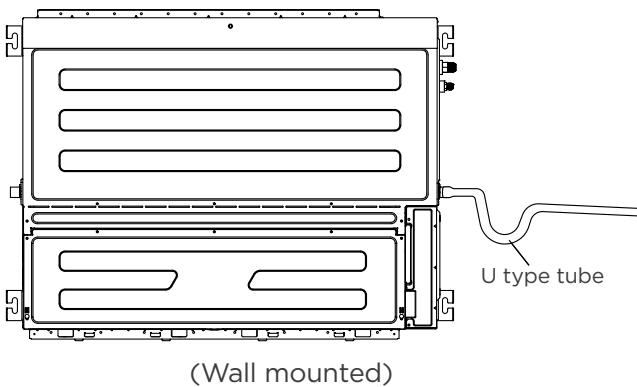
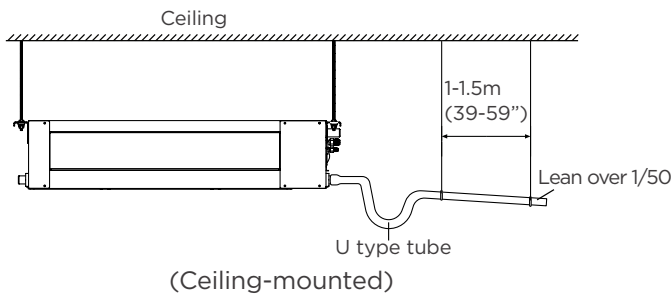
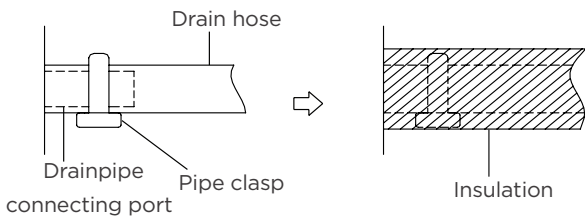
NOTE ON PURCHASING PIPES

- Installation requires a polyethylene tube (exterior diameter = 3.7-3.9cm, interior diameter = 3.2cm), which can be obtained at your local hardware store or dealer.

Indoor Drainpipe Installation

Install the drainpipe as illustrated in the following Figure.

1. Cover the drainpipe with heat insulation to prevent condensation and leakage.
2. Attach the mouth of the drain hose to the unit's outlet pipe. Sheath the mouth of the hose and clip it firmly with a pipe clasp.
3. These units operate with a negative pressure at the drain connections and a drain trap is required. The trap needs to be installed as close to the unit as possible. Make sure the top of the trap is below the connection to the drain pan to allow complete drainage of the pan.



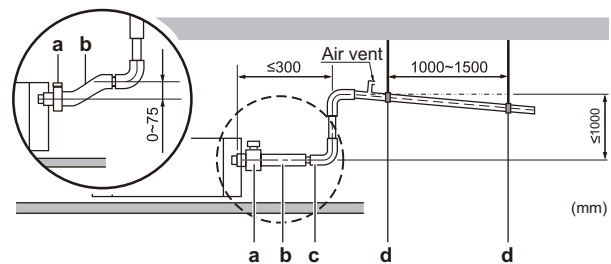
NOTE ON DRAINPIPE INSTALLATION

- When using an extended drainpipe, tighten the indoor connection with an additional protection tube. This prevents it from pulling loose.
- The drainpipe should slope downward at a gradient of at least 1/100 to prevent water from flowing back into the air conditioner.
- To prevent the pipe from sagging, space hanging wires every 1-1.5m (39-59 inches).
- If the outlet of the drainpipe is higher than the body's pump joint, use a lift pipe for the indoor unit's exhaust outlet. The lift pipe must be installed no higher than 55cm (21.7 inches) from the ceiling board. The distance between the unit and the lift pipe must be less than 20cm (7.9 inches).

Incorrect installation could cause water to flow back into the unit and flood.

- To prevent air bubbles, keep the drain hose level or slightly tilted up (<75mm / 3 inches).

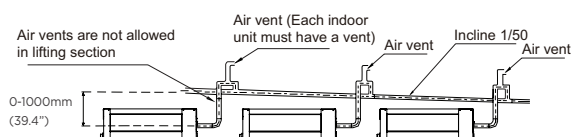
Drainpipe installation for units with a pump



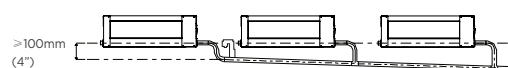
- a Metal clamp (accessory)
- b Drain hose (accessory)
- c Rising drain piping (vinyl pipe of 25 mm nominal diameter and 32 mm outer diameter) (field supply)
- d Hanging bars (field supply)

NOTE: When connecting multiple drainpipes, install the pipes as illustrated.

Units with a pump



Units without a pump

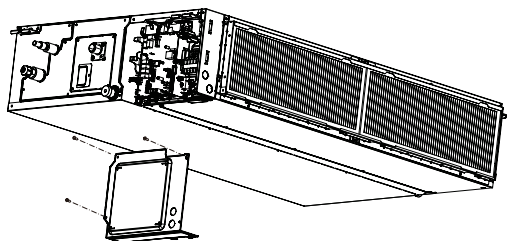


To check for water leaks

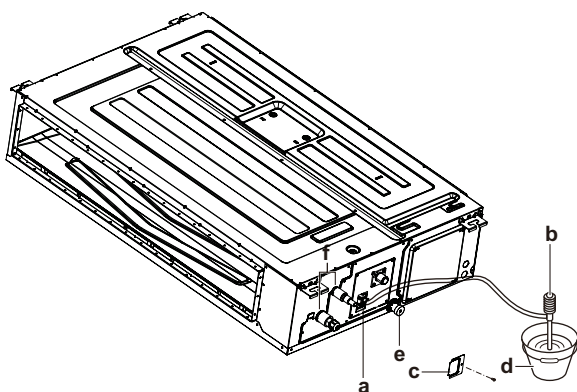
The procedure differs depending on whether electrical wiring is already finished. When the electrical wiring is not finished yet, you need to temporarily connect the user interface and power supply to the unit.

When electrical wiring is not finished yet

1. Temporarily connect electrical wiring.
2. Remove the switch box cover (a).
3. Connect the single-phase power supply (50 Hz, 230 V) to connections No. 1 and No. 2 on the terminal block for power supply and earth.
4. Reattach the switch box cover (a).



5. Turn ON the power.
6. Start cooling operation (see "11. Test Operation").
7. Gradually pour approximately 1 l of water through the air discharge outlet, and check for leaks.



- a Water inlet
- b Portable pump
- c Water inlet cover
- d Bucket (adding water through water inlet)
- e Drain outlet for maintenance
- f Refrigerant pipes

8. Turn OFF the power.
9. Disconnect the electrical wiring.
10. Remove the control box cover.

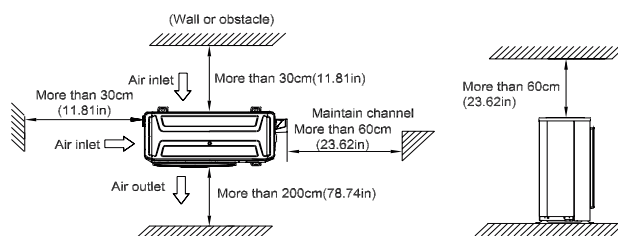
11. Disconnect the power supply and earth.
12. Reattach the control box cover.

When electrical wiring is finished already

1. Start cooling operation (see "11. Test Operation").
2. Gradually pour approximately 1 l of water through the air discharge outlet, and check for leaks.

5. Outdoor unit installation(Side Discharge Unit)

5.1 Service space for outdoor unit



5.2 Install drain joint

Before bolting the outdoor unit in place, you must install the drain joint at the bottom of the unit.

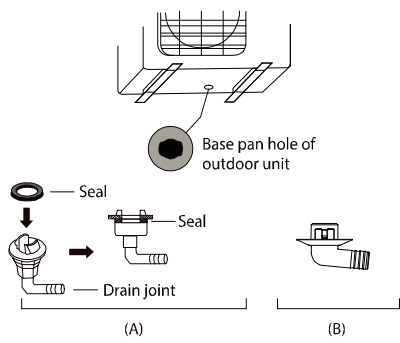
Note that there are two different types of drain joints depending on the type of outdoor unit.

If the drain joint comes with a rubber seal(see Fig. A), do the following:

1. Fit the rubber seal on the end of the drain joint that will connect to the outdoor unit.
2. Insert the drain joint into the hole in the base pan of the unit.
3. Rotate the drain joint 90° until it clicks in place facing the front of the unit. **For some panel plates, you need to use tool.**
4. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

If the drain joint doesn't come with a rubber seal (see Fig. B), do the following:

1. Insert the drain joint into the hole in the base pan of the unit. The drain joint will click in place.
2. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.



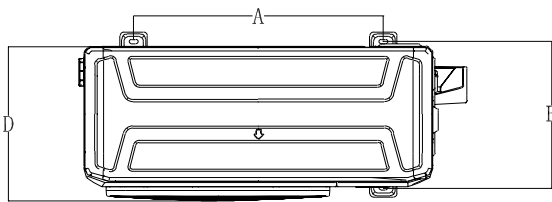
Do not touch the fan with hands or other objects.

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.

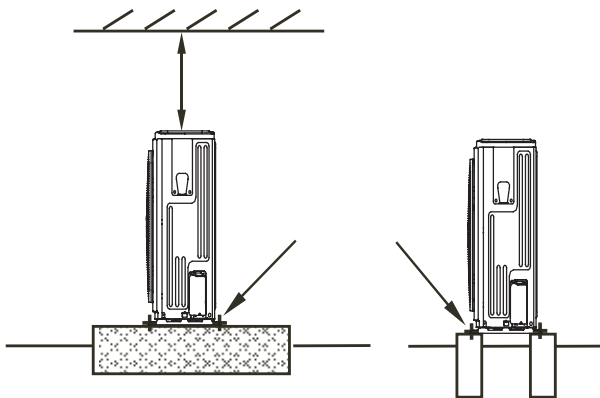
5.3 Bolt pitch



Model	A(mm)	B(mm)	D(mm)
9/12	452	286	303
18	511	317	330
24	663	354	342
30~42	673	403	410
48~60	616	397	375

5.4 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.

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.

Model	Max. Length (m/ft)	Max. Elevation (m/ft)
9/12	25/82	10/32.8
18	30/98.4	20/65.6
24~30	50/164	25/82
36~60	75/246.1	30/98.4

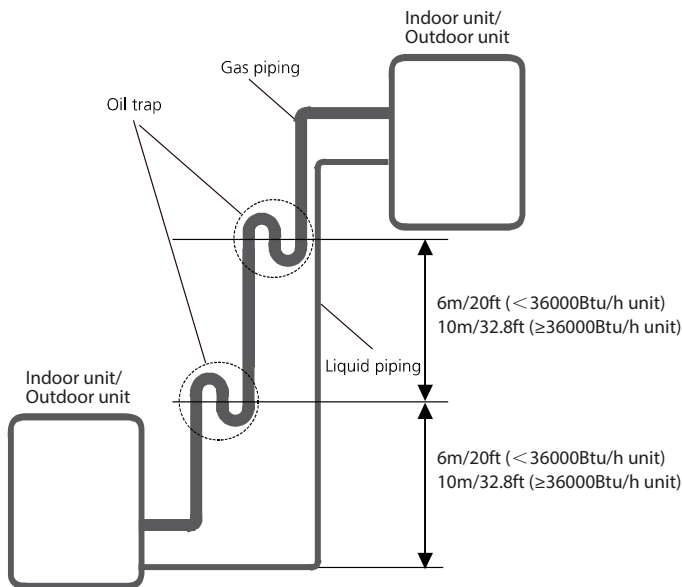
caution:

- 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 (≥36000Btu/h unit).



6.2 The procedure of connecting pipes

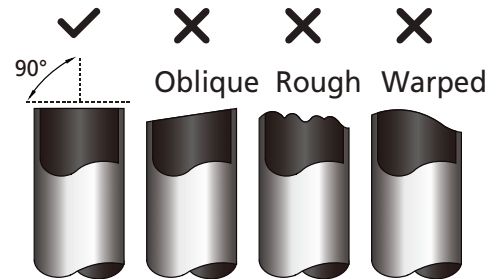
1. Choose the pipe size according to the specification table.

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.

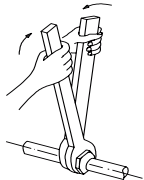
12. Locate the pipe and fix it by supporter

- 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.

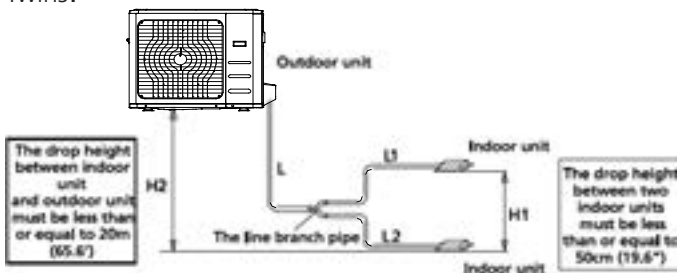
- Be sure to use two spanners and proper torque to fasten the nut, too large torque will damage the bellmouthing, and too small torque may cause leakage. Refer the following table for different pipe connection.

Pipe Diameter	Torque	Sketch map
	N.m(lb.ft)	
1/4" (6.35)	18~20 (13.3~14.8)	
3/8" (9.52)	32~39 (23.6~28.8)	
1/2" (12.7)	49~59 (36.1~43.5)	
5/8" (15.9)	57~71 (42~52.4)	
3/4" (19)	67~101 (49.4~74.5)	
7/8" (22)	85~110 (62.7~81.1)	

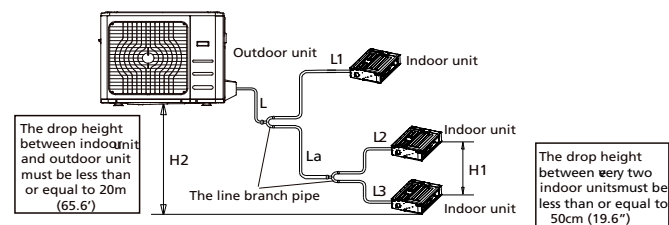
6.3 Refrigerant Piping with Twins/Triple/Double Twins Indoor Units

When installing multiple indoor units with a single outdoor unit, ensure that the length of the refrigerant pipe and the drop height between the indoor and outdoor units meet the requirements illustrated in the following diagram:

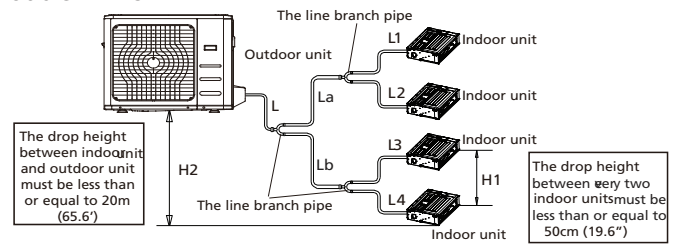
Twins:



Triple:



Double-Twins:



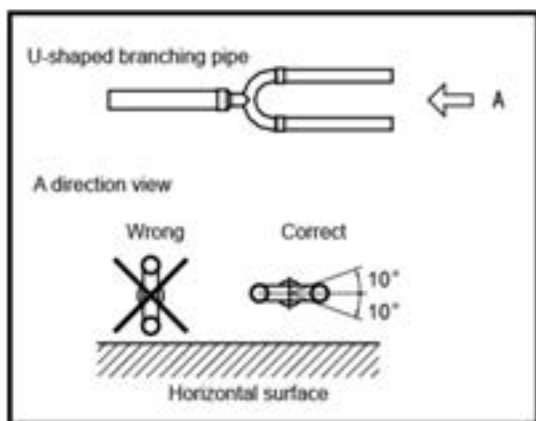
Permitted length(Unit:m)					
Piping length	Twins	Total piping length	12+12	50	L+L1+ L2
			18+18	75	
			24+24 30+30		
	Triple	Total piping length	15		L1, L2
			10		L1-L2
			75		L+L1+L2+L3+La
Double Twins	Total piping length	12+12+12		L+L1+L2+L3+L4+La+Lb	
		18+18+18			
		15	L1, L2, L3, L4		
10	L1-L2, L1-L3, L1-L4, L2-L3, L2-L4, L3-L4				
	Drop height	Drop height between indoor and outdoor unit		20	H2
Drop height between two indoor units		0.5	H1		

- branching pipe

	IDU	IDU Pipe Diameter (liquid&gas)	ODU	ODU Pipe Diameter (liquid&gas)
Twins	12+12	6.35&9.52	24	9.52&15.9
	18+18	6.35&12.7	36	9.52&15.9
	24+24	9.52&15.9	48	9.52&15.9
	30+30	9.52&15.9	60	9.52&15.9
Triple	12+12+12	6.35&9.52	36	9.52&15.9
	18+18+18	6.35&12.7	60	9.52&15.9
Double Twins	12+12+12+12	6.35&9.52	48	9.52&15.9

Caution:

- The branching pipe must be installed horizontally. An angle of more than 10° may cause malfunction.
- DO NOT install the connecting pipe until both indoor and outdoor units have been installed.
- Insulate both the gas and liquid piping to prevent water leakage.



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).

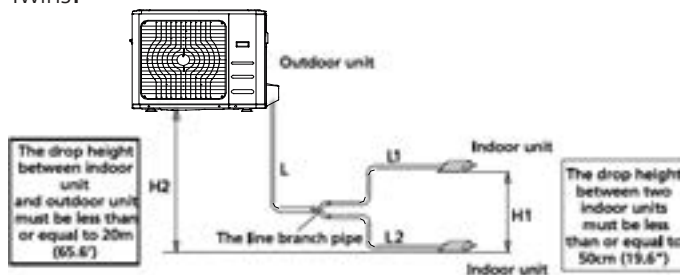
L : The length of the liquid pipe (m).

Note:

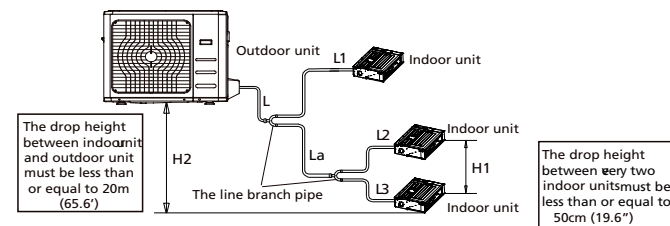
- Refrigerant may only be charged after performed the vacuum drying process.
- Always use gloves and glasses to protect your hands and eyes during the charge work.
- Use electronic scale or fluid infusion apparatus to weight refrigerant to be recharged. Be sure to avoid extra refrigerant charged, it 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).

Additional Refrigerant Charge for Twins/Triple/Double Twins System

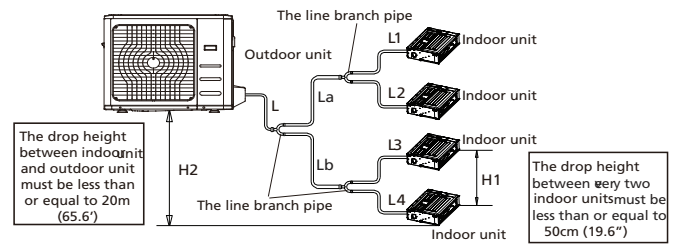
Twins:



Triple:



Double-Twins:



ODU	IDU	Formula
Twins		
24	Duct-09/12	$(L1+L2)*12+(L-5)*24-120$
36	Duct-18	$(L1+L2)*12+(L-5)*24-240$
48	Duct-24	$(L1+L2+L-5)*24-240$
60	Duct-30	$(L1+L2+L-5)*24-240$
Triple		
36	Duct-09/12	$(L1+L2+L3)*12+(L+La-5)*24-180$
60	Duct-18	$(L1+L2+L3)*12+(L+La-5)*24-180$
Double Twins		
48	Duct-09/12	$(L1+L2+L3+L4)*12+(L+La+Lb-5)*24-240$

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.

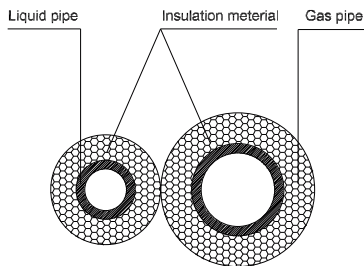
3. Insulation material selection for refrigerant pipe

- 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

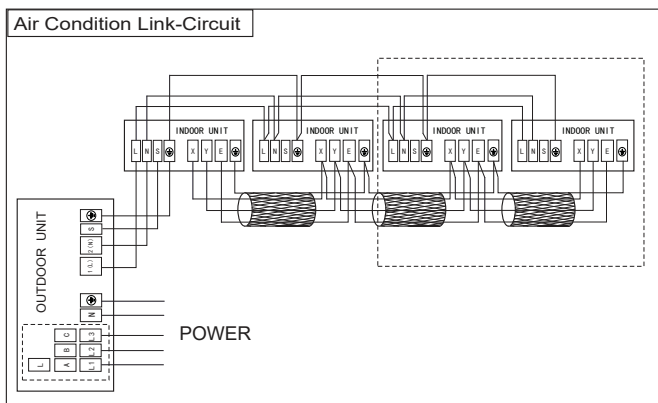
10.1 Highlights of electrical wiring installation

- 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 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

10.2 Wiring for Twins/Triple/Double Twins System



Note, Twins/Triple/Double Twins and Central controller use same terminal X/Y/E, so these two functions you can just choose one .

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

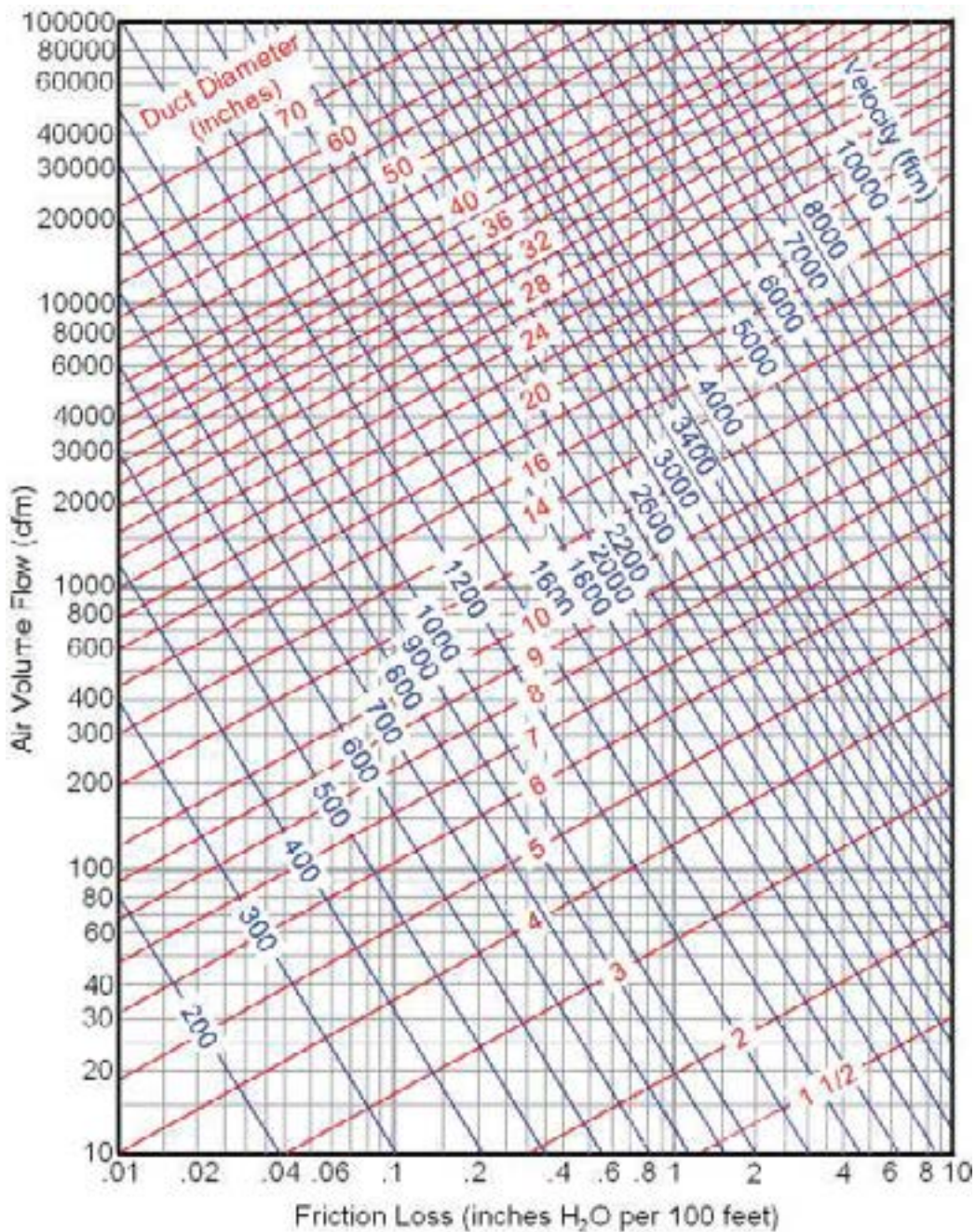
Duct system losses are the irreversible transformation of mechanical energy into heat. The two types of losses are (1) friction losses and (2) dynamic losses.

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 ^x	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	
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	
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
52													139	121	107	96	87	80	74	69	64
53													145	127	112	100	91	83	77	71	67
54													152	133	117	105	95	87	80	74	70
55														139	123	110	99	91	84	78	72
56														145	128	114	104	95	87	81	75
57														151	134	119	108	98	91	84	78
58														158	139	124	112	102	94	87	81
59														165	145	130	117	107	98	91	85
60														172	151	135	122	111	102	94	88

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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7.27	EC 55 (Outdoor IPM module temperature sensor fault Diagnosis and Solution)52	
8.	Check Procedures.....	53

1. Safety Caution

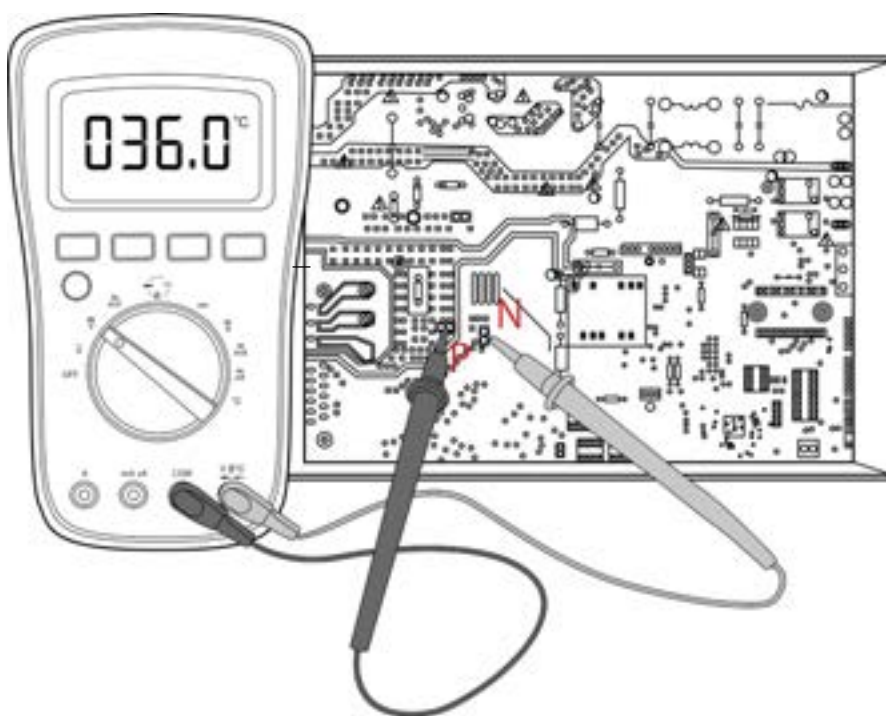
⚠ WARNING

Be sure to turn off all power supplies or disconnect all wires to avoid electric shock. While checking indoor/outdoor PCB, please equip oneself with antistatic gloves or wrist strap to avoid damage to the board.

⚠ WARNING

Electricity remains in capacitors even when the power supply is off. Ensure the capacitors are fully discharged before troubleshooting.

Test the voltage between P and N on back of the main PCB with multimeter. If the voltage is lower than 36V, the capacitors are fully discharged. For models that cannot be measured, wait 5 minutes after the power supply is off to ensure that the capacitors are fully discharged.



Note: This picture is for reference only. Actual appearance may vary.

2. General Troubleshooting

2.1 Error Display (Indoor Unit)

When the indoor unit encounters a recognized error, the operation lamp will flash in a corresponding series, the timer lamp may turn on or begin flashing, and an error code will be displayed. These error codes are described in the following table:

Operation Lamp	Timer Lamp	Display	Error Information	Solution
1 time	OFF	E400/ E401	Indoor unit EEPROM parameter error	TS23
2 times	OFF	E401	Indoor / outdoor unit communication error	TS24
4 times	OFF	E403	The indoor fan speed is operating outside of the normal range(for some models)	TS26
4 times	OFF	E431	Upper indoor fan speed is operating outside of the normal range(for new console type)	TS26
4 times	OFF	E432	Lower indoor fan speed is operating outside of the normal range(for new console type)	TS26
6 times	OFF	E460	Indoor room temperature sensor T1 is in open circuit or has short circuited	TS30
6 times	OFF	E461	Evaporator coil temperature sensor T2 is in open circuit or has short circuited	TS30
8 times	OFF	E40C	Refrigerant leakage detection(for some models)	TS31
9 times	OFF	E40b	Communication error between indoor two chips (For A6 duct type & floor ceiling type)	TS44
9 times	OFF	E40b	Communication error between display board and main board(for new console type)	TS44
13 times	OFF	E40E	Water-level alarm malfunction	TS32
5 times	OFF	E453	Outdoor room temperature sensor T4 is in open circuit or has short circuited	TS30
5 times	OFF	E452	Condenser coil temperature sensor T3 is in open circuit or has short circuited	TS30
5 times	OFF	E454	Compressor discharge temperature sensor TP is in open circuit or has short circuited	TS30
5 times	OFF	E455	Outdoor IPM module temperature sensor fault	TS30
5 times	OFF	E456	Evaporator coil outlet temperature sensor T2B is in open circuit or has short circuited(for free-match indoor units)	TS30
5 times	ON	E451	Outdoor unit EEPROM parameter error	TS23
12 times	OFF	E407	The outdoor fan speed is operating outside of the normal range(for some models)	TS26
7 times	FLASH	P400	IPM malfunction or IGBT over-strong current protection	TS33
2 times	FLASH	P401	Over voltage or over low voltage protection	TS34
3 times	FLASH	P402	Top temperature protection of compressor or High temperature protection of IPM module	TS36
5 times	FLASH	P404	Inverter compressor drive error	TS33

7 times	FLASH	PC03	High pressure protection or low pressure protection (for some models)	TS46/ TS35
14 times	OFF	EC0d	Outdoor unit malfunction(for some models)	TS37
2 times	OFF	EL11	Communication error between master and slave unit (for twins system)	TS49
2 times	OFF	EH12	Another indoor unit malfunction (for twins system)	TS49
--	--	EHbA	Communication malfunction between external fan module and indoor unit (for some models)	TS51
4 times	OFF	EH3R	External fan DC bus voltage is too low protection (for some models)	TS51
4 times	OFF	EH3b	External fan DC bus voltage is too high fault (for some models)	TS51
1 time	ON	--	Indoor units mode conflict(match with multi outdoor unit) (for some models)	--
4 times	FLASH	PC0L	Low ambient temperature protection	TS44

For other errors:

The display board may show a garbled code or a code undefined by the service manual. Ensure that this code is not a temperature reading.

Troubleshooting:

Test the unit using the remote control. If the unit does not respond to the remote, the indoor PCB requires replacement. If the unit responds, the display board requires replacement.

LED flash frequency:



2.2 Error Display (For Some Outdoor Units)

Display	Malfunction or Protection	Solution
EC51	Outdoor EEPROM malfunction	TS23
EL01	Indoor / outdoor units communication error	TS24
PC40	Communication malfunction between IPM board and outdoor main board	TS38
PC08	Outdoor overcurrent protection	TS39
PC10	Outdoor unit low AC voltage protection	TS34
PC11	Outdoor unit main control board DC bus high voltage protection	TS34
PC12	Outdoor unit main control board DC bus high voltage protection /341 MCE error	TS34
PC00	IPM module protection	TS33
PC0F	PFC module protection	TS41
EC71	Over current failure of outdoor DC fan motor	TS26
EC72	Lack phase failure of outdoor DC fan motor	TS42
EC07	Outdoor fan speed has been out of control	TS26

PC 43	Outdoor compressor lack phase protection	TS43
PC 44	Outdoor unit zero speed protection	TS39
PC 45	Outdoor unit IR chip drive failure	TS44
PC 46	Compressor speed has been out of control	TS39
PC 49	Compressor overcurrent failure	TS39
PC 30	High pressure protection	TS46
PC 31	Low pressure protection	TS35
PC 0A	High temperature protection of condenser	TS47
PC 06	Temperature protection of compressor discharge	TS48
PH 90	High temperature protection of evaporator	--
PH 91	Low temperature protection of evaporator	--
PC 02	Top temperature protection of compressor	TS36
EC 52	Condenser coil temperature sensor T3 is in open circuit or has short circuited	TS30
EC 53	Outdoor room temperature sensor T4 is in open circuit or has short circuited	TS30
EC 54	Compressor discharge temperature sensor TP is in open circuit or has short circuited	TS30
EC 55	Outdoor IPM module temperature sensor fault	TS52
EC 50	Open or short circuit of outdoor unit temperature sensor(T3,T4,TP)	TS30
PC 0L	Low ambient temperature protection	TS44

For some models, the outdoor main control board has 1 red LED, which is a status indicator. After power-on, slow flashing (0.5Hz flashing) means standby, long bright means power on, and fast flashing (2.5Hz flashing) means fault.

2.3 Error Display on Two Way Communication Wired Controller

Display	Malfunction or Protection	Solution
E1b3	Communication error between wire controller and indoor unit((for KJR-120X series wired controller)	TS50

The other error codes displayed on the wire controller are same from those on the unit.

3. Information Inquiry

A6 Duct type & Floor ceiling Type:

- To enter information inquiry status, complete the following procedure within ten seconds:
 - Press LED(or DO NOT DISTURB) 3 times.
 - Press SWING(or AIR DIRECTION) 3 times.
- Finish 1 and 2 within 10 seconds, you will hear beeps for two seconds, which means the unit goes into parameter checking mode.
- Use the LED(or DO NOT DISTURB) and SWING(or AIR DIRECTION) buttons to cycle through information displayed.
- Pressing LED(or DO NOT DISTURB) will display the next code in the sequence. Pressing SWING(or AIR DIRECTION) will show the previous.
- The following table shows information codes. The screen will display this code for two seconds, then the information for 25 seconds.

Displayed code	Explanation	Displayed value	Meaning	Additional Notes
T1	Room temperature	-1F,-1E,-1d,-1c,-1b,-1A -19—99 A0,A1,...A9 b0,b1,...b9 c0,c1,...c9 d0,d1,...d9 E0,E1,...E9 F0,F1,...F9	-25,-24,-23,-22,-21,-20 -19—99 100,101,...109 110,111,...119 120,121,...129 130,131,...139 140,141,...149 150,151,...159	<ol style="list-style-type: none"> All displayed temperatures use actual values. All temperatures are displayed in °C regardless of remote used. T1, T2, T3, T4, and T2B display ranges from -25 to 70 °C. TP display ranges from -20 to 130 °C. The frequency display ranges from 0 to 159HZ. If the actual values exceed or fall short of the defined range, the values closest to the maximum and minimum values will be displayed.
T2	Indoor coil temperature			
T3	Outdoor coil temperature			
T4	Ambient temperature			
TB	Outlet temperature of indoor coil			
TP	Discharge temperature			
TH	Suction temperature			
FT	Targeted frequency			
FR	Actual frequency			
IF	Indoor fan speed	0 1,2,3,4	OFF Low speed, Medium speed, High speed, Turbo.	N/A Used for some large capacity motors.
OF	Outdoor fan speed	14-FF	Actual fan speed is equal to the display value converted to decimal value and multiplied by 10. This is measured in RPM.	Used for some small capacity motors. The display value is 14-FF (hexadecimal). The corresponding fan speed ranges from 200 to 2550RPM.
LR	EXV opening angle	0-FF	Actual EXV opening value is equal to the display value converted to decimal value and then multiplied by 2.	-
CT	Compressor continuous running time	0-FF	0-255 minutes	If the actual value exceeds or falls short of the defined range, the value closest to the maximum and minimum will be displayed.
ST	Causes of compressor stop	0-99	For a detailed explanation, contact technical support.	-

Displayed code	Explanation	Displayed value	Meaning	Additional Notes
R0	Reserved	0-FF	-	-
R1				
b0				
b1				
b2				
b3				
b4				
b5				
b6				
dL				
Rc				
Uo				
Td				
RR				
CF				
PR				
Po				

Console Type& Compact Cassette Type:

- To enter information inquiry status, complete the following procedure within ten seconds:
 - Press LED(or DO NOT DISTURB) 3 times.
 - Press SWING(or AIR DIRECTION) 3 times.
- Finish 1 and 2 within 10 seconds, you will hear beeps for two seconds, which means the unit goes into parameter checking mode.
- Use the LED(or DO NOT DISTURB) and SWING(or AIR DIRECTION) buttons to cycle through information displayed.
- Pressing LED(or DO NOT DISTURB) will display the next code in the sequence. Pressing SWING(or AIR DIRECTION) will show the previous.
- The following table shows information codes. The screen will display this code for two seconds, then the information for 25 seconds.

Displayed code	Explanation	Additional Notes
Error code	Error code	Refer to next list of error code
T1	Room temperature	T1 temperature
T2	Indoor coil temperature	T2 temperature
T3	Outdoor coil temperature	T3 temperature
T4	Ambient temperature	T4 temperature
TP	Discharge temperature	TP temperature
FT	Targeted frequency	Targeted Frequency
Fr	Actual frequency	Actual Frequency
dL	Compressor current	N/A
Uo	Outdoor AC voltage	N/A
rS	Indoor capacity test	N/A
od	Running mode	
Pr	Outdoor fan speed	Outdoor fan speed=value*8
Lr	EXV opening angle	EXV opening angle-value*8
lr	Indoor fan speed	Indoor fan speed=value*8
HU	Indoor humidity	N/A
TT	Adjusted setting temperature	N/A
DT	Reserve	N/A
IF	Reserve	N/A
rR	Reserve	N/A
oT	GA algorithm frequency	N/A

New Four-way Cassette Type, New Console Type & A7 Duct type:

- To enter engineer mode, in power-on or standby mode, and in non-locked state, press the key combination “ON/OFF + Air Speed” for 7s:
- After entering the engineer mode, the remote control will display icons of “Auto, Cool, Dry, Heat”, and the Battery icon; at the same time, it will also display the numeric code of the current engineer mode (for the initial engineer mode, the numeric code displayed is 0), and all other icons are inactive.
- In engineer mode, the value of the current numeric code can be adjusted circularly through the Up/Down key, with the setting range of 0 to 30.

Code	Query Content	Additional Notes
0	Error code	Refer to next list of error code
1	Room temperature	T1 temperature
2	Indoor coil temperature	T2 temperature
3	Outdoor coil temperature	T3 temperature
4	Ambient temperature	T4 temperature
5	Discharge temperature	TP temperature
6	Compressor Target Frequency FT	Targeted Frequency
7	Compressor Running Frequency Fr	Actual Frequency
8	Unit Current dL	N/A
9	Outdoor AC Voltage Uo	N/A
10	Current indoor capacity test state Sn	N/A
11	Running mode od	
12	Set Speed Pr of the outdoor fan	Outdoor fan speed=value*8
13	Opening Lr of EEV	EXV opening angle-value*8
14	Actual Running Speed ir of the indoor fan	Indoor fan speed=value*8
15	Indoor Humidity Hu	N/A
16	Set Temperature TT after compensation	N/A
17		N/A
18		N/A
19	/	N/A
20	Indoor Target Frequency oT	N/A
21	Reserve	
22		
23		
24		
25		
26		
27		
28		
29		
30		

Exit of engineer mode:

1)In engineer mode, press the key combination of “On/Off + Air speed” for 2s; 2)The engineer mode will be exited if there are no valid key operations for continuous 60s.

Error code of engineer mode

Display	Error Information
EH00/EH0A	Indoor unit EEPROM parameter error
EL01	Indoor / outdoor unit communication error
EH1A	Communication error between indoor unit and indoor external fan module
EH30	Parameters error of indoor external fan
EH31	Upper indoor fan speed is operating outside of the normal range(for new console type)
EH32	Lower indoor fan speed is operating outside of the normal range(for new console type)
EH35	Phase failure of indoor external fan
EH36	Indoor external fan current sampling bias fault
EH37	Indoor external fan zero speed failure
EH38	Indoor external fan stall failure
EH39	Out of step failure of indoor external fan
EH3A	Low voltage protection of indoor external fan DC bus
EH3B	Indoor external fan DC bus voltage is too high fault
EH3E	Indoor external fan overcurrent fault
EH3F	Indoor external fan module protection/hardware overcurrent protection
EH03	The indoor fan speed is operating outside of the normal range
EC51	Outdoor unit EEPROM parameter error
EC52	Condenser coil temperature sensor T3 is in open circuit or has short circuited
EC53	Outdoor room temperature sensor T4 is in open circuit or has short circuited
EC54	Compressor discharge temperature sensor TP is in open circuit or has short circuited
EC55	IGBT temperature sensor TH is in open circuit or has short circuited
EC0d	Outdoor unit malfunction
EH60	Indoor room temperature sensor T1 is in open circuit or has short circuited
EH61	Evaporator coil temperature sensor T2 is in open circuit or has short circuited
EC71	Outdoor external fan overcurrent fault
EC75	Outdoor external fan module protection/hardware overcurrent protection
EC72	Outdoor external fan phase failure
EC74	Outdoor external fan current sampling bias fault
EC73	Zero speed failure of outdoor unit DC fan
EC07	The outdoor fan speed is operating outside of the normal range(
EHb5	Intelligent eye communication failure
EL0C	Refrigerant leak detected
EH0b	Communication error between indoor two chips
EH0B	Communication error between display board and main board(for new console type)
EH0E	Water-level alarm malfunction
EH0F	Intelligent eye malfunction

PC 00	IPM malfunction or IGBT over-strong current protection
PC 10	Over low voltage protection
PC 11	Over voltage protection
PC 12	DC voltage protection
PC 02	Top temperature protection of compressor or High temperature protection of IPM module
PC 40	Communication error between outdoor main chip and compressor driven chip
PC 41	Current Input detection protection
PC 42	Compressor start error
PC 43	Lack of phase (3 phase) protection
PC 44	Outdoor unit zero speed protection
PC 45	341PWM error
PC 46	Compressor speed malfunction
PC 49	Compressor over current protection
PC 06	Compressor discharge temperature protection
PC 08	Outdoor current protection
PH 09	Anti-cold air in heating mode
PC 0F	PFC module malfunction
PC 30	System overpressure protection
PC 31	System pressure is too low protection
PC 03	Pressure protection
PC 0L	Outdoor low ambient temperature protection
PH 90	Evaporator coil temperature over high protection
PH 91	Evaporator coil temperature over low Protection
PC 0R	Condenser high temperature protection
PH 0C	Indoor unit humidity sensor failure
LH 00	Frequency limit caused by T2
LH 30	Indoor external fan current limit
LH 31	Indoor external fan voltage limit
LC 01	Frequency limit caused by T3
LC 02	Frequency limit caused by TP
LC 05	Frequency limit caused by voltage
LC 03	Frequency limit caused by current
LC 06	Frequency limit caused by PFC
LC 30	Frequency limit caused by high pressure
LC 31	Frequency limit caused by low pressure
LH 07	Frequency limit caused by remote controller
--	Indoor units mode conflict(match with multi outdoor unit)
RR	No malfunction and protection

4. Outdoor Unit Point Check Function(for some models)

- A check switch is included on the outdoor PCB.
- Push SW1 to check the unit's status while running. The digital display shows the following codes each time the SW1 is pushed.

Number of Presses	Display	Remark
00	Normal display	Displays running frequency, running state, or malfunction code
01	Indoor unit capacity demand code	Actual data*HP*10 If capacity demand code is higher than 99, the digital display tube will show single digit and tens digit. (For example, the digital display tube show "5.0",it means the capacity demand is 15. the digital display tube show "60",it means the capacity demand is 6.0)
02	Amendatory capacity demand code	
03	The frequency after the capacity requirement transfer	
04	The frequency after the frequency limit	
05	The frequency of sending to 341 chip	
06	Indoor unit evaporator temperature (T2)	If the temp. is lower than 0 degree, the digital display tube will show "0".If the temp. is higher than 70 degree, the digital display tube will show "70".
07	Condenser pipe temp.(T3)	If the temp. is lower than -9 degree, the digital display tube will show "-9".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"
08	Outdoor ambient temp.(T4)	
09	Compressor discharge temp. (T5)	The display value is between 13~129 degree. If the temp. is lower than 13 degree, the digital display tube will show "13". If the temp. is higher than 99 degree, the digital display tube will show single digit and tens digit. (For example, the digital display tube show "0.5",it means the compressor discharge temp. is 105 degree. the digital display tube show "1.6",it means the compressor discharge temp. is 116 degree)
10	AD value of current	The display value is a hex number.
11	AD value of voltage	For example, the digital display tube shows "Cd", it means AD value is 205.
12	Indoor unit running mode code	Standby:0, Fan only 1,Cooling:2, Heating:3, Forced cooling:4, Drying:6, Self clean:8
13	Outdoor unit running mode code	Standby:0, Fan only 1,Cooling:2, Heating:3, Forced cooling:4, Drying:6, Self clean:8
14	EXV open angle	Actual data/4. If the value is higher than 99, the digital display tube will show single digit and tens digit. For example, the digital display tube show "2.0",it means the EXV open angle is 120×4=480p.)

15	Frequency limit symbol	Bit7	Frequency limit caused by IGBT radiator	The display value is a hexadecimal number. For example, the digital display show 2A, then Bit5=1, Bit3=1, and Bit1=1. This means that a frequency limit may be caused by T4, T3, or the current.
		Bit6	Frequency limit caused by PFC	
		Bit5	Frequency limit caused by high temperature of T2.	
		Bit4	Frequency limit caused by low temperature of T2.	
		Bit3	Frequency limit caused by T3.	
		Bit2	Frequency limit caused by T5.	
		Bit1	Frequency limit caused by current	
		Bit0	Frequency limit caused by voltage	
16	Outdoor unit fan motor state	Off: 0, Turbo:1 High speed:2, Med speed: 3, Low speed: 4, Breeze:5, Super breeze: 6 other speed:7		
17	IGBT radiator temp.	The display value is between 0~130 degree. If the temp. is higher than 99 degree, the digital display tube will show single digit and tens digit. (For example, the digital display tube show "0.5",it means the IGBT radiator temp. is 105 degree. the digital display tube show "1.6",it means the IGBT radiator temp. is 116 degree)		
18	Indoor unit number	The indoor unit can communicate with outdoor unit well. General:1, Twins:2		
19	Evaporator pipe temp. T2 of 1# indoor unit	If the temp. is lower than 0 degree, the digital display tube will show "0".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"(heating T2, cooling T2B)		
20	Evaporator pipe temp. T2 of 2# indoor unit			
21	Reserved			
22	1# Indoor unit capacity demand code	Actual data*HP*10		
23	2# Indoor unit capacity demand code	If capacity demand code is higher than 99, the digital display tube will show single digit and tens digit. (For example, the digital display tube show "5.0",it means the capacity demand is 15. the digital display tube show "60",it means the capacity demand is 6.0). If the indoor unit is not connected, the digital display tube will show: "--"		
24	Reserved			
25	Room temp. T1 of 1# indoor unit	If the temp. is lower than -9 degree, the digital display tube will show "-9".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"		
26	Room temp. T1 of 2# indoor unit	If the temp. is lower than 0 degree, the digital display tube will show "0".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"		
27	Average room temp. T1			
28	Reason of stop			
29	Evaporator pipe temp. T2B of 1# indoor unit	If the temp. is lower than -9 degree, the digital display tube will show "-9".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"		
30	Evaporator pipe temp. T2B of 2# indoor unit	If the temp. is lower than 0 degree, the digital display tube will show "0".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"		

5. Error Diagnosis and Troubleshooting Without Error Code

WARNING

Be sure to turn off unit before any maintenance to prevent damage or injury.

5.1 Remote maintenance

SUGGESTION: When troubles occur, please check the following points with customers before field maintenance.

No.	Problem	Solution
1	Unit will not start	TS18 - TS19
2	The power switch is on but fans will not start	TS18 - TS19
3	The temperature on the display board cannot be set	TS18 - TS19
4	Unit is on but the wind is not cold(hot)	TS18 - TS19
5	Unit runs, but shortly stops	TS18 - TS19
6	The unit starts up and stops frequently	TS18 - TS19
7	Unit runs continuously but insufficient cooling(heating)	TS18 - TS19
8	Cool can not change to heat	TS18 - TS19
9	Unit is noisy	TS18 - TS19

5.2 Field maintenance

	Problem	Solution
1	Unit will not start	TS20 - TS21
2	Compressor will not start but fans run	TS20 - TS21
3	Compressor and condenser (outdoor) fan will not start	TS20 - TS21
4	Evaporator (indoor) fan will not start	TS20 - TS21
5	Condenser (Outdoor) fan will not start	TS20 - TS21
6	Unit runs, but shortly stops	TS20 - TS21
7	Compressor short-cycles due to overload	TS20 - TS21
8	High discharge pressure	TS20 - TS21
9	Low discharge pressure	TS20 - TS21
10	High suction pressure	TS20 - TS21
11	Low suction pressure	TS20 - TS21
12	Unit runs continuously but insufficient cooling	TS20 - TS21
13	Too cool	TS20 - TS21
14	Compressor is noisy	TS20 - TS21
15	Horizontal louver can not revolve	TS20 - TS21

1.Remote Maintenance	Electrical Circuit	Refrigerant Circuit	
Possible causes of trouble	Power failure		
	The main power tripped		
	Loose connections		
	Faulty transformer		
	The voltage is too high or too low		
	The remote control is powered off		
	Broken remote control		
	Dirty air filter		
	Dirty condenser fins		
	The setting temperature is higher/lower than the room's(cooling/heating)		
	The ambient temperature is too high/low when the mode is cooling/heating		
	Fan mode		
	SILENCE function is activated(optional function)		
	Frosting and defrosting frequently		
Test method / remedy	Unit will not start		
	The power switch is on but fans will not start		
	The temperature on the display board cannot be set		
	Unit is on but the wind is not cold(hot)		
	Unit runs, but shortly stops		
	The unit starts up and stops frequently		
	Unit runs continuously but insufficient cooling/heating)		
	Cool can not change to heat		
	Unit is noisy		
	Test voltage	☆	
	Close the power switch	☆	
	Inspect connections - tighten	☆ ☆	
	Change the transformer	☆ ☆	
	Test voltage	☆	☆ ☆
Replace the battery of the remote control	☆		
Replace the remote control	☆		
Clean or replace		☆	
Clean		☆	
Adjust the setting temperature		☆ ☆ ☆	
Turn the AC later		☆ ☆ ☆ ☆	
Adjust to cool mode		☆	
Turn off SILENCE function.		☆	
Turn the AC later		☆	

1.Remote Maintenance	Others					
Possible causes of trouble	Heavy load condition	Loosen hold down bolts and / or screws	Bad airproof	The air inlet or outlet of either unit is blocked	Interference from cell phone towers and remote boosters	Shipping plates remain attached
Unit will not start						
The power switch is on but fans will not start					☆	
The temperature on the display board cannot be set						
Unit is on but the wind is not cold(hot)						
Unit runs, but shortly stops						
The unit starts up and stops frequently				☆		
Unit runs continuously but insufficient cooling(heating)	☆		☆	☆		
Cool can not change to heat						
Unit is noisy		☆				☆
Test method / remedy	Check heat load	Tighten bolts or screws	Close all the windows and doors	Remove the obstacles	Reconnect the power or press ON/OFF button on remote control to restart operation	Remove them

2. Field Maintenance	Refrigerant Circuit												Others										
Possible causes of trouble	Compressor stuck	Shortage of refrigerant	Restricted liquid line	Dirty air filter	Dirty evaporator coil	Insufficient air through evaporator coil	Overcharge of refrigerant	Dirty or partially blocked condenser	Air or incompressible gas in refrigerant cycle	Short cycling of condensing air	High temperature condensing medium	Insufficient condensing medium	Broken compressor internal parts	Inefficient compressor	Expansion valve obstructed	Expansion valve or capillary tube closed completely	Leaking power element on expansion valve	Poor installation of feeler bulb	Heavy load condition	Loosen hold down bolts and / or screws	Shipping plates remain attached	Poor choices of capacity	Contact of piping with other piping or external plate
Unit will not start																							
Compressor will not start but fans run	☆																						
Compressor and condenser (outdoor) fan will not start																							
Evaporator (indoor) fan will not start																							
Condenser (Outdoor) fan will not start																							
Unit runs, but shortly stops		☆	☆																				
Compressor short-cycles due to overload		☆																					
High discharge pressure																							
Low discharge pressure		☆																					
High suction pressure																							
Low suction pressure		☆	☆																				
Unit runs continuously but insufficient cooling		☆	☆																				
Too cool																							
Compressor is noisy													☆										
Horizontal louver can not revolve																							
Test method / remedy	Replace the compressor																						
	Leak test		☆	☆																			
	Replace restricted part			☆	☆																		
	Clean or replace			☆	☆																		
	Clean coil			☆	☆																		
	Check fan			☆	☆																		
	Change charged refrigerant volume							☆															
	Clean condenser or remove obstacle								☆						☆	☆							
	Purge, evacuate and recharge								☆														
	Remove obstruction to air flow								☆														
	Remove obstruction in air or water flow														☆								
	Remove obstruction in air or water flow														☆								
	Replace compressor													☆									
	Test compressor efficiency														☆	☆							
	Replace valve															☆							
	Replace valve																☆						
	Replace valve																	☆					
	Fix feeler bulb																		☆				
	Check heat load																		☆	☆			
	Tighten bolts or screws																				☆		
	Remove them																				☆		
	Choose AC of larger capacity or add the number of AC																					☆	
	Rectify piping so as not to contact each other or with external plate																					☆	

2. Field Maintenance		Electrical Circuit	
Possible causes of trouble	Unit will not start	☆	Power failure
	Compressor will not start but fans run	☆	Blown fuse or varistor
	Compressor and condenser (outdoor) fan will not start	☆	Loose connections
	Evaporator (indoor) fan will not start	☆	Shorted or broken wires
	Condenser (Outdoor) fan will not start	☆	Safety device opens
	Unit runs, but shortly stops	☆	Faulty thermostat / room temperature sensor
	Compressor short-cycles due to overload	☆	Wrong setting place of temperature sensor
	High discharge pressure	☆	Faulty transformer
	Low discharge pressure	☆	Shorted or open capacitor
	High suction pressure	☆	Faulty magnetic contactor for compressor
	Low suction pressure	☆	Faulty magnetic contactor for fan
	Unit runs continuously but insufficient cooling	☆	Low voltage
	Too cool	☆	Faulty stepping motor
	Compressor is noisy	☆	Shorted or grounded compressor
	Horizontal louver can not revolve	☆	Shorted or grounded fan motor
	Test method / remedy	Test voltage	
Inspect fuse type & size			
Inspect connections - tighten		☆	
Test circuits with tester		☆	
Test continuity of safety device			
Test continuity of thermostat / sensor & wiring			☆
Place the temperature sensor at the central of the air inlet grille			☆
Check control circuit with tester			☆
Check capacitor with tester			☆
Test continuity of coil & contacts			☆
Test continuity of coil & contacts			☆
Test voltage			☆
Replace the stepping motor		☆	
Check resistance with multimeter			☆
Check resistance with multimeter			☆

6. Quick Maintenance by Error Code

If you do not have the time to test which specific parts are faulty, you can directly change the required parts according to the error code.

You can find the parts to replace by error code in the following table.

Part requiring replacement	Error Code								
	EH00/EH0R	EL01	EH03/EH31/EH32	EH60	EH61	EL0C	EH0E	EC53	EH0b
Indoor PCB	✓	✓	✓	✓	✓	✓	✓	x	✓
Outdoor PCB	x	✓	x	x	x	x	x	✓	x
Indoor fan motor	x	x	✓	x	x	x	x	x	x
T1 sensor	x	x	x	✓	x	x	x	x	x
T2 Sensor	x	x	x	x	✓	✓	✓	x	x
T3 Sensor	x	x	x	x	x	x	x	x	x
T4 Sensor	x	x	x	x	x	x	x	✓	x
Reactor	x	✓	x	x	x	x	x	x	x
Compressor	x	x	x	x	x	x	x	x	x
Additional refrigerant	x	x	x	x	x	✓	✓	x	x
Water-level switch	x	x	x	x	x	x	✓	x	x
Water pump	x	x	x	x	x	x	✓	x	x
Display board	x	x	x	x	x	x	x	x	✓

Part requiring replacement	EC54	EC51	EC52	EC07	PC00	PC01	PC02	PC04	PC03
Indoor PCB	x	x	x	x	x	x	x	x	x
Outdoor PCB	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outdoor fan motor	x	x	x	✓	✓	x	✓	✓	x
T3 Sensor	x	x	✓	x	x	x	x	x	x
TP Sensor	✓	x	x	x	x	x	x	x	x
Reactor	x	x	x	x	x	✓	x	x	x
Compressor	x	x	x	x	✓	x	x	✓	x
IPM module board	x	x	x	x	✓	✓	✓	✓	x
Low pressure protector	x	x	x	x	x	x	x	x	✓
Additional refrigerant	x	x	x	x	x	x	x	x	✓

Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

7. Troubleshooting by Error Code

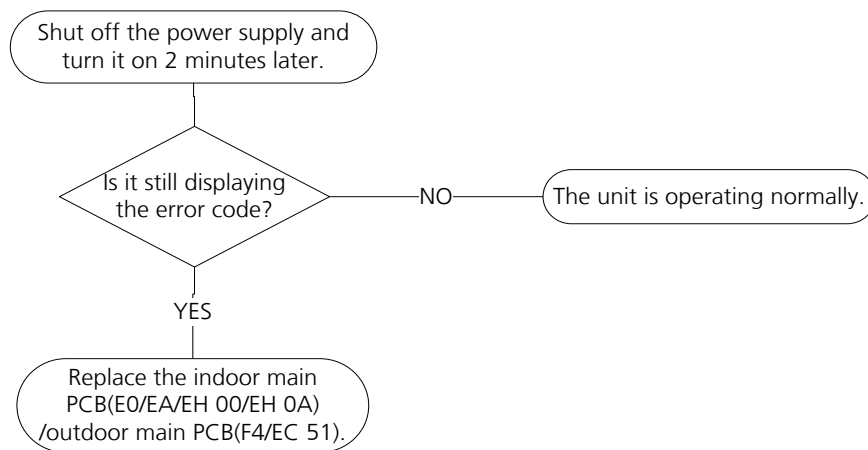
7.1 EH 00/ EH 0A / EC 51 (EEPROM Parameter Error Diagnosis and Solution)

Description: Indoor or outdoor PCB main chip does not receive feedback from EEPROM chip.

Recommended parts to prepare:

- Indoor PCB
- Outdoor PCB

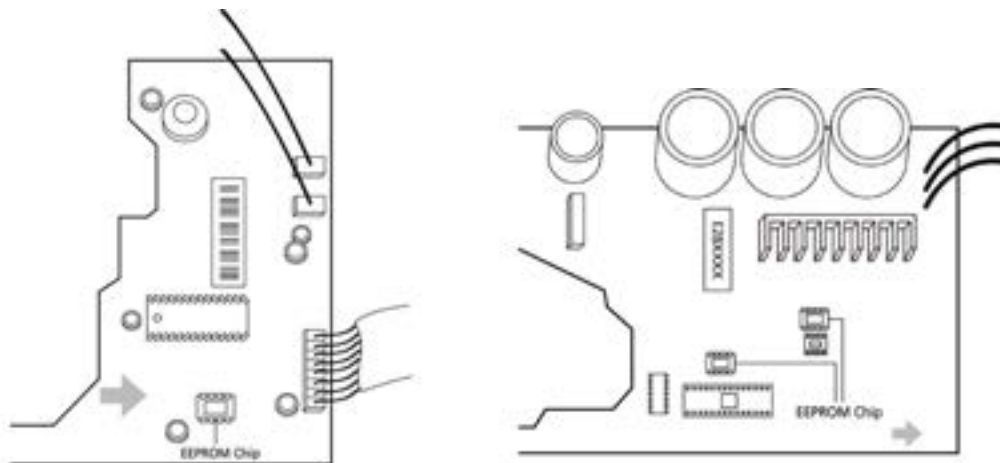
Troubleshooting and repair:



Remarks:

EEPROM: A read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.

The location of the EEPROM chip on the indoor and outdoor PCB is shown in the following two images:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole. This pictures are only for reference, actual appearance may vary.

Troubleshooting and repair of compressor driven chip EEPROM parameter error and communication error between outdoor main chip and compressor driven chip are same as EC 51.

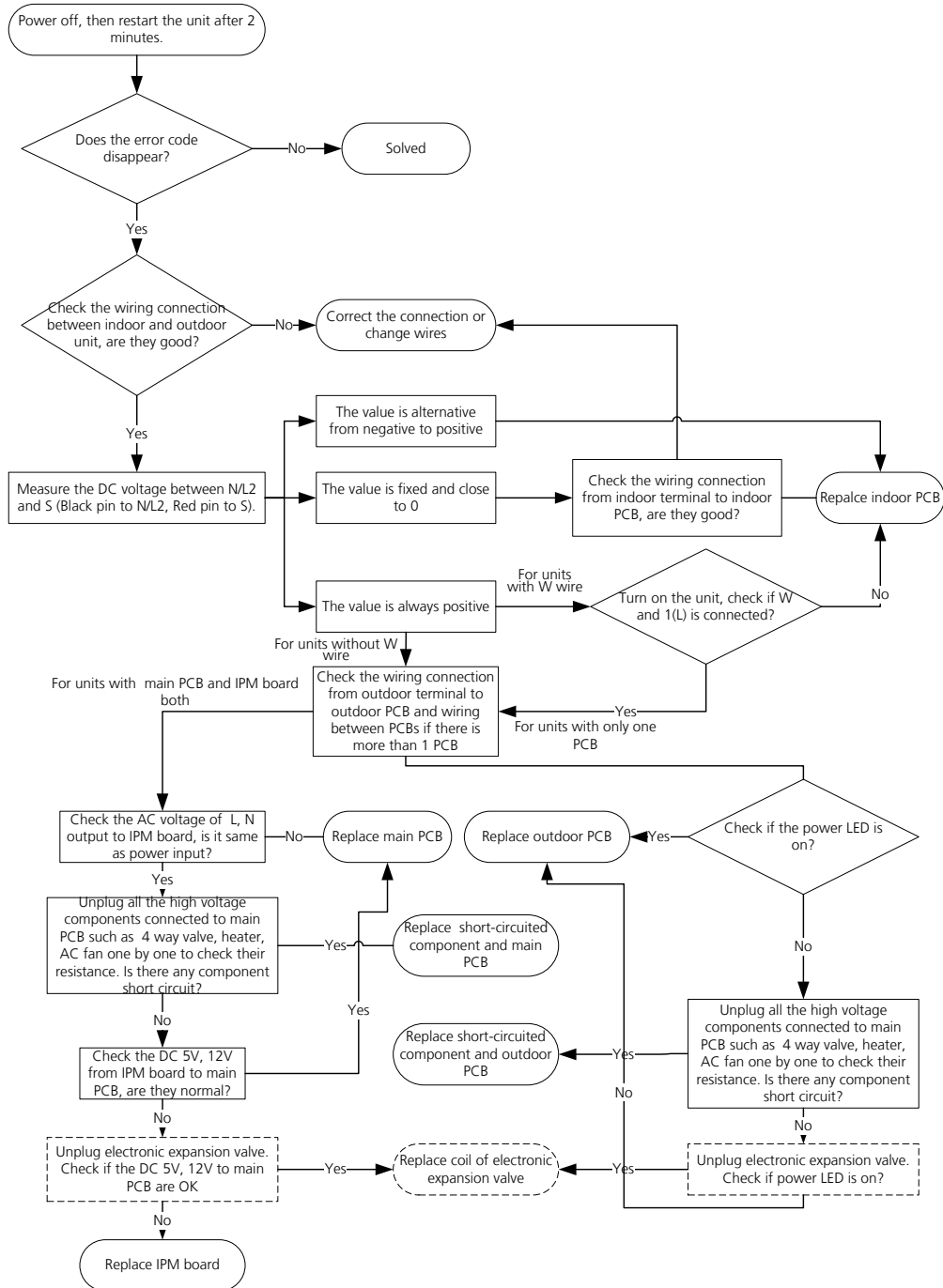
7.2 EL 01 (Indoor and Outdoor Unit Communication Error Diagnosis and Solution)

Description: Indoor unit can not communicate with outdoor unit

Recommended parts to prepare:

- Indoor PCB
- Outdoor PCB
- Reactor

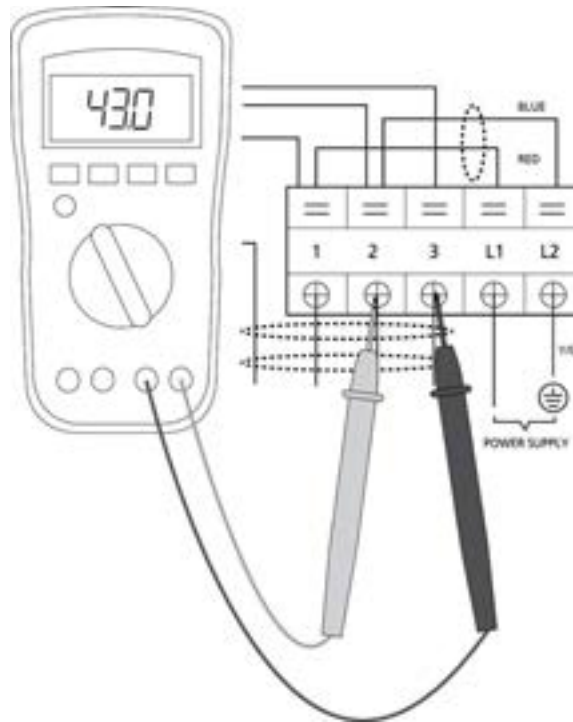
Troubleshooting and repair:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

Remarks:

- Use a multimeter to test the DC voltage between 2 port(or S or L2 port) and 3 port(or N or S port) of outdoor unit. The red pin of multimeter connects with 2 port(or S or L2 port) while the black pin is for 3 port(or N or S port) .
- When AC is operating normally, the voltage is moving alternately as positive values and negative values
- If the outdoor unit has malfunction, the voltage has always been the positive value.
- While if the indoor unit has malfunction, the voltage has always been a certain value.



**S and N
or
L2 and S
or
2 and 3**

- Use a multimeter to test the resistance of the reactor which does not connect with capacitor.
- The normal value should be around zero ohm. Otherwise, the reactor must have malfunction.



Note: The picture and the value are only for reference, actual condition and specific value may vary.

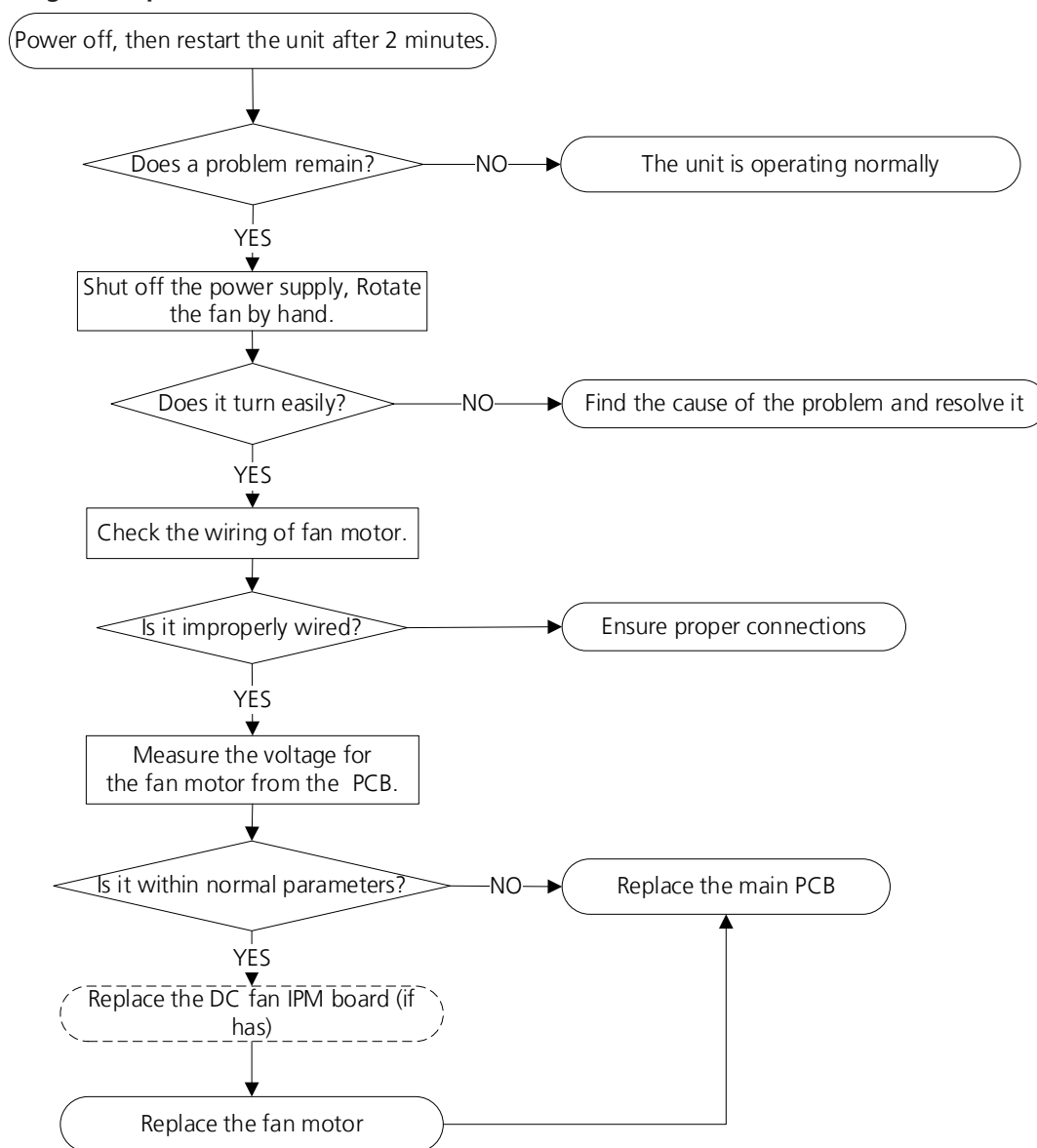
7.3 EH 03 / EH 31/EH 32/ EC 07 (Fan Speed Is Operating Outside of Normal Range)/EC 71(Over Current Failure of Outdoor DC Fan Motor) Diagnosis and Solution

Description: When indoor / outdoor fan speed keeps too low or too high for a certain time, the unit ceases operation and the LED displays the failure.

Recommended parts to prepare:

- Connection wires
- Fan assembly
- Fan motor
- PCB

Troubleshooting and repair:



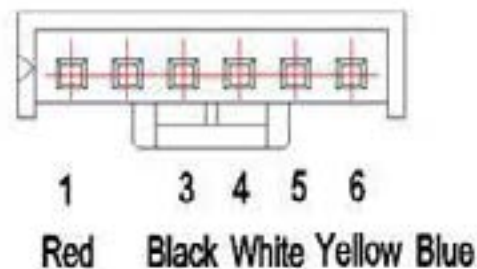
Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

Index:

1. Indoor or Outdoor DC Fan Motor(control chip is in fan motor)

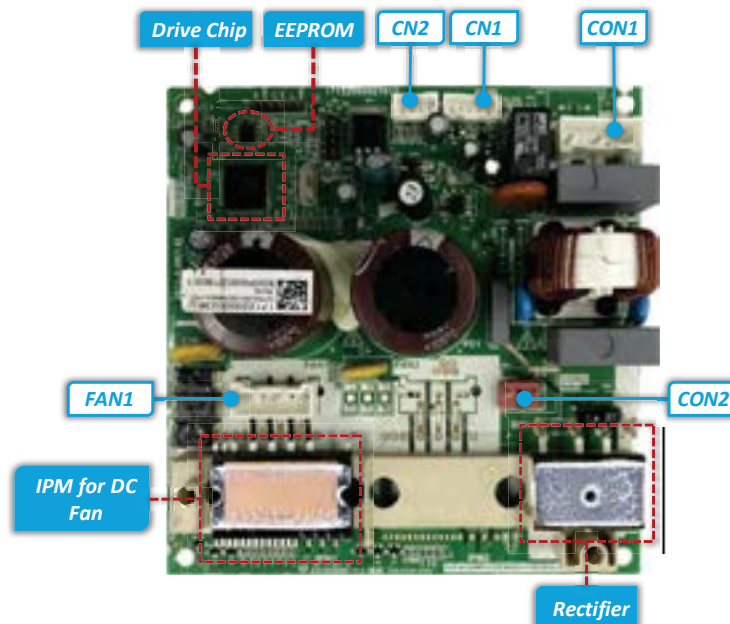
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must has problems and need to be replaced.

No.	Color	Signal	Voltage
1	Red	Vs/Vm	192V~380V
2	---	---	---
3	Black	GND	0V
4	White	Vcc	13.5-16.5V
5	Yellow	Vsp	0~6.5V
6	Blue	FG	13.5-16.5V



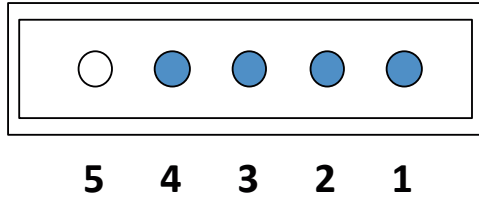
2. Indoor DC Fan IPM Board (Duct and Ceiling-floor Unit)

Power on and when the unit is in standby, measure the voltage of CON1, pin1-pin2 and pin3-pin2 of CN1 in DC motor driver board. If the value of the voltage is not in the range showing in below tables, the indoor main PCB must has problems and need to be replaced.



Port	Description	Parameter	Remark
CON1	Power input for the PCB	230V/AC	
CN1	Communication with main PCB	DC	
CN2	Test port	5V/DC	For debugging board
CN23	UVW output for DC fan motor		
CON2	Ports for reactor		

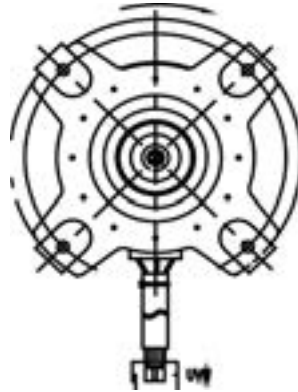
CN1 Communication with main PCB



NO.	Signal	Voltage
1	Vcc	+15V
2	GND	
3	TXD	0~6V
4	RXD	0~15V
5	--	--

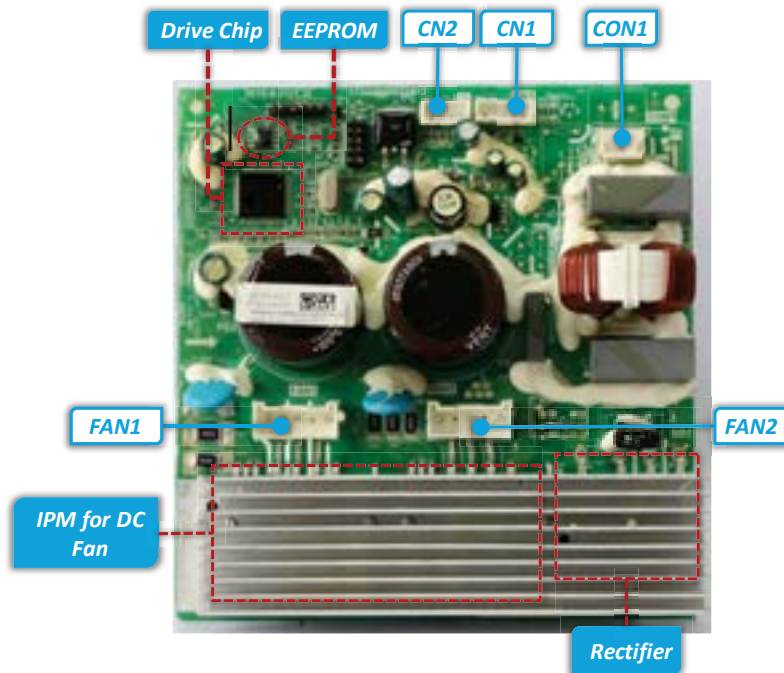
3. Outdoor DC Fan Motor (control chip is in outdoor PCB)

Release the UVW connector. Measure the resistance of U-V, U-W, V-W. If the resistance is not equal to each other, the fan motor must have problems and need to be replaced. Otherwise the PCB must have problems and need to be replaced.



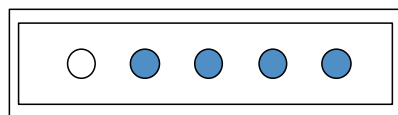
4. Outdoor DC Fan IPM Board (for some double fan models)

Power on and when the unit is in standby, measure the voltage of CON1, pin1-pin2 and pin3-pin2 of CN1 in DC motor driver board. If the value of the voltage is not in the range showing in below tables, the outdoor main PCB must have problems and need to be replaced.



Part	Description	Parameter	Remark
CON1	Power input for the PCB	192-380V/DC	
CN1	Communication with main PCB	DC	
CN2	Test port	5V/DC	For debugging board
FAN1	UVW output for DC fan motor		
FAN2	UVW output for DC fan motor		

CN1 Communication with main PCB



5 4 3 2 1

No.	Signal	Voltage
1	Vcc	13.5-16.5V
2	GND	0V
3	Vsp	0~6.5V
4	FG	13.5-16.5V
5	---	---

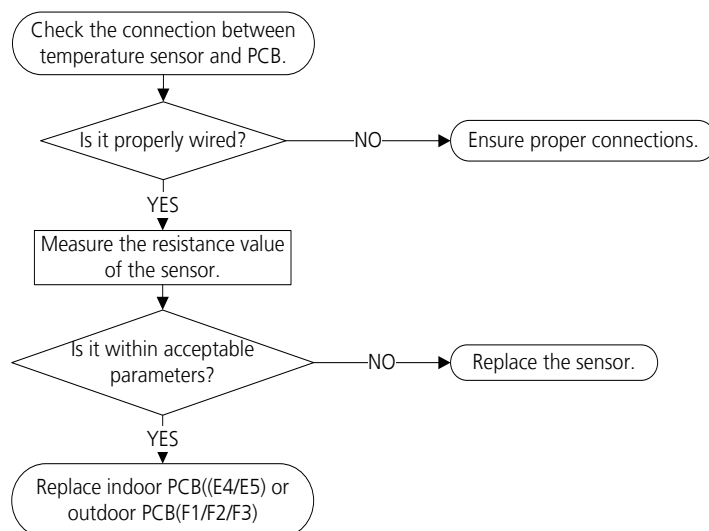
7.4 EH 60/EH 61/EC 53/EC 52/EC 54/EC 55/EC 56/EC 50 (Open Circuit or Short Circuit of Temperature Sensor Diagnosis and Solution)

Description: If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED displays the failure.

Recommended parts to prepare:

- Connection wires
- Sensors
- PCB

Troubleshooting and repair:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole. This picture and the value are only for reference, actual appearance and value may vary

7.5 EL 0C (Refrigerant Leakage Detection Diagnosis and Solution)

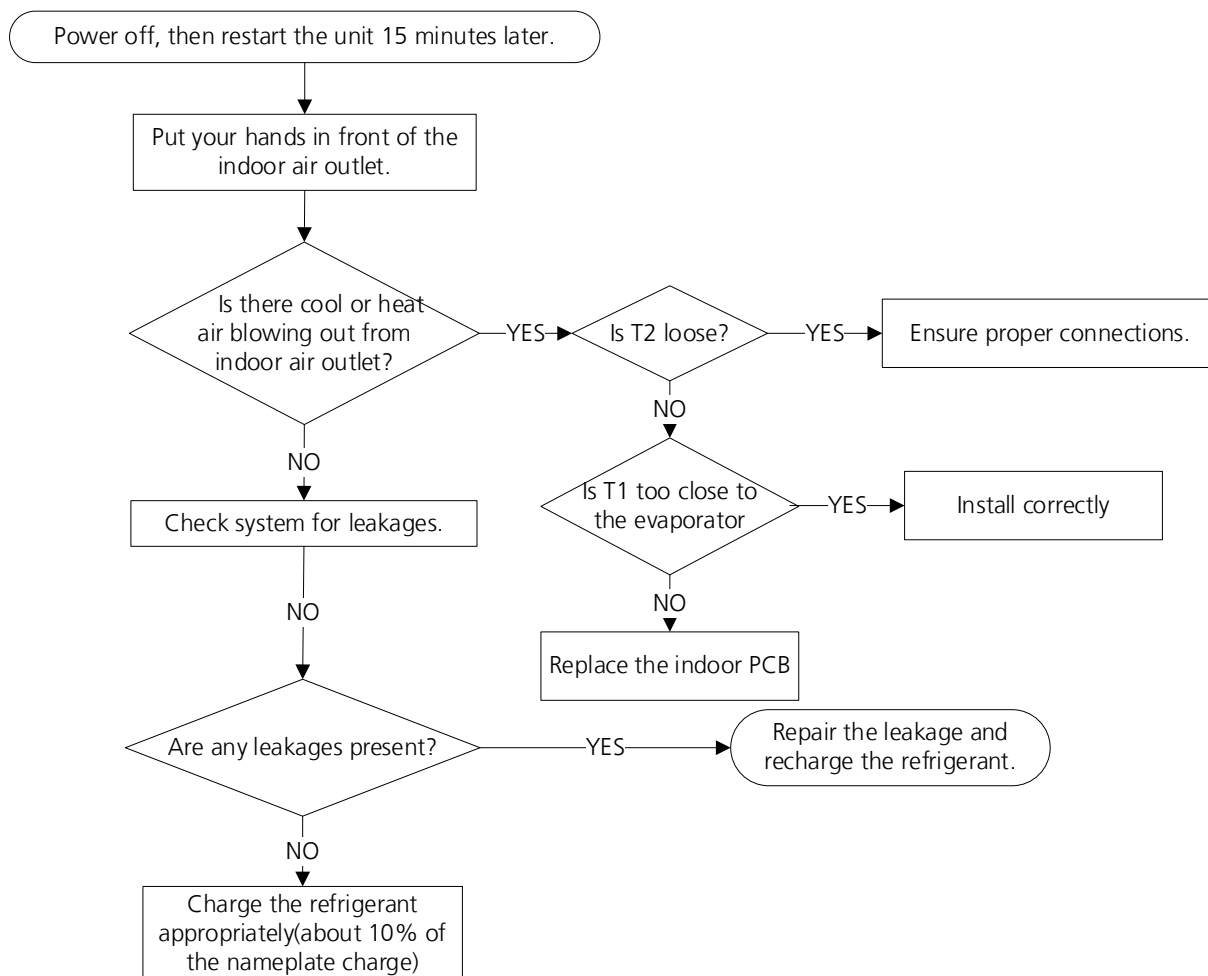
Description:

Judging the abnormality of the refrigeration system according to the number of compressor stops and the changes in operating parameters caused by excessive exhaust temperature.

Recommended parts to prepare:

- Indoor PCB
- Additional refrigerant

Troubleshooting and repair:

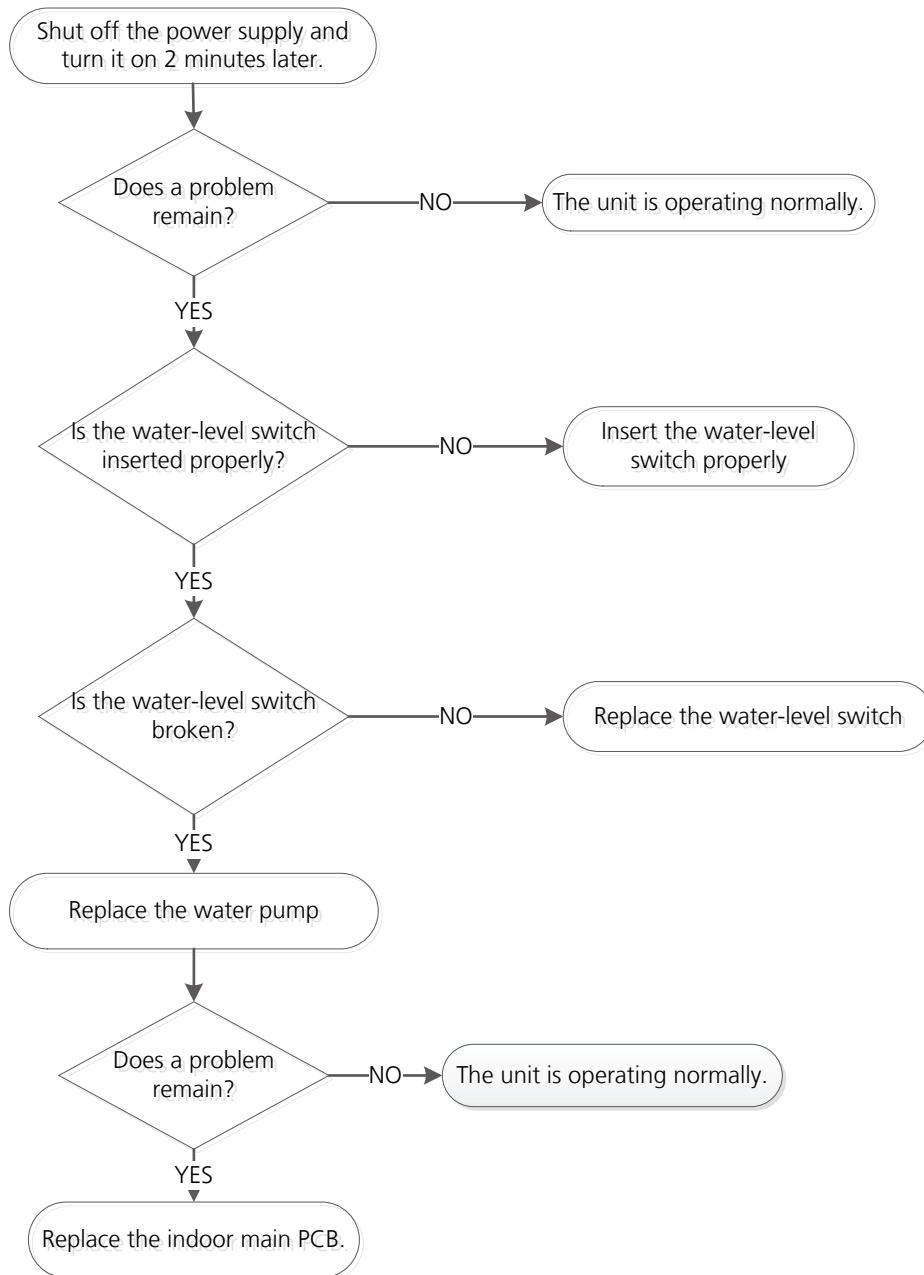


7.6 EH 0E(Water-Level Alarm Malfunction Diagnosis and Solution)

Description: If the sampling voltage is not 5V, the LED displays the failure code.

Recommended parts to prepare:

- Connection wires
- Water-level switch
- Water pump
- Indoor PCB



7.7 PC 00(IPM malfunction or IGBT over-strong current protection)/PC 04(Inverter compressor drive error) Diagnosis and Solution

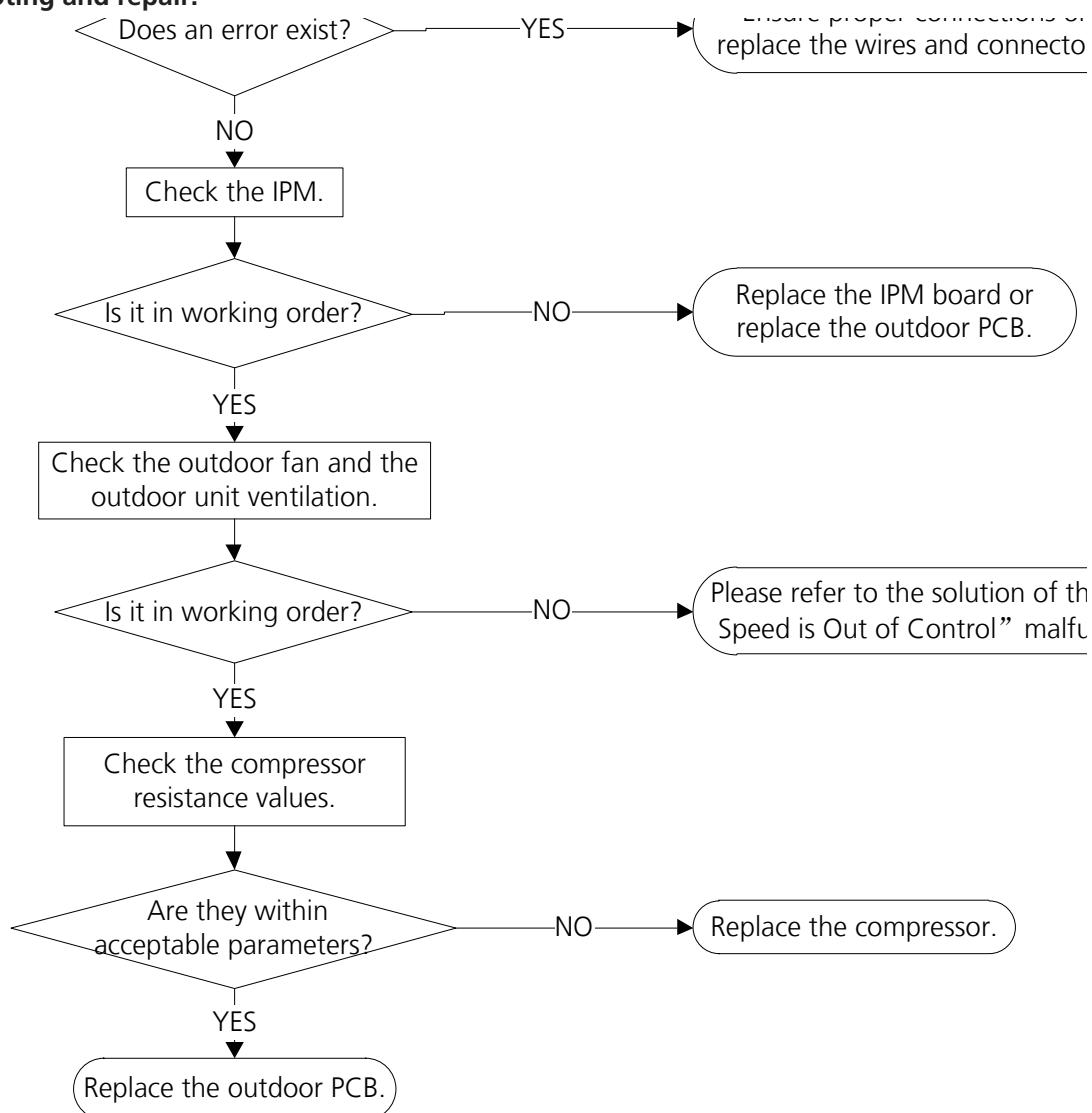
Description: When the voltage signal the IPM sends to the compressor drive chip is abnormal, the display LED shows "PC 00" and the AC turn off.

Or an abnormal inverter compressor drive is detected by a special detection circuit, including communication signal detection, voltage detection, compressor rotation speed signal detection and so on.

Recommended parts to prepare:

- Connection wires
- IPM module board
- Outdoor fan assembly
- Compressor
- Outdoor PCB

Troubleshooting and repair:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

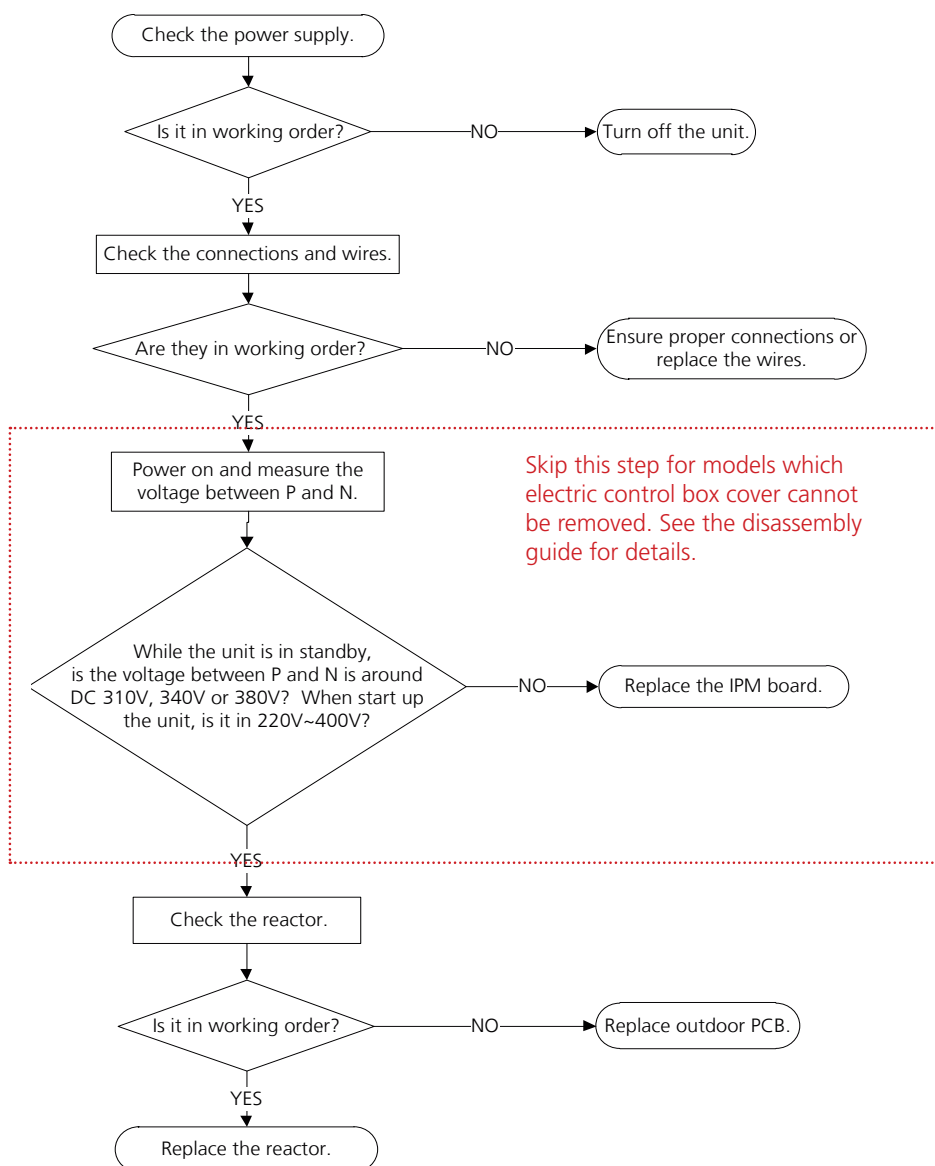
7.8 PC 01(Over voltage or too low voltage protection)/PC 10(Outdoor unit low AC voltage protection)/PC 11(Outdoor unit main control board DC bus high voltage protection)/PC 12(Outdoor unit main control board DC bus high voltage protection /341 MCE error) Diagnosis and Solution

Description: Abnormal increases or decreases in voltage are detected by checking the specified voltage detection circuit.

Recommended parts to prepare:

- Power supply wires
- IPM module board
- PCB
- Reactor

Troubleshooting and repair:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

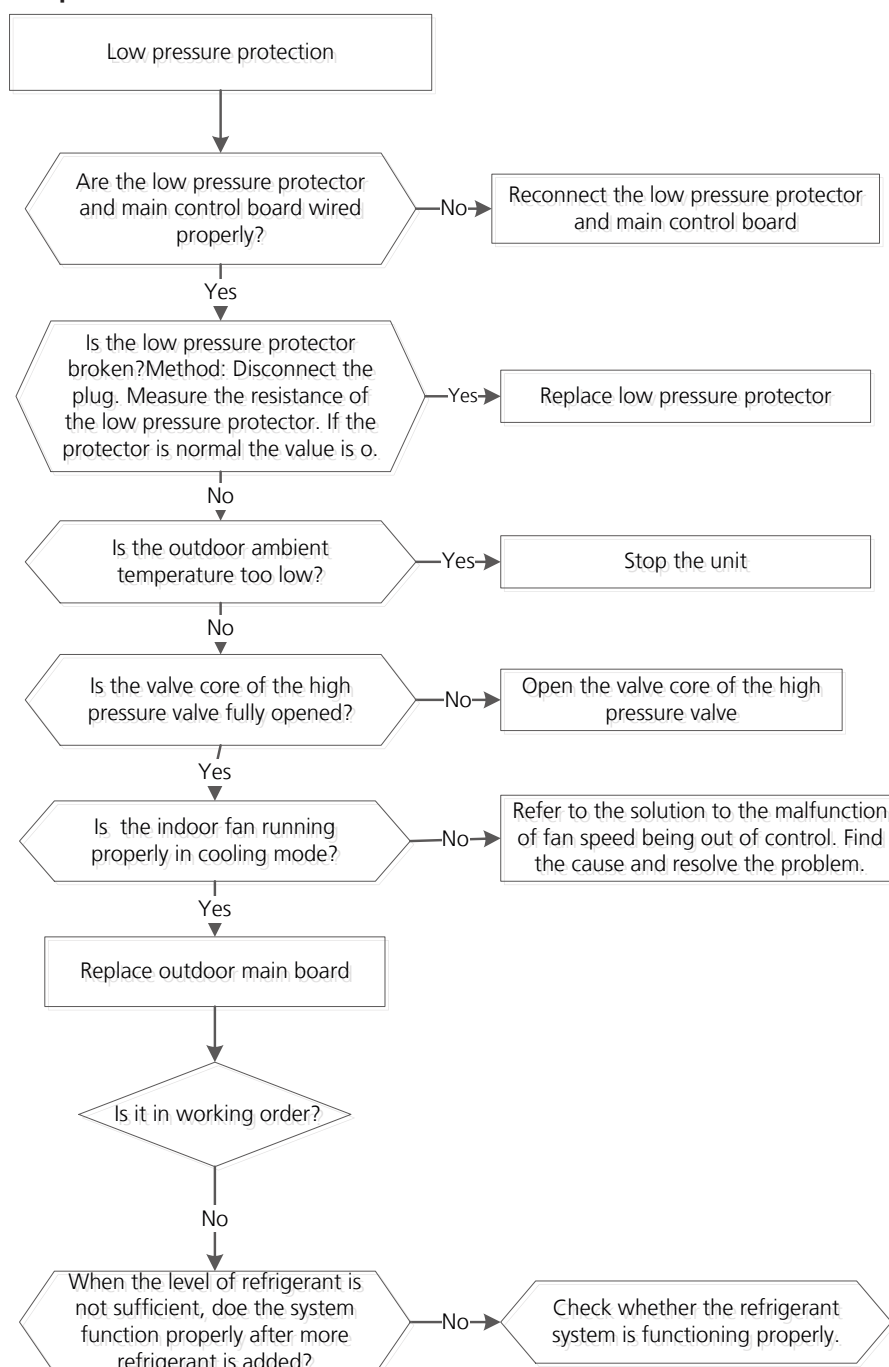
7.9 PC 03/PC 31(Low Pressure Protection Diagnosis and Solution)

Description: If the sampling voltage is not 5V, the LED displays a failure code.

Recommended parts to prepare:

- Connection wires
- Low pressure protector
- Indoor fan assembly
- Outdoor PCB

Troubleshooting and repair:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

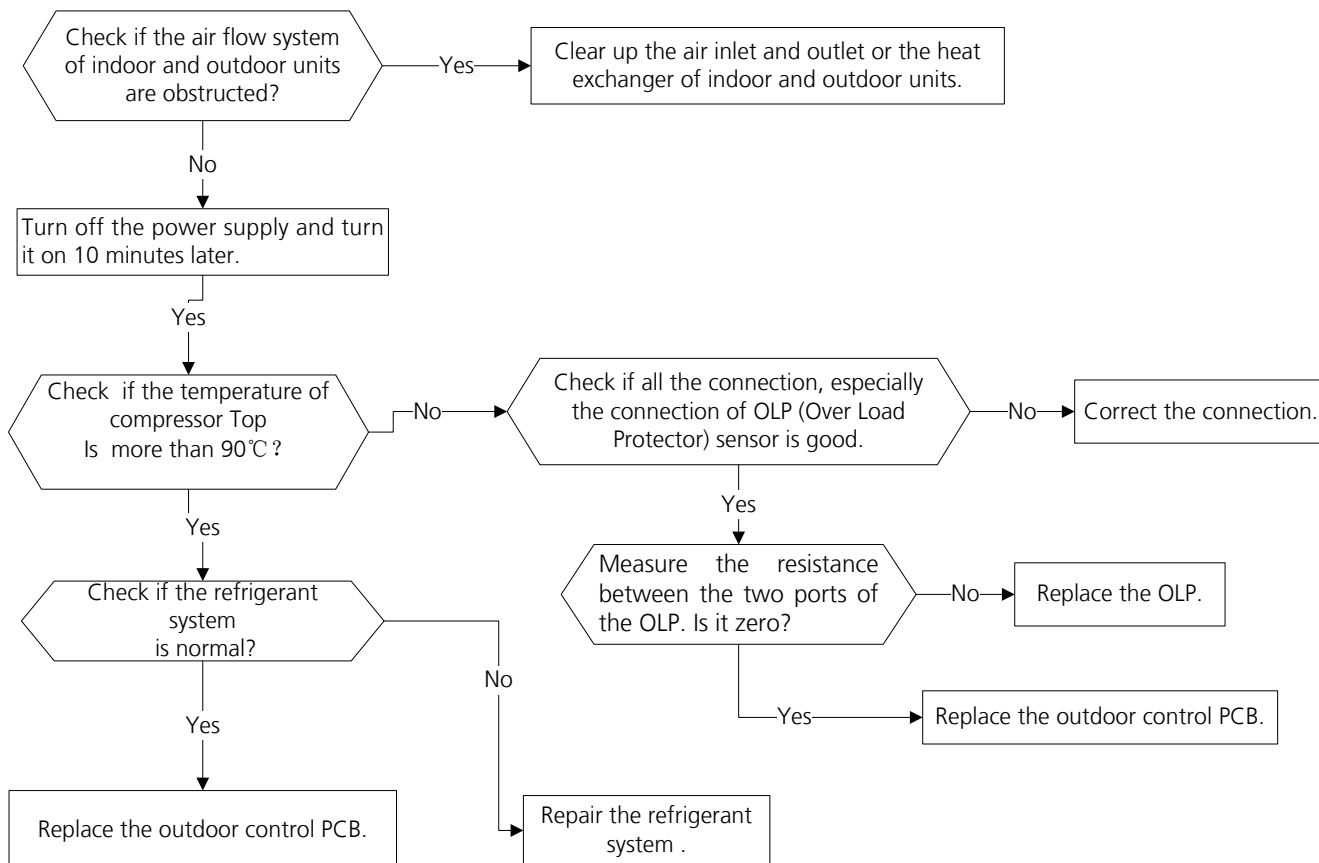
7.10 PC 02(Top temperature protection of compressor or High temperature protection of IPM module diagnosis and solution)

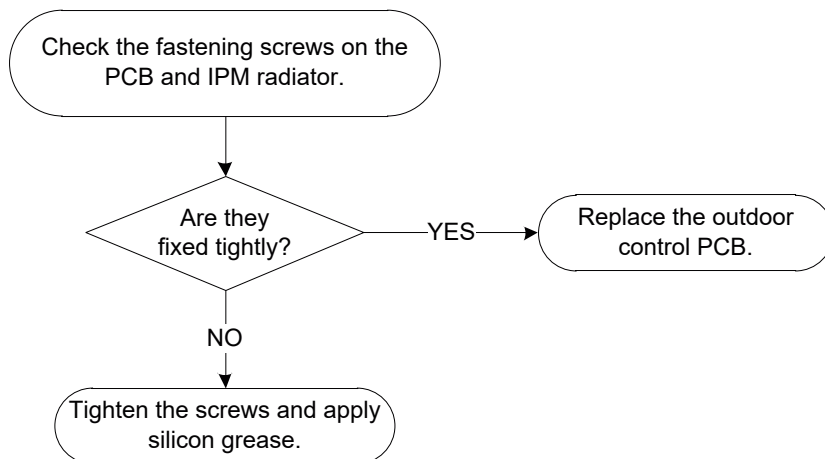
Description: For some models with overload protection, If the sampling voltage is not 5V, the LED will display the failure. If the temperature of IPM module is higher than a certain value, the LED displays the failure code.

Recommended parts to prepare:

- Connection wires
- Outdoor PCB
- IPM module board
- High pressure protector
- System blockages

Troubleshooting and repair:





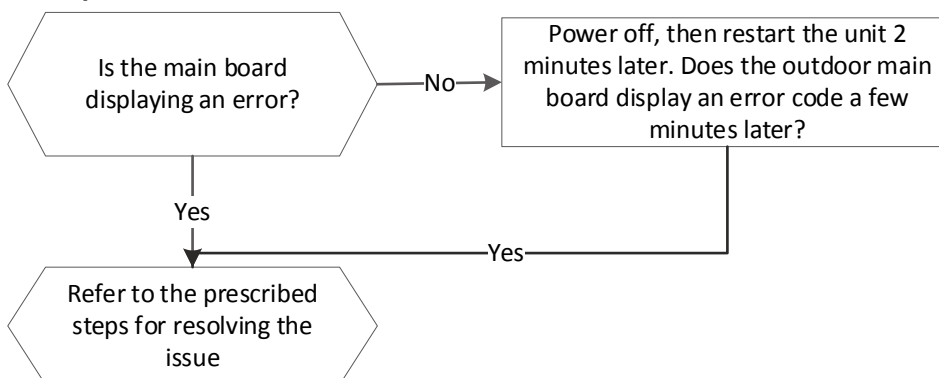
7.11 EC 0d(Outdoor unit malfunction Diagnosis and Solution)

Description: The indoor unit detect the outdoor unit is error.

Recommended parts to prepare:

- Outdoor unit

Troubleshooting and repair:



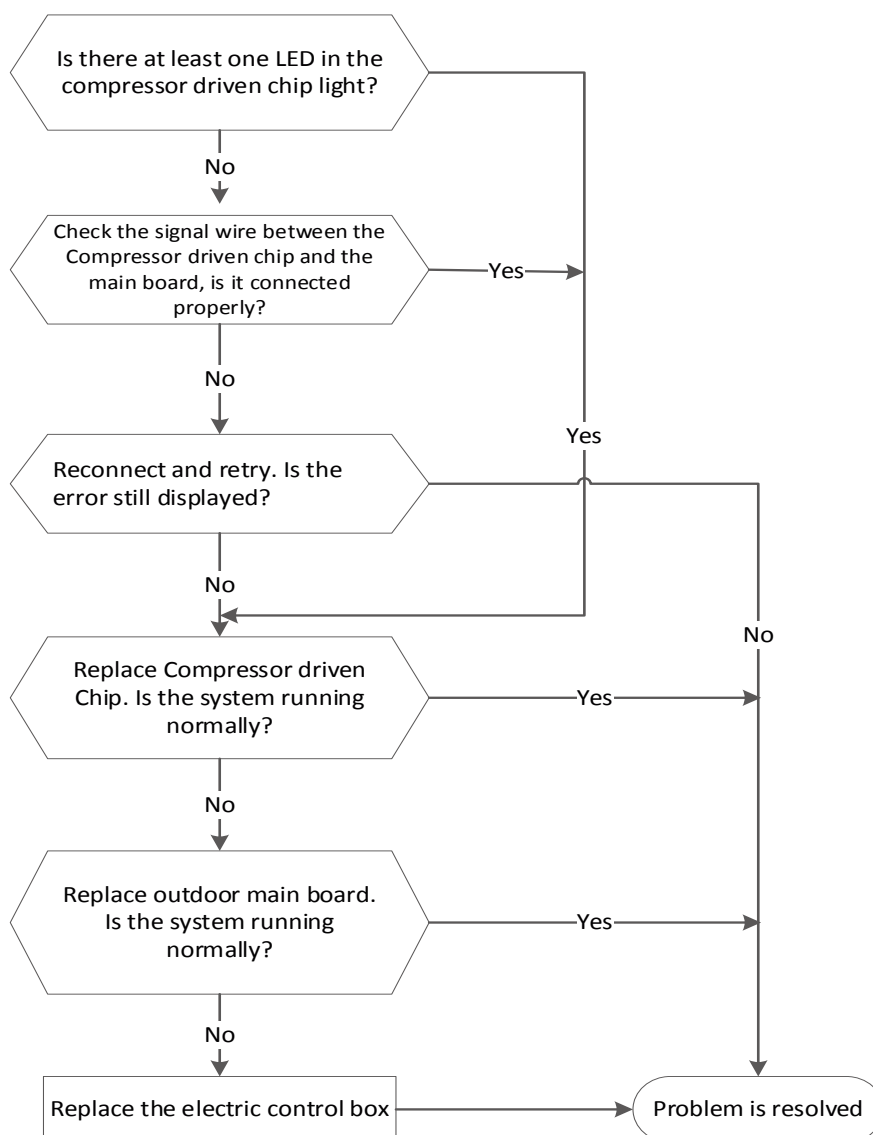
7.12 PC 40(Communication error between outdoor main PCB and IPM board diagnosis and solution)

Description: The main PCB cannot detect the IPM board.

Recommended parts to prepare:

- Connection wires
- IPM board
- Outdoor main PCB
- Electric control box

Troubleshooting and repair:



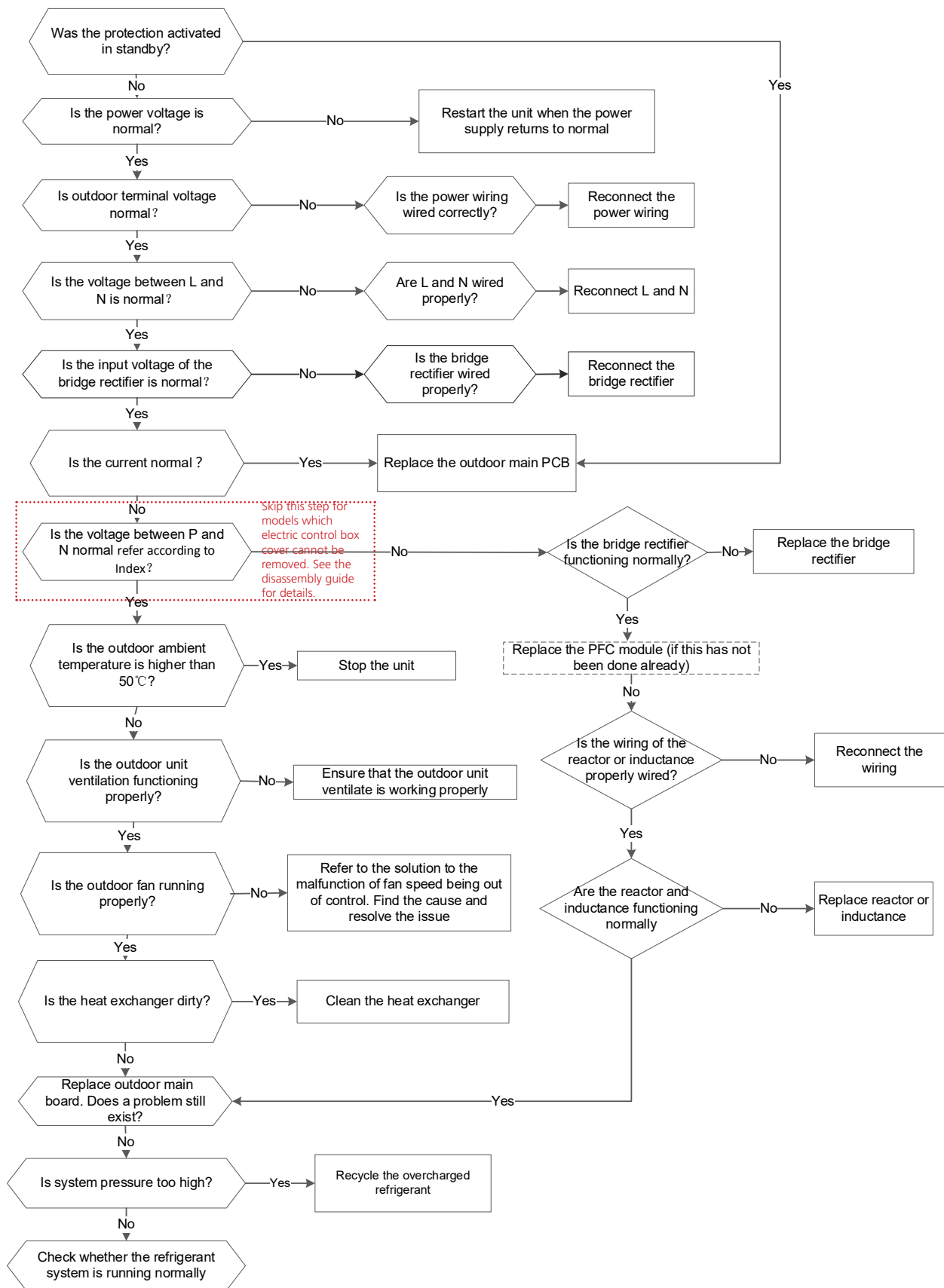
7.13 PC 08(Current overload protection)/PC 44(Outdoor unit zero speed protection)/ PC 46(Compressor speed has been out of control)/PC 49(Compressor overcurrent failure) diagnosis and solution

Description: An abnormal current rise is detected by checking the specified current detection circuit.

Recommended parts to prepare:

- Connection wires
- Rectifier
- PFC circuit or reactor
- Blocked refrigeration piping system
- Pressure switch
- Outdoor fan
- IPM module board
- Outdoor PCB

Troubleshooting and repair:



Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

7.14 PC 0F(PFC module protection diagnosis and solution)

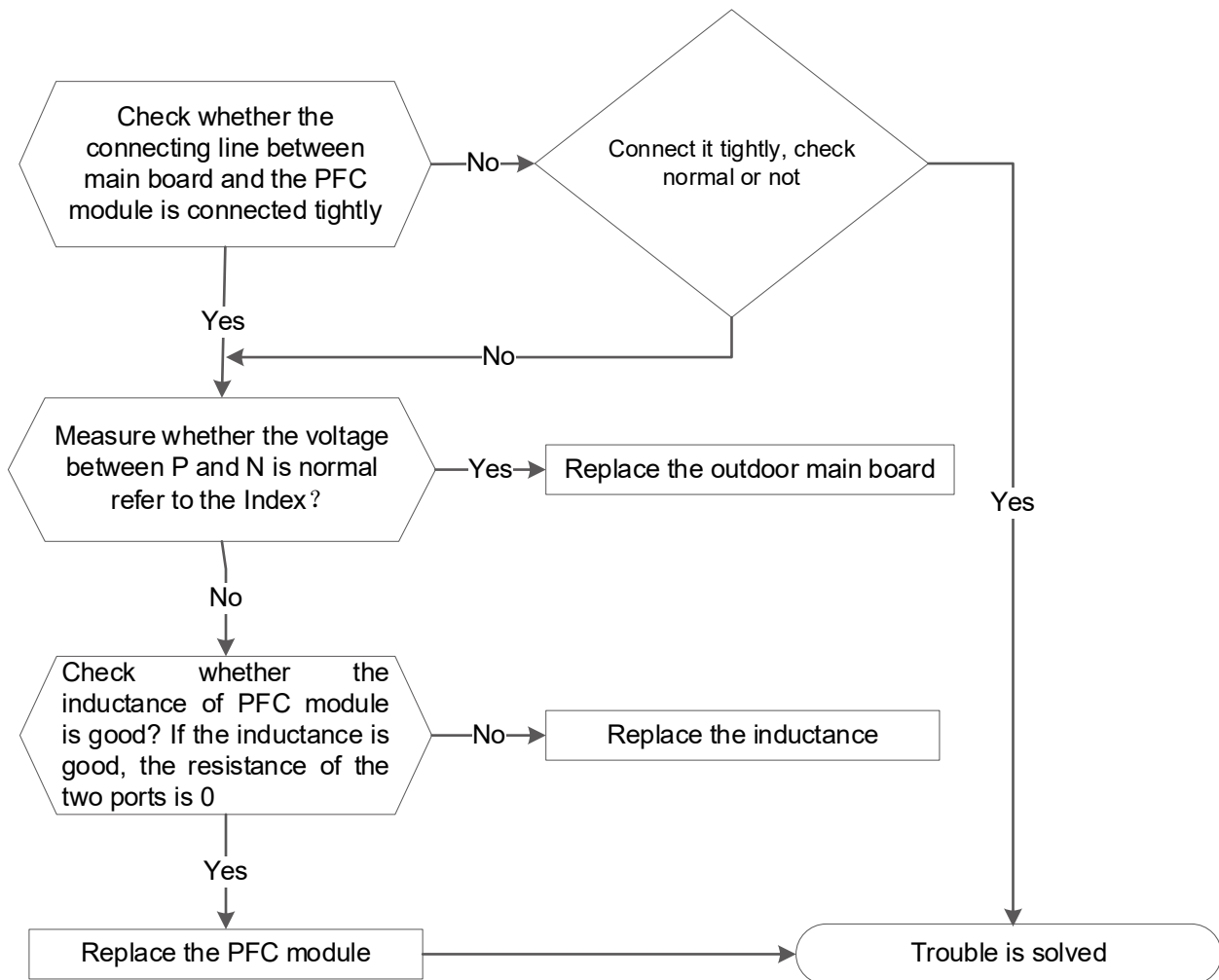
Description: When the voltage signal that IPM send to compressor drive chip is abnormal, the LED displays the failure code and the AC turns off.

Recommended parts to prepare:

- Connection wires
- Inductance
- Outdoor main PCB
- PFC module

Troubleshooting and repair:

At first test the resistance between every two ports of U, V, W of IPM and P, N. If any result of them is 0 or close to 0, the IPM is defective. Otherwise, please follow the procedure below:



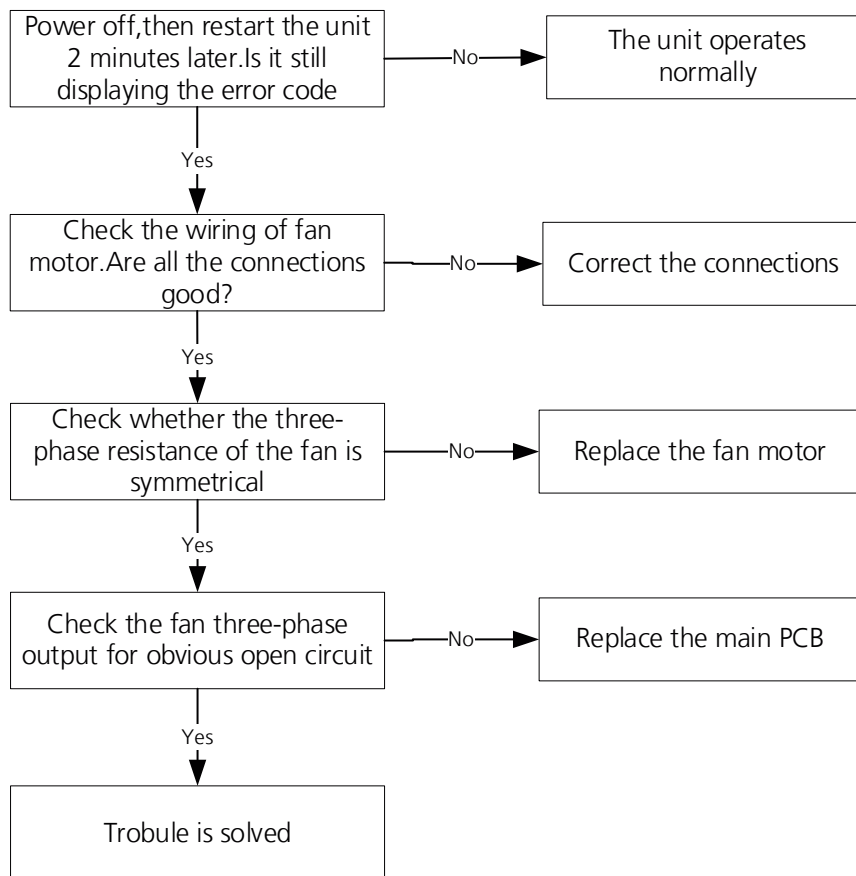
7.15 EC 72 (Lack phase failure of outdoor DC fan motor diagnosis and solution)

Description: When the three-phase sampling current of the DC motor is abnormal, especially when the current of one or more phases is always small and almost 0, the LED displays the failure code.

Recommended parts to prepare:

- Connection wire
- Fan motor
- Outdoor PCB

Troubleshooting and repair:



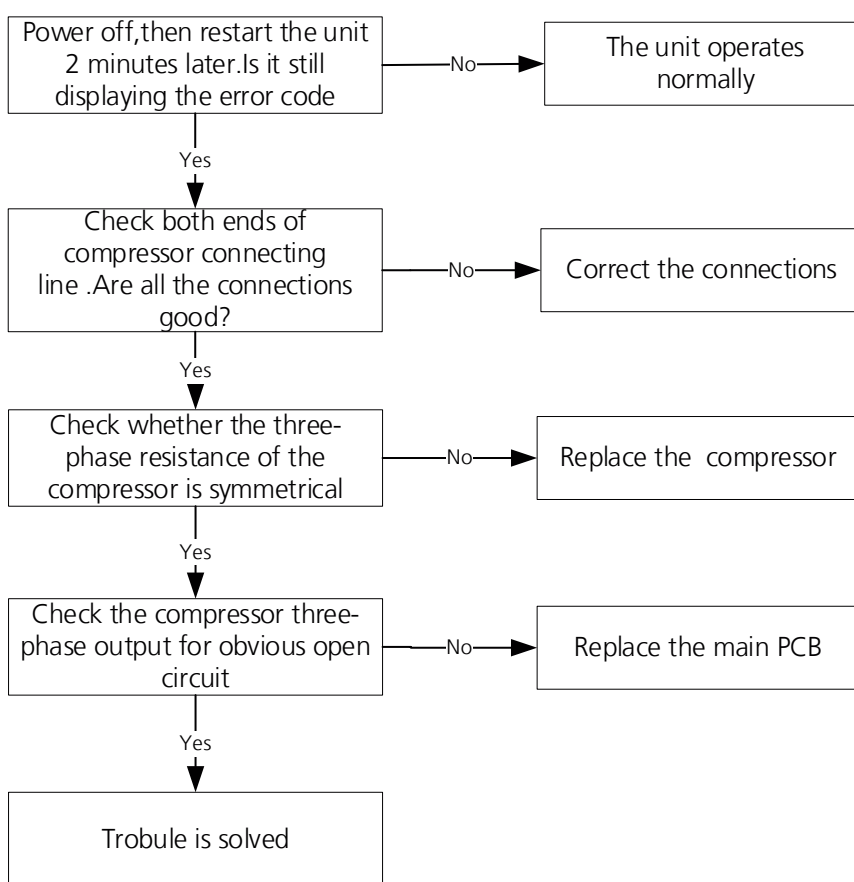
7.16 PC 43 (Outdoor compressor lack phase protection diagnosis and solution)

Description: When the three-phase sampling current of the compressor is abnormal, especially when the current of one or more phases is always small and almost 0, the LED displays the failure code

Recommended parts to prepare:

- Connection wire
- Compressor
- Outdoor PCB

Troubleshooting and repair:



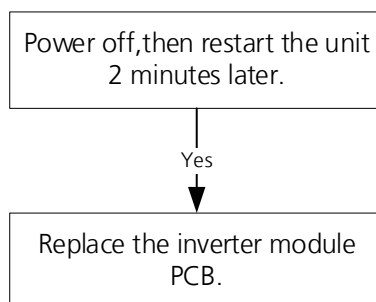
7.17 PC 45 (Outdoor unit IR chip drive failure diagnosis and solution)

Description: When the IR chip detects its own parameter error, the LED displays the failure code when power on.

Recommended parts to prepare:

- Inverter module PCB.

Troubleshooting and repair:



7.18 PC 0L (Low ambient temperature protection)

Description: It is a protection function. When compressor is off, outdoor ambient temperature(T4) is lower than -35°C. for 10s, the AC will stop and display the failure code.

When compressor is on, outdoor ambient temperature(T4) is lower than -40°C. for 10s, the AC will stop and display the failure code.

When outdoor ambient temperature(T4) is no lower than -32°C. for 10s, the unit will exit protection.

7.19 EH 0b(Communication error between indoor two chips diagnosis and solution)

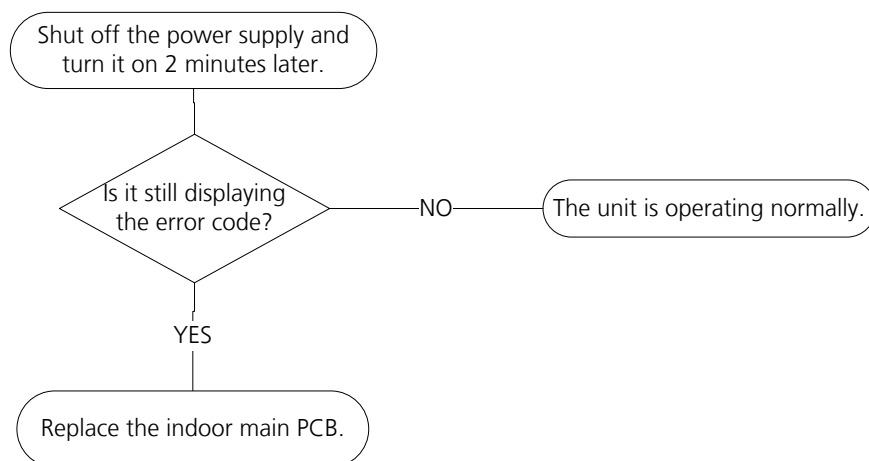
For Duct type & Floor ceiling Type:

Description: Indoor PCB main chip does not receive feedback from another chip.

Recommended parts to prepare:

- Indoor PCB

Troubleshooting and repair:



For new console type,

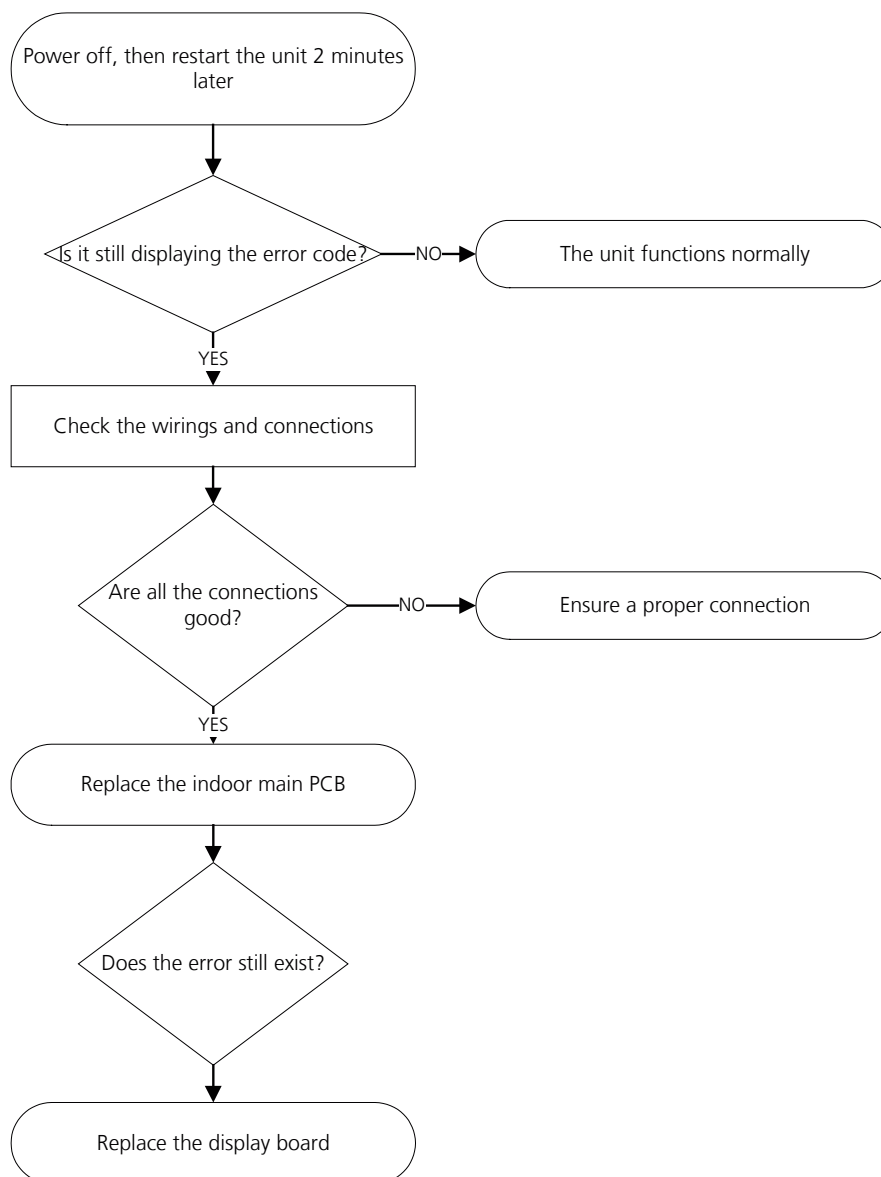
EH 0b(Communication error between display board and main board)

Description: Indoor PCB does not receive feedback from the display board.

Recommended parts to prepare:

- Communication wire
- Indoor PCB
- Display board

Troubleshooting and repair:



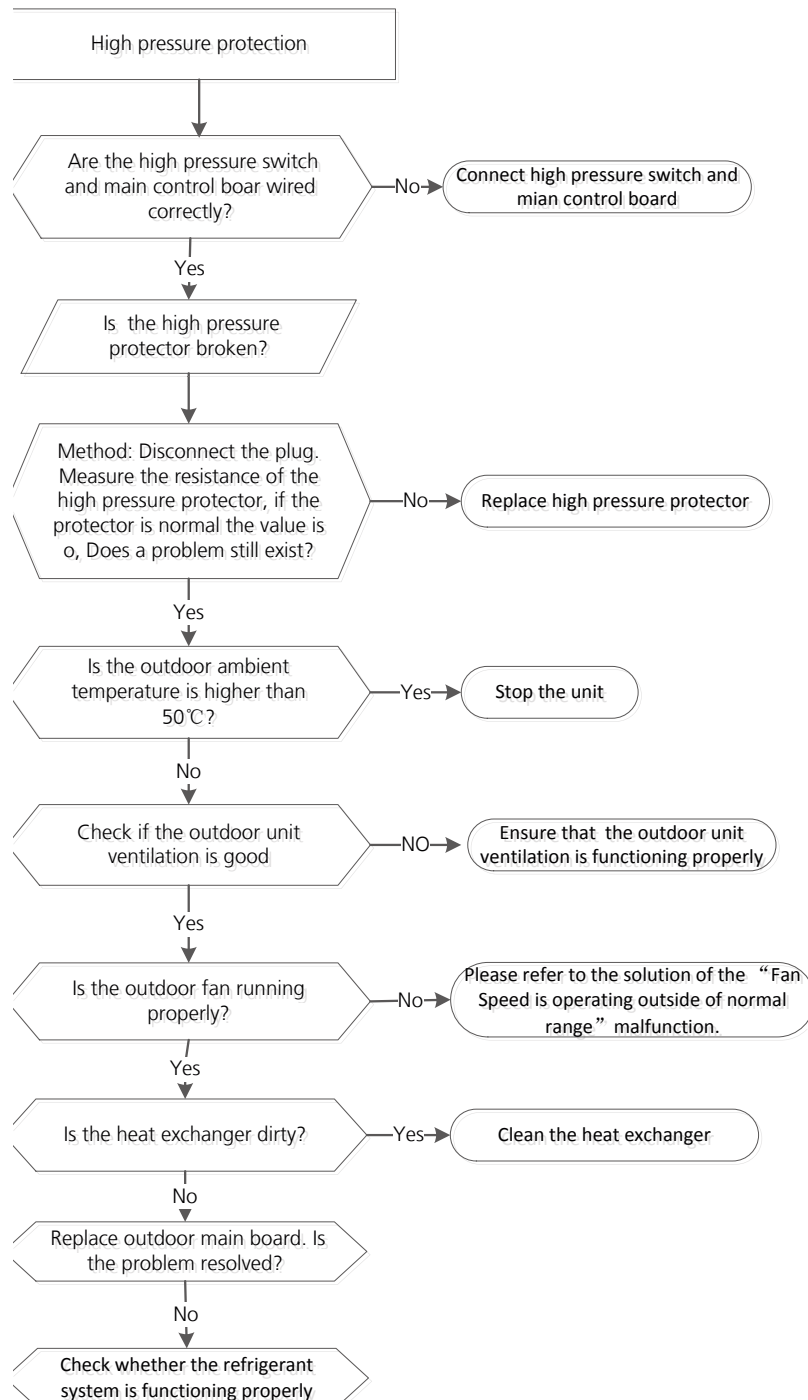
7.20 PC 03/PC 30 (High pressure protection diagnosis and solution)

Description: Outdoor pressure switch cut off the system because high pressure is higher than 4.4 MPa

Recommended parts to prepare:

- Connection wires
- Pressure switch
- Outdoor fan
- Outdoor main PCB

Troubleshooting and repair:



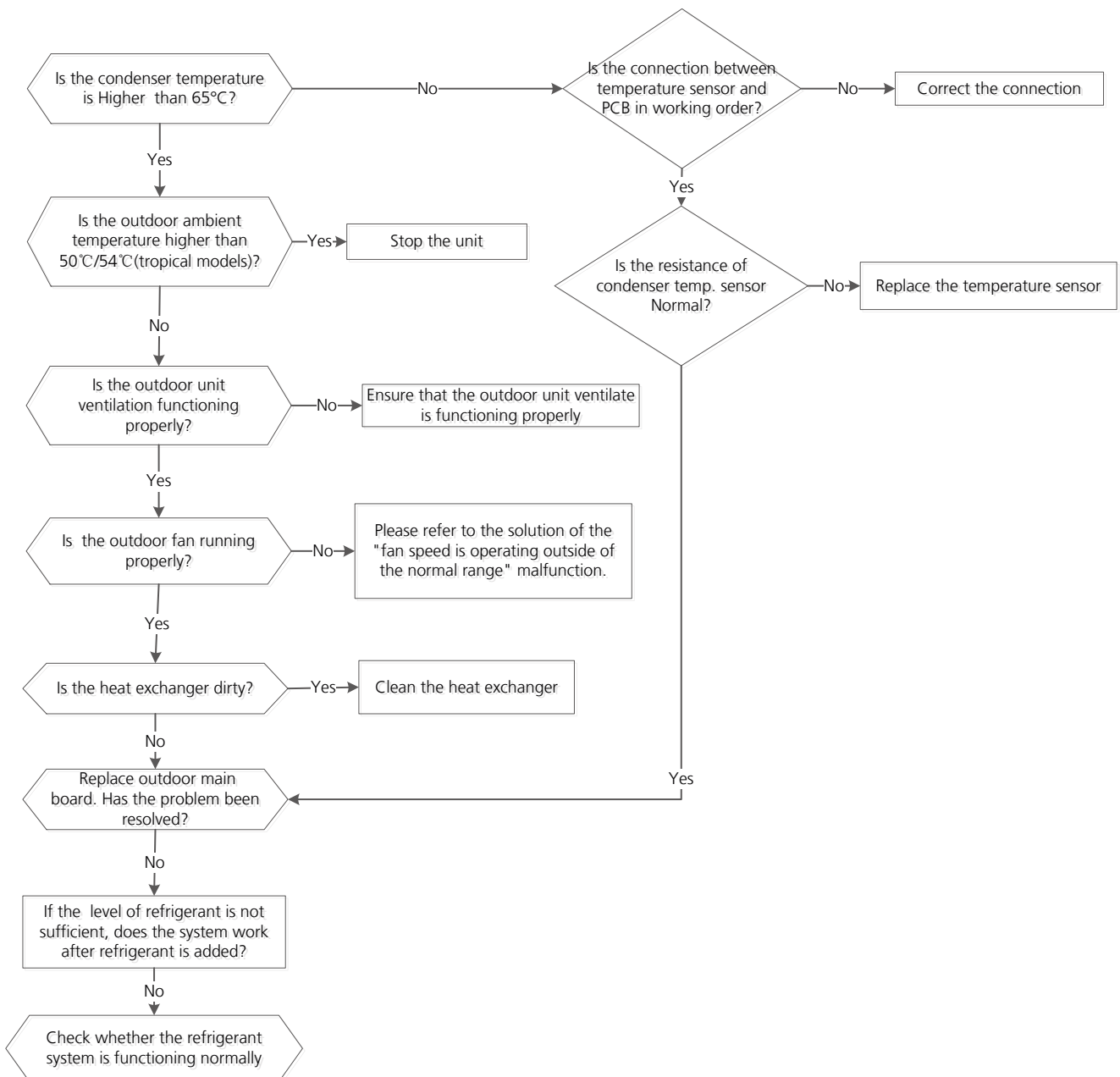
7.21 PC 0A (High temperature protection of condenser diagnosis and solution)

Description: When the outdoor pipe temperature is more than 65°C, the unit stops. It starts again only when the outdoor pipe temperature is less than 52°C.

Recommended parts to prepare:

- Connection wires
- Condenser temperature sensor
- Outdoor fan
- Outdoor main PCB
- Refrigerant

Troubleshooting and repair:



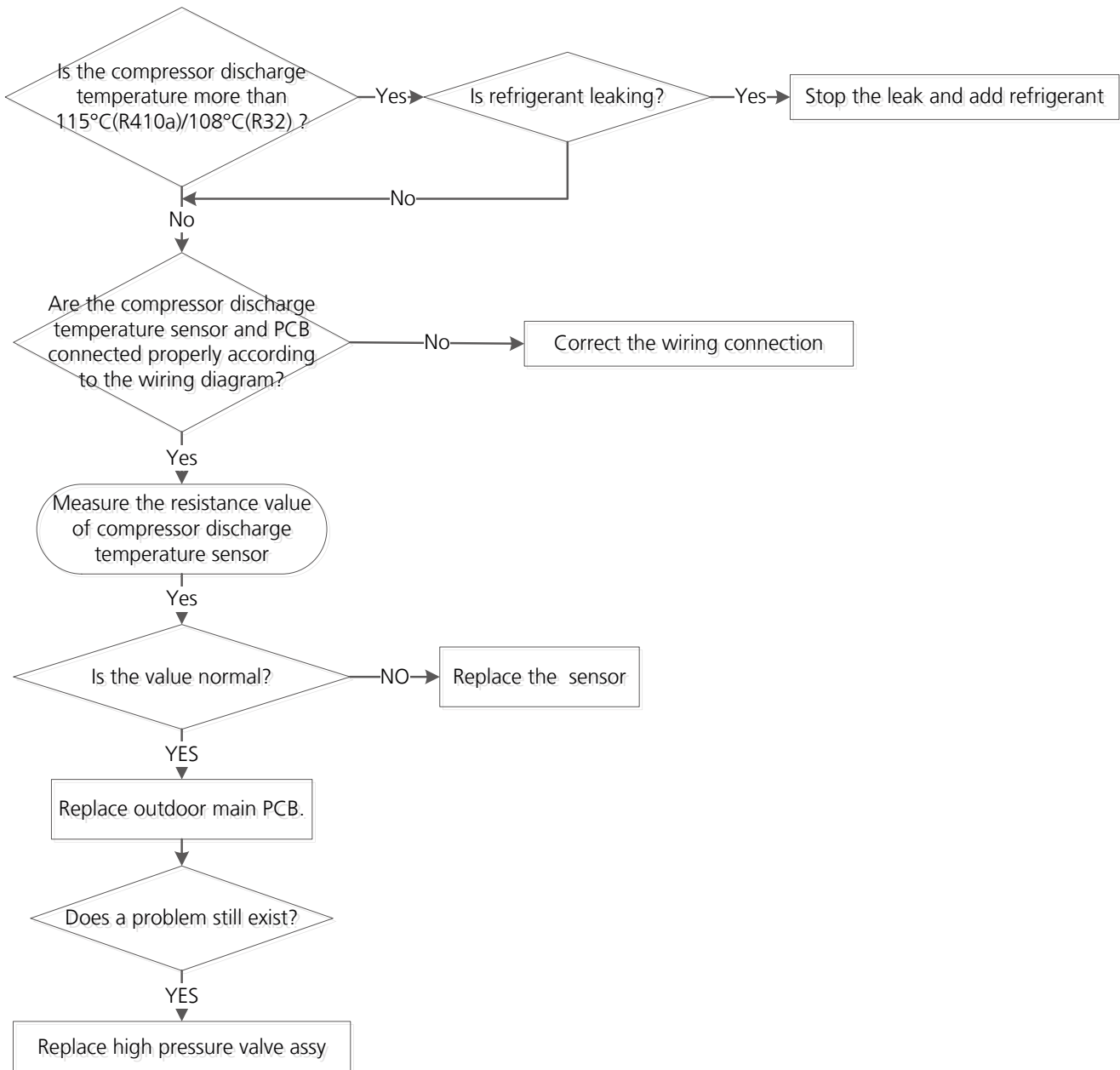
7.22 PC 06 (Discharge temperature protection of compressor diagnosis and solution)

Description: If the compressor discharge temperature exceeds a certain level for nine seconds, the compressor ceases operation, the LED displays the failure code

Recommended parts to prepare:

- Connection wires
- Discharge temperature sensor
- Additional refrigerant
- Outdoor main PCB

Troubleshooting and repair:



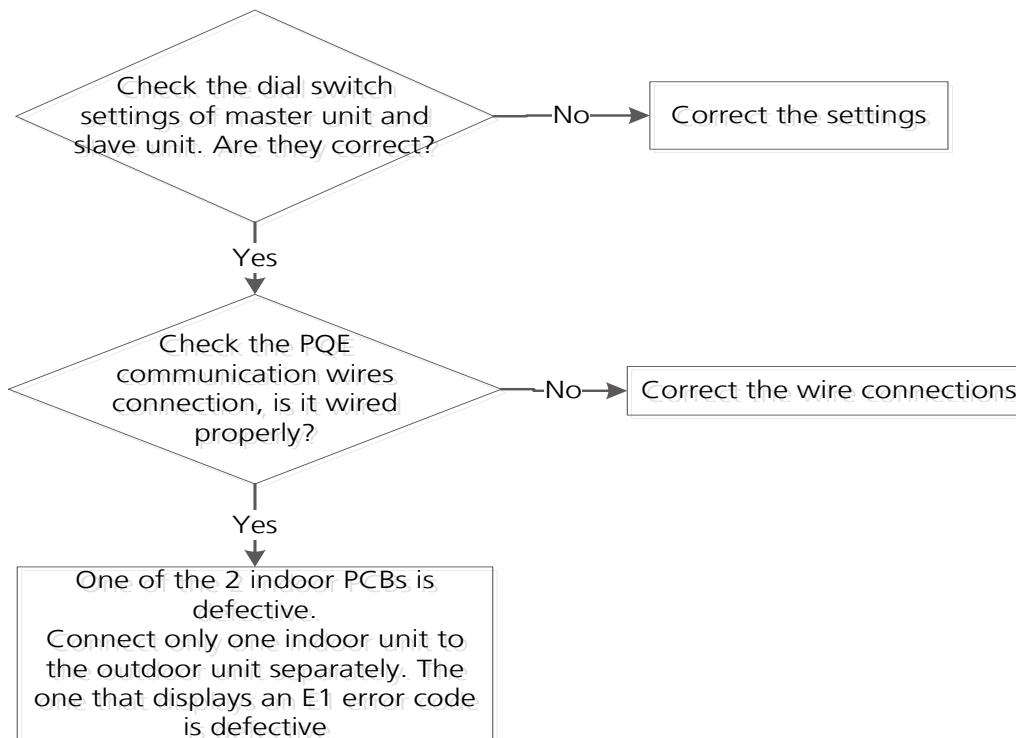
Note: For certain models, outdoor unit uses combination sensor, T3,T4 and TP are the same of sensor. This picture and the value are only for reference, actual appearance and value may vary.

7.23 EL11 (Communication error between master and slave unit (for twins system) Diagnosis and Solution)

Description: When set in twins system, master unit and slave unit cannot be recognized normally.

Recommended parts to prepare:

- Connection wires
- Indoor PCB



7.24 EH12 (Another indoor unit malfunction (for twins system) Diagnosis and Solution)

Description: When set in twins system, one indoor unit displays this error code, which means another indoor unit is faulty. Check another indoor unit's error code and then follow the prescribed solutions to resolve the malfunction.

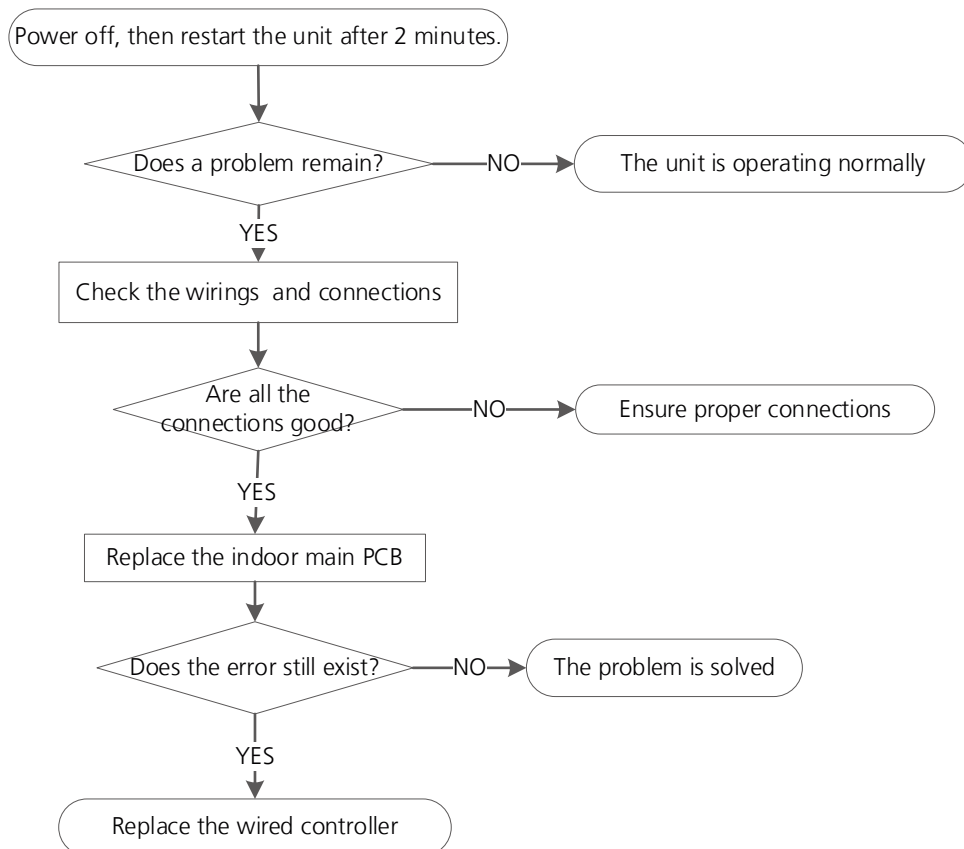
7.25 EH b3 (Communication error between wired controller and indoor unit Diagnosis and Solution

Description: If Indoor PCB does not receive feedback from wired controller, the error displays on the wired controller

Recommended parts to prepare:

- Connection wires
- Indoor PCB
- Wired controller

Troubleshooting and repair:



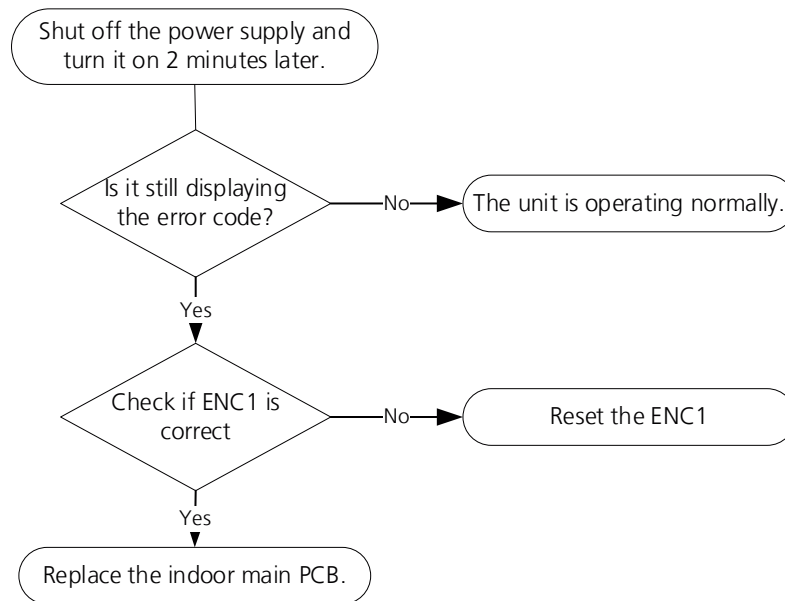
7.26 EH bA(Communication malfunction between external fan module and indoor unit)/ EH 3A(External fan DC bus voltage is too low protection)/ EH 3b(External fan DC bus voltage is too high fault) diagnosis and solution

Description: Indoor unit does not receive the feedback from external fan module during 150 seconds.
or Indoor unit receives abnormal increases or decreases in voltage from external fan module.

Recommended parts to prepare:

- Indoor main PCB

Troubleshooting and repair:



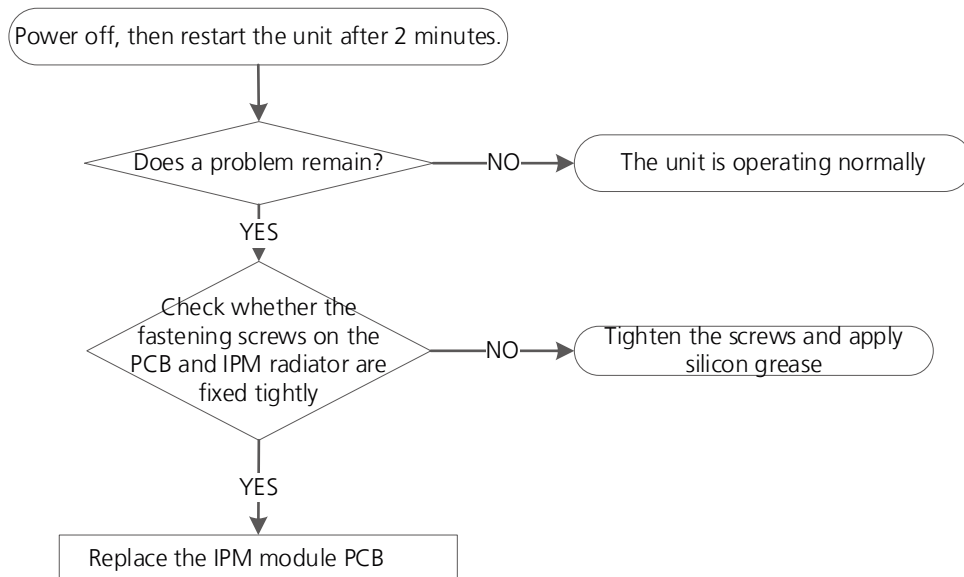
7.27 EC55 (Outdoor IPM module temperature sensor fault) diagnosis and solution

Description: If the sampling voltage is 0V or 5V, the LED displays the failure code.

Recommended parts to prepare:

- IPM module PCB

Troubleshooting and repair:



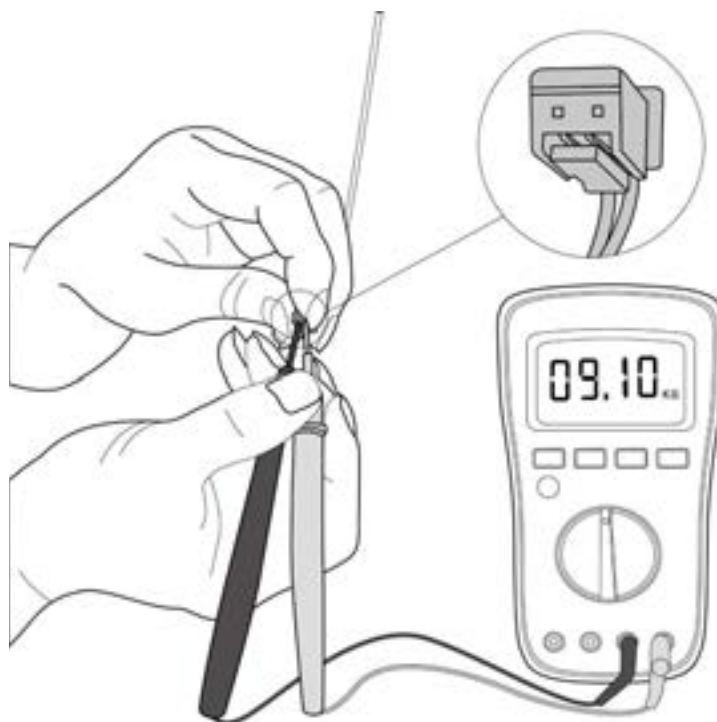
8. Check Procedures

8.1 Temperature Sensor Check

WARNING

Be sure to turn off all power supplies or disconnect all wires to avoid electric shock. Operate after compressor and coil have returned to normal temperature in case of injury.

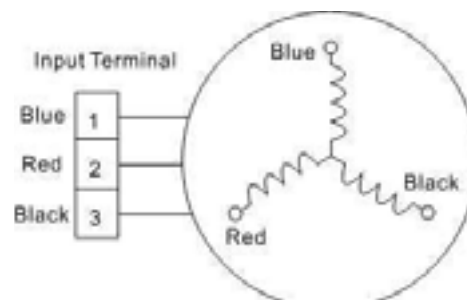
1. Disconnect the temperature sensor from PCB (Refer to Chapter 5&6. Indoor&Outdoor Unit Disassembly).
2. Measure the resistance value of the sensor using a multi-meter.
3. Check corresponding temperature sensor resistance value table (Refer to Chapter 8. Appendix).



Note: The picture and the value are only for reference, actual condition and specific value may vary.

8.2 Compressor Check

1. Disconnect the compressor power cord from outdoor PCB (Refer to Chapter 6. Outdoor Unit Disassembly).
2. Measure the resistance value of each winding using a multi-meter.
3. Check the resistance value of each winding in the following table.



Resistance Value	KSN98D64UFZ3	KSN140D21UFZ	KTM240D43UKT	KTM240D57UMT
Blue-Red	2.7Ω	1.28Ω	1.03Ω	0.62Ω
Blue-Black				
Red-Black				

Resistance Value	KTF250D22UMT ATF235D22TMT	KSN140D58UFZ	KTF310D43UMT ATF310D43TMT	KTQ420D1UMU ATQ420D1SN5A1 EAPQ420D1UMUA EAPQ440D1UMUA KTQ420D41SN5A1
Blue-Red	0.75Ω	1.86Ω	0.65Ω	0.37Ω
Blue-Black				
Red-Black				

Resistance Value	ATM150D23TFZ	ATH307CDRC8DUL	KSK103D33UEZ3	KTM240D46UKT2	ASN140D35TFZ
Blue-Red	1.72Ω	1.09Ω	2.13Ω	1.04Ω	0.83Ω
Blue-Black					
Red-Black					



Note: The picture and the value are only for reference, actual condition and specific value may vary.

8.3 IPM Continuity Check

WARNING

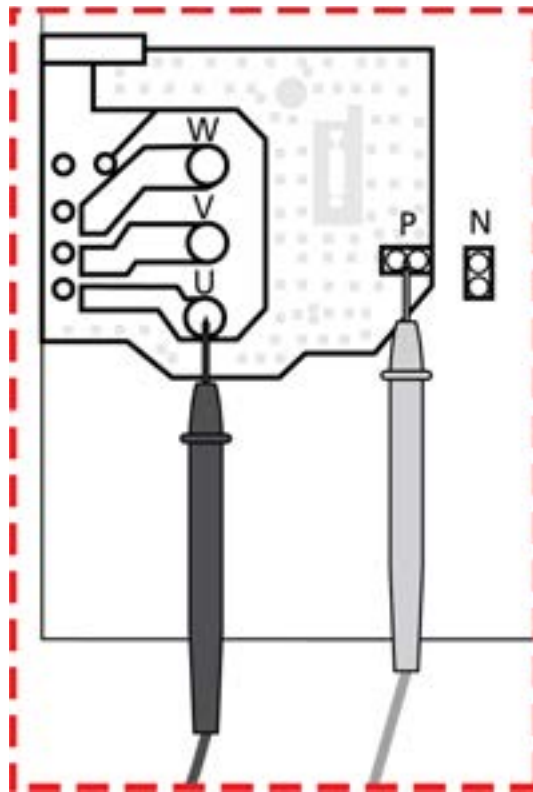
Electricity remains in capacitors even when the power supply is off. Ensure the capacitors are fully discharged before troubleshooting.

1. Turn off outdoor unit and disconnect power supply.
2. Discharge electrolytic capacitors and ensure all energy-storage unit has been discharged.
3. Disassemble outdoor PCB or disassemble IPM board.
4. Measure the resistance value between P and U(V, W, N); U(V, W) and N.

Digital tester		Resistance value	Digital tester		Resistance value
(+)Red	(-)Black	∞ (Several MΩ)	(+)Red	(-)Black	∞ (Several MΩ)
P	N		N	U	
	U			V	
	V			W	
	W			-	

Or test the conductivity of IPM with diode mode.

Needle-type Tester		Normal Value	Needle-type Tester		Normal Value
Red	Black		Red	Black	
P	U	Open-circuit	N	U	0.3-0.5V
	V			V	
	W			W	
Needle-type Tester		Normal Value	Needle-type Tester		Normal Value
Black	Red		Black	Red	
P	U	0.3-0.5V	N	U	Open-circuit
	V			V	
	W			W	



Note: The picture and the value are only for reference, actual condition and specific value may vary.

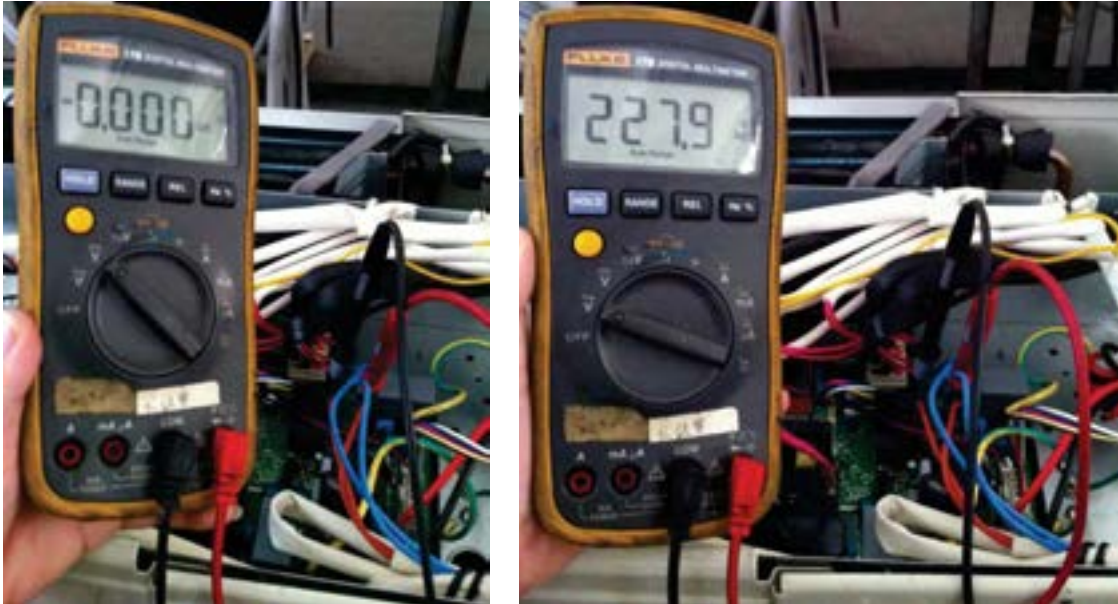
8.4 Normal voltage of P and N

208-240V(1-phase,3-phase)	380-415V(3-phase)
In standby	
around 310VDC	around 530VDC
In operation	
>310VDC	>450VDC

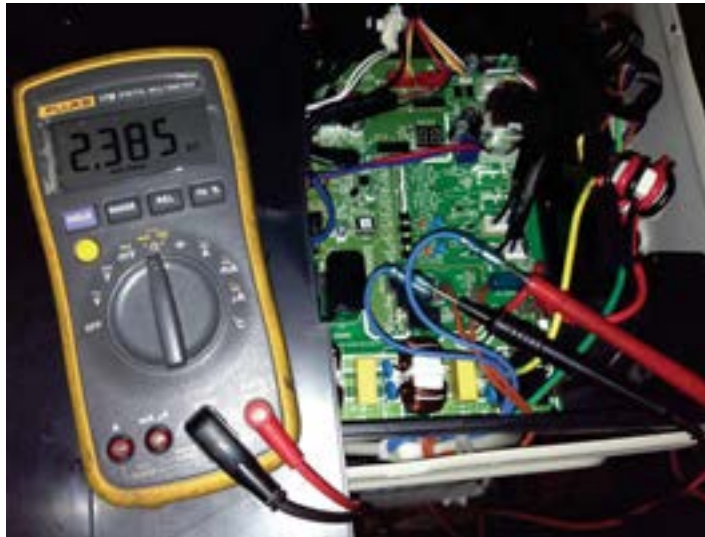
8.5 4-way Valve Check(Heat pump units)

1. Power on, use a digital tester to measure the voltage, when the unit operates in cooling, it is 0V. When the unit operates in heating, it is about 230VAC.

If the value of the voltage is not in the range, the PCB must have problems and need to be replaced.



2 Turn off the power, use a digital tester to measure the resistance. The value should be 1.8~2.5 K Ω .

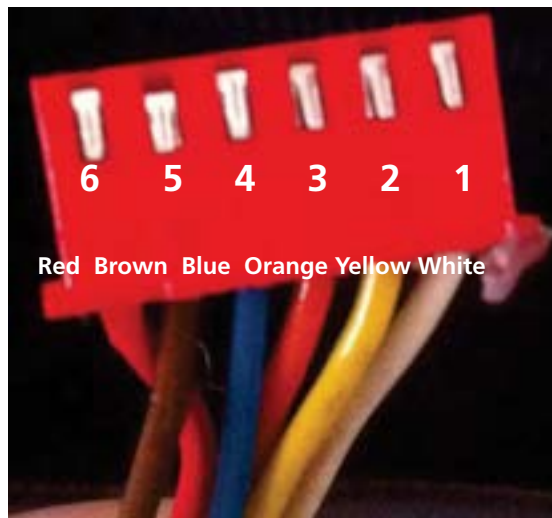


8.6 EEV Check(for some models)

WARNING

**Electricity remains in capacitors even when the power supply is off.
Ensure the capacitors are fully discharged before troubleshooting.**

1. Disconnect the connector from outdoor PCB.
2. Measure the resistance value of each winding using a multi-meter.
3. Check the resistance value of each winding in the following table.



Color of lead winding	Normal Value
Red- Blue	About 50Ω
Red - Yellow	
Brown-Orange	
Brown-White	

Appendix

Contents

i)	Temperature Sensor Resistance Value Table for T1, T2, T3, and T4 (°C – K)	2
ii)	Temperature Sensor Resistance Value Table for TP (for some units)(°C --K)	3
iii)	Pressure On Service Port	4

i) Temperature Sensor Resistance Value Table for T1,T2,T3 and T4 (°C – K)

°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm
-20	-4	115.266	20	68	12.6431	60	140	2.35774	100	212	0.62973
-19	-2	108.146	21	70	12.0561	61	142	2.27249	101	214	0.61148
-18	0	101.517	22	72	11.5	62	144	2.19073	102	216	0.59386
-17	1	96.3423	23	73	10.9731	63	145	2.11241	103	217	0.57683
-16	3	89.5865	24	75	10.4736	64	147	2.03732	104	219	0.56038
-15	5	84.219	25	77	10	65	149	1.96532	105	221	0.54448
-14	7	79.311	26	79	9.55074	66	151	1.89627	106	223	0.52912
-13	9	74.536	27	81	9.12445	67	153	1.83003	107	225	0.51426
-12	10	70.1698	28	82	8.71983	68	154	1.76647	108	226	0.49989
-11	12	66.0898	29	84	8.33566	69	156	1.70547	109	228	0.486
-10	14	62.2756	30	86	7.97078	70	158	1.64691	110	230	0.47256
-9	16	58.7079	31	88	7.62411	71	160	1.59068	111	232	0.45957
-8	18	56.3694	32	90	7.29464	72	162	1.53668	112	234	0.44699
-7	19	52.2438	33	91	6.98142	73	163	1.48481	113	235	0.43482
-6	21	49.3161	34	93	6.68355	74	165	1.43498	114	237	0.42304
-5	23	46.5725	35	95	6.40021	75	167	1.38703	115	239	0.41164
-4	25	44	36	97	6.13059	76	169	1.34105	116	241	0.4006
-3	27	41.5878	37	99	5.87359	77	171	1.29078	117	243	0.38991
-2	28	39.8239	38	100	5.62961	78	172	1.25423	118	244	0.37956
-1	30	37.1988	39	102	5.39689	79	174	1.2133	119	246	0.36954
0	32	35.2024	40	104	5.17519	80	176	1.17393	120	248	0.35982
1	34	33.3269	41	106	4.96392	81	178	1.13604	121	250	0.35042
2	36	31.5635	42	108	4.76253	82	180	1.09958	122	252	0.3413
3	37	29.9058	43	109	4.5705	83	181	1.06448	123	253	0.33246
4	39	28.3459	44	111	4.38736	84	183	1.03069	124	255	0.3239
5	41	26.8778	45	113	4.21263	85	185	0.99815	125	257	0.31559
6	43	25.4954	46	115	4.04589	86	187	0.96681	126	259	0.30754
7	45	24.1932	47	117	3.88673	87	189	0.93662	127	261	0.29974
8	46	22.5662	48	118	3.73476	88	190	0.90753	128	262	0.29216
9	48	21.8094	49	120	3.58962	89	192	0.8795	129	264	0.28482
10	50	20.7184	50	122	3.45097	90	194	0.85248	130	266	0.2777
11	52	19.6891	51	124	3.31847	91	196	0.82643	131	268	0.27078
12	54	18.7177	52	126	3.19183	92	198	0.80132	132	270	0.26408
13	55	17.8005	53	127	3.07075	93	199	0.77709	133	271	0.25757
14	57	16.9341	54	129	2.95896	94	201	0.75373	134	273	0.25125
15	59	16.1156	55	131	2.84421	95	203	0.73119	135	275	0.24512
16	61	15.3418	56	133	2.73823	96	205	0.70944	136	277	0.23916
17	63	14.6181	57	135	2.63682	97	207	0.68844	137	279	0.23338
18	64	13.918	58	136	2.53973	98	208	0.66818	138	280	0.22776
19	66	13.2631	59	138	2.44677	99	210	0.64862	139	282	0.22231

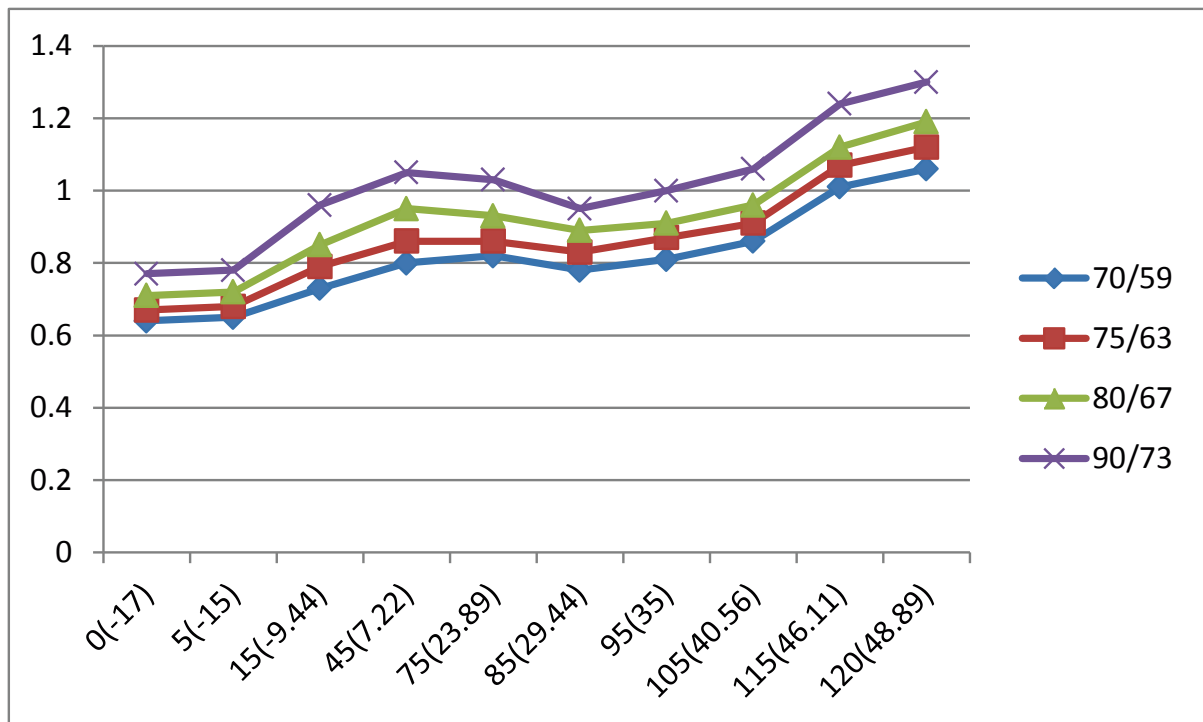
ii) Temperature Sensor Resistance Value Table for TP(for some units) (°C --K)

°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm
°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm
-20	-4	542.7	20	68	68.66	60	140	13.59	100	212	3.702
-19	-2	511.9	21	70	65.62	61	142	13.11	101	214	3.595
-18	0	483	22	72	62.73	62	144	12.65	102	216	3.492
-17	1	455.9	23	73	59.98	63	145	12.21	103	217	3.392
-16	3	430.5	24	75	57.37	64	147	11.79	104	219	3.296
-15	5	406.7	25	77	54.89	65	149	11.38	105	221	3.203
-14	7	384.3	26	79	52.53	66	151	10.99	106	223	3.113
-13	9	363.3	27	81	50.28	67	153	10.61	107	225	3.025
-12	10	343.6	28	82	48.14	68	154	10.25	108	226	2.941
-11	12	325.1	29	84	46.11	69	156	9.902	109	228	2.86
-10	14	307.7	30	86	44.17	70	158	9.569	110	230	2.781
-9	16	291.3	31	88	42.33	71	160	9.248	111	232	2.704
-8	18	275.9	32	90	40.57	72	162	8.94	112	234	2.63
-7	19	261.4	33	91	38.89	73	163	8.643	113	235	2.559
-6	21	247.8	34	93	37.3	74	165	8.358	114	237	2.489
-5	23	234.9	35	95	35.78	75	167	8.084	115	239	2.422
-4	25	222.8	36	97	34.32	76	169	7.82	116	241	2.357
-3	27	211.4	37	99	32.94	77	171	7.566	117	243	2.294
-2	28	200.7	38	100	31.62	78	172	7.321	118	244	2.233
-1	30	190.5	39	102	30.36	79	174	7.086	119	246	2.174
0	32	180.9	40	104	29.15	80	176	6.859	120	248	2.117
1	34	171.9	41	106	28	81	178	6.641	121	250	2.061
2	36	163.3	42	108	26.9	82	180	6.43	122	252	2.007
3	37	155.2	43	109	25.86	83	181	6.228	123	253	1.955
4	39	147.6	44	111	24.85	84	183	6.033	124	255	1.905
5	41	140.4	45	113	23.89	85	185	5.844	125	257	1.856
6	43	133.5	46	115	22.89	86	187	5.663	126	259	1.808
7	45	127.1	47	117	22.1	87	189	5.488	127	261	1.762
8	46	121	48	118	21.26	88	190	5.32	128	262	1.717
9	48	115.2	49	120	20.46	89	192	5.157	129	264	1.674
10	50	109.8	50	122	19.69	90	194	5	130	266	1.632
11	52	104.6	51	124	18.96	91	196	4.849			
12	54	99.69	52	126	18.26	92	198	4.703			
13	55	95.05	53	127	17.58	93	199	4.562			
14	57	90.66	54	129	16.94	94	201	4.426			
15	59	86.49	55	131	16.32	95	203	4.294			
16	61	82.54	56	133	15.73	96	205	4.167			
17	63	78.79	57	135	15.16	97	207	4.045			
18	64	75.24	58	136	14.62	98	208	3.927			
19	66	71.86	59	138	14.09	99	210	3.812			

iii) Pressure On Service Port

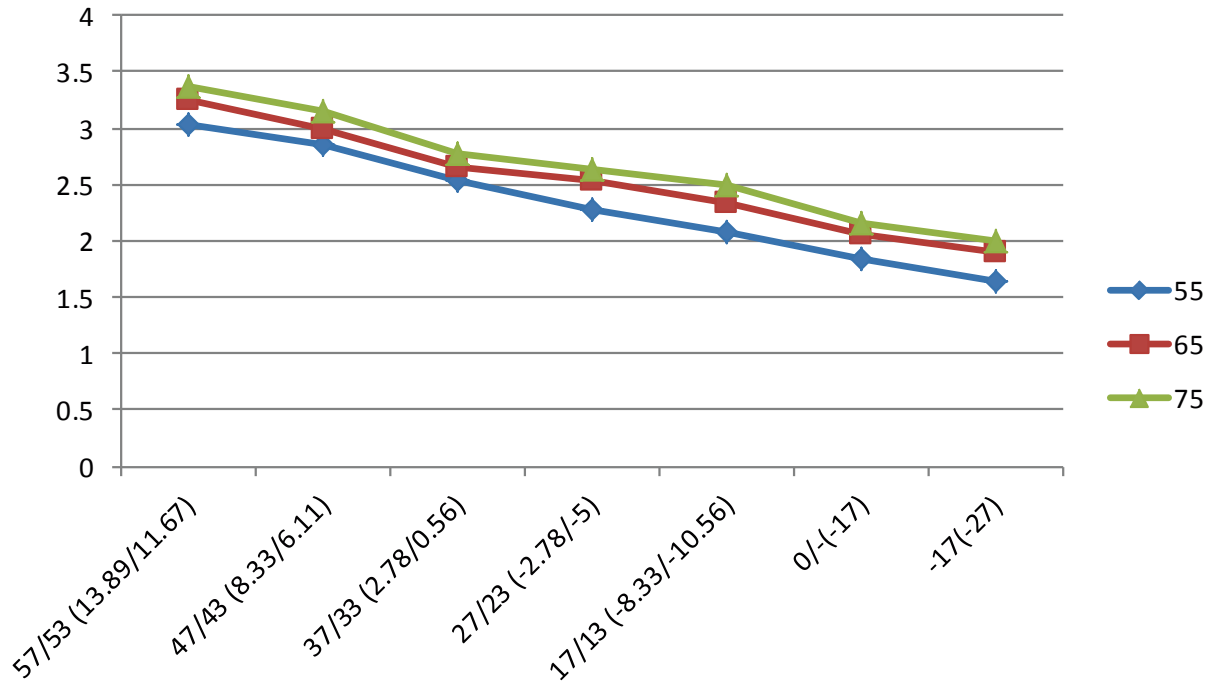
Cooling chart(R410A):

°F(°C)	ODU(DB)		0(-17)	5(-15)	15 (-9.44)	45 (7.22)	75 (23.89)	85 (29.44)	95 (35)	105 (40.56)	115 (46.11)	120 (48.89)
	IDU(DB/WB)											
BAR	70/59 (21.11/15)		6.4	6.5	7.3	8.0	8.2	7.8	8.1	8.6	10.1	10.6
	75/63 (23.89/17.22)		6.7	6.8	7.9	8.6	8.6	8.3	8.7	9.1	10.7	11.2
	80/67 (26.67/19.44)		7.1	7.2	8.5	9.5	9.3	8.9	9.1	9.6	11.2	11.9
	90/73 (32.22/22.78)		7.7	7.8	9.6	10.5	10.3	9.5	10.0	10.6	12.4	13.0
PSI	70/59 (21.11/15)		93	94	106	116	119	113	117	125	147	154
	75/63 (23.89/17.22)		97	99	115	125	124	120	126	132	155	162
	80/67 (26.67/19.44)		103	104	123	138	135	129	132	140	162	173
	90/73 (32.22/22.78)		112	113	139	152	149	138	145	154	180	189
MPa	70/59 (21.11/15)		0.64	0.65	0.73	0.8	0.82	0.78	0.81	0.86	1.01	1.06
	75/63 (23.89/17.22)		0.67	0.68	0.79	0.86	0.86	0.83	0.87	0.91	1.07	1.12
	80/67 (26.67/19.44)		0.71	0.72	0.85	0.95	0.93	0.89	0.91	0.96	1.12	1.19
	90/73 (32.22/22.78)		0.77	0.78	0.96	1.05	1.03	0.95	1	1.06	1.24	1.3



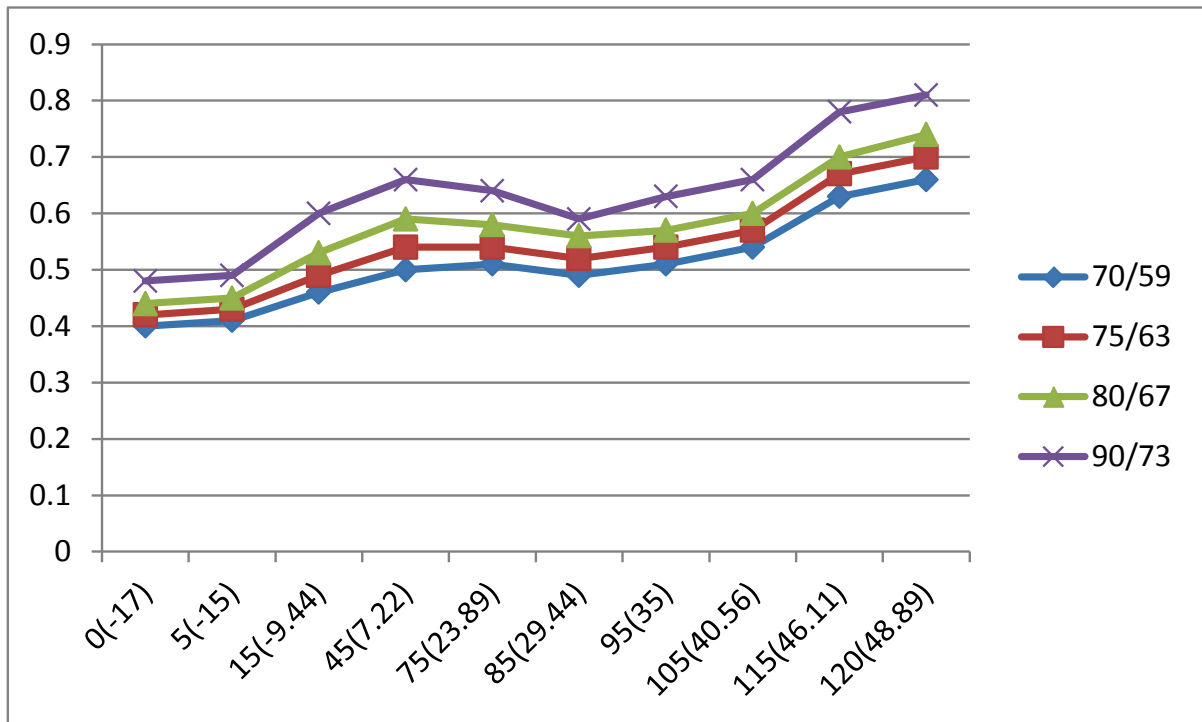
Heating chart(R410A):

°F(°C)	ODU(DB/WB)	57/53 (13.89/11.67)	47/43 (8.33/6.11)	37/33 (2.78/0.56)	27/23 (-2.78/-5)	17/13 (-8.33/ -10.56)	0/-2 (-17/-19)	-17/-18 (-27/-28)
	IDU(DB)							
BAR	55(12.78)	30.3	28.5	25.3	22.8	20.8	18.5	16.5
	65(18.33)	32.5	30.0	26.6	25.4	23.3	20.5	19.0
	75(23.89)	33.8	31.5	27.8	26.3	24.9	21.5	20.0
PSI	55(12.78)	439	413	367	330	302	268	239
	65(18.33)	471	435	386	368	339	297	276
	75(23.89)	489	457	403	381	362	312	290
MPa	55(12.78)	3.03	2.85	2.53	2.28	2.08	1.85	1.65
	65(18.33)	3.25	3.00	2.66	2.54	2.33	2.05	1.90
	75(23.89)	3.38	3.15	2.78	2.63	2.49	2.15	2.00



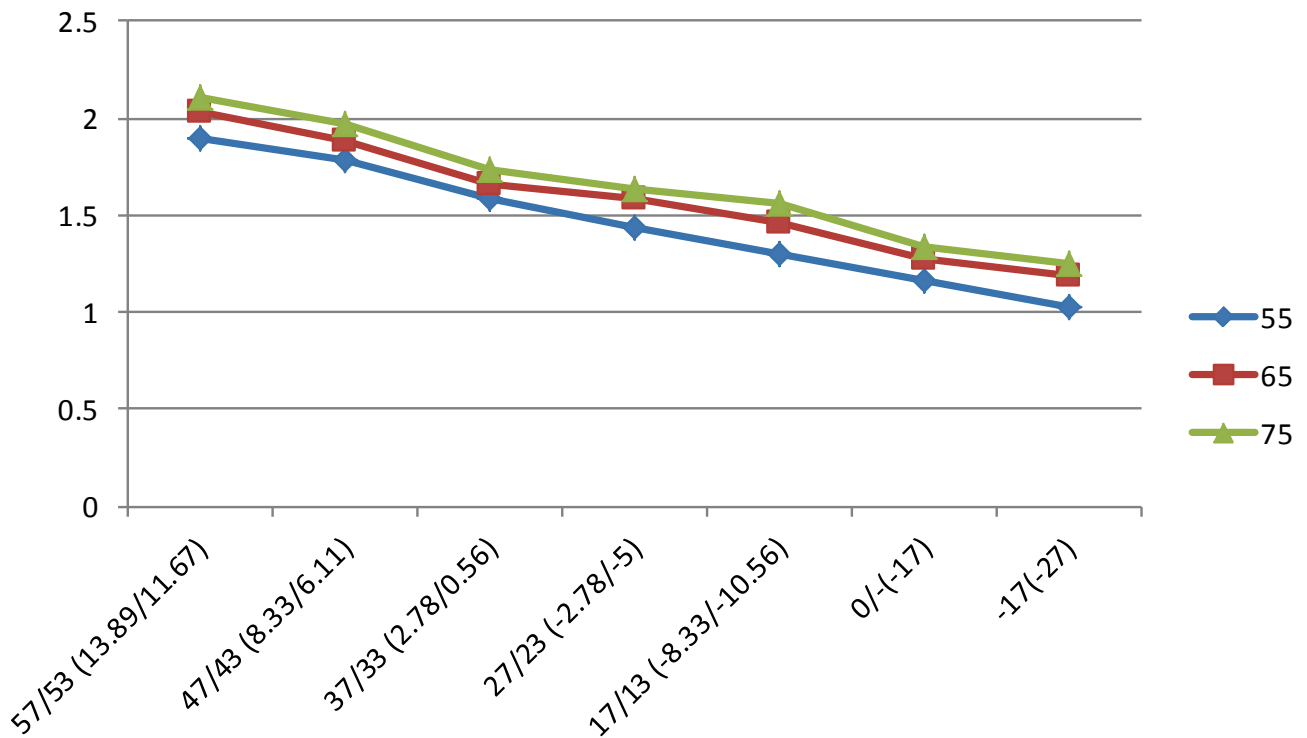
Cooling chart(R22):

°F(°C)	ODU(DB)		0(-17)	5(-15)	15(-9.44)	45(7.22)	75(23.89)	85(29.44)	95(35)	105(40.56)	115(46.11)	120(48.89)
	IDU(DB/WB)											
BAR	70/59 (21.11/15)		4.0	4.1	4.6	5.0	5.1	4.9	5.1	5.4	6.3	6.6
	75/63 (23.89/17.22)		4.2	4.3	4.9	5.4	5.4	5.2	5.4	5.7	6.7	7.0
	80/67 (26.67/19.44)		4.4	4.5	5.3	5.9	5.8	5.6	5.7	6.0	7.0	7.4
	90/73 (32.22/22.78)		4.8	4.9	6.0	6.6	6.4	5.9	6.3	6.6	7.8	8.1
PSI	70/59 (21.11/15)		58	59	67	73	74	71	74	78	91	96
	75/63 (23.89/17.22)		61	62	71	78	78	75	78	83	97	102
	80/67 (26.67/19.44)		64	65	77	86	84	81	83	87	102	107
	90/73 (32.22/22.78)		70	71	87	96	93	86	91	96	113	117
MPa	70/59 (21.11/15)		0.40	0.41	0.46	0.50	0.51	0.49	0.51	0.54	0.63	0.66
	75/63 (23.89/17.22)		0.42	0.43	0.49	0.54	0.54	0.52	0.54	0.57	0.67	0.70
	80/67 (26.67/19.44)		0.44	0.45	0.53	0.59	0.58	0.56	0.57	0.60	0.70	0.74
	90/73 (32.22/22.78)		0.48	0.49	0.60	0.66	0.64	0.59	0.63	0.66	0.78	0.81



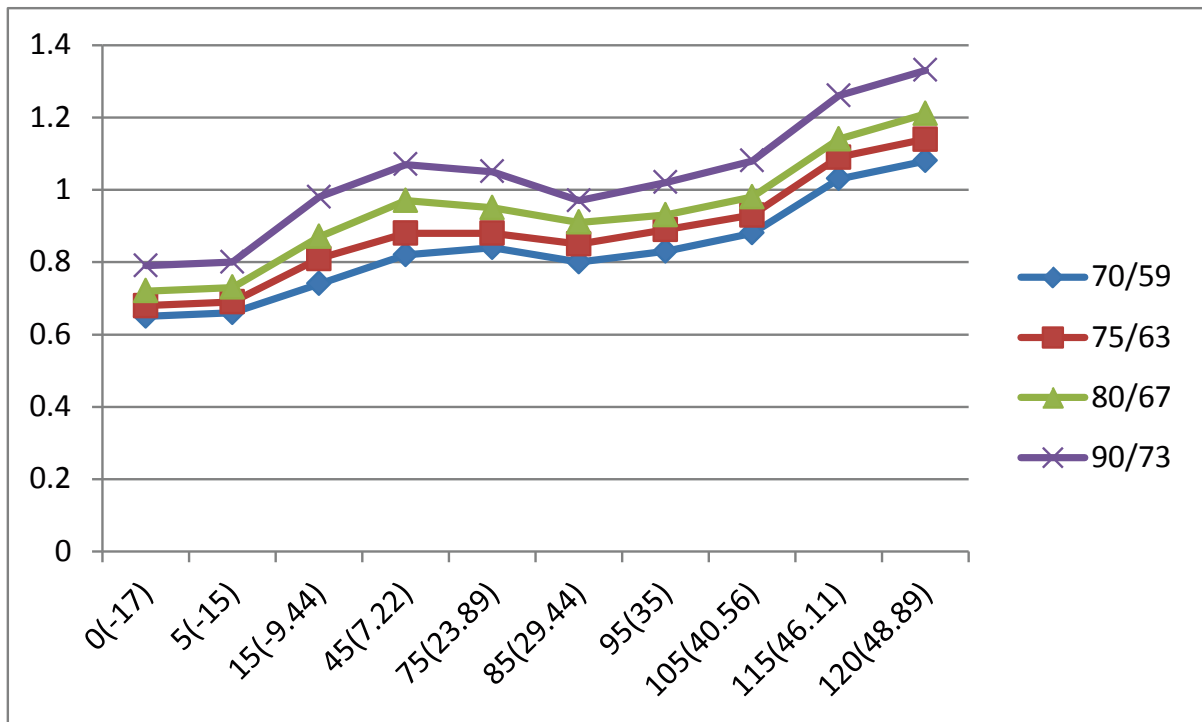
Heating chart(R22):

°F(°C)	ODU(DB/WB)	57/53 (13.89/11.67)	47/43 (8.33/6.11)	37/33 (2.78/0.56)	27/23 (-2.78/-5)	17/13 (-8.33/ -10.56)	0/-2 (-17/-19)	-17/-18 (-27/-28)
	IDU(DB)							
BAR	55(12.78)	18.9	17.8	15.8	14.3	13.0	11.6	10.3
	65(18.33)	20.3	18.8	16.6	15.9	14.6	12.8	11.9
	75(23.89)	21.1	19.7	17.3	16.4	15.6	13.4	12.5
PSI	55(12.78)	274	258	229	207	189	168	149
	65(18.33)	294	273	241	231	212	186	172.6
	75(23.89)	306	286	251	238	226	194	181
MPa	55(12.78)	1.89	1.78	1.58	1.43	1.30	1.16	1.03
	65(18.33)	2.03	1.88	1.66	1.59	1.46	1.28	1.19
	75(23.89)	2.11	1.97	1.73	1.64	1.56	1.34	1.25



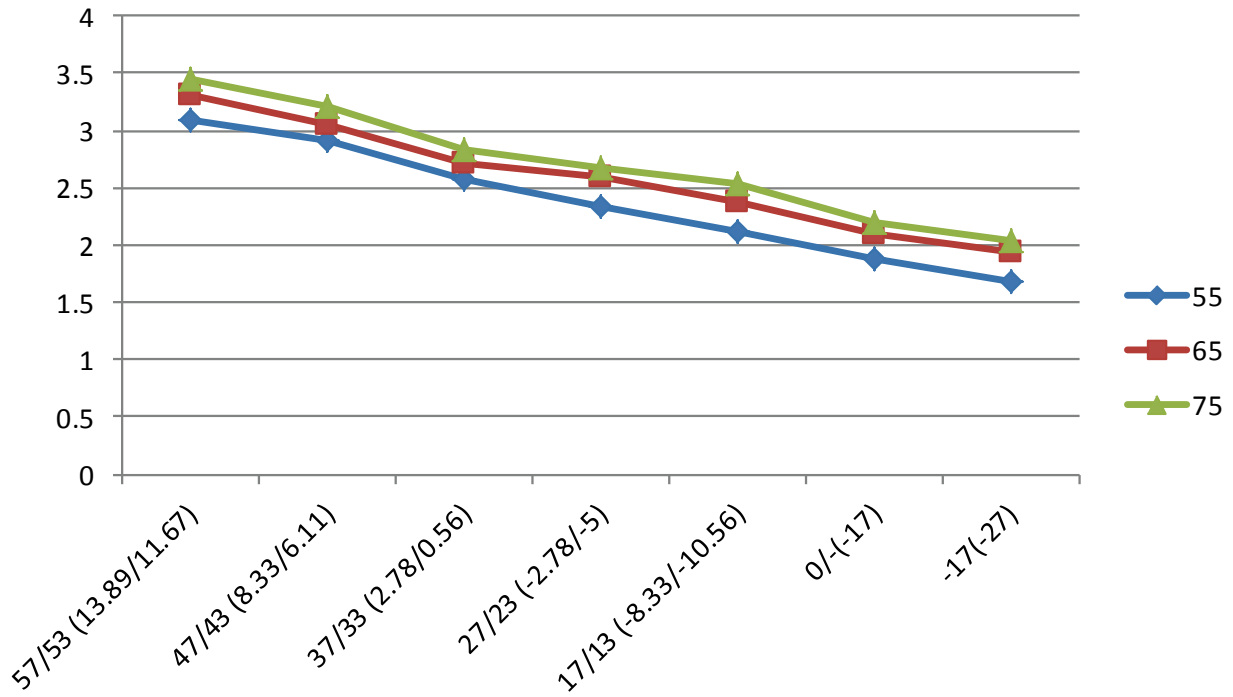
Cooling chart(R32):

°F(°C)	ODU(DB)		0(-17)	5(-15)	15(-9.44)	45(7.22)	75(23.89)	85(29.44)	95(35)	105(40.56)	115(46.11)	120(48.89)
	IDU(DB/WB)											
BAR	70/59 (21.11/15)		6.5	6.6	7.4	8.2	8.4	8.0	8.3	8.8	10.3	10.8
	75/63 (23.89/17.22)		6.8	6.9	8.1	8.8	8.8	8.5	8.9	9.3	10.9	11.4
	80/67 (26.67/19.44)		7.2	7.3	8.7	9.7	9.5	9.1	9.3	9.8	11.4	12.1
	90/73 (32.22/22.78)		7.9	8.0	9.8	10.7	10.5	9.7	10.2	10.8	12.6	13.3
PSI	70/59 (21.11/15)		95	96	108	118	121	115	119	128	150	157
	75/63 (23.89/17.22)		99	101	117	128	126	122	129	135	158	165
	80/67 (26.67/19.44)		105	106	125	141	138	132	135	143	165	176
	90/73 (32.22/22.78)		114	115	142	155	152	141	148	157	184	193
MPa	70/59 (21.11/15)		0.65	0.66	0.74	0.82	0.84	0.80	0.83	0.88	1.03	1.08
	75/63 (23.89/17.22)		0.68	0.69	0.81	0.88	0.88	0.85	0.89	0.93	1.09	1.14
	80/67 (26.67/19.44)		0.72	0.73	0.87	0.97	0.95	0.91	0.93	0.98	1.14	1.21
	90/73 (32.22/22.78)		0.79	0.80	0.98	1.07	1.05	0.97	1.02	1.08	1.26	1.33



Heating chart(R32):

°F(°C)	ODU(DB/WB)	57/53 (13.89/11.67)	47/43 (8.33/6.11)	37/33 (2.78/0.56)	27/23 (-2.78/-5)	17/13 (-8.33/- 10.56)	0/-2 (-17/-19)	-17/-18 (-27/-28)
	IDU(DB)							
BAR	55(12.78)	30.9	29.1	25.8	23.3	21.2	18.9	16.8
	65(18.33)	33.2	30.6	27.1	25.9	23.8	20.9	19.4
	75(23.89)	34.5	32.1	28.4	26.8	25.4	21.9	20.4
PSI	55(12.78)	448	421	374	337	308	273	244
	65(18.33)	480	444	394	375	346	303	282
	75(23.89)	499	466	411	389	369	318	296
MPa	55(12.78)	3.09	2.91	2.58	2.33	2.12	1.89	1.68
	65(18.33)	3.32	3.06	2.71	2.59	2.38	2.09	1.94
	75(23.89)	3.45	3.21	2.84	2.68	2.54	2.19	2.04



System Pressure Table-R22

Pressure			Temperature		Pressure			Temperature	
Kpa	bar	PSI	°C	°F	Kpa	bar	PSI	°C	°F
100	1	14.5	-41.091	-41.964	1600	16	232	41.748	107.146
150	1.5	21.75	-32.077	-25.739	1650	16.5	239.25	43.029	109.452
200	2	29	-25.177	-13.319	1700	17	246.5	44.281	111.706
250	2.5	36.25	-19.508	-3.114	1750	17.5	253.75	45.506	113.911
300	3	43.5	-14.654	5.623	1800	18	261	46.706	116.071
350	3.5	50.75	-10.384	13.309	1850	18.5	268.25	47.882	118.188
400	4	58	-6.556	20.199	1900	19	275.5	49.034	120.261
450	4.5	65.25	-3.075	26.464	1950	19.5	282.75	50.164	122.295
500	5	72.5	0.124	32.223	2000	20	290	51.273	124.291
550	5.5	79.75	3.091	37.563	2050	20.5	297.25	52.361	126.250
600	6	87	5.861	42.550	2100	21	304.5	53.43	128.174
650	6.5	94.25	8.464	47.234	2150	21.5	311.75	54.48	130.064
700	7	101.5	10.92	51.656	2200	22	319	55.512	131.922
750	7.5	108.75	13.249	55.848	2250	22.5	326.25	56.527	133.749
800	8	116	15.465	59.837	2300	23	333.5	57.526	135.547
850	8.5	123.25	17.58	63.644	2350	23.5	340.75	58.508	137.314
900	9	130.5	19.604	67.287	2400	24	348	59.475	139.055
950	9.5	137.75	21.547	70.785	2450	24.5	355.25	60.427	140.769
1000	10	145	23.415	74.147	2500	25	362.5	61.364	142.455
1050	10.5	152.25	25.216	77.389	2550	25.5	369.75	62.288	144.118
1100	11	159.5	26.953	80.515	2600	26	377	63.198	145.756
1150	11.5	166.75	28.634	83.541	2650	26.5	384.25	64.095	147.371
1200	12	174	30.261	86.470	2700	27	391.5	64.98	148.964
1250	12.5	181.25	31.839	89.310	2750	27.5	398.75	65.852	150.534
1300	13	188.5	33.371	92.068	2800	28	406	66.712	152.082
1350	13.5	195.75	34.86	94.748	2850	28.5	413.25	67.561	153.610
1400	14	203	36.308	97.354	2900	29	420.5	68.399	155.118
1450	14.5	210.25	37.719	99.894	2950	29.5	427.75	69.226	156.607
1500	15	217.5	39.095	102.371	3000	30	435	70.042	158.076
1550	15.5	224.75	40.437	104.787					

System Pressure Table-R410A

Pressure			Temperature		Pressure			Temperature	
Kpa	bar	PSI	°C	°F	Kpa	bar	PSI	°C	°F
100	1	14.5	-51.623	-60.921	2350	23.5	340.75	38.817	101.871
150	1.5	21.75	-43.327	-45.989	2400	24	348	39.68	103.424
200	2	29	-36.992	-34.586	2450	24.5	355.25	40.531	104.956
250	2.5	36.25	-31.795	-25.231	2500	25	362.5	41.368	106.462
300	3	43.5	-27.351	-17.232	2550	25.5	369.75	42.192	107.946
350	3.5	50.75	-23.448	-10.206	2600	26	377	43.004	109.407
400	4	58	-19.953	-3.915	2650	26.5	384.25	43.804	110.847
450	4.5	65.25	-16.779	1.798	2700	27	391.5	44.592	112.266
500	5	72.5	-13.863	7.047	2750	27.5	398.75	45.37	113.666
550	5.5	79.75	-11.162	11.908	2800	28	406	46.136	115.045
600	6	87	-8.643	16.444	2850	28.5	413.25	46.892	116.406
650	6.5	94.25	-6.277	20.701	2900	29	420.5	47.638	117.748
700	7	101.5	-4.046	24.716	2950	29.5	427.75	48.374	119.073
750	7.5	108.75	-1.933	28.521	3000	30	435	49.101	120.382
800	8	116	0.076	32.137	3050	30.5	442.25	49.818	121.672
850	8.5	123.25	1.993	35.587	3100	31	449.5	50.525	122.945
900	9	130.5	3.826	38.888	3150	31.5	456.75	51.224	124.203
950	9.5	137.75	5.584	42.052	3200	32	464	51.914	125.445
1000	10	145	7.274	45.093	3250	32.5	471.25	52.596	126.673
1050	10.5	152.25	8.901	48.022	3300	33	478.5	53.27	127.886
1100	11	159.5	10.471	50.848	3350	33.5	485.75	53.935	129.083
1150	11.5	166.75	11.988	53.578	3400	34	493	54.593	130.267
1200	12	174	13.457	56.223	3450	34.5	500.25	55.243	131.437
1250	12.5	181.25	14.879	58.782	3500	35	507.5	55.885	132.593
1300	13	188.5	16.26	61.268	3550	35.5	514.75	56.52	133.736
1350	13.5	195.75	17.602	63.684	3600	36	522	57.148	134.866
1400	14	203	18.906	66.031	3650	36.5	529.25	57.769	135.984
1450	14.5	210.25	20.176	68.317	3700	37	536.5	58.383	137.089
1500	15	217.5	21.414	70.545	3750	37.5	543.75	58.99	138.182
1550	15.5	224.75	22.621	72.718	3800	38	551	59.591	139.264
1600	16	232	23.799	74.838	3850	38.5	558.25	60.185	140.333
1650	16.5	239.25	24.949	76.908	3900	39	565.5	60.773	141.391
1700	17	246.5	26.074	78.933	3950	39.5	572.75	61.355	142.439
1750	17.5	253.75	27.174	80.913	4000	40	580	61.93	143.474
1800	18	261	28.251	82.852	4050	40.5	587.25	62.499	144.498
1850	18.5	268.25	29.305	84.749	4100	41	594.5	63.063	145.513
1900	19	275.5	30.338	86.608	4150	41.5	601.75	63.62	146.516
1950	19.5	282.75	31.351	88.432	4200	42	609	64.172	147.510
2000	20	290	32.344	90.219	4250	42.5	616.25	64.719	148.494
2050	20.5	297.25	33.319	91.974	4300	43	623.5	65.259	149.466
2100	21	304.5	34.276	93.697	4350	43.5	630.75	65.795	150.431
2150	21.5	311.75	35.215	95.387	4400	44	638	66.324	151.383
2200	22	319	36.139	97.050	4450	44.5	645.25	66.849	152.328
2250	22.5	326.25	37.047	98.685	4500	45	652.5	67.368	153.262
2300	23	333.5	37.939	100.290					

System Pressure Table-R32

Pressure			Temperature		Pressure			Temperature	
Kpa	bar	PSI	°C	°F	Kpa	bar	PSI	°C	°F
100	1	14.5	-51.909	-61.436	1850	18.5	268.25	28.425	83.165
150	1.5	21.75	-43.635	-46.543	1900	19	275.5	29.447	85.005
200	2	29	-37.323	-35.181	1950	19.5	282.75	30.448	86.806
250	2.5	36.25	-32.15	-25.87	2000	20	290	31.431	88.576
300	3	43.5	-27.731	-17.916	2050	20.5	297.25	32.395	90.311
350	3.5	50.75	-23.85	-10.93	2100	21	304.5	33.341	92.014
400	4	58	-20.378	-4.680	2150	21.5	311.75	34.271	93.688
450	4.5	65.25	-17.225	0.995	2200	22	319	35.184	95.331
500	5	72.5	-14.331	6.204	2250	22.5	326.25	36.082	96.948
550	5.5	79.75	-11.65	11.03	2300	23	333.5	36.965	98.537
600	6	87	-9.150	15.529	2350	23.5	340.75	37.834	100.101
650	6.5	94.25	-6.805	19.752	2400	24	348	38.688	101.638
700	7	101.5	-4.593	23.734	2450	24.5	355.25	39.529	103.152
750	7.5	108.75	-2.498	27.505	2500	25	362.5	40.358	104.644
800	8	116	-0.506	31.089	2550	25.5	369.75	41.173	106.111
850	8.5	123.25	1.393	34.507	2600	26	377	41.977	107.559
900	9	130.5	3.209	37.777	2650	26.5	384.25	42.769	108.984
950	9.5	137.75	4.951	40.911	2700	27	391.5	43.55	110.39
1000	10	145	6.624	43.923	2750	27.5	398.75	44.32	111.776
1050	10.5	152.25	8.235	46.823	2800	28	406	45.079	113.142
1100	11	159.5	9.790	49.621	2850	28.5	413.25	45.828	114.490
1150	11.5	166.75	11.291	52.324	2900	29	420.5	46.567	115.821
1200	12	174	12.745	54.941	2950	29.5	427.75	47.296	117.133
1250	12.5	181.25	14.153	57.475	3000	30	435	48.015	118.427
1300	13	188.5	15.52	59.936	3050	30.5	442.25	48.726	119.707
1350	13.5	195.75	16.847	62.325	3100	31	449.5	49.428	120.970
1400	14	203	18.138	64.648	3150	31.5	456.75	50.121	122.218
1450	14.5	210.25	19.395	66.911	3200	32	464	50.806	123.451
1500	15	217.5	20.619	69.114	3250	32.5	471.25	51.482	124.668
1550	15.5	224.75	21.813	71.263	3300	33	478.5	52.15	125.87
1600	16	232	22.978	73.360	3350	33.5	485.75	52.811	127.060
1650	16.5	239.25	24.116	75.409	3400	34	493	53.464	128.235
1700	17	246.5	25.229	77.412	3450	34.5	500.25	54.11	129.398
1750	17.5	253.75	26.317	79.371	3500	35	507.5	54.748	130.546
1800	18	261	27.382	81.288					

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