



Service Manual

DCI Light Commercial Series

KCD Indoor Units	OID Indoor Units	TCD Indoor Units	QBD Indoor Units	Outdoor Units
ELSI-KCD012-N11	ELSI-OID012-N11		ELSI-QBD012-N11	ELAU-VMD012-H11
ELSI-KCD018-N11	ELSI-OID018-N11	ELSI-TCD018-N11		ELAU-VMD018-H11
ELSI-KCD024-N11	ELSI-OID024-N11	ELSI-TCD024-N11		ELAU-VMD024-H11
ELSI-KCD030-N11				ELAU-VMD030-H11
ELSI-KCD036-N11	ELSI-OID036-N11	ELSI-TCD036-N11		ELAU-VMD036-H11
				ELAU-VMD036-H13
	ELSI-OID042-N11			ELAU-VMD042-H11
ELSI-KCD048-N11	ELSI-OID048-N11	ELSI-TCD048-N11		ELAU-VMD048-H11
				ELAU-VMD048-H13
	ELSI-OID060-N11	ELSI-TCD060-N11		ELAU-VMD060-H13

REFRIGERANT

R410A

SM VMD DCI Ver.1 GB

HEATPUMP

FEB 2017

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※The specifications, designs, and information in this book are subject to change without notice for product improvement.

Part 1

General Information

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1. Model Lists

1.1 Indoor Units

R410A (capacity multiplied by 1000Btu/h)

Type	Function	12	18	24	30	36	48	60
Cassette 90x90	Cooling and heating			●	●	●	●	●
Ducted	Cooling and heating	●	●	●	●	●	●	●
Ceiling-floor	Cooling and heating		●	●	●	●	●	●
Cassette 60x60	Cooling and heating	●	●					
Console	Cooling and heating	●						

1.2 Outdoor Units

Outdoor unit Model	Compressor type	Compressor Brand	Matched indoor units
ELAU-VMD012-H11	Rotary	GMCC	ELSI-KCD012-N11 ELSI-QBD012-N11 ELSI-OID012-N11
ELAU-VMD018-H11	Rotary	GMCC	ELSI-KCD018-N11 ELSI-TCD018-N11 ELSI-OID018-N11
ELAU-VMD024-H11	Rotary	GMCC	ELSI-KCD024-N11 ELSI-TCD024-N11 ELSI-OID024-N11
ELAU-VMD030-H11	Rotary	GMCC	ELSI-KCD030-N11
ELAU-VMD036-H11	Rotary	GMCC	ELSI-KCD036-N11 ELSI-TCD036-N11 ELSI-OID036-N11
ELAU-VMD036-H13	Rotary	GMCC	
ELAU-VMD042-H11	Rotary	GMCC	ELSI-OID042-N11
ELAU-VMD048-H11	Rotary	GMCC	ELSI-KCD048-N11 ELSI-TCD048-N11 ELSI-OID048-N11
ELAU-VMD048-H13	Rotary	GMCC	
ELAU-VMD060-H13	Rotary	GMCC	ELSI-TCD060-N11 ELSI-OID060-N11

2. External Appearance

2.1 Indoor Units

Super slim cassette



Duct



Ceiling-Floor



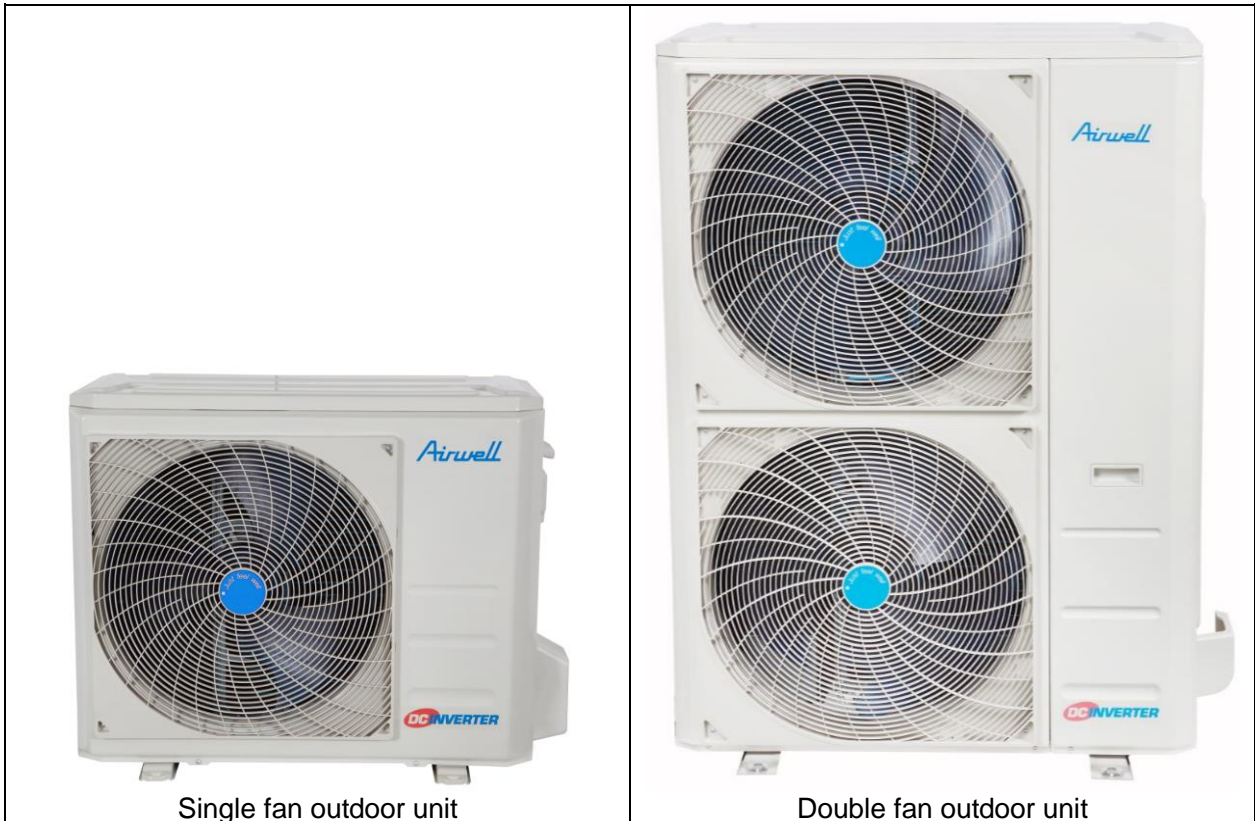
Compact Four-way cassette



Console



2.2 Outdoor Units



3. Product specification

3.1 ELAU-VMD012-H11

MODEL INDOOR UNIT			ELSI-KCD012-N11		
Model Outdoor Unit			ELAU-VMD012-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	3.5(0.8-4.4)	4.1(0.85-5.1)		
Pdesign	kW	3.5	3.5	3.6	-
SEER /SCOP ⁽²⁾	W/W	6.8	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	181	1225	989	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	16			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM 500/580/700		
	Air flow ⁽³⁾	L/M/H	m3/hr 450/530/650		
	External static pressure	Nom (Min-Max)	Pa 0		
	Sound power level ⁽⁴⁾	H	dB(A) 55		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A) 34/38/42		
	Moisture removal		Hr 1.5		
	Condensate drain tube I.D / O.D		mm ODΦ25		
	Dimensions	WxHxD	mm 570x270x570		
	Weight		kg 16		
	Package dimensions	WxHxD	mm 655x290x655		
	Packaged weight		kg 18.6		
	Stacking height		units 8		
OUTDOOR	Refrigerant control		EEV		
	Compressor type, model		Rotary DC Inverter		
	Fan type & quantity		Axial x 1		
	Fan speeds	H	RPM 800		
	Air flow	H	m3/hr 2000		
	Sound power level ⁽⁴⁾	H	dB(A) 61		
	Sound pressure level ⁽⁵⁾	H	dB(A) 54		
	Dimensions	WxHxD	mm 800x554x333		
	Weight		kg 34.5		
	Package dimensions	WxHxD	mm 920x615x390		
	Packaged weight		kg 37.3		
	Stacking height		Units 4		
	Refrigerant type		R410A		
	Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/1.38	
	Additional charge per 1 meter		gr / 1m	15	
Connections between units	Liquid line	In.(mm)	1/4"(Φ6.35)		
	Suction line	In.(mm)	3/8"(Φ9.52)		
	Max.tubing length	m.	25		
	Max.height difference	m.	10		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit			ELSI-QBD012-N11		
Model Outdoor Unit			ELAU-VMD012-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	3.5(0.8-4.4)	3.8(0.85-5.0)		
Pdesign	kW	3.5	3.6	3.6	-
SEER /SCOP ⁽²⁾	W/W	6.7	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	183	1260	989	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	16			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM		
Air flow		H	m3/hr		
Sound power level ⁽⁴⁾		H	dB(A)		
Sound pressure level ⁽⁵⁾		H	dB(A)		
Dimensions		WxHxD	mm		
Weight			kg		
Package dimensions		WxHxD	mm		
Packaged weight			kg		
Stacking height			Units		
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)			
Additional charge per 1 meter		gr / 1m			
Connections between units	Liquid line	In.(mm)	1/4"(Φ6.35)		
	Suction line	In.(mm)	3/8"(Φ9.52)		
	Max.tubing length	m.	25		
	Max.height difference	m.	10		
Operation control type		Remote control			
Heating elements		kW			
Others		NA			

Model Indoor Unit			ELSI-OID012-N11		
Model Outdoor Unit			ELAU-VMD012-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	3.5(0.6-4.4)	3.8(0.6-5.0)		
Pdesign	kW	3.5	3.2	3.6	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	201	1120	989	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	16			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM 760/940/1100		
	Air flow ⁽³⁾	L/M/H	m3/hr 450/580/680		
	External static pressure	Nom (Min-Max)	Pa 25(0-45)		
	Sound power level ⁽⁴⁾	H	dB(A) 57		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A) 27/31/35		
	Moisture removal		Hr 1.5		
	Condensate drain tube I.D / O.D		mm ODΦ25		
	Dimensions	WxHxD	mm 700x210x635		
	Weight		kg 18.4		
	Package dimensions	WxHxD	mm 915x290x655		
	Packaged weight		kg 22.7		
	Stacking height		units 6		
OUTDOOR	Refrigerant control		EEV		
	Compressor type, model		Rotary DC Inverter		
	Fan type & quantity		Axial x 1		
	Fan speeds	H	RPM 800		
	Air flow	H	m3/hr 2000		
	Sound power level ⁽⁴⁾	H	dB(A) 61		
	Sound pressure level ⁽⁵⁾	H	dB(A) 54		
	Dimensions	WxHxD	mm 800x554x333		
	Weight		kg 34.5		
	Package dimensions	WxHxD	mm 920x615x390		
	Packaged weight		kg 37.3		
	Stacking height		Units 4		
	Refrigerant type		R410A		
	Refrigerant charge (standard connecting tubing length)		kg(5m) R410a/1.38		
	Additional charge per 1 meter		gr / 1m 15		
Connections between units	Liquid line	In.(mm)	1/4"(Φ6.35)		
	Suction line	In.(mm)	3/8"(Φ9.52)		
	Max.tubing length	m.	25		
	Max.height difference	m.	10		
Operation control type		Remote control			
Heating elements		kW NA			
Others					

3.2 ELAU-VMD018-H11

Model Indoor Unit			ELSI-KCD018-N11		
Model Outdoor Unit			ELAU-VMD018-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	5.1(0.8-6.1)	5.6(0.9-7.0)		
Pdesign	kW	5.1	4.8	5	-
SEER /SCOP ⁽²⁾	W/W	6.3	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	284	1680	1373	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+16			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM		
Air flow		H	m3/hr		
Sound power level ⁽⁴⁾		H	dB(A)		
Sound pressure level ⁽⁵⁾		H	dB(A)		
Dimensions		WxHxD	mm		
Weight			kg		
Package dimensions		WxHxD	mm		
Packaged weight			kg		
Stacking height			Units		
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/1.78		
Additional charge per 1 meter		gr / 1m	15		
Connections between units		Liquid line	In.(mm)	1/4"(Φ6.35)	
	Suction line	In.(mm)	1/2"(Φ12.7)		
	Max.tubing length	m.	30		
	Max.height difference	m.	20		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit			ELSI-TCD018-N11		
Model Outdoor Unit			ELAU-VMD018-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	5.1(0.8-6.1)	5.6(0.9-7.0)		
Pdesign	kW	5.1	4.8	5.2	-
SEER /SCOP ⁽²⁾	W/W	6.5	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	275	1680	1428	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+16			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM 750/850/950		
	Air flow ⁽³⁾	L/M/H	m3/hr 700/800/900		
	External static pressure	Nom (Min-Max)	Pa 0		
	Sound power level ⁽⁴⁾	H	dB(A) 57		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A) 38/41/44		
	Moisture removal		Hr 1.5		
	Condensate drain tube I.D / O.D		mm ODΦ16		
	Dimensions	WxHxD	3/8"(Φ9.52) 1068x235x675		
	Weight		kg 25.8		
	Package dimensions	WxHxD	mm 1145x313x755		
	Packaged weight		kg 30.6		
	Stacking height		units 8		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM 850		
Air flow		H	m3/hr 2100		
Sound power level ⁽⁴⁾		H	dB(A) 65		
Sound pressure level ⁽⁵⁾		H	dB(A) 54		
Dimensions		WxHxD	mm 800x554x333		
Weight			kg 35.5		
Package dimensions		WxHxD	mm 920x615x390		
Packaged weight			kg 38.4		
Stacking height			Units 4		
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m) R410a/1.78			
Additional charge per 1 meter		gr / 1m 15			
Connections between units	Liquid line	In.(mm)	1/4"(Φ6.35)		
	Suction line	In.(mm)	1/2"(Φ12.7)		
	Max.tubing length	m.	30		
	Max.height difference	m.	20		
Operation control type		Remote control			
Heating elements		kW NA			
Others					

Model Indoor Unit		ELSI-OID018-N11			
Model Outdoor Unit		ELAU-VMD018-H11			
Installation Method of Pipe		Flared			
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	5.1(0.8-6.1)	5.8(0.9-7.0)		
Pdesign	kW	5.1	4.7	5	-
SEER /SCOP ⁽²⁾	W/W	6.3	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	284	1645	1373	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+16			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	850	
Air flow		H	m3/hr	2100	
Sound power level ⁽⁴⁾		H	dB(A)	65	
Sound pressure level ⁽⁵⁾		H	dB(A)	54	
Dimensions		WxHxD	mm	800x554x333	
Weight			kg	35.5	
Package dimensions		WxHxD	mm	920x615x390	
Packaged weight			kg	38.4	
Stacking height			Units	4	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/1.78		
Additional charge per 1 meter		gr / 1m	15		
Connections between units		Liquid line	In.(mm)	1/4"(Φ6.35)	
	Suction line	In.(mm)	1/2"(Φ12.7)		
	Max.tubing length	m.	30		
	Max.height difference	m.	20		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

3.3 ELAU-VMD024-H11

Model Indoor Unit			ELSI-KCD024-N11		
Model Outdoor Unit			ELAU-VMD024-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	6.8(1.2-8.2)	7.6(1.2-8.6)		
Pdesign	kW	6.8	5.8	5.8	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	391	2030	1593	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	450/600/700	
	Air flow ⁽³⁾	L/M/H	m3/hr	1300/1500/1700	
	External static pressure	Nom (Min-Max)	Pa	0	
	Sound power level ⁽⁴⁾	H	dB(A)	62	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	42/44/47	
	Moisture removal		Hr	2,5	
	Condensate drain tube I.D / O.D		mm	ODΦ31.5	
	Dimensions	WxHxD	mm	840x245x840	
	Weight		kg	24	
	Package dimensions	WxHxD	mm	900x257x900	
	Packaged weight		kg	28	
	Stacking height		units	7	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	760	
Air flow		H	m3/hr	2700	
Sound power level ⁽⁴⁾		H	dB(A)	65	
Sound pressure level ⁽⁵⁾		H	dB(A)	60	
Dimensions		WxHxD	mm	845x702x363	
Weight			kg	49	
Package dimensions		WxHxD	mm	965x765x396	
Packaged weight			kg	51.5	
Stacking height			Units	3	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/1.95		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	50		
	Max.height difference	m.	25		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit			ELSI-TC024-N11		
Model Outdoor Unit			ELAU-VMD024-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	6.8(1.2-8.2)	7.5(1.2-8.6)		
Pdesign	kW	6.8	5.8	5.8	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	391	2030	1593	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	890/1080/1200	
	Air flow ⁽³⁾	L/M/H	m3/hr	850/1050/1180	
	External static pressure	Nom (Min-Max)	Pa	0	
	Sound power level ⁽⁴⁾	H	dB(A)	63	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	44/49/52	
	Moisture removal		Hr	2.2	
	Condensate drain tube I.D / O.D		mm	ODΦ16	
	Dimensions	WxHxD	mm	1068x235x675	
	Weight		kg	25	
	Package dimensions	WxHxD	mm	1145x313x755	
	Packaged weight		kg	30	
	Stacking height		units	8	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	760	
Air flow		H	m3/hr	2700	
Sound power level ⁽⁴⁾		H	dB(A)	65	
Sound pressure level ⁽⁵⁾		H	dB(A)	60	
Dimensions		WxHxD	mm	845x702x363	
Weight			kg	49	
Package dimensions		WxHxD	mm	965x765x396	
Packaged weight			kg	51.5	
Stacking height			Units	3	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/1.95		
Additional charge per 1 meter		gr / 1m	30		
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)	
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	50		
	Max.height difference	m.	25		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit			ELSI-OID024-N11		
Model Outdoor Unit			ELAU-VMD024-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	7(1.2-8.2)	7.3(1.2-8.6)		
Pdesign	kW	7	6	6	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	402	2100	1648	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	760	
Air flow		H	m3/hr	2700	
Sound power level ⁽⁴⁾		H	dB(A)	65	
Sound pressure level ⁽⁵⁾		H	dB(A)	60	
Dimensions		WxHxD	mm	845x702x363	
Weight			kg	49	
Package dimensions		WxHxD	mm	965x765x396	
Packaged weight			kg	51.5	
Stacking height			Units	3	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/1.95		
Additional charge per 1 meter		gr / 1m	30		
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)	
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	50		
	Max.height difference	m.	25		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

3.4 ELAU-VMD030-H11

Model Indoor Unit			ELSI-KCD030-N11		
Model Outdoor Unit			ELAU-VMD030-H11		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	8.5(2.1-10.5)	9.0(2.1-10.5)		
Pdesign	kW	8.5	8.2	8.3	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	#VALUE!	2870	2279	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+30			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM		
Air flow		H	m3/hr		
Sound power level ⁽⁴⁾		H	dB(A)		
Sound pressure level ⁽⁵⁾		H	dB(A)		
Dimensions		WxHxD	mm		
Weight			kg		
Package dimensions		WxHxD	mm		
Packaged weight			kg		
Stacking height			Units		
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/2.8		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	50		
	Max.height difference	m.	25		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

3.5 ELAU-VMD036-H11

Model Indoor Unit			ELSI-KCD036-N11			
Model Outdoor Unit			ELAU-VMD036-H11			
Installation Method of Pipe			Flared			
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	10.5(2.9-12.0)	11.0(2.6-13.2)			
Pdesign	kW	10.5	9.8	10.5	-	
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-	
Energy efficiency class		A++	A+	A+++	-	
Annual energy consumption	kWh	603	3430	2883	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	220-240V/Single/50Hz				
Circuit breaker rating	A	10+30				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
	OUTDOOR	Refrigerant control		EEV		
Compressor type, model		Rotary DC Inverter				
Fan type & quantity		Axial x 1				
Fan speeds		H	RPM			
Air flow		H	m3/hr			
Sound power level ⁽⁴⁾		H	dB(A)			
Sound pressure level ⁽⁵⁾		H	dB(A)			
Dimensions		WxHxD	mm			
Weight			kg			
Package dimensions		WxHxD	mm			
Packaged weight			kg			
Stacking height			Units			
Refrigerant type		R410A				
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.2			
Additional charge per 1 meter		gr / 1m	30			
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

Model Indoor Unit			ELSI-TCDD036-N11			
Model Outdoor Unit			ELAU-VMD036-H11			
Installation Method of Pipe			Flared			
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	10.5(2.9-12.0)	11.0(2.6-13.2)			
Pdesign	kW	10.5	10.2	10.5	-	
SEER /SCOP ⁽²⁾	W/W	6.3	4.0	5.1	-	
Energy efficiency class		A++	A+	A+++	-	
Annual energy consumption	kWh	584	3570	2883	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	220-240V/Single/50Hz				
Circuit breaker rating	A	10+30				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
	OUTDOOR	Refrigerant control		EEV		
Compressor type, model		Rotary DC Inverter				
Fan type & quantity		Axial x 1				
Fan speeds		H	RPM			
Air flow		H	m3/hr			
Sound power level ⁽⁴⁾		H	dB(A)			
Sound pressure level ⁽⁵⁾		H	dB(A)			
Dimensions		WxHxD	mm			
Weight			kg			
Package dimensions		WxHxD	mm			
Packaged weight			kg			
Stacking height			Units			
Refrigerant type		R410A				
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.2			
Additional charge per 1 meter		gr / 1m	30			
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

Model Indoor Unit			ELSI-OID036-N11			
Model Outdoor Unit			ELAU-VMD036-H11			
Installation Method of Pipe			Flared			
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	10.0(2.9-12.0)	11.5(2.6-13.2)			
Pdesign	kW	10.0	10.2	10.5	-	
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-	
Energy efficiency class		A++	A+	A+++	-	
Annual energy consumption	kWh	574	3570	2883	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	220-240V/Single/50Hz				
Circuit breaker rating	A	10+30				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
OUTDOOR	Refrigerant control		EEV			
	Compressor type, model		Rotary DC Inverter			
	Fan type & quantity		Axial x 1			
	Fan speeds	H	RPM			
	Air flow	H	m3/hr			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	H	dB(A)			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		Units			
	Refrigerant type		R410A			
	Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.2		
	Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)			
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

3.6 ELAU-VMD036-H13

Model Indoor Unit			ELSI-KCD036-N11		
Model Outdoor Unit			ELAU-VMD036-H13		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	10.5(2.9-12.0)	11.0(2.6-13.2)		
Pdesign	kW	10.5	10	10.5	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	603	3500	2883	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+20			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	600/670/730	
	Air flow ⁽³⁾	L/M/H	m3/hr	1400/1600/1850	
	External static pressure	Nom (Min-Max)	Pa	0	
	Sound power level ⁽⁴⁾	H	dB(A)	63	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	48/51/54	
	Moisture removal		Hr	3,8	
	Condensate drain tube I.D / O.D		mm	ODΦ31.5	
	Dimensions	WxHxD	mm	840x245x840	
	Weight		kg	26.4	
	Package dimensions	WxHxD	mm	900x257x900	
	Packaged weight		kg	30.4	
	Stacking height		units	7	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	950	
Air flow		H	m3/hr	4300	
Sound power level ⁽⁴⁾		H	dB(A)	68	
Sound pressure level ⁽⁵⁾		H	dB(A)	61	
Dimensions		WxHxD	mm	946x810x410	
Weight			kg	78.9	
Package dimensions		WxHxD	mm	1090x865x500	
Packaged weight			kg	83.9	
Stacking height			Units	3	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.2		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit		ELSI-TCDD036-N11			
Model Outdoor Unit		ELAU-VMD036-H13			
Installation Method of Pipe		Flared			
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	10.5(2.9-12.0)	11.0(2.6-13.2)		
Pdesign	kW	10.5	10.2	10.5	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	603	3570	2883	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+20			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	850/1100/1300	
	Air flow ⁽³⁾	L/M/H	m3/hr	1400/1770/2050	
	External static pressure	Nom (Min-Max)	Pa	0	
	Sound power level ⁽⁴⁾	H	dB(A)	63	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	43/49/52	
	Moisture removal		Hr	3.1	
	Condensate drain tube I.D / O.D		mm	ODΦ16	
	Dimensions	WxHxD	mm	1650x235x675	
	Weight		kg	40.3	
	Package dimensions	WxHxD	mm	1725x313x755	
	Packaged weight		kg	46.9	
	Stacking height		units	8	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	950	
Air flow		H	m3/hr	4300	
Sound power level ⁽⁴⁾		H	dB(A)	68	
Sound pressure level ⁽⁵⁾		H	dB(A)	61	
Dimensions		WxHxD	mm	946x810x410	
Weight			kg	78.9	
Package dimensions		WxHxD	mm	1090x865x500	
Packaged weight			kg	83.9	
Stacking height			Units	4	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.2		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit			ELSI-OID036-N11		
Model Outdoor Unit			AWSI-VMD036-H13		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	10.0(2.9-12.0)	11.5(2.6-13.2)		
Pdesign	kW	10.0	10	10.5	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	574	3500	2883	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+20			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	900/1000/1100	
	Air flow ⁽³⁾	L/M/H	m3/hr	920/1100/1400	
	External static pressure	Nom (Min-Max)	Pa	37(0-120)	
	Sound power level ⁽⁴⁾	H	dB(A)	63	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	38/40/42	
	Moisture removal		Hr	3.8	
	Condensate drain tube I.D / O.D		mm	ODΦ25	
	Dimensions	WxHxD	mm	1360x249x774	
	Weight		kg	40.2	
	Package dimensions	WxHxD	mm	1570x305x805	
	Packaged weight		kg	48.4	
	Stacking height		units	8	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	950	
Air flow		H	m3/hr	4300	
Sound power level ⁽⁴⁾		H	dB(A)	68	
Sound pressure level ⁽⁵⁾		H	dB(A)	61	
Dimensions		WxHxD	mm	946x810x410	
Weight			kg	78.9	
Package dimensions		WxHxD	mm	1090x865x500	
Packaged weight			kg	83.9	
Stacking height			Units	3	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.2		
Additional charge per 1 meter		gr / 1m	30		
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)	
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

3.7 ELAU-VMD042-H11

Model Indoor Unit			ELSI-OID042-N11			
Model Outdoor Unit			ELAU-VMD042-H11			
Installation Method of Pipe			Flared			
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	12.3(3.2-13.2)	13.5(2.9-14.6)			
Pdesign	kW	12.3	10.4	10.5	-	
SEER /SCOP ⁽²⁾	W/W	5.6	4.0	5.2	-	
Energy efficiency class		A+	A+	A+++	-	
Annual energy consumption	kWh	769	3640	2827	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	220-240V/Single/50Hz				
Circuit breaker rating	A	10+30				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
	OUTDOOR	Refrigerant control		EEV		
Compressor type, model		Rotary DC Inverter				
Fan type & quantity		Axial x 1				
Fan speeds		H	RPM			
Air flow		H	m3/hr			
Sound power level ⁽⁴⁾		H	dB(A)			
Sound pressure level ⁽⁵⁾		H	dB(A)			
Dimensions		WxHxD	mm			
Weight			kg			
Package dimensions		WxHxD	mm			
Packaged weight			kg			
Stacking height			Units			
Refrigerant type		R410A				
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/3.65			
Additional charge per 1 meter		gr / 1m	30			
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

3.8 ELAU-VMD048-H11

Model Indoor Unit			ELSI-KCD048-N11			
Model Outdoor Unit			ELAU-VMD048-H11			
Installation Method of Pipe			Flared			
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	14.0(4.1-16.0)	15.5(4.2-17.6)			
Pdesign	kW	14	11.5	11.8	-	
SEER /SCOP ⁽²⁾	W/W	6.1	4	5.1	-	
Energy efficiency class		A++	A+	A+++	-	
Annual energy consumption	kWh	804	4025	3240	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	220-240V/Single/50Hz				
Circuit breaker rating	A	10 + 40				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
	OUTDOOR	Refrigerant control		EEV		
Compressor type, model		Rotary DC Inverter				
Fan type & quantity		Axial x 1				
Fan speeds		H	RPM			
Air flow		H	m3/hr			
Sound power level ⁽⁴⁾		H	dB(A)			
Sound pressure level ⁽⁵⁾		H	dB(A)			
Dimensions		WxHxD	mm			
Weight			kg			
Package dimensions		WxHxD	mm			
Packaged weight			kg			
Stacking height			Units			
Refrigerant type		R410A				
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.0			
Additional charge per 1 meter		gr / 1m	30			
Connections between units		Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

Model Indoor Unit		ELSI-TCDD048-N11			
Model Outdoor Unit		ELAU-VMD048-H11			
Installation Method of Pipe		Flared			
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	14.0(4.1-16.4)	16.4(4.4-18.4)		
Pdesign	kW	14	11.8	11.8	-
SEER /SCOP ⁽²⁾	W/W	6.1	4	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	804	4130	3240	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	220-240V/Single/50Hz			
Circuit breaker rating	A	10+40			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM		
Air flow		H	m3/hr		
Sound power level ⁽⁴⁾		H	dB(A)		
Sound pressure level ⁽⁵⁾		H	dB(A)		
Dimensions		WxHxD	mm		
Weight			kg		
Package dimensions		WxHxD	mm		
Packaged weight			kg		
Stacking height			Units		
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.0		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit		ELSI-OID048-N11				
Model Outdoor Unit		AWAU-YUD048-H11				
Installation Method of Pipe		Flared				
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	14(4.1-16.4)	16.0(4.3-18.1)			
Pdesign	kW	14	12	11.6	-	
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	4.9	-	
Energy efficiency class		A++	A+	A++	-	
Annual energy consumption	kWh	804	4200	3315	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	220-240V/Single/50Hz				
Circuit breaker rating	A	10+40				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
	OUTDOOR	Refrigerant control		EEV		
Compressor type, model		Rotary DC Inverter				
Fan type & quantity		Axial x 1				
Fan speeds		H	RPM			
Air flow		H	m3/hr			
Sound power level ⁽⁴⁾		H	dB(A)			
Sound pressure level ⁽⁵⁾		H	dB(A)			
Dimensions		WxHxD	mm			
Weight			kg			
Package dimensions		WxHxD	mm			
Packaged weight			kg			
Stacking height			Units			
Refrigerant type		R410A				
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.0			
Additional charge per 1 meter		gr / 1m	30			
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)			
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

3.9 ELAU-VMD048-H13

Model Indoor Unit		ELSI-KCD048-N11			
Model Outdoor Unit		ELAU-VMD048-H13			
Installation Method of Pipe		Flared			
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	14.0(4.0-16.1)	15.5(4.2-17.6)		
Pdesign	kW	14.0	11.5	11.6	-
SEER /SCOP ⁽²⁾	W/W	5.6	4.0	5.1	-
Energy efficiency class		A+	A+	A+++	-
Annual energy consumption	kWh	875	4025	3185	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	600/680/780	
	Air flow ⁽³⁾	L/M/H	m3/hr	1600/1800/2200	
	External static pressure	Nom (Min-Max)	Pa	0	
	Sound power level ⁽⁴⁾	H	dB(A)	64	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	46/49/52	
	Moisture removal		Hr	4,5	
	Condensate drain tube I.D / O.D		mm	ODΦ31.5	
	Dimensions	WxHxD	mm	840x287x840	
	Weight		kg	28	
	Package dimensions	WxHxD	mm	900x900x292	
	Packaged weight		kg	32.1	
	Stacking height		units	7	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	850	
Air flow		H	m3/hr	6800	
Sound power level ⁽⁴⁾		H	dB(A)	72	
Sound pressure level ⁽⁵⁾		H	dB(A)	63	
Dimensions		WxHxD	mm	952x1333x415	
Weight			kg	108.1	
Package dimensions		WxHxD	mm	1095x1470x500	
Packaged weight			kg	121.2	
Stacking height			Units	2	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.0		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit			ELSI-TCDO48-N11			
Model Outdoor Unit			ELAU-VMD048-H13			
Installation Method of Pipe			Flared			
Characteristics	Units	Cooling	Heating			
			Average	Warm	Cold	
Capacity ⁽¹⁾	kW	14.0(4.0-16.4)	16.0(4.4-18.4)			
Pdesign	kW	14.0	11.6	11.6	-	
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-	
Energy efficiency class		A++	A+	A+++	-	
Annual energy consumption	kWh	804	4060	3185	-	
Tbiv	°C	N/A	-7	2	-	
Tol	°C	N/A	-15			
Power supply	V/Ph/Hz	380-415V/3N~/50Hz				
Circuit breaker rating	A	10+25				
INDOOR	Fan type & quantity		Cross flow fan x1			
	Fan speeds	L/M/H	RPM			
	Air flow ⁽³⁾	L/M/H	m3/hr			
	External static pressure	Nom (Min-Max)	Pa			
	Sound power level ⁽⁴⁾	H	dB(A)			
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)			
	Moisture removal		Hr			
	Condensate drain tube I.D / O.D		mm			
	Dimensions	WxHxD	mm			
	Weight		kg			
	Package dimensions	WxHxD	mm			
	Packaged weight		kg			
	Stacking height		units			
	OUTDOOR	Refrigerant control		EEV		
Compressor type, model		Rotary DC Inverter				
Fan type & quantity		Axial x 1				
Fan speeds		H	RPM			
Air flow		H	m3/hr			
Sound power level ⁽⁴⁾		H	dB(A)			
Sound pressure level ⁽⁵⁾		H	dB(A)			
Dimensions		WxHxD	mm			
Weight			kg			
Package dimensions		WxHxD	mm			
Packaged weight			kg			
Stacking height			Units			
Refrigerant type		R410A				
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.0			
Additional charge per 1 meter		gr / 1m	30			
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)			
	Suction line	In.(mm)	5/8"(Φ15.88)			
	Max.tubing length	m.	65			
	Max.height difference	m.	30			
Operation control type		Remote control				
Heating elements		kW	NA			
Others						

Model Indoor Unit		ELSI-OID048-N11			
Model Outdoor Unit		ELAU-VMD048-H13			
Installation Method of Pipe		Flared			
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	14.0(4.1-16.4)	16(4.3-18.1)		
Pdesign	kW	14.0	12	12.2	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	804	4200	3350	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM		
	Air flow ⁽³⁾	L/M/H	m3/hr		
	External static pressure	Nom (Min-Max)	Pa		
	Sound power level ⁽⁴⁾	H	dB(A)		
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)		
	Moisture removal		Hr		
	Condensate drain tube I.D / O.D		mm		
	Dimensions	WxHxD	mm		
	Weight		kg		
	Package dimensions	WxHxD	mm		
	Packaged weight		kg		
	Stacking height		units		
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM		
Air flow		H	m3/hr		
Sound power level ⁽⁴⁾		H	dB(A)		
Sound pressure level ⁽⁵⁾		H	dB(A)		
Dimensions		WxHxD	mm		
Weight			kg		
Package dimensions		WxHxD	mm		
Packaged weight			kg		
Stacking height			Units		
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.0		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

3.10 ELAU-VMD060-H13

Model Indoor Unit			ELSI-TCDD060-N11		
Model Outdoor Unit			ELAU-VMD060-H13		
Installation Method of Pipe			Flared		
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	16.0(5.0-18.1)	18.0(5.3-20.5)		
Pdesign	kW	16.0	12	12.2	-
SEER /SCOP ⁽²⁾	W/W	6.1	4.0	5.1	-
Energy efficiency class		A++	A+	A+++	-
Annual energy consumption	kWh	919	4200	3350	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	850/1050/1350	
	Air flow ⁽³⁾	L/M/H	m3/hr	1280/1660/2250	
	External static pressure	Nom (Min-Max)	Pa	0	
	Sound power level ⁽⁴⁾	H	dB(A)	69	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	46/51/57	
	Moisture removal		Hr	5.5	
	Condensate drain tube I.D / O.D		mm	ODΦ16	
	Dimensions	WxHxD	mm	1650x235x675	
	Weight		kg	40.5	
	Package dimensions	WxHxD	mm	1725x313x755	
	Packaged weight		kg	47	
	Stacking height		units	8	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	850	
Air flow		H	m3/hr	7200	
Sound power level ⁽⁴⁾		H	dB(A)	75	
Sound pressure level ⁽⁵⁾		H	dB(A)	63	
Dimensions		WxHxD	mm	952x1333x415	
Weight			kg	112.8	
Package dimensions		WxHxD	mm	1095x1470x500	
Packaged weight			kg	126	
Stacking height			Units	2	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.3		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Model Indoor Unit		ELSI-OID060-N11			
Model Outdoor Unit		ELAU-VMD060-H13			
Installation Method of Pipe		Flared			
Characteristics	Units	Cooling	Heating		
			Average	Warm	Cold
Capacity ⁽¹⁾	kW	16(5.0-18.1)	18.0(5.3-20.5)		
Pdesign	kW	16	12.2	12.4	-
SEER /SCOP ⁽²⁾	W/W	5.6	4.0	5.1	-
Energy efficiency class		A+	A+	A+++	-
Annual energy consumption	kWh	1000	4270	3404	-
Tbiv	°C	N/A	-7	2	-
Tol	°C	N/A	-15		
Power supply	V/Ph/Hz	380-415V/3N~/50Hz			
Circuit breaker rating	A	10+25			
INDOOR	Fan type & quantity		Cross flow fan x1		
	Fan speeds	L/M/H	RPM	-/1000	
	Air flow ⁽³⁾	L/M/H	m3/hr	1800/2150/2500	
	External static pressure	Nom (Min-Max)	Pa	50(0-160)	
	Sound power level ⁽⁴⁾	H	dB(A)	74	
	Sound pressure level ⁽⁵⁾	L/M/H	dB(A)	54/56/58	
	Moisture removal		Hr	5.5	
	Condensate drain tube I.D / O.D		mm	ODΦ25	
	Dimensions	WxHxD	mm	1200x300x874	
	Weight		kg	46	
	Package dimensions	WxHxD	mm	1405x355x915	
	Packaged weight		kg	55	
	Stacking height		units	8	
	OUTDOOR	Refrigerant control		EEV	
Compressor type, model		Rotary DC Inverter			
Fan type & quantity		Axial x 1			
Fan speeds		H	RPM	850	
Air flow		H	m3/hr	7200	
Sound power level ⁽⁴⁾		H	dB(A)	75	
Sound pressure level ⁽⁵⁾		H	dB(A)	63	
Dimensions		WxHxD	mm	952x1333x415	
Weight			kg	112.8	
Package dimensions		WxHxD	mm	1095x1470x500	
Packaged weight			kg	126	
Stacking height			Units	2	
Refrigerant type		R410A			
Refrigerant charge (standard connecting tubing length)		kg(5m)	R410a/4.3		
Additional charge per 1 meter		gr / 1m	30		
Connections between units	Liquid line	In.(mm)	3/8"(Φ9.53)		
	Suction line	In.(mm)	5/8"(Φ15.88)		
	Max.tubing length	m.	65		
	Max.height difference	m.	30		
Operation control type		Remote control			
Heating elements		kW	NA		
Others					

Part 2

Indoor Units

Cassette 90x90 Type	31
Ducted Type	51
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Console Type	108

Cassette 90x90 Type

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1. Features

1.1 Overview

- Compact design, super slim body size, less space requiring in installation
- Each louver can be separately controlled, more comfort air blowing is possible.
- Auto-lifting panel design, more convenient to clean and maintain the filter. (optional)

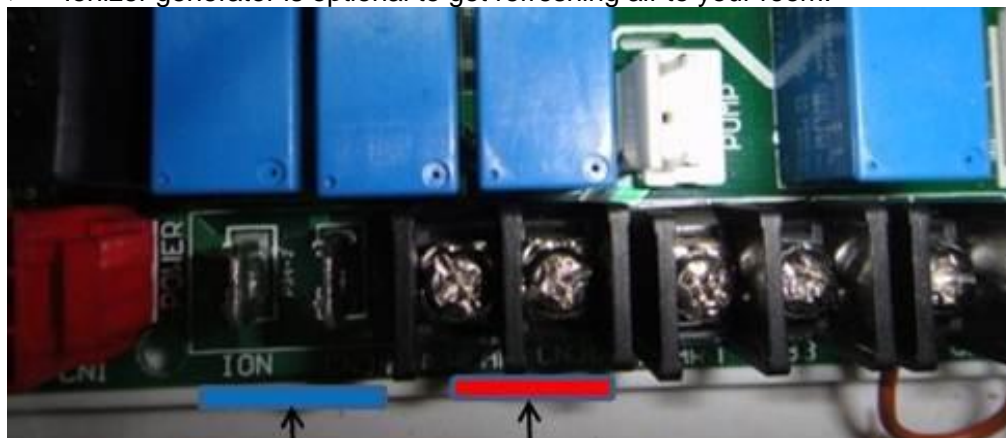
1.2 Fresh air intake function

- Fresh air fulfills air quality more healthy and comfortable.
- Ventilation motor is optional to increase the effect of fresh air.



1.3 Optional ionizer generator

- Ionizer generator is optional to get refreshing air to your room.



Ionizer generator
connector

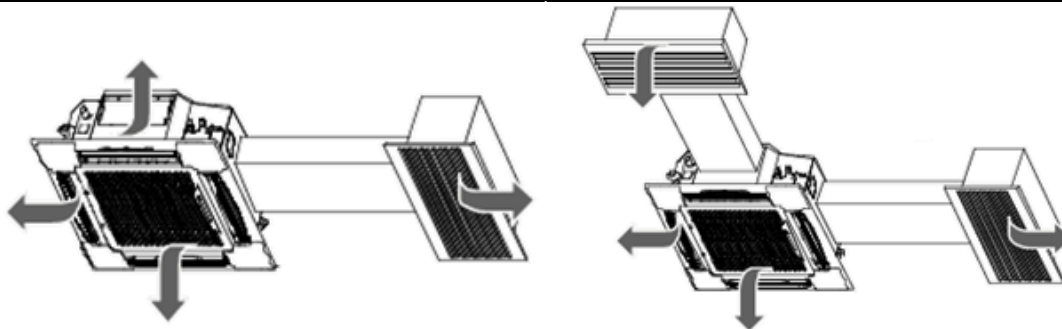
Ventilation motor
connector

- Ionizer can be switched on or off by remote controller. When pressing the Clean Air button on the remote controller, Ionizer will work and the indicator light on display board will shine.



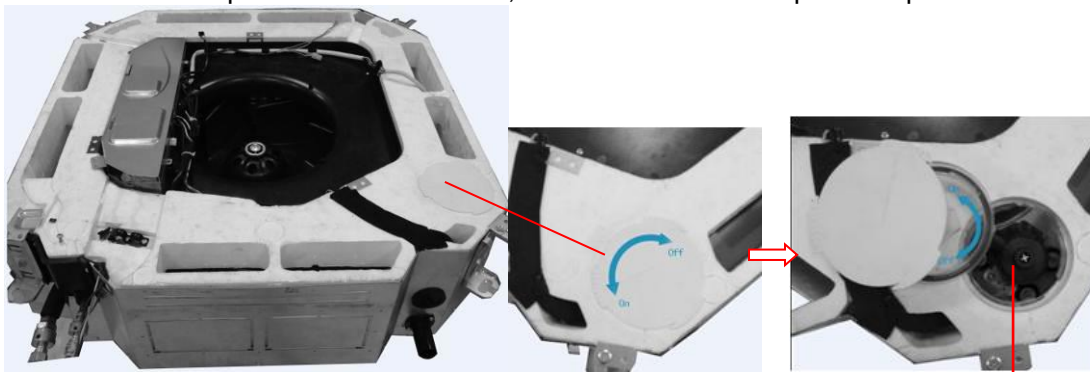
1.4 External air duct design

- Reserve external air duct, more flexible for the air supply.



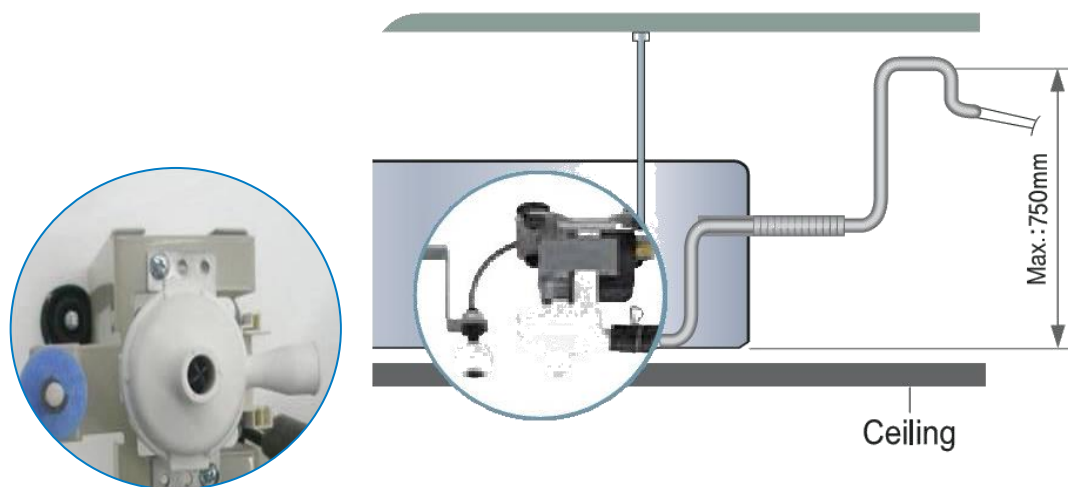
1.5 Built-in draining pump

- Due to the improvement of structure, more convenient to repair or replace the draining pump.



Draining Pump

- Built-in draining pump to make sure condensed water drain out reliaply.



Ceiling

1.6 Terminals for alarm lamp and long-distance on-off controller connection are standard

- Reserve terminals for the connection of alarm lamp and long-distance on-off controller, more human control.

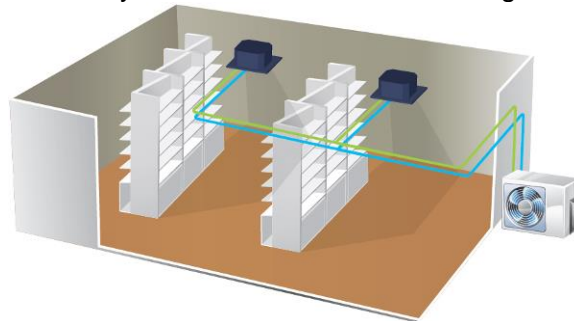


Alarm lamp

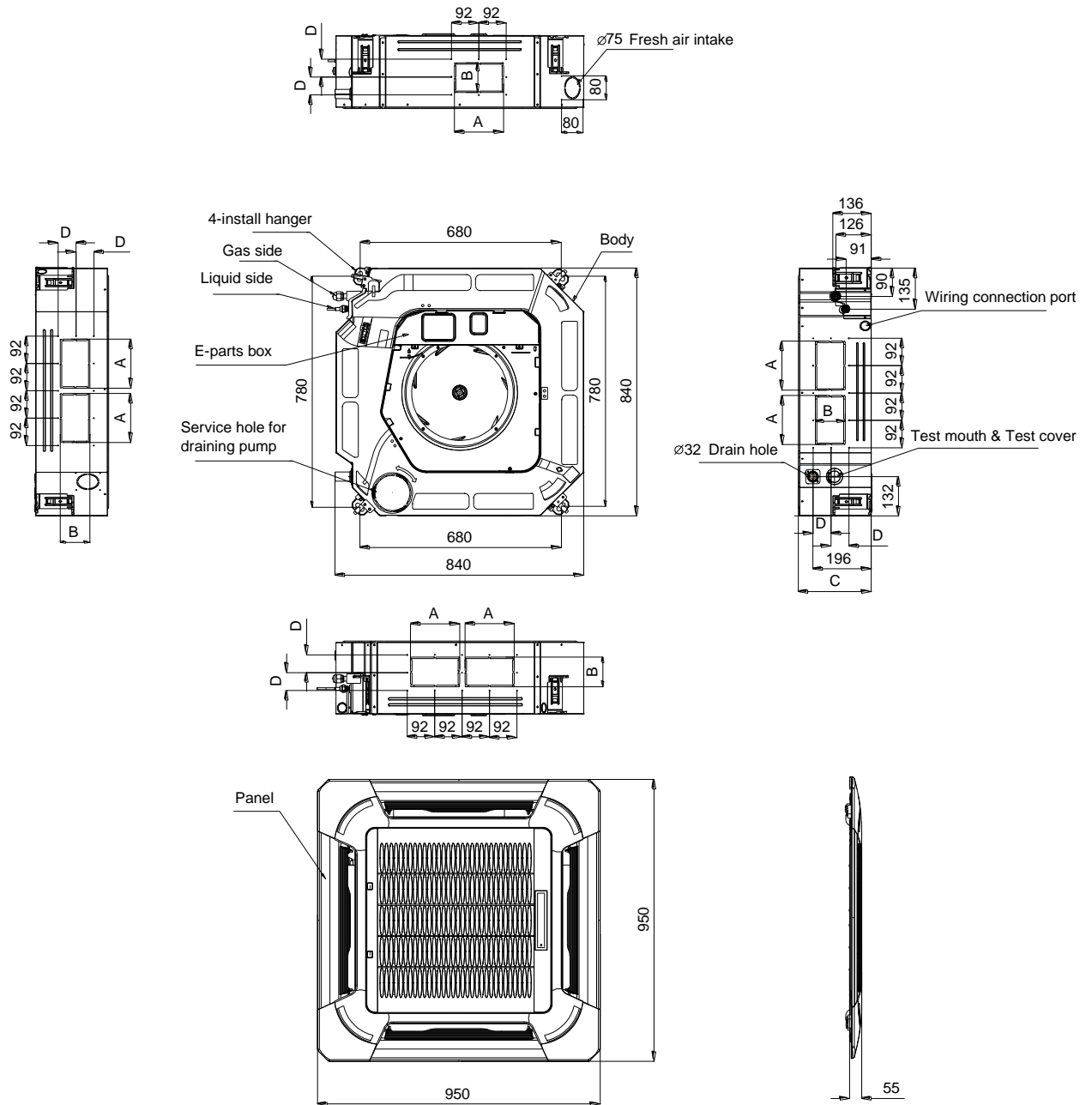
Long-distance on-off controller

1.7 Twins Combination(18k-30k)

- The units can be installed as Twin systems: one outdoor unit can connect with two indoor units. The indoor units can be combined in any of the different available ratings.

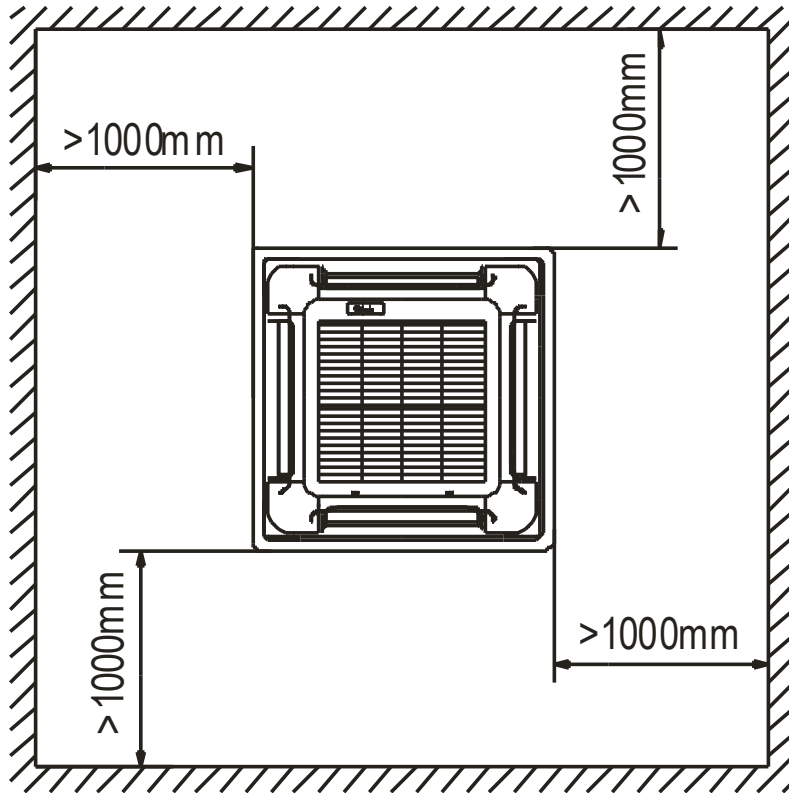


2. Dimensions



Unit: mm				
Model	A	B	C	D
ELSI-KCD024-N11				
ELSI-KCD030-N11	160	95	245	60
ELSI-KCD036-N11				
ELSI-KCD048-N11	160	95	287	60

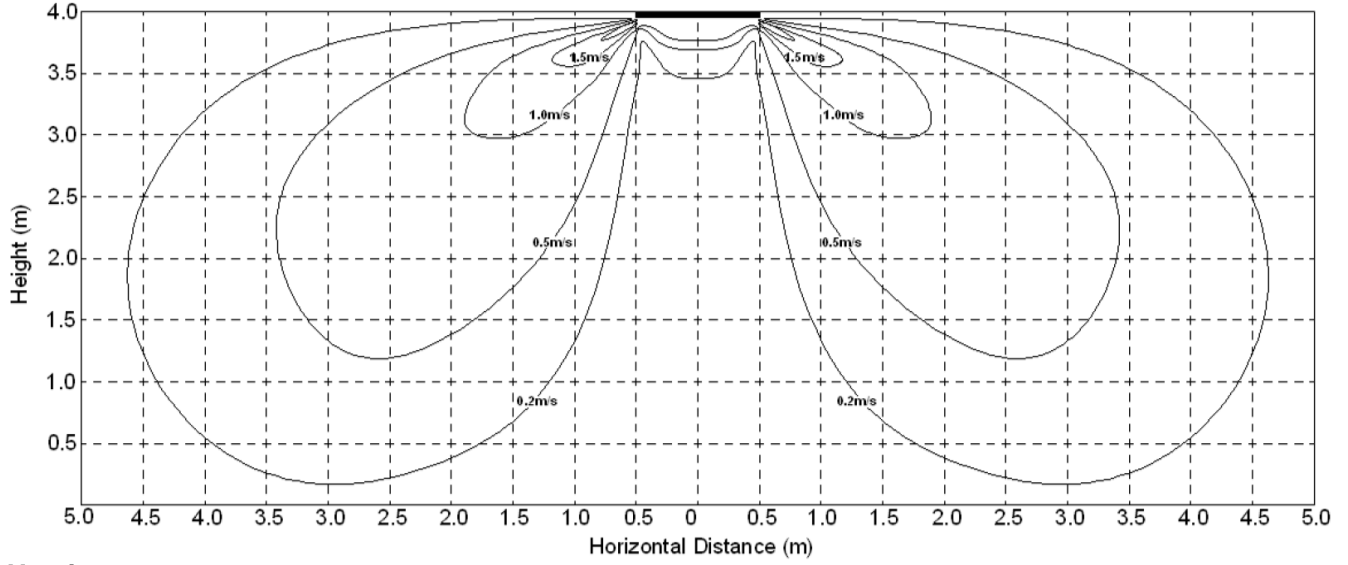
3. Service Space



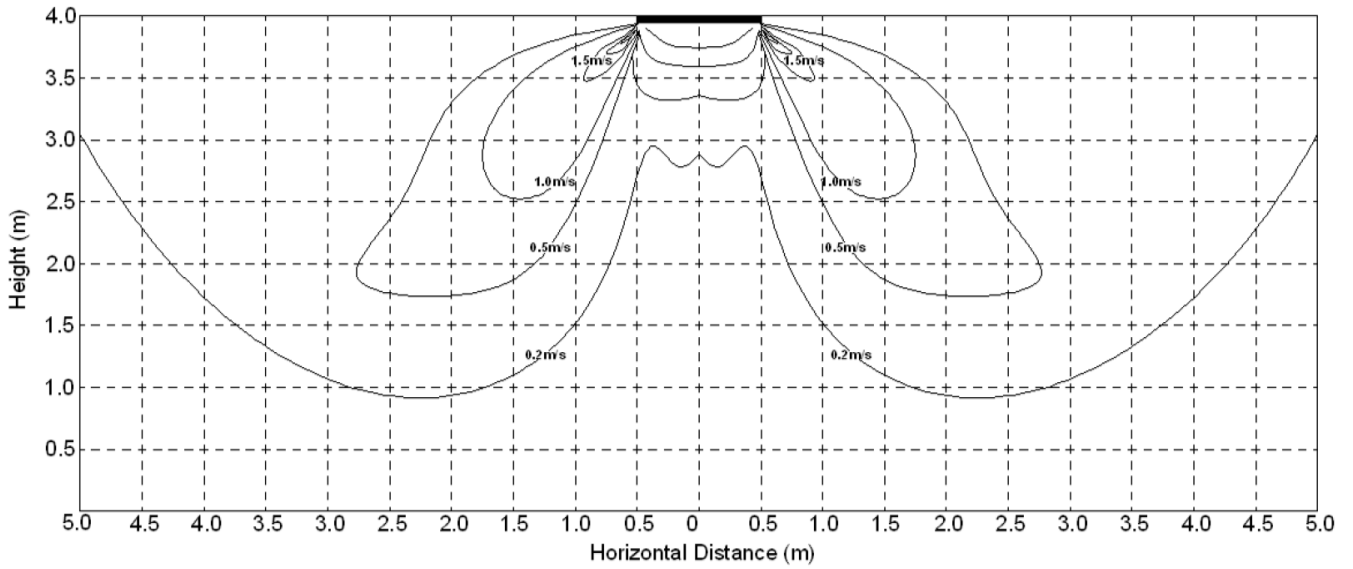
4. Air Velocity Distributions (Reference Data)

24K:

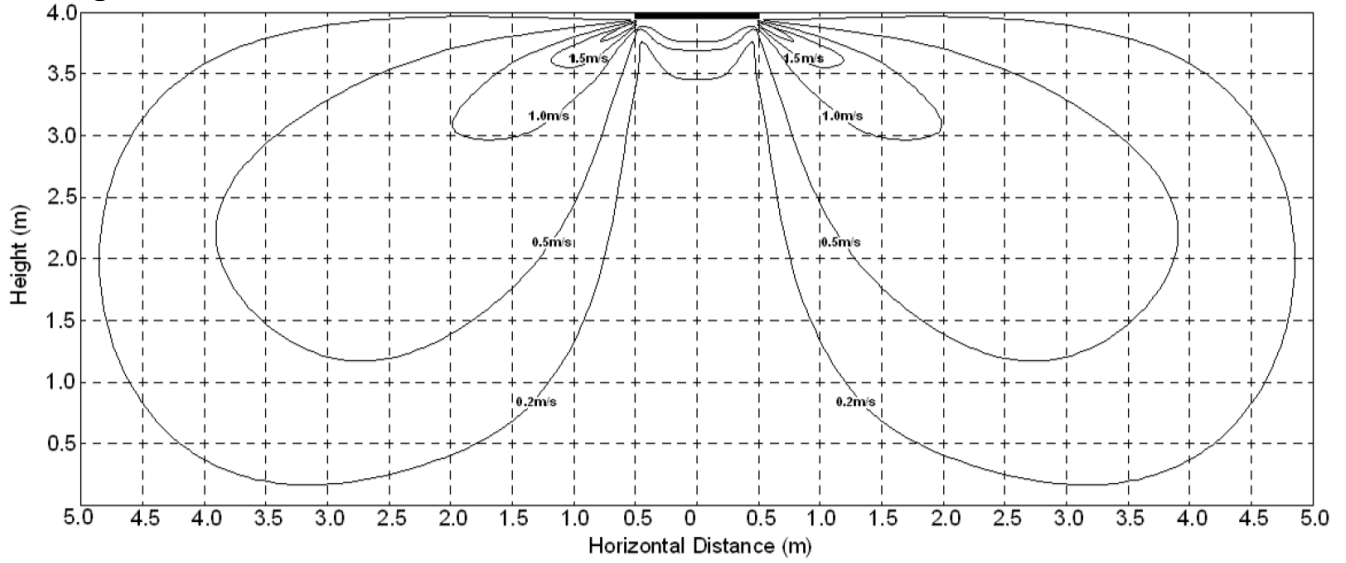
Cooling:



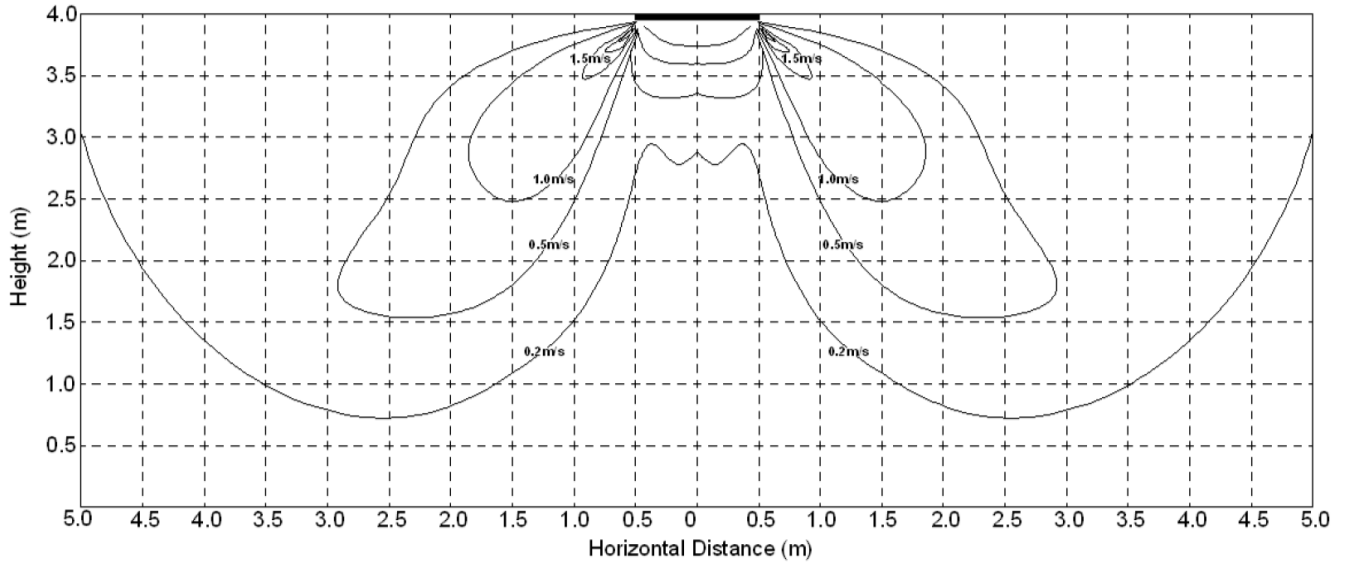
Heating:



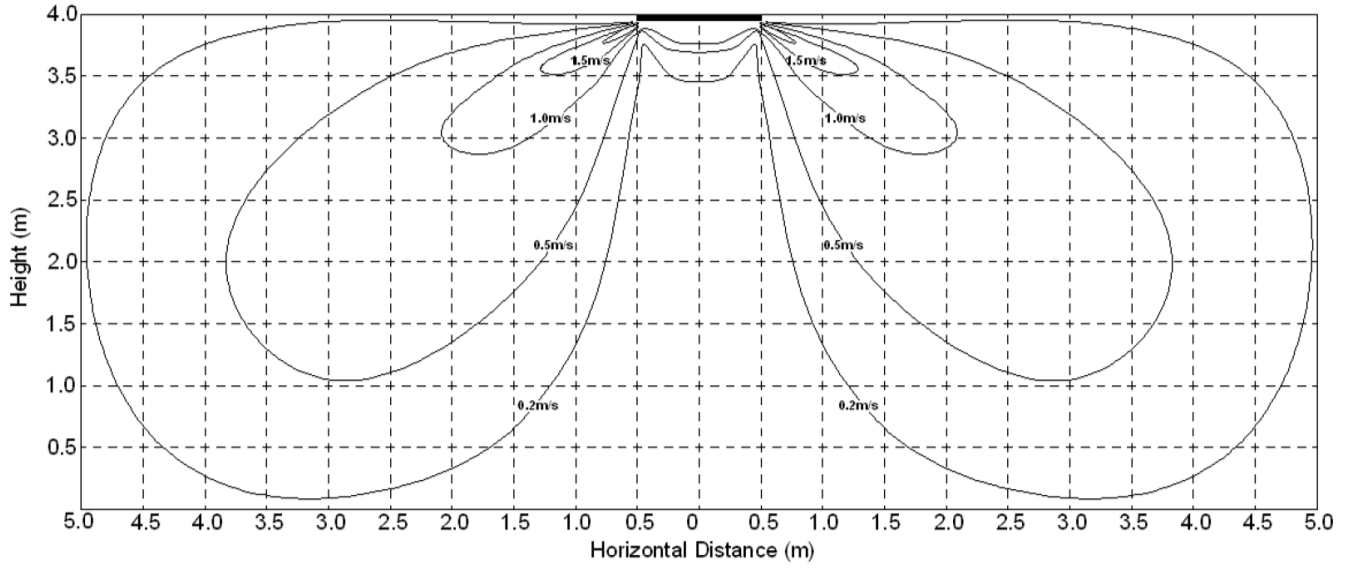
**30-36K:
Cooling:**



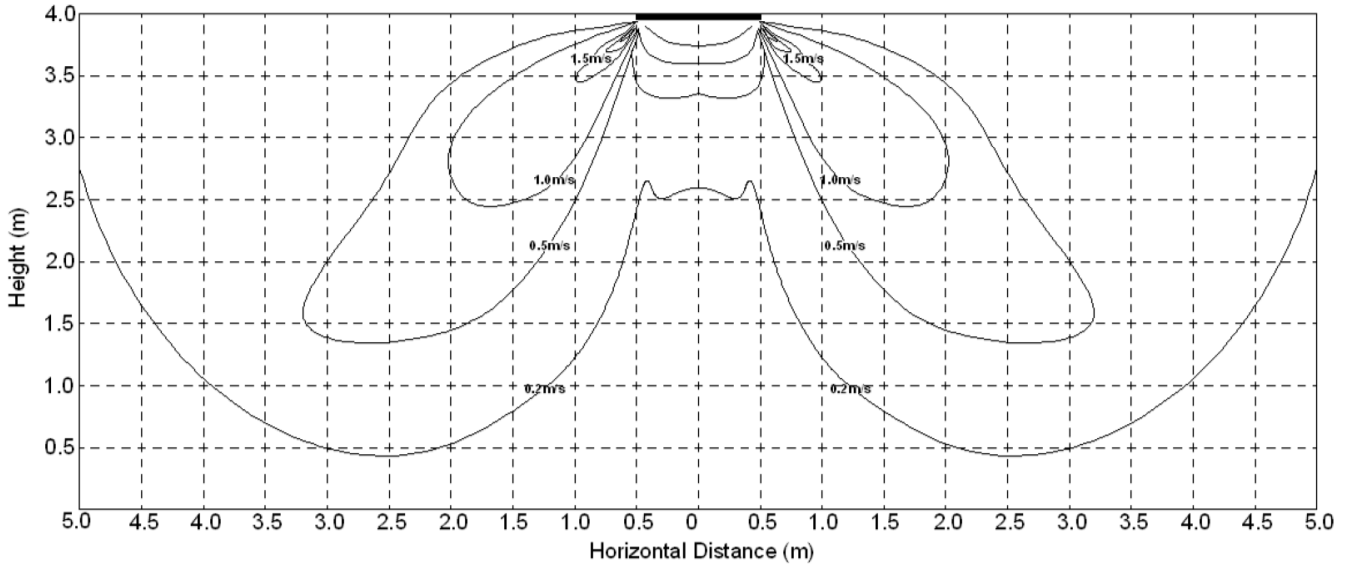
Heating:



**48K:
Cooling:**

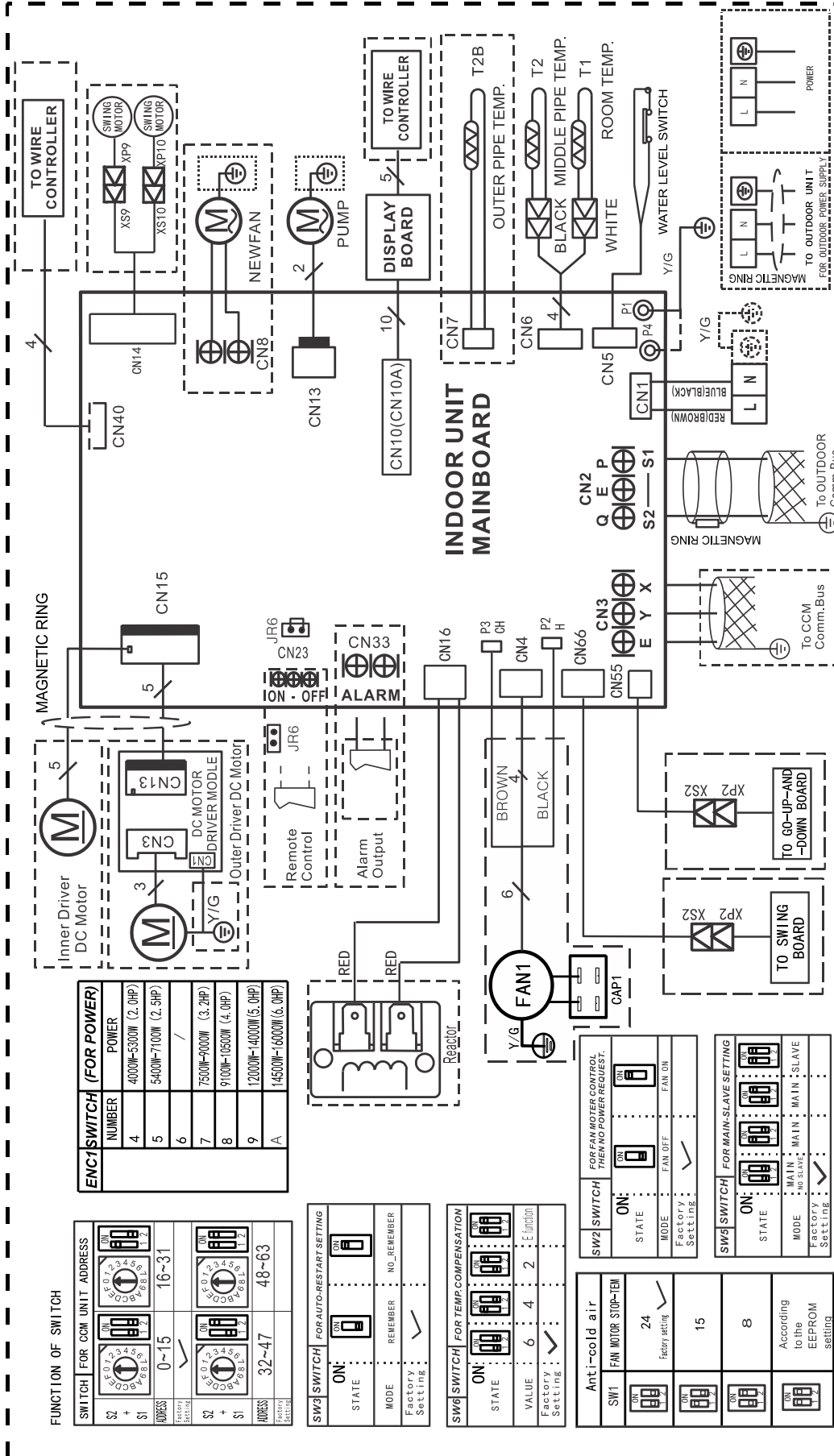


Heating:



5. Wiring Diagram

For model ELSI-KCD024-N11, ELSI-KCD030-N11, ELSI-KCD036-N11, ELSI-KCD048-N11,



ENC1 SWITCH (FOR POWER)	
NUMBER	POWER
4	4000W-5300W (2.0HP)
5	5400W-7100W (2.5HP)
6	/
7	7500W-9000W (3.2HP)
8	9100W-10500W (4.0HP)
9	12000W-14000W (5.0HP)
A	14500W-16000W (6.0HP)

FUNCTION OF SWITCH	
SW2 + S1	FOR CCM UNIT ADDRESS
ADDRESS	0~15
ADDRESS	16~31
SW2 + S1	FOR AUTO-RESTART SETTING
ADDRESS	32~47
ADDRESS	48~63

SW3 SWITCH FOR AUTO-RESTART SETTING	
ON:	<input type="checkbox"/>
STATE:	<input type="checkbox"/>
MODE:	REMEMBER
Factory Setting:	NO_REMEMBER

SW6 SWITCH FOR TEMP. COMPENSATION	
ON:	<input type="checkbox"/>
STATE:	<input type="checkbox"/>
VALUE:	6 4 2
Factory Setting:	6

SW2 SWITCH FOR FAN MOTOR CONTROL THEN NO POWER REQUEST.	
ON:	<input type="checkbox"/>
STATE:	<input type="checkbox"/>
MODE:	FAN OFF
Factory Setting:	FAN ON

SW6 SWITCH FOR MAIN-SLAVE SETTING	
ON:	<input type="checkbox"/>
STATE:	<input type="checkbox"/>
MODE:	MAIN
Factory Setting:	NO SLAVE

Anti-cold air	
SW1	FAN MOTOR STOP-TEI
STATE:	24
Factory Setting:	factory setting
SW1	FAN MOTOR STOP-TEI
STATE:	15
Factory Setting:	factory setting
SW1	FAN MOTOR STOP-TEI
STATE:	8
Factory Setting:	According to the EEPROM setting

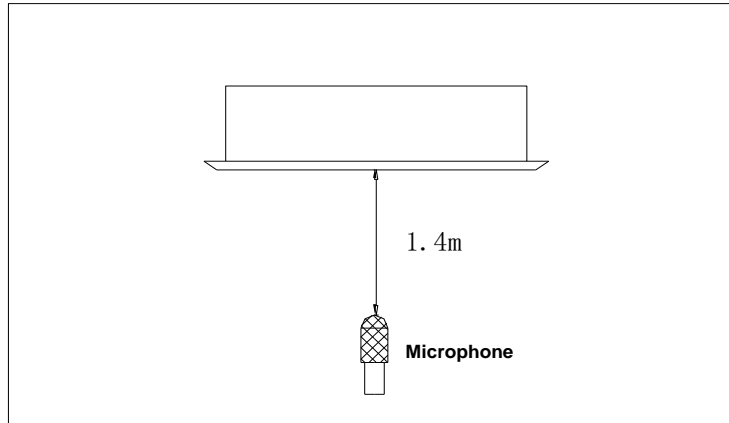
6. Electric Characteristics

Model	Indoor Unit				Power Supply
	Hz	Voltage	Min	Max	MFA
ELSI-KCD024-N11	50	220-240	198	254	10
ELSI-KCD030-N11	50	220-240	198	254	10
ELSI-KCD036-N11	50	220-240	198	254	10
ELSI-KCD048-N11	50	220-240	198	254	10

Notes:














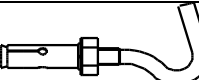

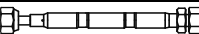
MFA: Max. Fuse Amps. (A)

7. Sound Levels



Model	Sound Power dB(A)	Sound Pressure dB(A)		
		H	M	L
ELSI-KCD024-N11	62	47	44	42
ELSI-KCD030-N11	62	51	48	45
ELSI-KCD036-N11	63	54	51	48
ELSI-KCD048-N11	64	52	49	46

8. Accessories

	Name	Shape	Quantity
Installation Fittings	Installation paper board		1
Tubing & Fittings	Soundproof / insulation sheath		1
Drainpipe Fittings	Out-let pipe sheath		1
	Out-let pipe clasp		1
	Drain joint		1
	Seal ring		1
Remote controller & Its Frame (The product you have might not be provided the following accessories)	Remote controller & Its Frame		1
	Remote controller holder		1
	Mounting screw(ST2.9x10-C-H)		2
	Remote controller manual		1
	Alkaline dry batteries (AM4)		2
Others	Owner's manual		1
	Installation manual		1
Installation accessory (The product you have might not be provided the following accessories)	Expansible hook		4
	Installation hook		4
	Orifice		1

9. The Specification of Power

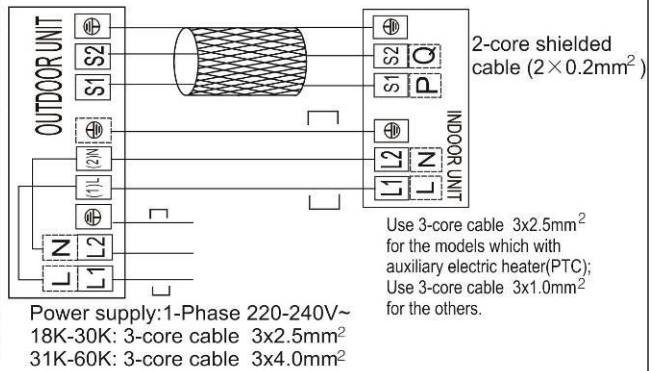
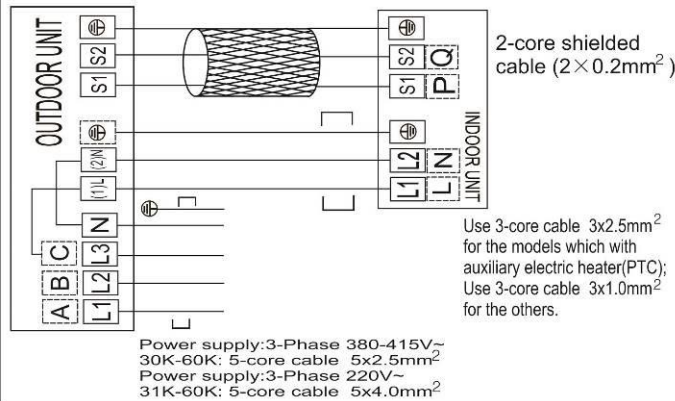
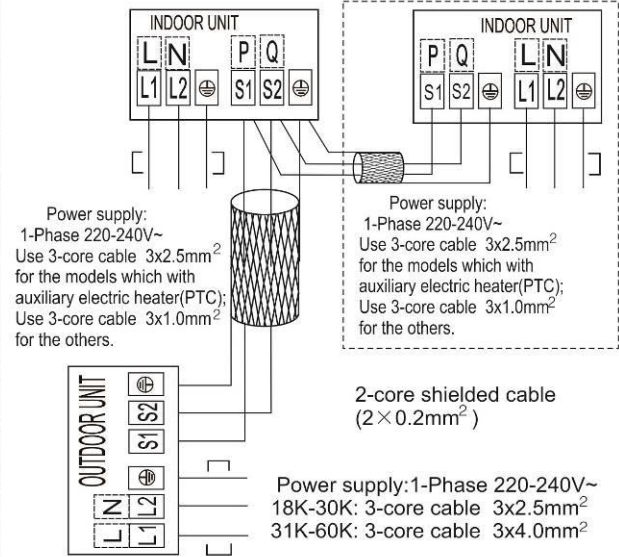
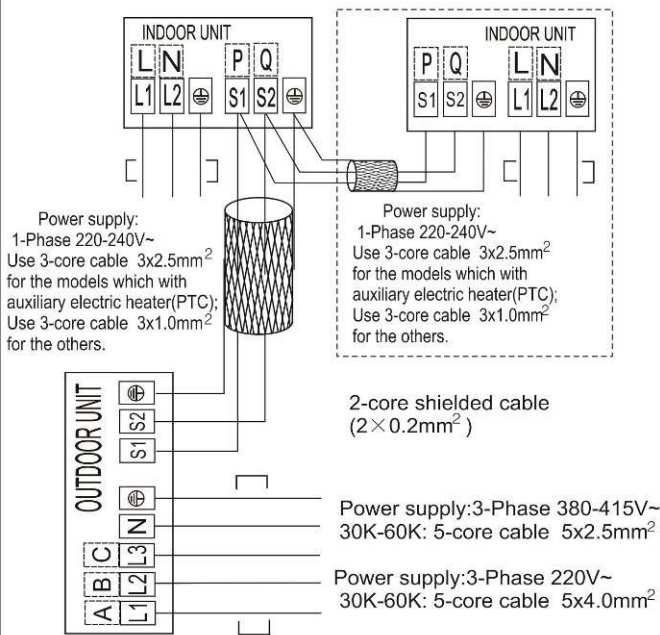
Model		18000-24000Btu/h	30000 Btu/h	36000 Btu/h	36000 Btu/h
INDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	POWER WIRING (mm ²)	3x1.0	3x1.0	3x1.0	3x1.0
	CIRCUIT BREAKER / Fuse (A)	15/10	15/10	15/10	15/10
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	380-420V, 50Hz
	POWER WIRING (mm ²)	3x2.5	3x2.5	3x4.0	5x2.5
	CIRCUIT BREAKER / Fuse (A)	30/20	40/30	40/30	30/20
Indoor/Outdoor Connecting Wiring (Weak Electric Signal) (mm ²)		2x0.2	2x0.2	2x0.2	2x0.2
Indoor/Outdoor Connecting Wiring (Strong Electric Signal) (mm ²)		————	————	————	————

Model(Btu/h)		48000	42000-60000
INDOOR UNIT POWER	Phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz
	Power Wiring (mm ²)	3x1.0	3x1.0
	Circuit Breaker/Fuse (A)	15/10	15/10
OUTDOOR UNIT POWER	Phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	380-415V, 50Hz
	Power Wiring (mm ²)	3x4.0	5x2.5
	Circuit Breaker/Fuse (A)	40/35	30/25
Indoor/Outdoor Connecting Wiring (Weak Electric Signal) (mm ²)		2x0.2	2x0.2
Indoor/Outdoor Connecting Wiring (Strong Electric Signal) (mm ²)		————	————

10. Field Wiring

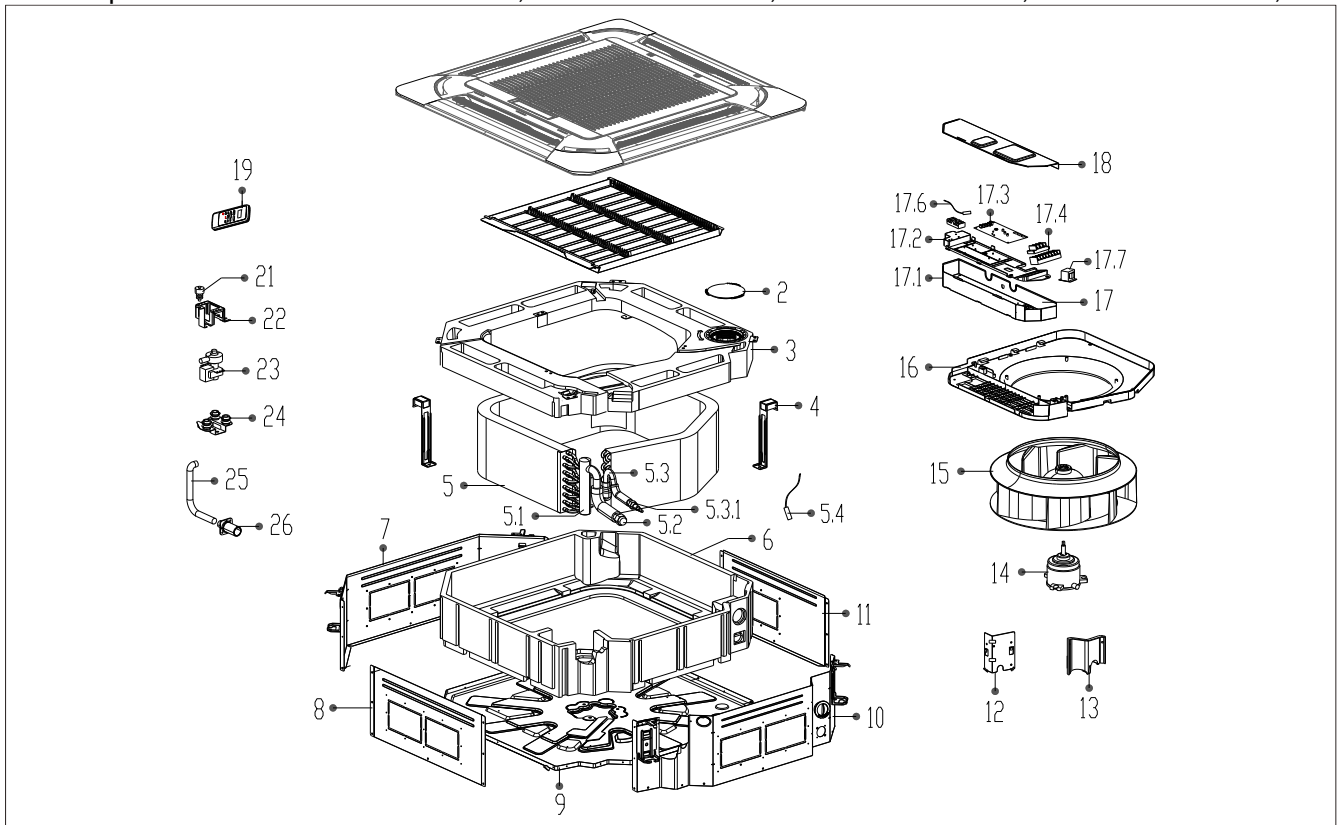
Air Condition Link-Circuit

202044790380



11. Exploded view and spare part list:

11.1 Exploded view : ELSI-KCD024-N11, ELSI-KCD030-N11, ELSI-KCD036-N11, ELSI-KCD048-N11,



11.2 Spare part list of ELSI-KCD024-N11

No.	BOM Code	Part Name	Quantity
2	12122500000025	Water Tightness Testing Cover Subassembly	1
3	12822500000059	Water receiver foam subassembly	1
4	12222500000092	Evaporator Fixing hanger	2
5	15822500A00011	Evaporator assembly Gas valve assembly	1
5.1	15122500000203	Outlet Pipes of Evaporator	1
5.3	15122500000298	Input pipes of Evaporator assembly Joint board of Evaporator	1
5.3.1	15500406000010	Copper nut	1
5.4	11201007000136	Pipe temperature sensor assembly	1
5.4	11201007000266	Temperature Sensor	1
6	12822500000015	Chassis Foam Subassembly	1
7	12222500000144	Boarding Subassembly	1
8	12222500000230	Boarding	1
9	12222500000122	Chassis Welding Parts	1
10	12222500000137	Boarding Subassembly	1
11	12222500000241	Boarding	1
12	12222500000105	Evaporator Intermediate Plate Subassembly	1
13	12122500000331	Sealing board for Pipe Tie-in Subassembly	1
14	11002015000281	Brushless DC Motor	1
15	12100103000096	Centrifugal Fan SL	1
16	12122500000420	Air Guide Coil	1
17	17222500000106	E-Parts Box assembly	1
17.1	12222500000119	Electrical Control Box	1
17.2	12122500000029	Wiring baseplate	1
17.3	17122500000323	Indoor Main Control Board Subassembly (Sticker, RoHS)Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
17.4	17400401000022	Terminal block	1
17.6	11201007000283	Room Temperature Sensor	1
17.7	17400306000070	Reactance	1
18	12222500000162	Electrical Control Box Cover Subassembly	1
19	17317000A01916	Remote controller	1
21	11201005000006	Water Level Sensor	1
22	12122500001147	Water Pump installation bracket assembly	1
23	17400802000012	Water Pump Subassembly	1
24	12622500000006	Pump rubber washer	3
25	12622500000013	Drain pipeExtended water pipe	1
26	12100509000068	Drainpipe connector pipe	1
36	12117000000086	Mounting bracket of remote controller	1

11.3 Spare part list of ELSI-KCD030-N11

No.	BOM Code	Part Name	Quantity
2	12122500000025	Water Tightness Testing Cover Subassembly	1
3	12822500000059	Water receiver foam subassembly	1
4	12222500000089	Evaporator Fixing hanger	2
5	15822500A01823	Evaporator Assembly	1
5.1	15122500000232	Outlet Pipes of Evaporator	1
5.3	15122500000346	Input pipes of Evaporator assembly Joint board of Evaporator	1
5.3.1	15500406000010	Copper nut	1
6	12822500000015	Chassis Foam Subassembly	1
7	12222500000144	Boarding Subassembly	1
8	12222500000230	Boarding	1
9	12222500000122	Chassis Welding Parts	1
10	12222500000137	Boarding Subassembly	1
11	12222500000241	Boarding	1
12	12222500000105	Evaporator Intermediate Plate Subassembly	1
13	12122500000331	Sealing board for Pipe Tie-in Subassembly	1
14	11002015000281	Brushless DC Motor	1
15	12100103000096	Centrifugal Fan SL	1
16	12122500000420	Air Guide Coil	1
17	17222500000106	E-Parts Box assembly	1
17.1	12222500000119	Electrical Control Box	1
17.2	12122500000029	Wiring baseplate	1
17.3	17122500000323	Indoor Main Control Board Subassembly (Sticker, RoHS) Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
17.4	17400401000022	Terminal block	1
17.6	11201007000283	Room Temperature Sensor	1
17.7	17400306000070	Reactance	1
18	12222500000162	Electrical Control Box Cover Subassembly	1
19	17317000A01916	Remote controller	1
20	11201007000136	Pipe temperature sensor	1
20	11201007000266	Temperature Sensor	1
21	11201005000006	Water Level Sensor	1
22	12122500001147	Water Pump installation bracket assembly	1
23	17400802000012	Water Pump Subassembly	1
24	12622500000006	Pump rubber washer	3
25	12622500000013	Drain pipe Extended water pipe	1
26	12100509000068	Drainpipe connector pipe	1
36	12117000000086	Mounting bracket of remote controller	1

11.4 Spare part list of ELSI-KCD036-N11

No.	BOM Code	Part Name	Quantity
2	12122500000025	Water Tightness Testing Cover Subassembly	1
3	12822500000059	Water receiver foam subassembly	1
4	12222500000089	Evaporator Fixing hanger	2
5	15822500A01823	Evaporator Assembly	1
5.1	15122500000232	Outlet Pipes of Evaporator	1
5.3	15122500000346	Input pipes of Evaporator assembly Joint board of Evaporator	1
5.3.1	15500406000010	Copper nut	1
6	12822500000015	Chassis Foam Subassembly	1
7	12222500000144	Boarding Subassembly	1
8	12222500000230	Boarding	1
9	12222500000122	Chassis Welding Parts	1
10	12222500000137	Boarding Subassembly	1
11	12222500000241	Boarding	1
12	12222500000105	Evaporator Intermediate Plate Subassembly	1
13	12122500000331	Sealing board for Pipe Tie-in Subassembly	1
14	11002015000281	Brushless DC Motor	1
15	12100103000096	Centrifugal Fan SL	1
16	12122500000420	Air Guide Coil	1
17	17222500002140	E-Parts Box assembly	1
17.1	12222500000119	Electrical Control Box	1
17.2	12122500000029	Wiring baseplate	1
17.3	17122500000323	Indoor Main Control Board Subassembly (Sticker, RoHS)Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
17.4	17400401000022	Terminal block	1
17.6	11201007000283	Room Temperature Sensor	1
17.7	17400306000403	Reactance	1
18	12222500000162	Electrical Control Box Cover Subassembly	1
19	17317000A01916	Remote controller	1
20	11201007000136	Pipe temperature sensor	1
20	11201007000266	Temperature Sensor	1
21	11201005000006	Water Level Sensor	1
22	12122500001147	Water Pump installation bracket assembly	1
23	17400802000012	Water Pump Subassembly	1
24	12622500000006	Pump rubber washer	3
25	12622500000013	Drain pipe Extended water pipe	1
26	12100509000068	Drainpipe connector pipe	1
36	12117000000086	Mounting bracket of remote controller	1

11.5 Spare part list of ELSI-KCD048-N11

No.	BOM Code	Part Name	Quantity
2	12122500000025	Water Tightness Testing Cover Subassembly	1
3	12822500000059	Water receiver foam subassembly	1
4	12222500000090	Evaporator Fixing hanger	2
5	15822500A01825	Evaporator Assembly	1
5.1	15122500000214	Outlet Pipes of Evaporator	1
5.3	15122500000320	Parts of Inlet Pipe of Evaporator	1
5.3.1	15500406000010	Copper nut	1
5.4	11201007000006	Temperature Sensor	1
6	12822500000009	Chassis Foam Subassembly	1
7	12222500000133	Boarding Subassembly	1
8	12222500000240	Boarding	1
9	12222500000122	Chassis Welding Parts	1
10	12222500000157	Boarding Subassembly	1
11	12222500000233	Boarding	1
12	12222500000105	Evaporator Intermediate Plate Subassembly	1
13	12122500000331	Sealing board for Pipe Tie-in Subassembly	1
14	11002015000281	Brushless DC Motor	1
15	12100103000096	Centrifugal Fan SL	1
16	12122500000422	Air Guide Coil	1
17	17222500000106	E-Parts Box assembly	1
17.1	12222500000119	Electrical Control Box	1
17.2	12122500000029	Wiring baseplate	1
17.3	17122500000323	Indoor Main Control Board Subassembly (Sticker, RoHS)Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
17.4	17400401000022	Terminal block	1
17.6	11201007000283	Room Temperature Sensor	1
17.7	17400306000070	Reactance	1
18	12222500000162	Electrical Control Box Cover Subassembly	1
19	17317000A01916	Remote controller	1
20	11201007000266	Temperature Sensor	1
21	11201005000006	Water Level Sensor	1
22	12122500001147	Water Pump installation bracket assembly	1
23	17400802000012	Water Pump Subassembly	1
24	12622500000006	Pump rubber washer	3
25	12622500000013	Drain pipe Extended water pipe	1
26	12100509000068	Drainpipe connector pipe	1
36	12117000000086	Mounting bracket of remote controller	1

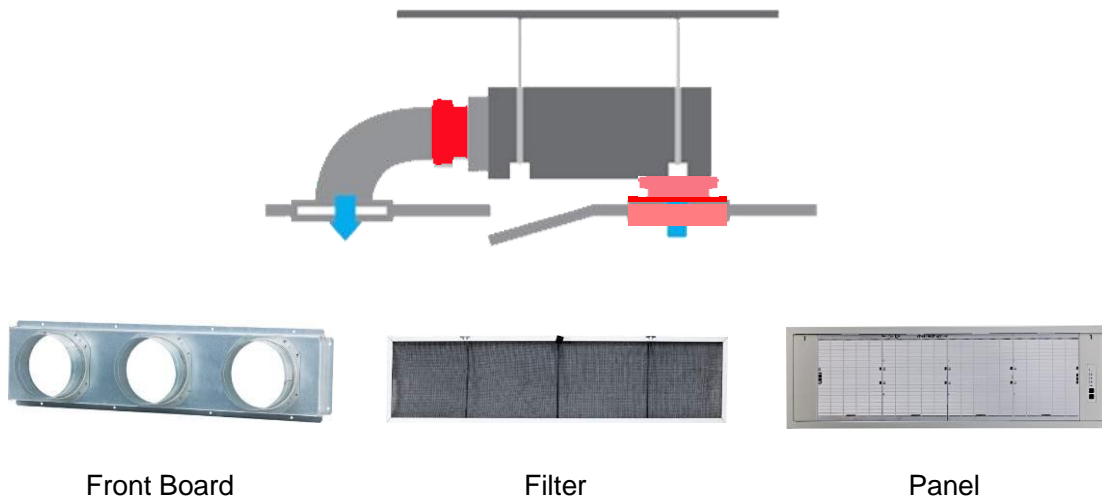
Ducted Type

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1. Features

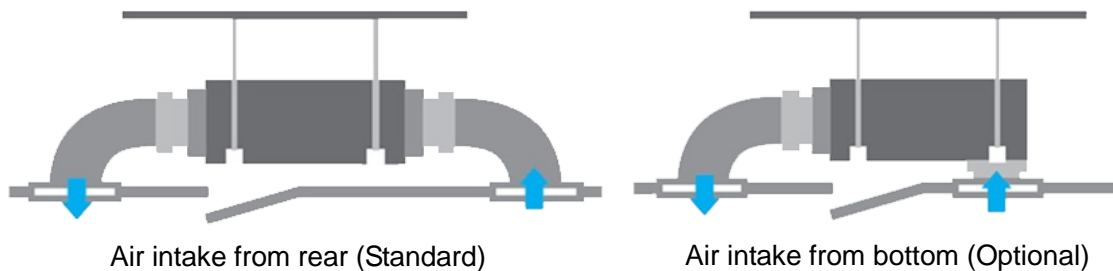
1.1 Installation accessories: (Optional)

- Front Board, Canvas Air Passage, Filter, Panel, for easy installation



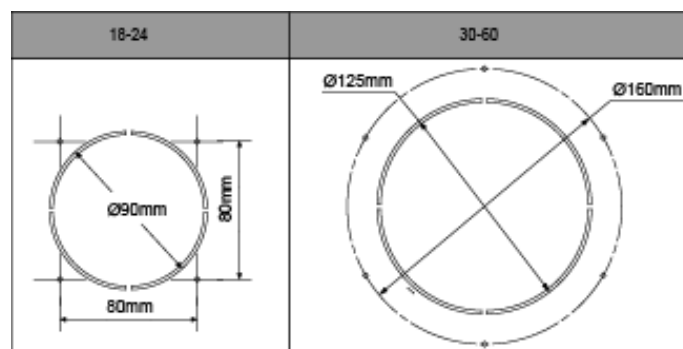
1.2 Easy Installation: Two air inlet styles (Bottom side or Rear side)

- Air inlet from rear is standard for all capacity; air inlet from bottom is optional.
- The size of air inlet frame from rear and bottom is same, it's very easy to move the cover from bottom to rear side, or from rear to the bottom, in order to matching the installation condition.



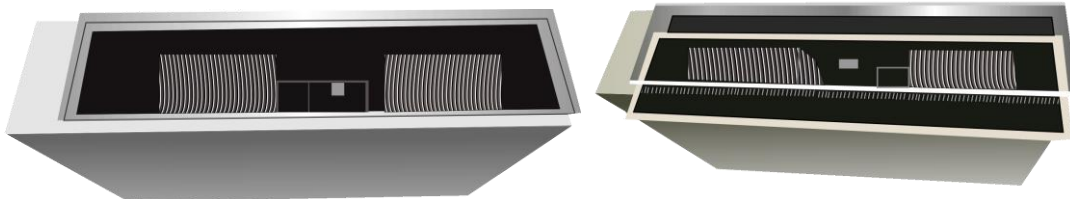
1.3 Fresh air intake function(Optional for 18~60k)

- Install one duct from the reserved fresh-air intake to outdoor.
Continually inhale the fresh air to improve the quality of the indoor air, fulfills air quality more healthy and comfortable.

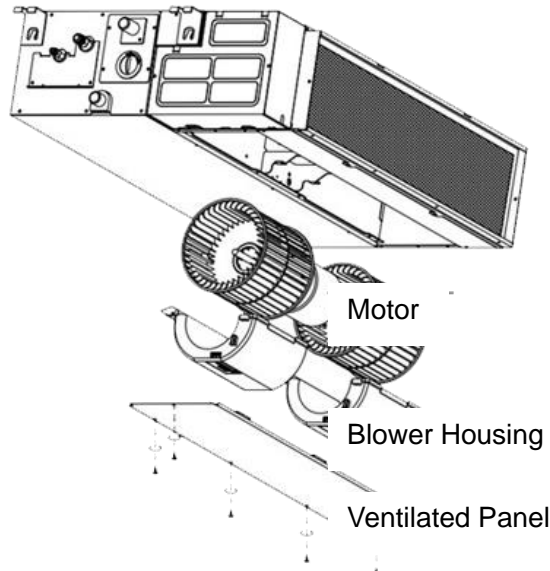


1.4 Easy maintenance

- Clean the filter (Optional, standard product without filter)
It is easy to draw out the filter from the indoor unit for cleaning, even the filter is installed in rear side or bottom side.

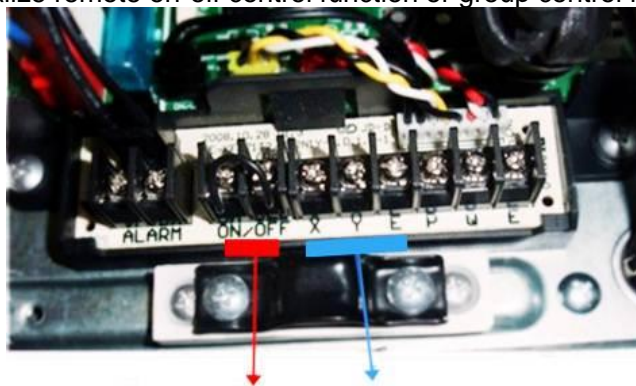


- Replace the motor or centrifugal fan
Remove the ventilated panel firstly. Remove a half of blower housing and take out the motor with centrifugal fan. Directly remove two bolts, and then replace the motor or centrifugal fan easily.



1.5 Reserved remote on-off and central control ports

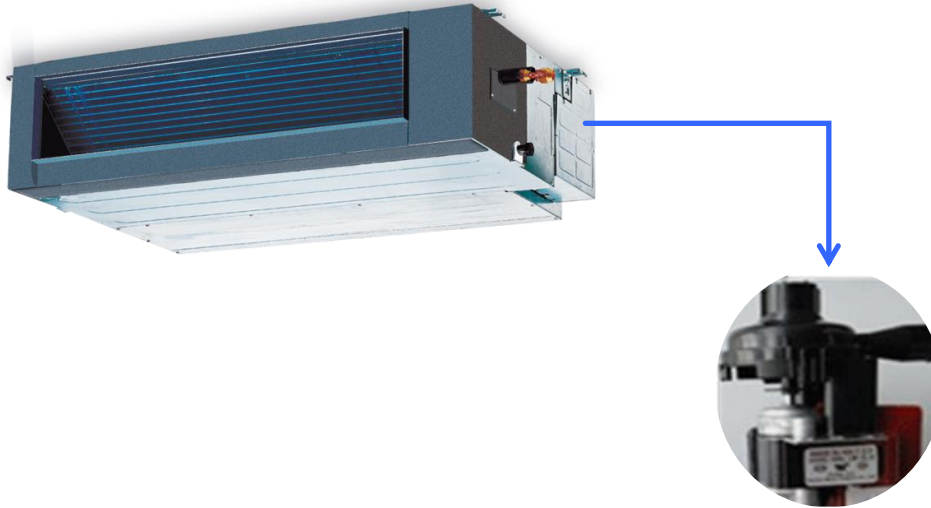
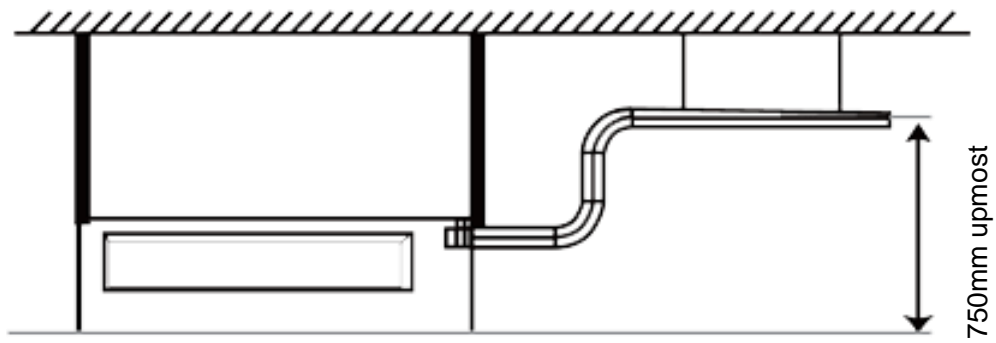
- Reserved remote on-off ports and central control ports, can connect the cable of an on-off controller or a central controller to realize remote on-off control function or group control function.



Remote on-off ports Central control ports

1.6 Built-in drain pump (Optional):

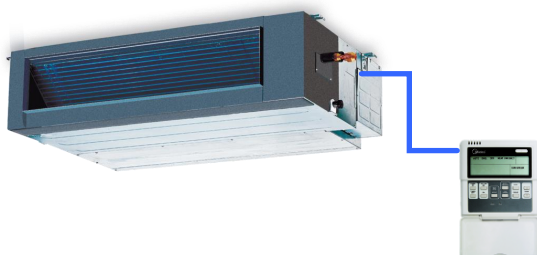
- Built-in drain pump can lift the water to 750mm upmost. It's convenient to install drainage piping under most space condition.



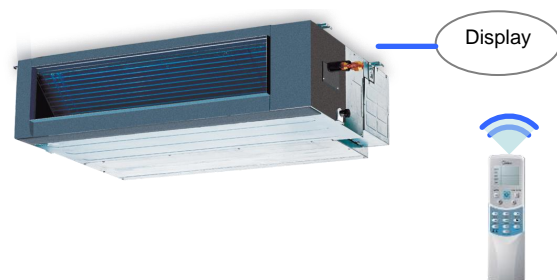
1.7 Built-in display board

- The standard indoor unit can be controlled by wired controller.
- There is a display board with a receiver in the E-box. Move out the display, and fix it in other place, even in the distance of 10m. The unit will realized remoter control.
- The wired controller and the display board can display the error code or production code when the chips detect some failure.

Wired Controller (Standard)

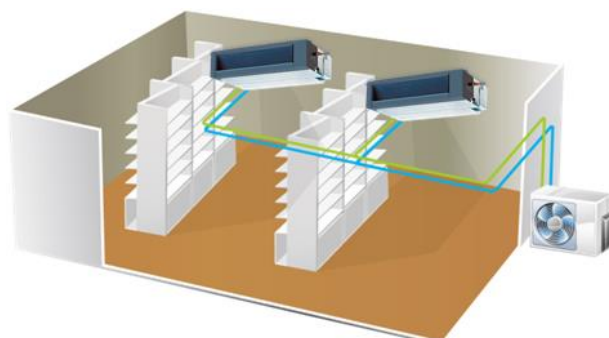


Remote Controller (Optional)

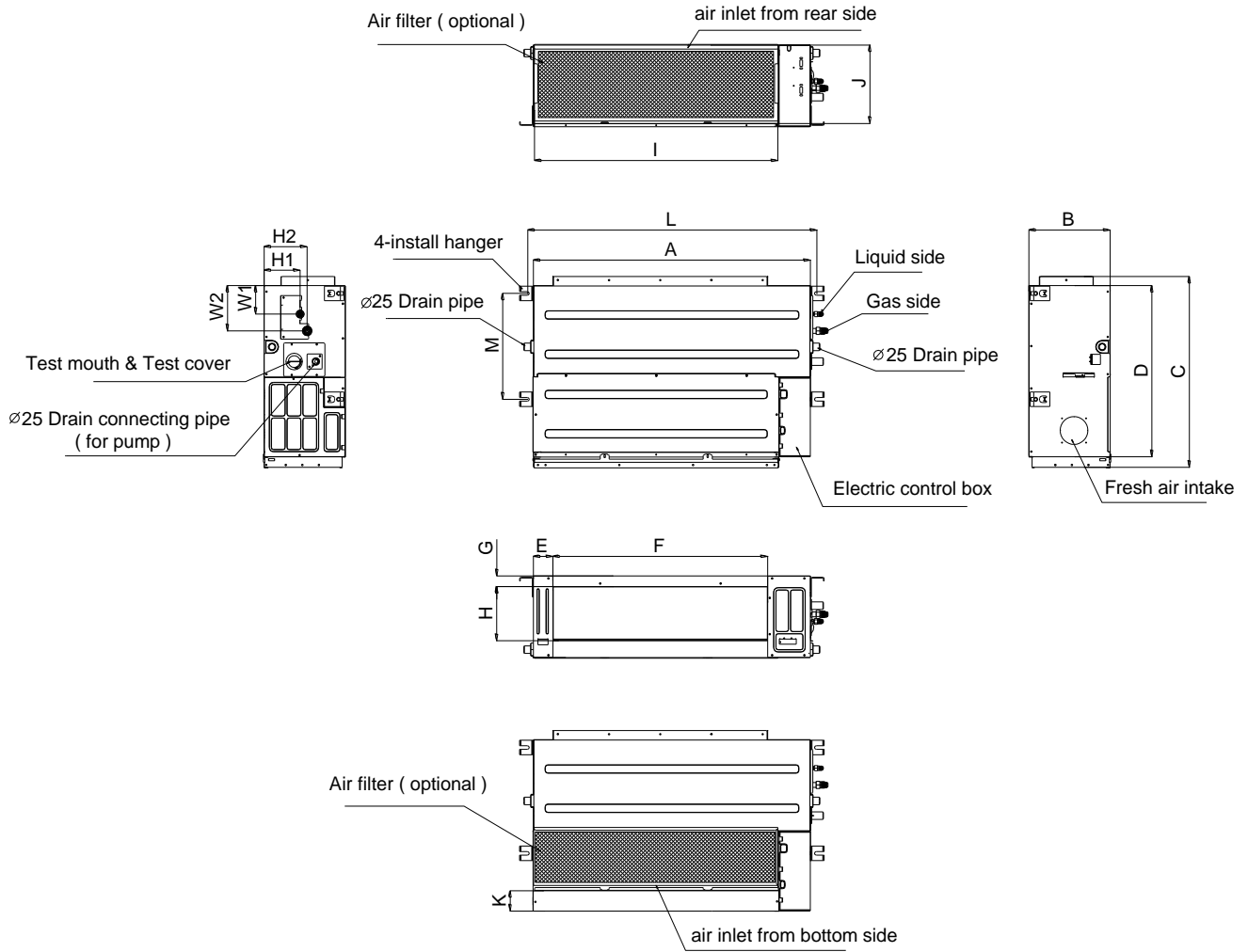


1.8 Twins Combination

- The units can be installed as Twin systems: one outdoor unit can connect with two indoor units. The indoor units can be combined in any of the different available ratings.



2. Dimensions



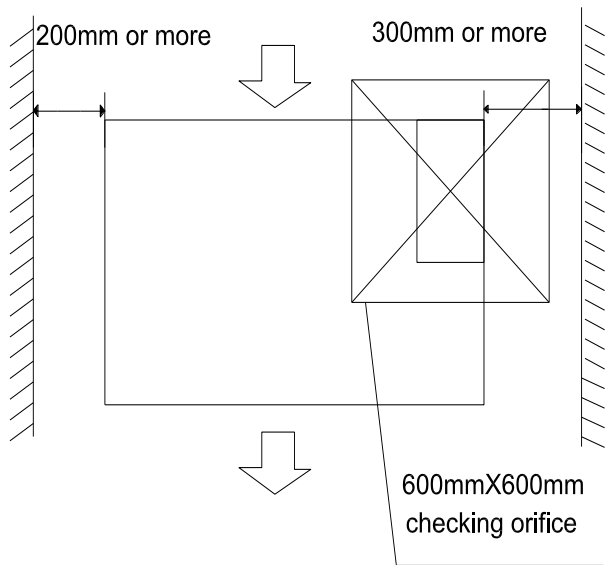
Note: standard product without filter

Model	Outline dimension(mm)													Size of install hanger				Size of refrigerant pipe			
	Air outlet opening size				Air return opening size				Size of install hanger		Size of refrigerant pipe		Size of install hanger		Size of refrigerant pipe						
	A	B	C	D	E	F	G	H	I	J	K	L	M	H1	H2	W1	W2				
ELSI-OID012-N11	700	210	635	570	65	493	35	119	595	200	80	740	350	120	143	95	150				
ELSI-OID018-N11 ELSI-OID024-N11	920	270	635	570	65	713	35	179	815	260	20	960	350	120	143	95	150				
ELSI-OID036-N11 ELSI-OID042-N11 ELSI-OID048-N11 ELSI-OID060-N11	1200	300	865	800	80	968	40	204	1094	288	45	1240	500	175	198	155	210				

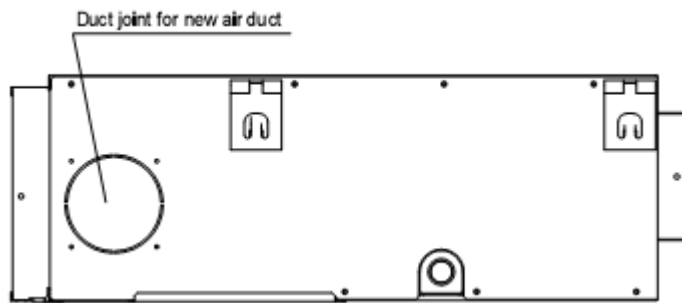
Unit: mm

3. Service Space

Ensure enough space required for installation and maintenance.

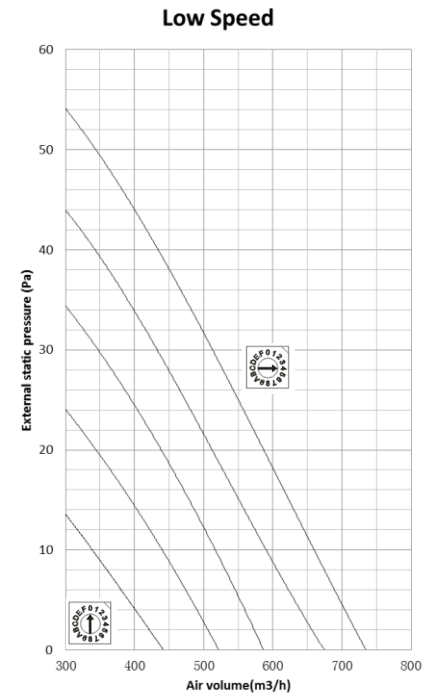
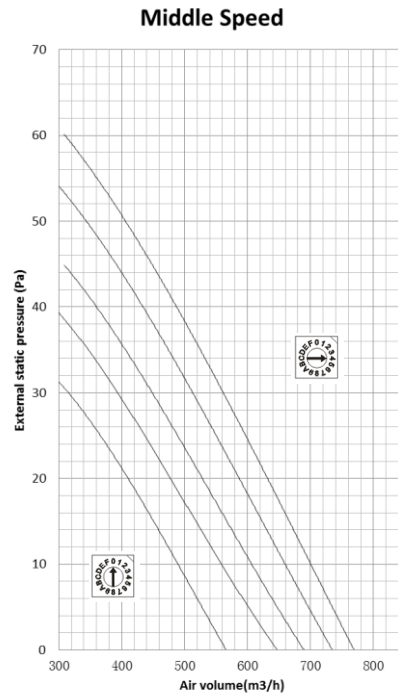
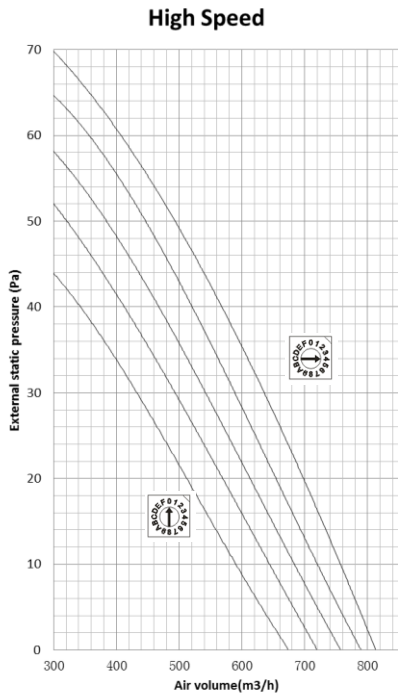


All the indoor units reserve the hole to joint the fresh air pipe. The hole size as following:

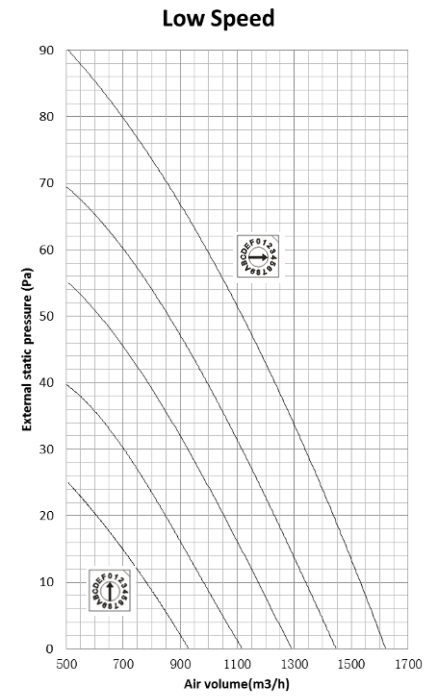
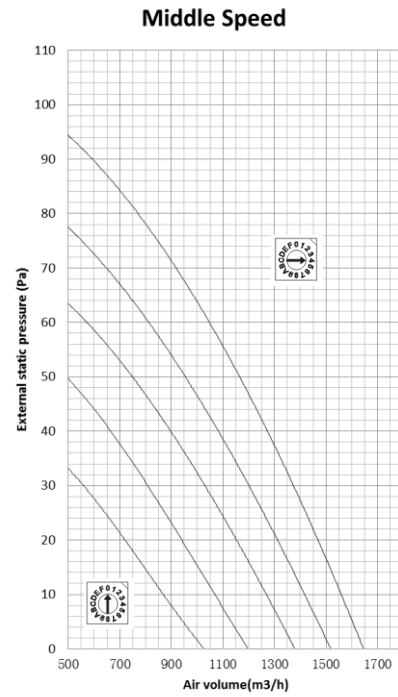
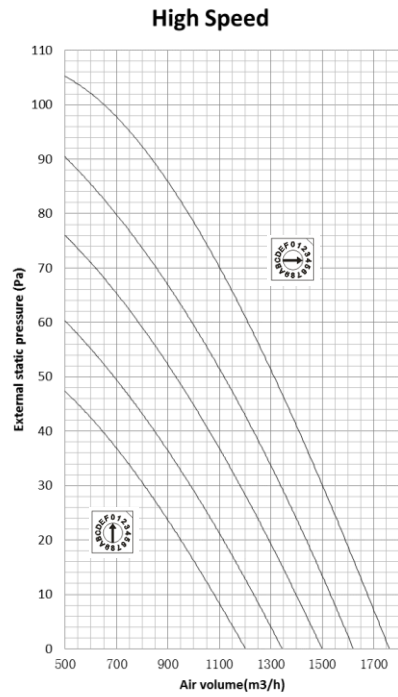


MODLE	
12-24	30-60
<p>Ø90mm</p> <p>80mm</p> <p>80mm</p>	<p>Ø125mm</p> <p>Ø160mm</p>

4. Static Pressure ELSI-OID012-N11

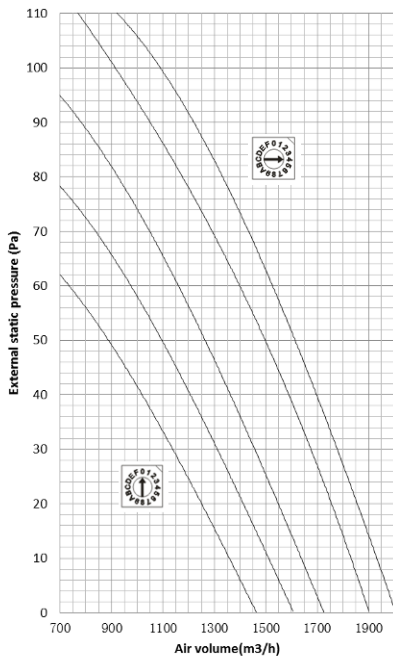


ELSI-OID018-N11

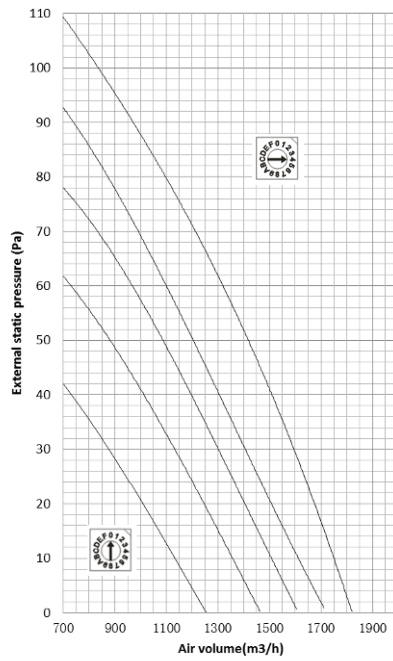


ELSI-OID024-N11

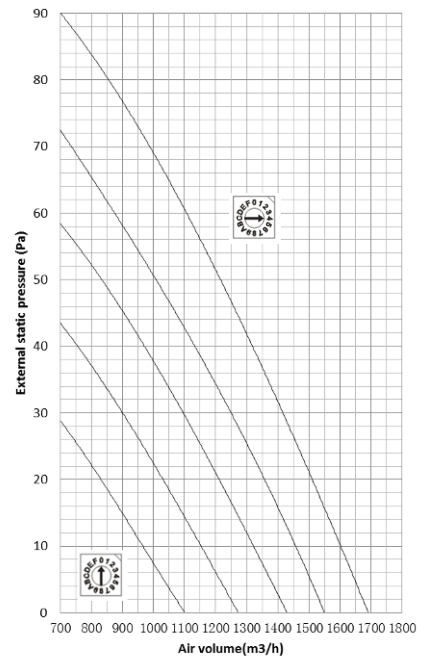
High Speed



Middle Speed

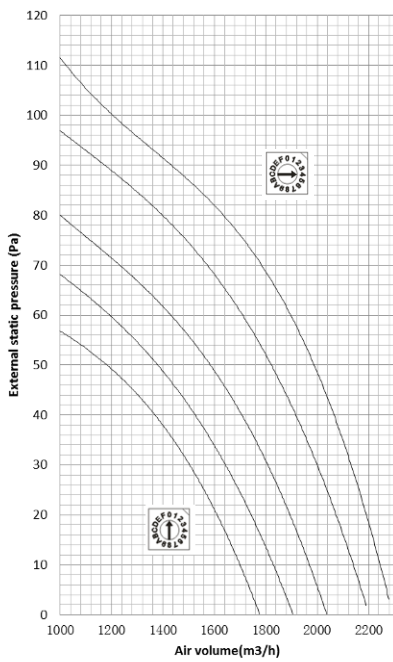


Low Speed

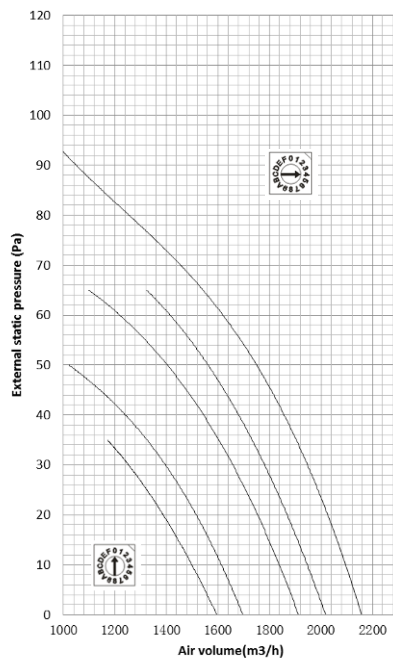


ELSI-OID030-N11

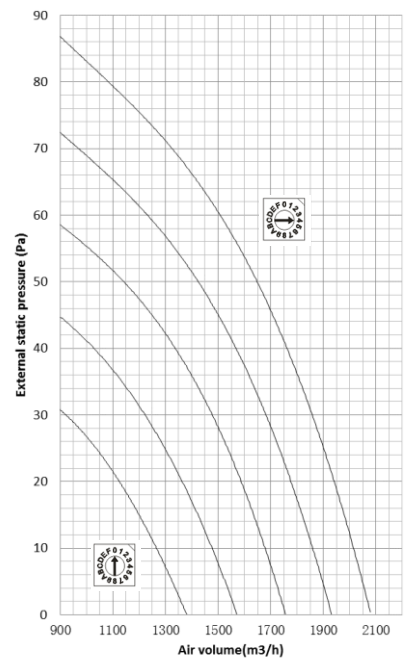
High Speed



Middle Speed

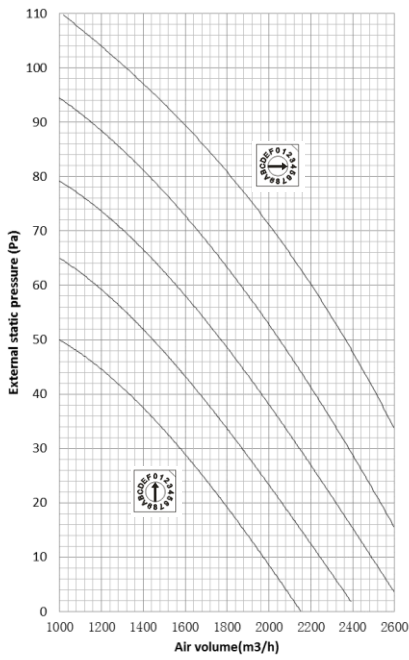


Low Speed

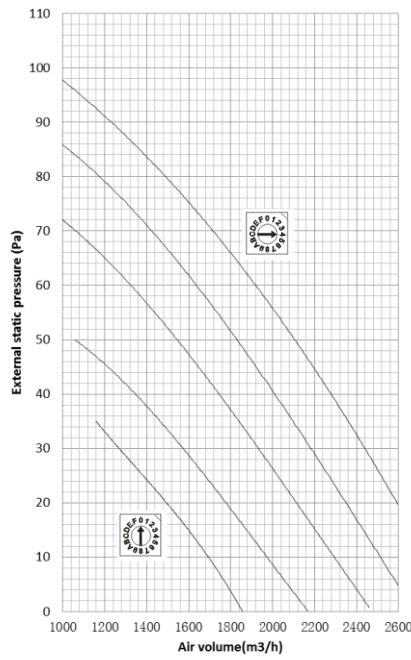


ELSI-OID036-N11

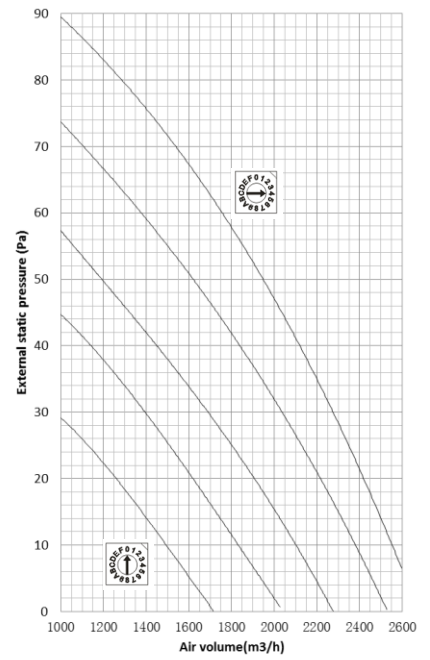
High Speed



Middle Speed

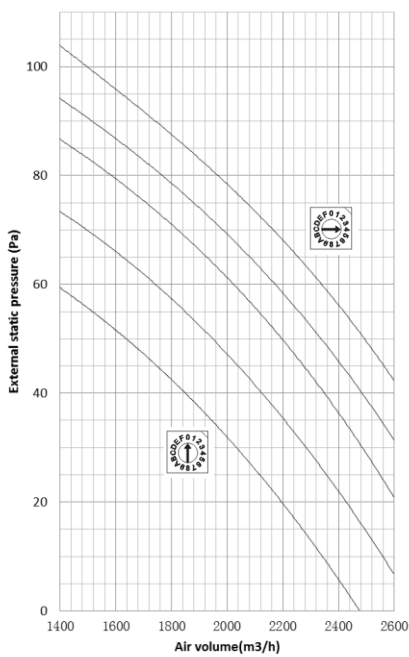


Low Speed

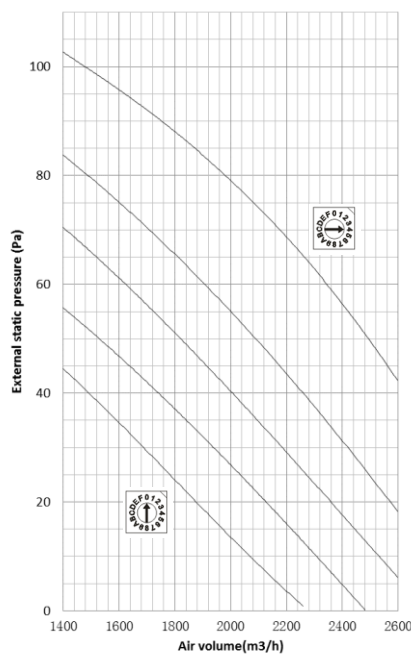


ELSI-OID048-N11, ELSI-OID060-N11

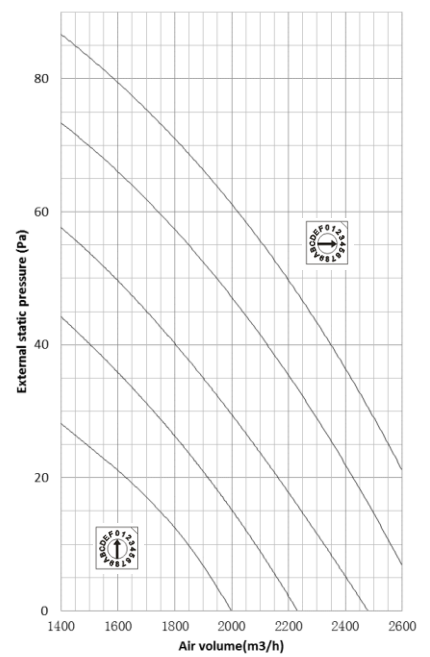
High Speed



Middle Speed



Low Speed



5. Electric Characteristics

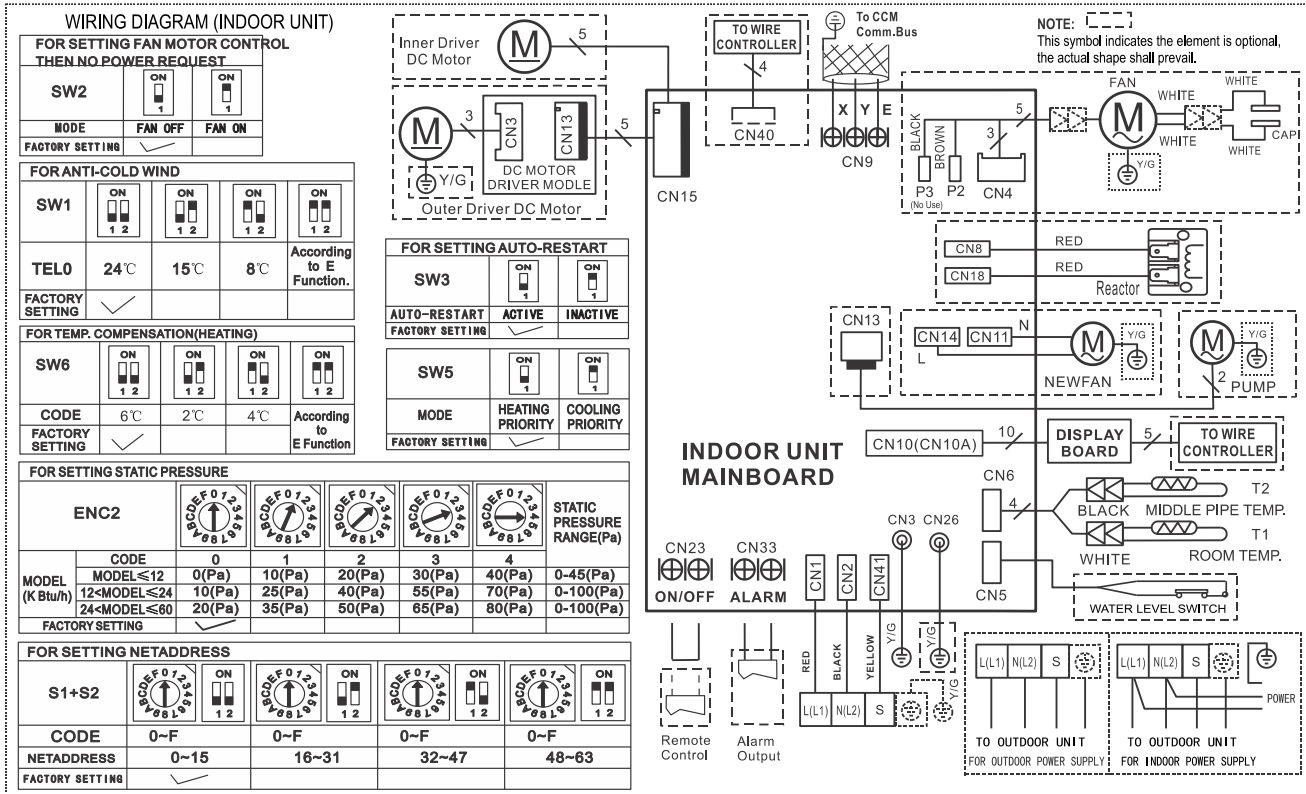
Model	Indoor Unit				Power Supply
	Hz	Voltage	Min.	Max.	MFA
ELSI-OID012-N11	50	220-240	198	254	16
ELSI-OID018-N11	50	220-240	198	254	10
ELSI-OID024-N11	50	220-240	198	254	10
ELSI-OID030-N11	50	220-240	198	254	10
ELSI-OID036-N11	50	220-240	198	254	10
ELSI-OID042-N11	50	220-240	198	254	10
ELSI-OID048-N11	50	220-240	198	254	10
ELSI-OID060-N11	50	220-240	198	254	10

Note:

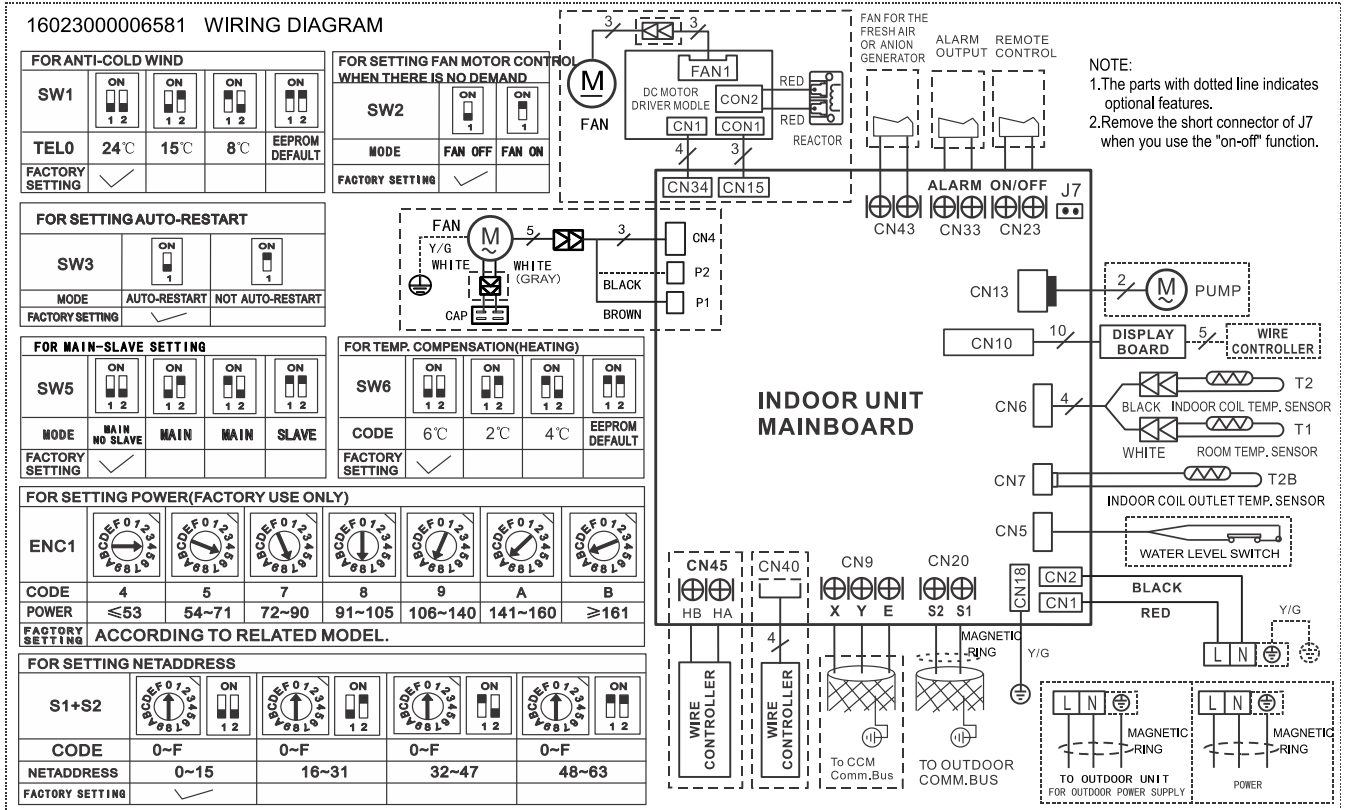
MFA: Max. Fuse Amps. (A)

6. Wiring diagram

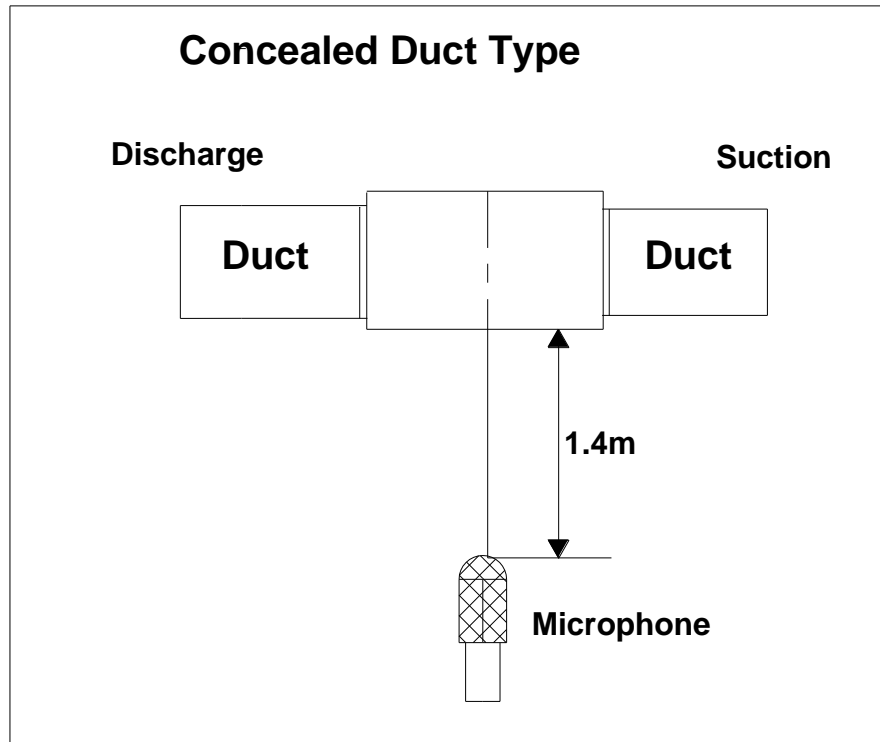
Model ELSI-OID012-N11



Model: ELSI-OID024-N11, ELSI-OID030-N11, ELSI-OID036-N11, ELSI-OID042-N11, ELSI-OID048-N11, ELSI-OID060-N11,









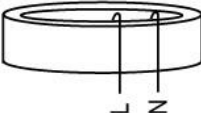


7. Sound Levels



Model	Sound Power dB(A)	Sound Pressure dB(A)		
		H	M	L
ELSI-OID012-N11	57	35	31	27
ELSI-OID018-N11	59	42	40	38
ELSI-OID024-N11	62	42	40	38
ELSI-OID036-N11	63	42	40	38
ELSI-OID042-N11	67	49	47	45
ELSI-OID048-N11	69	52	50	48
ELSI-OID060-N11	74	58	56	54

8. Accessories

	Name	Shape	Quantity
Tubing & Fittings	Soundproof / insulation sheath		2
	Binding tape		1
	Seal sponge		1
Drainpipe Fittings (for cooling & heating)	Drain joint		1
	Seal ring		1
Wired controller & Its Frame	Wired controller		1
Others	Owner' s manual		1
	Installation manual		1
EMS & It's fitting	Magnetic ring (twist the electric wires L and N around it to five circles)		1

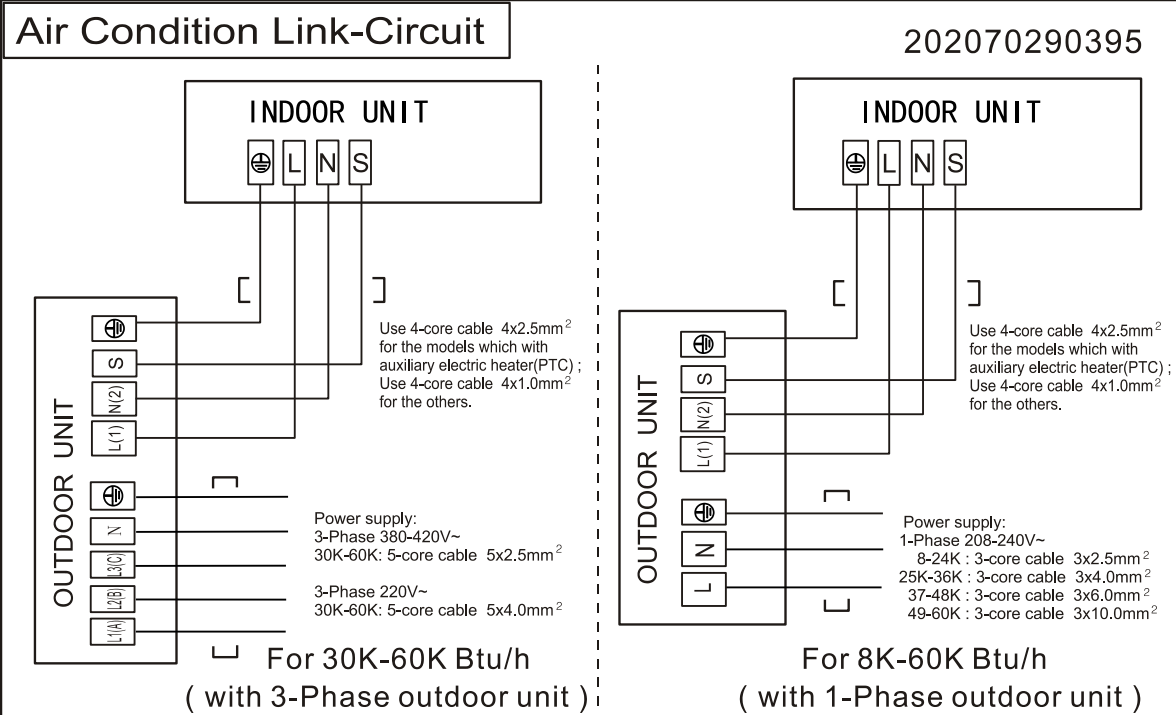
9. The Specification of Power

Model		12000 Btu/h	18000-24000Btu/h	30000 Btu/h	36000 Btu/h	36000 Btu/h
INDOOR 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)	—————	3×1.0	3×1.0	3×1.0	3×1.0
	CIRCUIT BREAKER/ Fuse (A)	—————	15/10	15/10	15/10	15/10
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	380-420V, 50Hz
	POWER WIRING (mm ²)	3×2.5	3×2.5	3×2.5	3×4.0	5×2.5
	CIRCUIT BREAKER/ Fuse (A)	20/16	30/20	40/30	40/30	30/20
Indoor/Outdoor Connecting Wiring(Weak Electric Signal) (mm ²)		—————	2×0.2	2×0.2	2×0.2	2×0.2
Indoor/Outdoor Connecting Wiring(Strong Electric Signal) (mm ²)		4×1.0	—————	—————	—————	—————

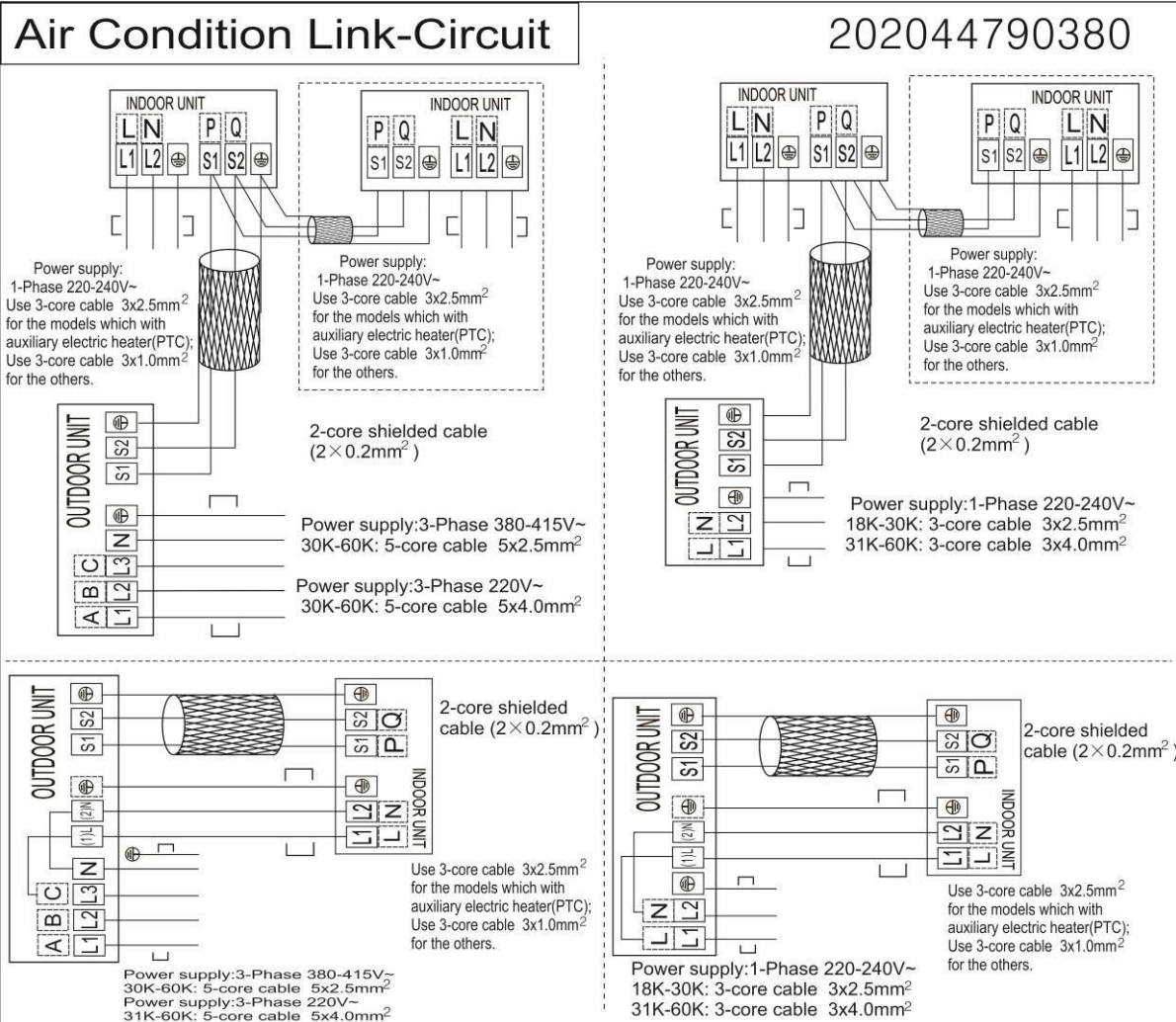
Model(Btu/h)		48000	60000	48000-60000
INDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	Power Wiring (mm ²)	3×1.0	3×1.0	3×1.0
	Circuit Breaker/Fuse (A)	15/10	15/10	15/10
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	380-415V, 50Hz
	Power Wiring (mm ²)	3×4.0	3×4.0	5×2.5
	Circuit Breaker/Fuse (A)	40/35	50/40	30/25
Indoor/Outdoor Connecting Wiring (Weak Electric Signal) (mm ²)		2×0.2	2×0.2	2×0.2
Indoor/Outdoor Connecting Wiring (Strong Electric Signal) (mm ²)		—————	—————	—————

10. Field Wiring

Model: ELSI-OID012-N11

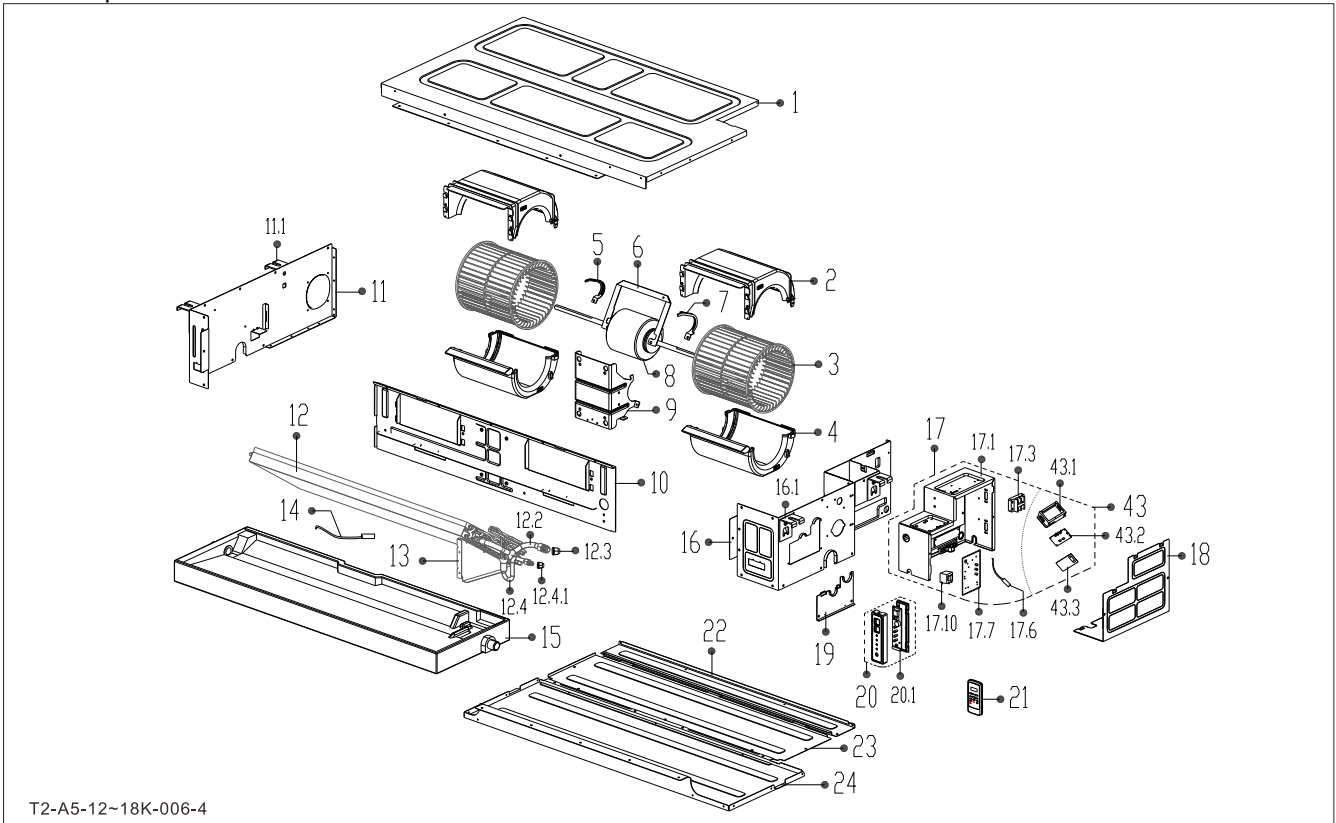


Model: ELSI-OID018-N11, ELSI-OID024-N11, ELSI-OID030-N11, ELSI-OID036-N11, ELSI-OID042-N11, ELSI-OID060-N11



11. Exploded view and spare part list

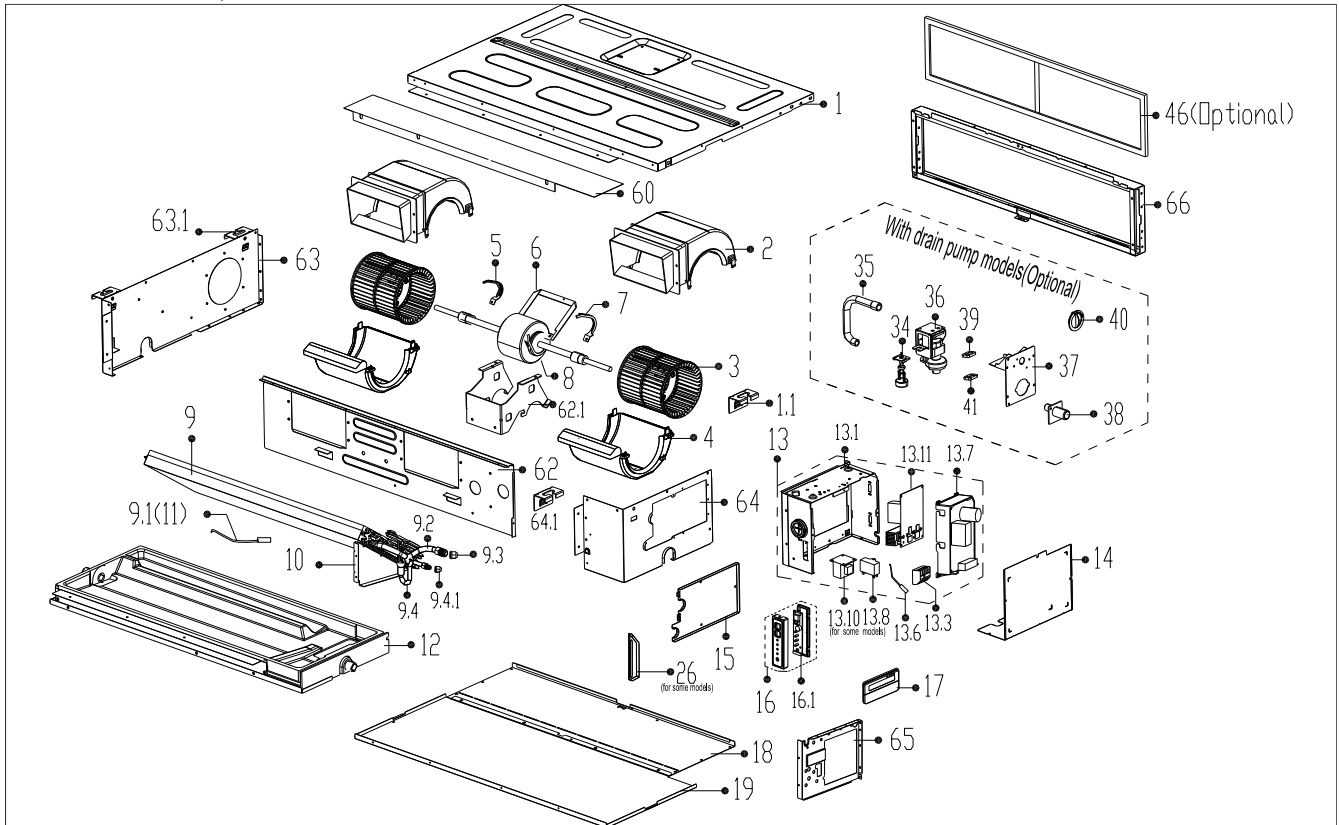
11.1 Exploded view of ELSI-OID012-N11



11.2 Spare part list of model ELSI-OID012-N11

No.	BOM Code	Part Name	Quantity
1	12223000000502	Chassis Assembly	1
2	12123000000026	Volute shell, up	2
3	12100103000077	Centrifugal fan	2
4	12123000000021	Volute shell	2
5	12222500000253	Motor clamp	1
6	122230000009087	Fan motor fixing board	1
7	12222500000255	Motor clamp	1
8	11002015000043	Brushless DC Motor	1
9	12223000000567	Fan Motor Holder	1
10	12223000000232	Middle beam ass'y	1
11	12223000000117	Left panel Subassembly	1
12	15823000A02338	Evaporator Assembly	1
12.1	11201007000136	Pipe temperature sensor assembly	1
12.2	15122300000480	Outlet Pipes of Evaporator	1
12.4	15123000000334	Input pipes of Evaporator assemblyJoint board of Evaporator	1
12.4.1	15500406000016	Copper nut	1
13	12223000000290	Evaporator support board ass'y	1
15	12823000000003	Drain pan ass'y	1
16	12223000000083	Parts fn Right Side Plate	1
17	17223000000226	E-Parts Box assembly	1
17.1	12223000000045	Welding Parts of Electrical Control Box	1
17.3	17400401000112	terminal block,4p	1
17.6	11201007000143	Room Temperature Sensor	1
17.7	17123000000172	Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
17.10	17400306000070	Reactance	1
18	12223000000059	Electrical Control Box Cover	1
19	12223000000524	Pressing Plate Subassembly of Tube(RoHS)	1
20	17223000000001	Structure Subassembly of Display Box	1
20.1	17123000000096	Display board assembly	1
21	17317100A17625	Wired controller	1
22	12223000000260	Rear beam ass'y	1
23	12223000000211	Rear cover plate ass'y	1
24	12223000000200	Top cover ass'y	1
35	12623000000003	Drain pipe	1
36	17400802000021	Drain pump	1
37	12223000000571	Bracket Subassembly of Water Drain Pump(RoHS)	1
38	12100510000021	Connecting pipe	1
39	12622500000004	Pump Rubber washer	1
40	12123000000043	Water cover ass'y	1
41	12622500000003	Pump Rubber washer	1
43	17222700000159	Electrical Control Box Subassembly	1
43.1	12223000000052	Electrical Control Box	1
43.2	171220000008562	Inverter Module Subassembly (Sticker)	1
43.3	11203803000154	Radiator	1
45	12123000000043	Water cover ass'y	1
52	12223000A00643	flange ass'y	1
53	12100204A00155	Filter	1
56	12100509000059	Drain pipe	1
57	12100501000035	Drain Hose	1

11.3 Exploded view of ELSI-OID018-N11, ELSI-OID024-N11, ELSI-OID036-N11, ELSI-OID048-N11, ELSI-OID060-N11,



11.4 Spare part list of model ELSI-OID018-N11

No.	BOM Code	Part Name	Quantity
1	12223000007007	Chassis assembly	1
2	12123000000801	Up volute shell	2
3	12100103000584	Centrifugal fan	2
4	12123000000802	Below volute shell	2
5	12222500000253	Motor clamp	1
6	12223000000537	Motor Boarding	1
7	12222500000255	Motor clamp	1
8	11002015002521	Brushless DC Motor	1
9	15823000A02377	Evaporator Assembly	1
9.1	11201007000136	Pipe temperature sensor assembly	1
9.2	15123000009507	Outlet Pipe Subassembly of Evaporator	1
9.4	15123000009510	Inlet Pipe Subassembly of Evaporator	1
10	122230000006629	Evaporator right support board assembly	1
11	11201007001460	Temperature Sensor	1
12	12823000000190	Water collector	1
13	17223000004377	E-Parts Box assembly	1
13.1	122230000006630	Electronic control box	1
13.3	17400401000026	terminal block, 2p	1
13.6	11201007000283	Room Temperature Sensor	1
13.7	17123000003432	Main control board assembly	1
13.10	17400306000070	Reactance	1
13.11	17122000030428	Inverter control board assembly	1
14	122230000006627	Cover of electronic control box	1
15	12223000A02735	Pipe clamp board assembly	1
16	17223000000001	Structure Subassembly of Display Box	1
16.1	17123000000096	Display board assembly	1
17	17317100A17625	Wired controller	1
18	122230000006632	Rear cover assembly	1
19	122230000006636	Top cover assembly	1
35	126230000000003	Drain pipe	1
36	17400802000021	Drain pump	1
37	12223000A02732	Drain pump holder assembly	1
38	12100510000021	Connecting pipe	1
39	126225000000004	Pump Rubber washer	1
40	121230000000043	Water cover ass'y	1
41	126225000000003	Pump Rubber washer	1
45	121230000000043	Water cover ass'y	1
46	12123000000983	Air filter	1
56	121005090000059	Drain pipe	1
57	121005010000035	Drain Hose	1
60	122230000008573	Right clapboard	1
62	122230000008576	Middle beam assembly	1
63	122230000008574	Left clapboard assembly	1
64	122230000008572	Right clapboard assembly	1
65	122230000008577	Right clapboard	1
66	122230000008578	Right clapboard	1

11.5 Spare part list of model ELSI-OID024-N11

No.	BOM Code	Part Name	Quantity
1	12223000008569	Chassis assembly	1
2	12123000000805	Up volute shell	2
3	12100103000586	Centrifugal fan	2
4	12123000000806	Below volute shell	2
5	12222500000253	Motor clamp	1
6	12223000000537	Motor Boarding	1
7	12222500000255	Motor clamp	1
8	11002015002521	Brushless DC Motor	1
9	15823000A02378	Evaporator Assembly	1
9.1	11201007000136	Pipe temperature sensor assembly	1
9.2	15123000008702	Outlet Pipe Subassembly of Evaporator	1
9.4	15123000009029	Inlet Pipe Subassembly of Evaporator	1
10	12223000006644	Evaporator right support board assembly	1
11	11201007001460	Temperature Sensor	1
12	12823000000130	Water receiver assembly	1
13	17223000004376	E-Parts Box assembly	1
13.1	12223000006638	Welding Parts of Electrical Control Box	1
13.3	17400401000026	terminal block, 2p	1
13.6	11201007000283	Room Temperature Sensor	1
13.7	17123000003432	Main control board assembly	1
13.10	17400306000070	Reactance	1
13.11	17122000030428	Inverter control board assembly	1
14	12223000006641	Cover of electronic control box	1
15	12223000A02730	Pipe clamp board assembly	1
16	17223000000001	Structure Subassembly of Display Box	1
16.1	17123000000096	Display board assembly	1
17	17317100A17625	Wired controller	1
18	12223000007887	Rear cover assembly	1
19	12223000006648	Top cover assembly	1
26	12223000006643	Right clapboard strengthen board	1
35	12623000000003	Drain pipe	1
36	17400802000021	Drain pump	1
37	12223000A02732	Drain pump holder assembly	1
38	12100510000021	Connecting pipe	1
39	12622500000004	Pump Rubber washer	1
40	12123000000043	Water cover ass'y	1
41	12622500000003	Pump Rubber washer	1
45	12123000000043	Water cover ass'y	1
46	12123000000982	Air filter	1
56	12100509000059	Drain pipe	1
57	12100501000035	Drain Hose	1
60	12223000008570	Right clapboard	1
62	12223000008110	Middle beam assembly	1
63	12223000008568	Left clapboard assembly	1
64	12223000008571	Right clapboard assembly	1
65	12223000008114	Right clapboard	1
66	12223000008109	Right clapboard	1

11.6 Spare part list of model ELSI-OID036-N11

No.	BOM Code	Part Name	Quantity
1	12223000008580	Chassis assembly	1
2	12123000000803	Up volute shell	2
3	12100103000585	Centrifugal fan	2
4	12123000000804	Below volute shell	2
5	12222500000253	Motor clamp	1
6	12223000006639	Fan motor fixing board	1
7	12222500000255	Motor clamp	1
8	11002015002541	Brushless DC Motor	1
9	15823000A02379	Evaporator Assembly	1
9.1	11201007000136	Pipe temperature sensor assembly	1
9.1	11201007001460	Temperature Sensor	1
9.2	15123000008702	Outlet Pipe Subassembly of Evaporator	1
9.4	15123000009028	Inlet Pipe Subassembly of Evaporator	1
10	12223000006644	Evaporator right support board assembly	1
12	12823000000110	Water receiver assembly	1
13	17223000004378	E-Parts Box assembly	1
13.1	12223000006638	Welding Parts of Electrical Control Box	1
13.3	17400401000026	terminal block, 2p	1
13.6	11201007000283	Room Temperature Sensor	1
13.7	17123000003432	Main control board assembly	1
13.10	17400306000070	Reactance	1
13.11	17122000023872	Inverter control board assembly	1
14	12223000006641	Cover of electronic control box	1
15	12223000A02730	Pipe clamp board assembly	1
16	17223000000001	Structure Subassembly of Display Box	1
16.1	17123000000096	Display board assembly	1
17	17317100A17625	Wired controller	1
18	12223000007827	Rear cover assembly	1
19	12223000006645	Top cover assembly	1
26	12223000006643	Right clapboard strengthen board	1
35	12623000000003	Drain pipe	1
36	17400802000021	Drain pump	1
37	12223000A02732	Drain pump holder assembly	1
38	12100510000021	Connecting pipe	1
39	12622500000004	Pump Rubber washer	1
40	12123000000043	Water cover ass'y	1
41	12622500000003	Pump Rubber washer	1
45	12123000000043	Water cover ass'y	1
46	12123000000980	Air filter	1
56	12100509000059	Drain pipe	1
57	12100501000035	Drain Hose	1
60	12223000008581	Right clapboard	1
62	12223000008582	Middle beam assembly	1
63	12223000008568	Left clapboard assembly	1
64	12223000008571	Right clapboard assembly	1
65	12223000008114	Right clapboard	1

11.7 Spare part list of model ELSI-OID048-N11

No.	BOM Code	Part Name	Quantity
1	12223000008656	Chassis assembly	1
2	12123000000941	Up volute shell	2
3	12100103000664	Centrifugal fan	2
4	12123000000940	Below volute shell	2
5	12225000000253	Motor clamp	1
6	12223000006639	Fan motor fixing board	1
7	12225000000255	Motor clamp	1
8	11002015003861	Brushless DC Motor	1
9	15823000A02376	Evaporator Assembly	1
9.1	11201007000136	Pipe temperature sensor assembly	1
9.2	15123000009807	Outlet Pipe Subassembly of Evaporator	1
9.4	15123000009667	Inlet Pipe Subassembly of Evaporator	1
9.4.1	15500406000010	Copper nut	1
10	12223000008027	Evaporator right support board assembly	1
11	11201007001460	Temperature Sensor	1
12	12823000000210	Water collector	1
13	17223000003996	E-Parts Box assembly	1
13.1	12223000008127	Electronic control box	1
13.3	17400401000026	terminal block, 2p	1
13.6	11201007000283	Room Temperature Sensor	1
13.7	17123000002932	Main control board assembly	1
13.10	17400306000055	Reactor	1
13.11	17122000028148	Inverter control board assembly	1
14	12223000008047	Cover of electronic control box	1
15	12223000A02730	Pipe clamp board assembly	1
16	17223000000001	Structure Subassembly of Display Box	1
16.1	17123000000096	Display board assembly	1
17	17317100A17625	Wired controller	1
18	12223000008655	Rear cover assembly	1
19	12223000008657	Top cover assembly	1
26	12223000000112	strengthen board, right clapboard	1
35	12623000000003	Drain pipe	1
36	17400802000021	Drain pump	1
37	12223000A02732	Drain pump holder assembly	1
38	12100510000021	Connecting pipe	1
39	12622500000004	Pump Rubber washer	1
40	12123000000043	Water cover ass'y	1
41	12622500000003	Pump Rubber washer	1
45	12123000000043	Water cover ass'y	1
46	12123000000981	Air filter	1
56	12100509000059	Drain pipe	1
57	12100501000035	Drain Hose	1
60	12223000008658	Right clapboard	1
62	12223000008652	Middle beam assembly	1
63	12223000008654	Left clapboard assembly	1
64	12223000008659	Right clapboard assembly	1
65	12223000008647	Right clapboard	1
66	12223000008648	Right clapboard	1

11.8 Spare part list of model ELSI-OID060-N11

No.	BOM Code	Part Name	Quantity
1	12223000008656	Chassis assembly	1
2	12123000000941	Up volute shell	2
3	12100103000664	Centrifugal fan	2
4	12123000000940	Below volute shell	2
5	12222500000253	Motor clamp	1
6	12223000006639	Fan motor fixing board	1
7	12222500000255	Motor clamp	1
8	11002015003861	Brushless DC Motor	1
9	15823000A02376	Evaporator Assembly	1
9.1	11201007000136	Pipe temperature sensor assembly	1
9.2	15123000009807	Outlet Pipe Subassembly of Evaporator	1
9.4	15123000009667	Inlet Pipe Subassembly of Evaporator	1
9.4.1	15500406000010	Copper nut	1
10	12223000008027	Evaporator right support board assembly	1
11	11201007001460	Temperature Sensor	1
12	12823000000210	Water collector	1
13	17223000003996	E-Parts Box assembly	1
13.1	12223000008127	Electronic control box	1
13.3	17400401000026	terminal block, 2p	1
13.6	11201007000283	Room Temperature Sensor	1
13.7	17123000002932	Main control board assembly	1
13.10	17400306000055	Reactor	1
13.11	17122000028148	Inverter control board assembly	1
14	12223000008047	Cover of electronic control box	1
15	12223000A02730	Pipe clamp board assembly	1
16	17223000000001	Structure Subassembly of Display Box	1
16.1	17123000000096	Display board assembly	1
17	17317100A17625	Wired controller	1
18	12223000008655	Rear cover assembly	1
19	12223000008657	Top cover assembly	1
26	12223000000112	strengthen board, right clapboard	1
35	12623000000003	Drain pipe	1
36	17400802000021	Drain pump	1
37	12223000A02732	Drain pump holder assembly	1
38	12100510000021	Connecting pipe	1
39	12622500000004	Pump Rubber washer	1
40	12123000000043	Water cover ass'y	1
41	12622500000003	Pump Rubber washer	1
45	12123000000043	Water cover ass'y	1
46	12123000000981	Air filter	1
56	12100509000059	Drain pipe	1
57	12100501000035	Drain Hose	1
60	12223000008658	Right clapboard	1
62	12223000008652	Middle beam assembly	1
63	12223000008654	Left clapboard assembly	1
64	12223000008659	Right clapboard assembly	1
65	12223000008647	Right clapboard	1
66	12223000008648	Right clapboard	1

Ceiling & Floor Type

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1. Features

1.1. New design, more modern and elegant appearance.

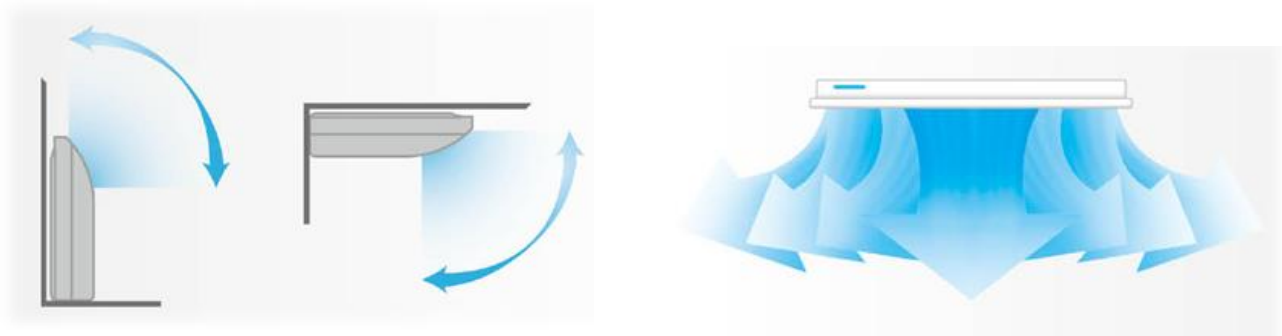


1.2. Convenient installation

- The ceiling type can be easily installed into a corner of the ceiling even if the ceiling is very narrow
- It is especially useful when installation of an air conditioner in the center of the ceiling is impossible due to a structure such as one lighting.

1.3. Two direction auto swing (vertical & horizontal) and wide angle air flow,

- Air flow directional control minimizes the air resistance and produces wilder air flow to vertical direction.
- The range of horizontal air discharge is widened which secures wider air flow distribution to provide more comfortable air circulation no matter where the unit is set up



1.4. Three level fan speed, more humanism design, meets different air-supply requirement.

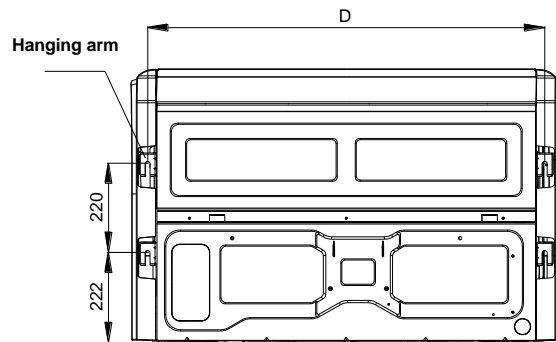
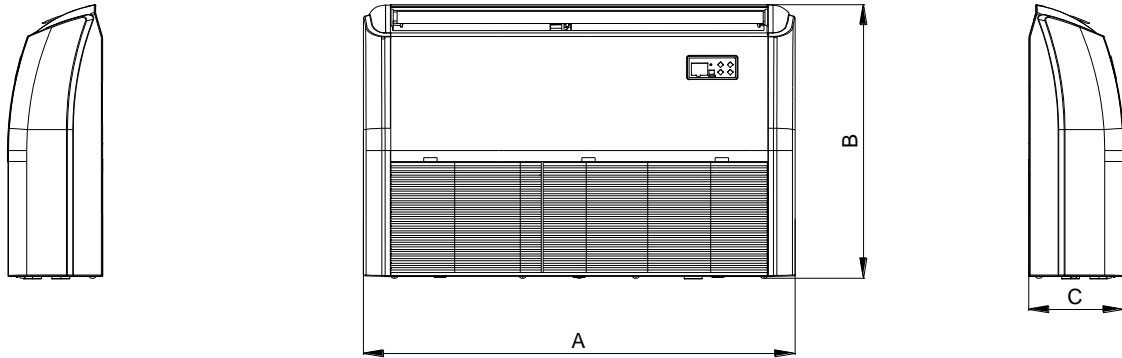
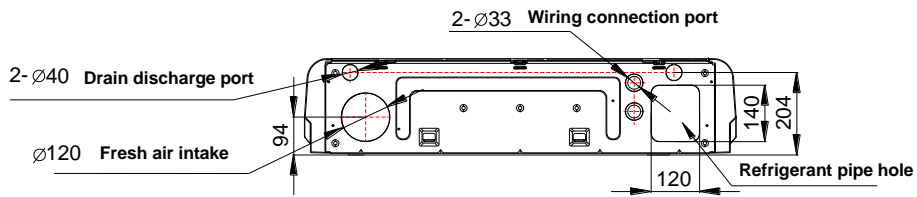
1.5. New foam drain pan with plastic-spraying inner surface



1.6. Easy operation.

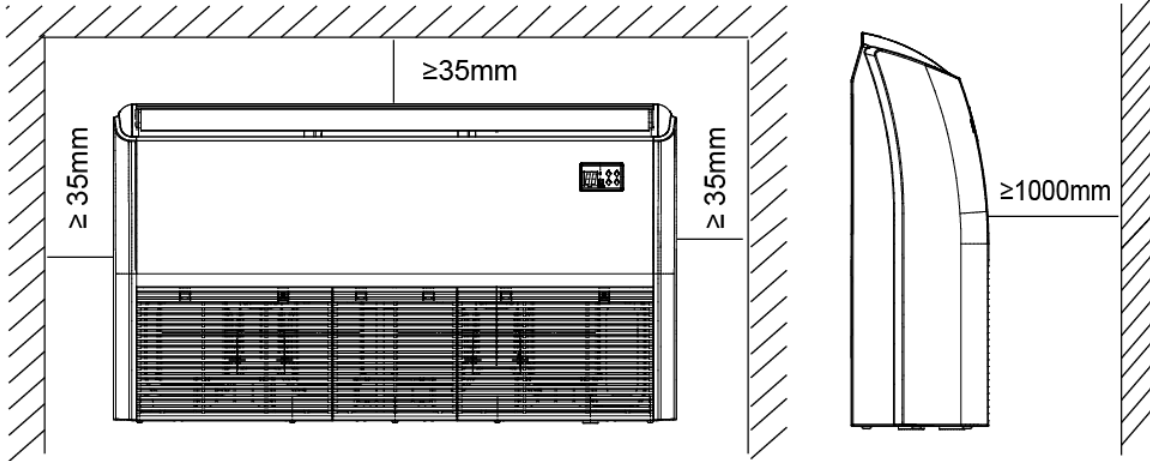
1.7. Remote control and optional wired control method.

2. Dimensions



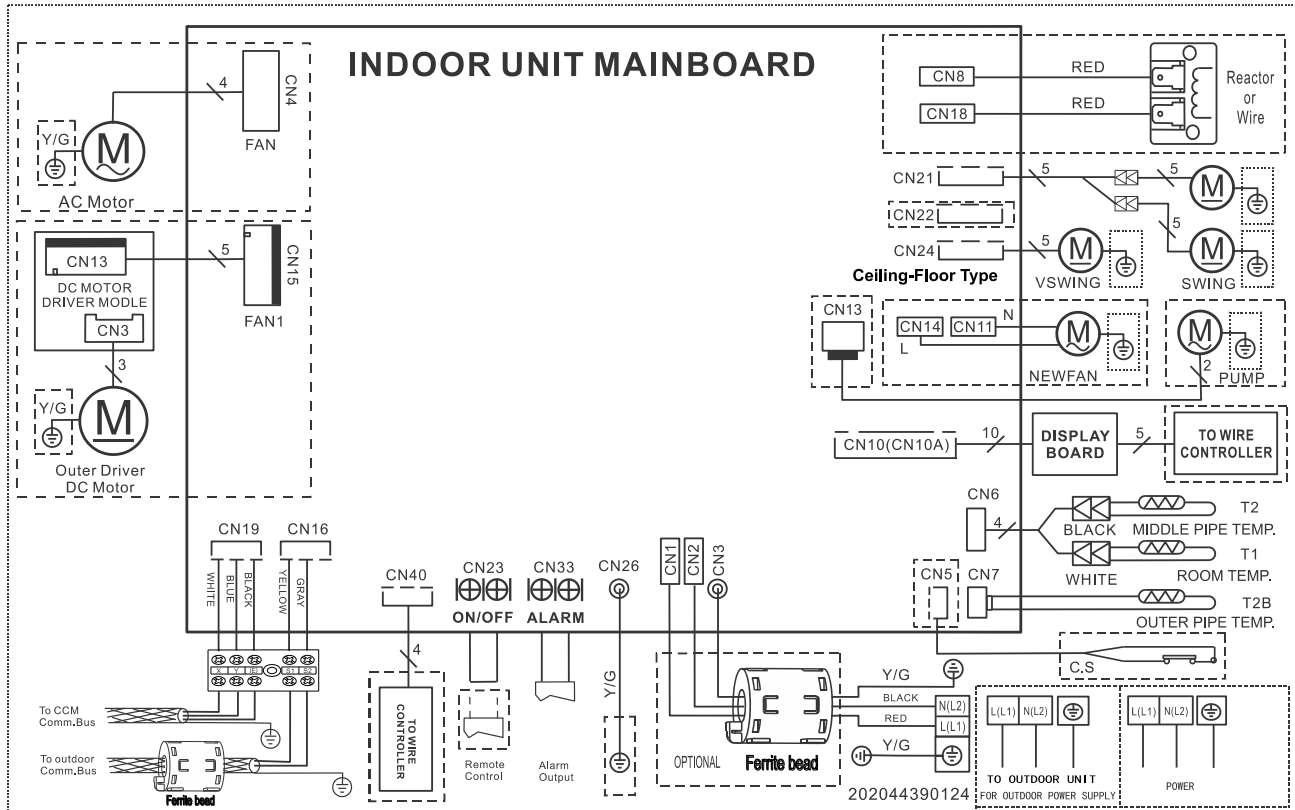
Capacity (KBtu/h)	A	B	C	D
18/24	1068	675	235	983
30	1285	675	235	1200
36/42/48/55	1650	675	235	1565

3. Service Space

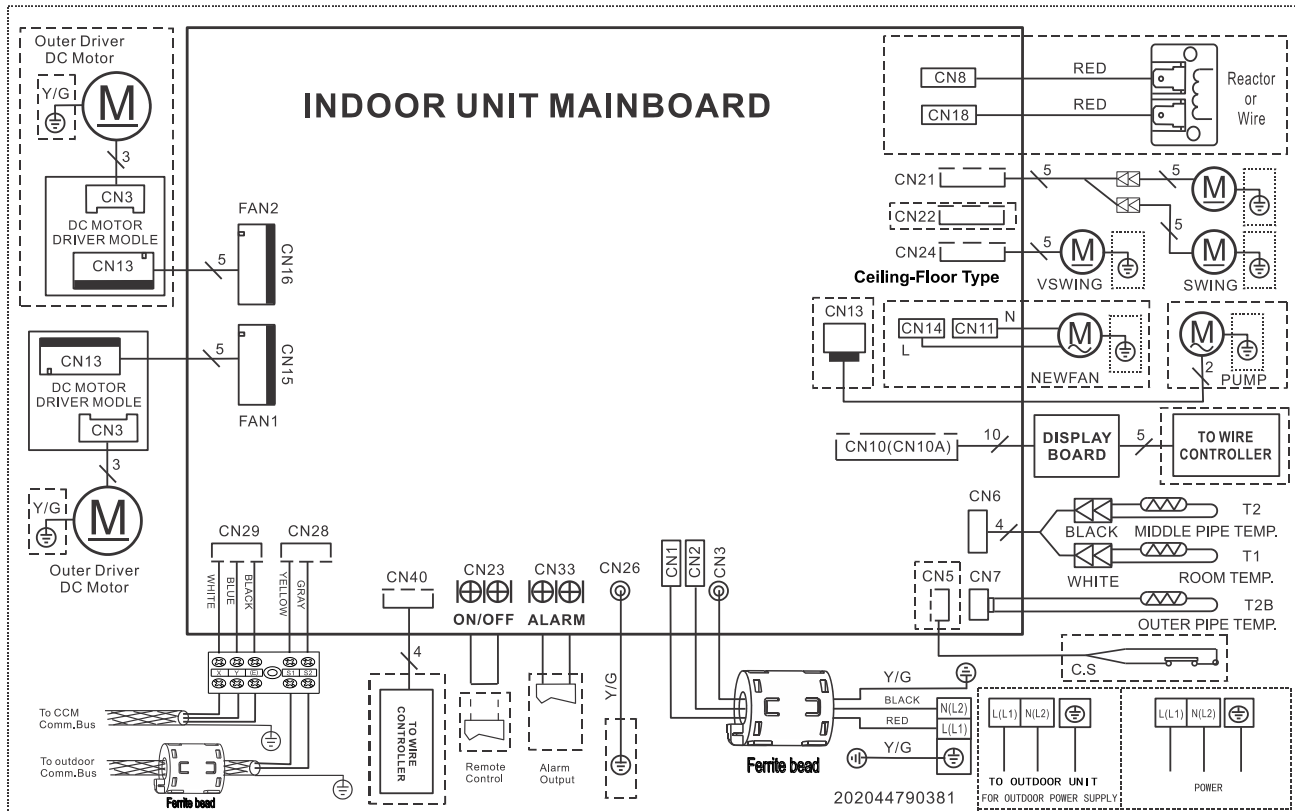


4. Wiring Diagram

Model: ELSI-TCD018-N11, ELSI-TCD024-N11



Model: ELSI-TCD036-N11, ELSI-TCD048-N11, ELSI-TCD060-N11

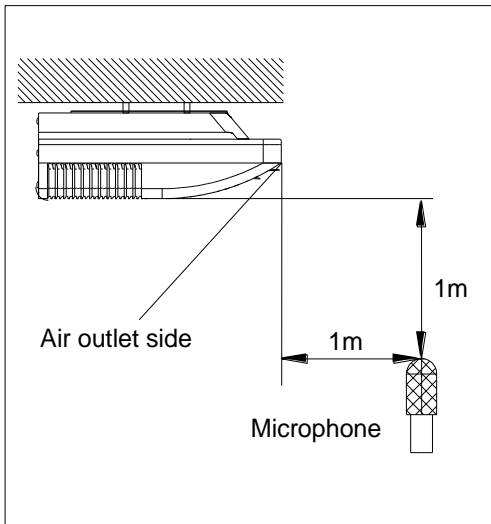


5. Electric Characteristics

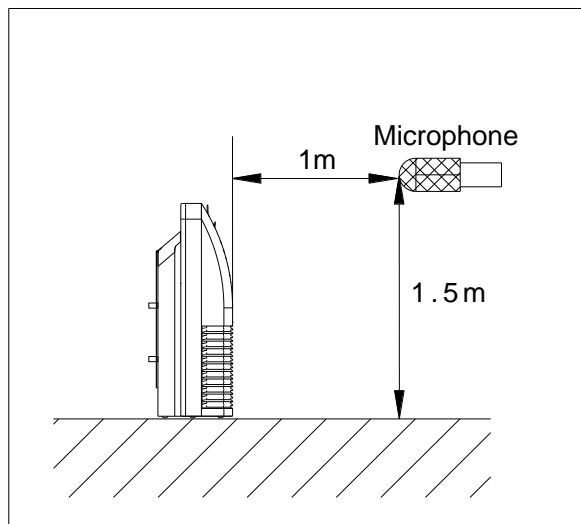
Model	Indoor Units				Power Supply
	Hz	Voltage	Min.	Max.	MFA
ELSI-TCD018-N11	50	220-240	198	254	10
ELSI-TCD024-N11	50	220-240	198	254	10
ELSI-TCD036-N11	50	220-240	198	254	10
ELSI-TCD048-N11	50	220-240	198	254	10
ELSI-TCD060-N11	50	220-240	198	254	10

Note:
MFA: Max. Fuse Amps. (A)

6. Sound Levels



Ceiling



Floor

Model	Sound Power dB (A)	Sound Pressure dB(A)		
		H	M	L
ELSI-TCD018-N11	57	44	41	38
ELSI-TCD024-N11	63	52	49	44
ELSI-TCD036-N11	63	52	49	43
ELSI-TCD048-N11	66	54	51	46
ELSI-TCD060-N11	69	57	51	46

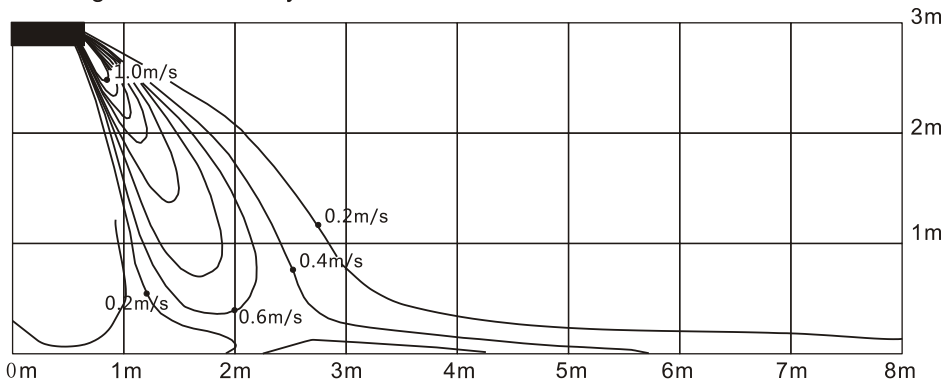
7. Air Velocity and Temperature Distributions (Reference Data)

Model: ELSI-TCD018-N11, ELSI-TCD024-N11

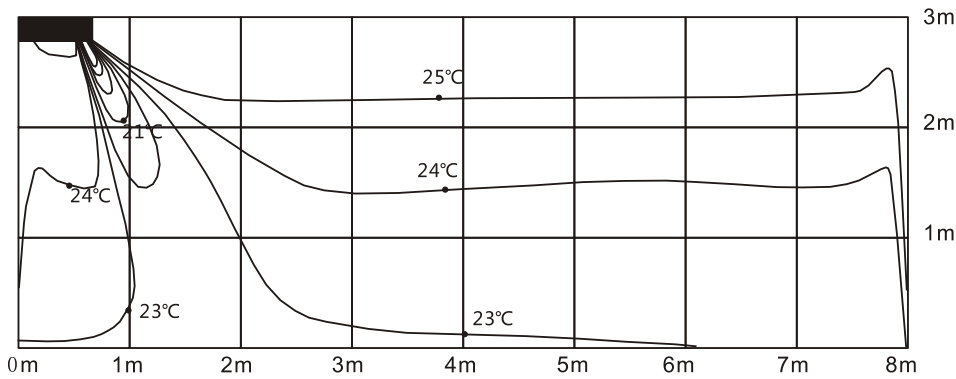
Ceiling installation:

Discharge angle 17°

Cooling airflow velocity distribution

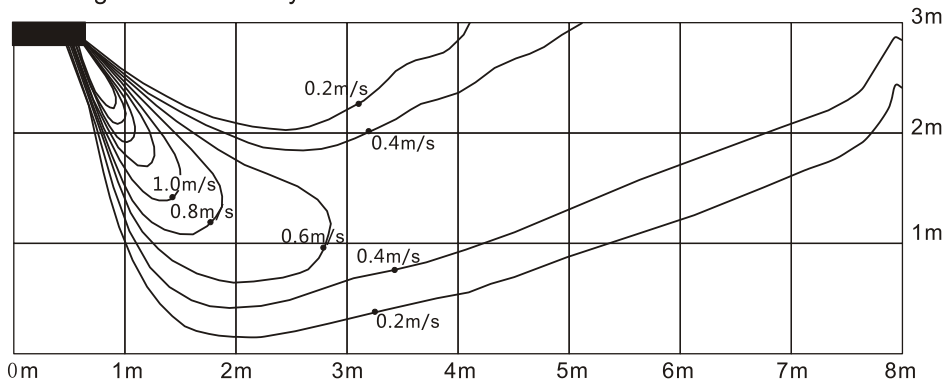


Cooling temperature distribution

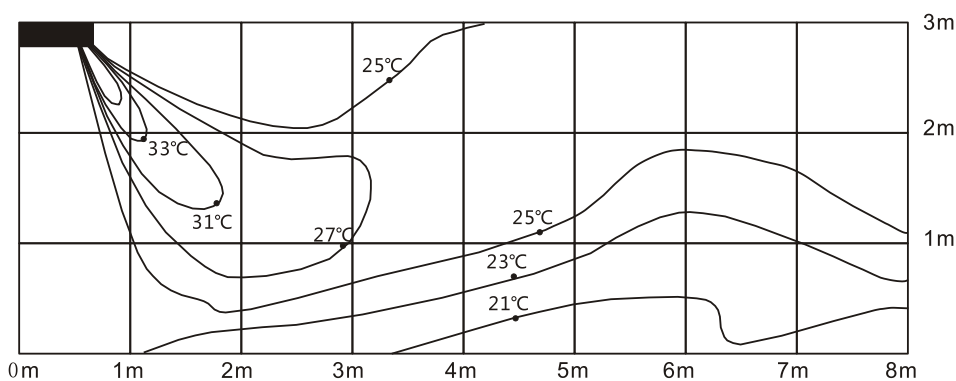


Discharge angle 50°

Heating airflow velocity distribution



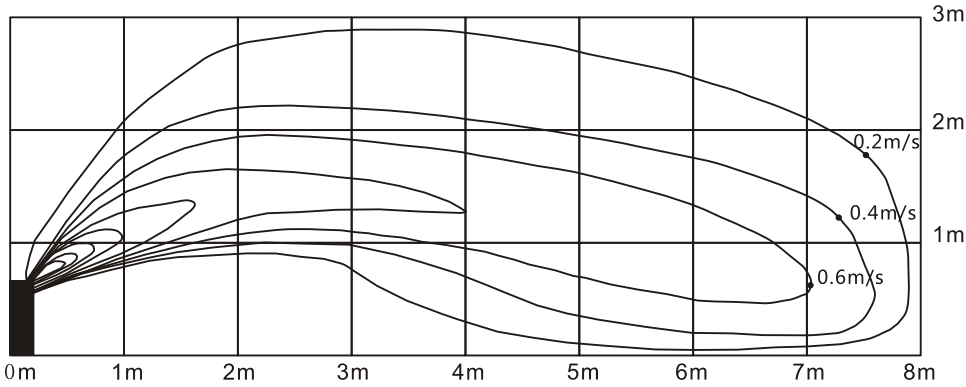
Heating temperature distribution



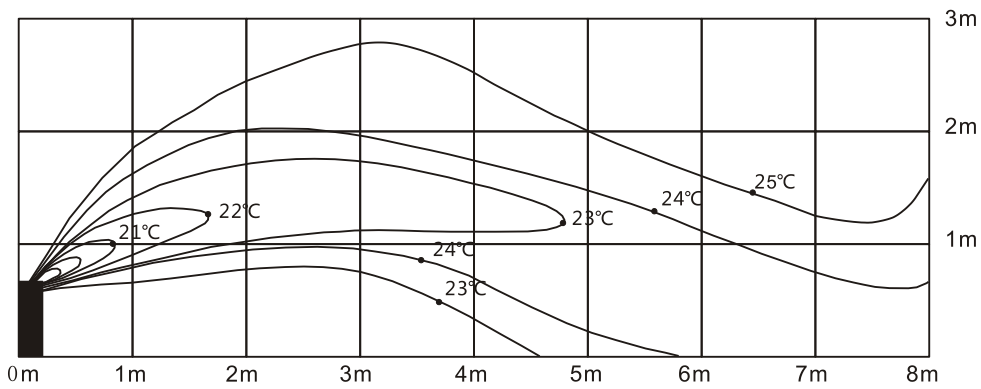
Floor installation:

Discharge angle 17°

Cooling airflow velocity distribution

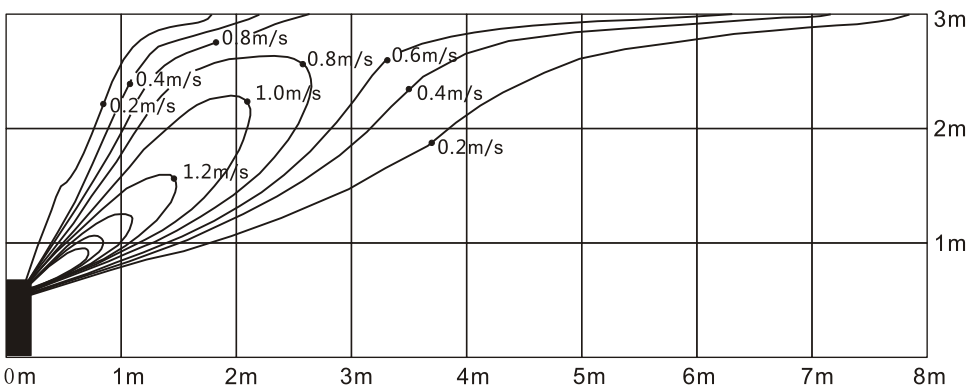


Cooling temperature distribution

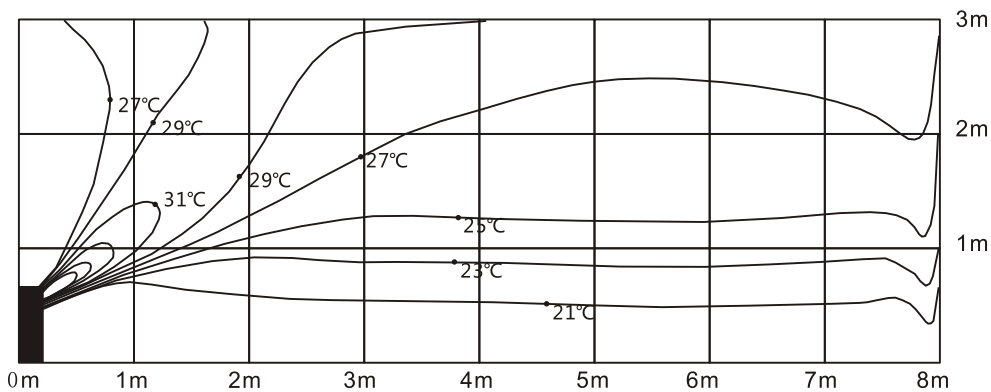


Discharge angle 50°

Heating airflow velocity distribution



Heating temperature distribution

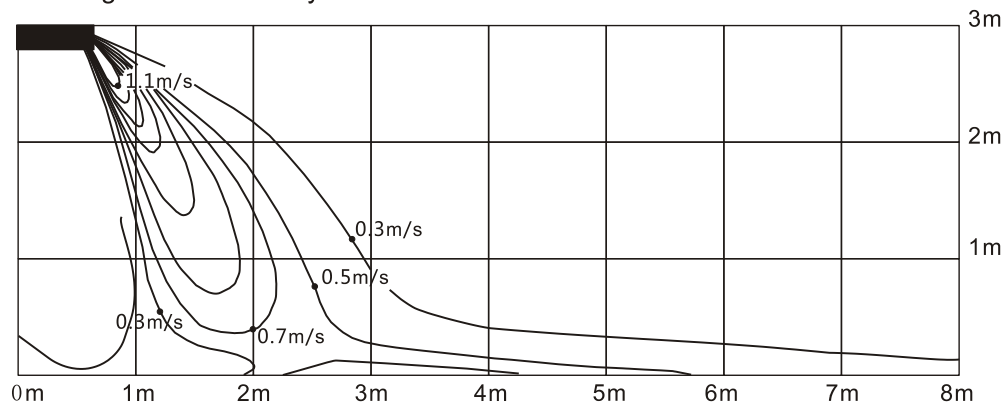


Model: ELSI-TCD036-N11

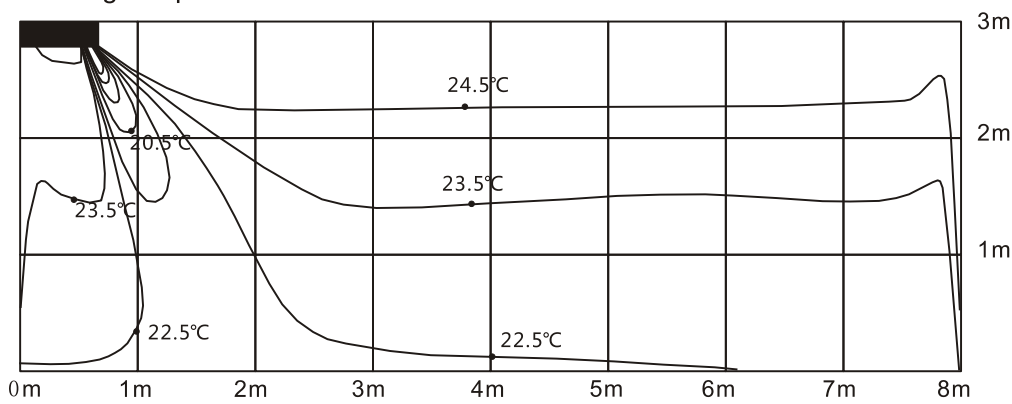
Ceiling installation:

Discharge angle 17°

Cooling airflow velocity distribution

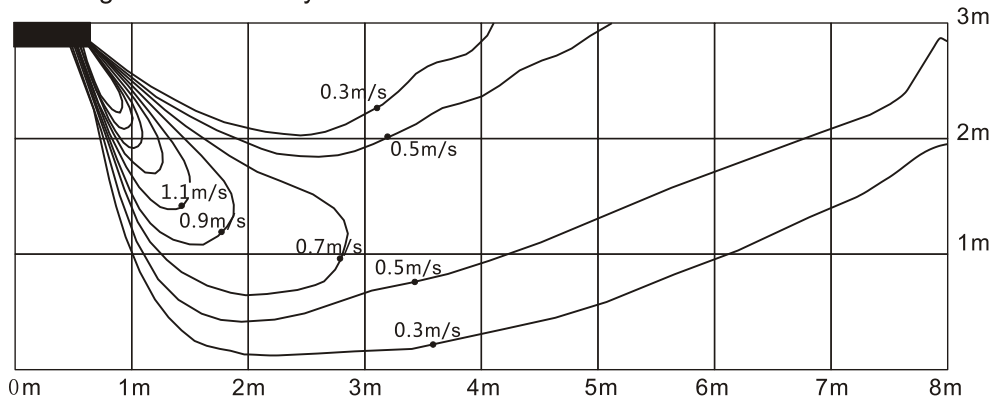


Cooling temperature distribution

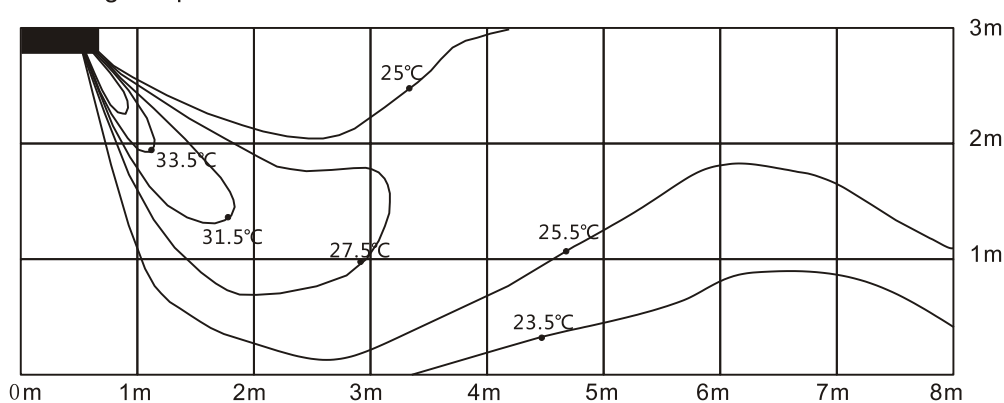


Discharge angle 50°

Heating airflow velocity distribution



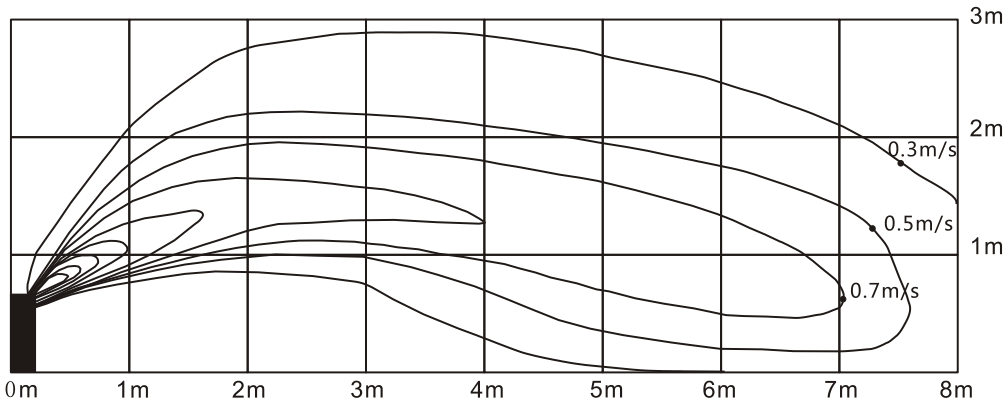
Heating temperature distribution



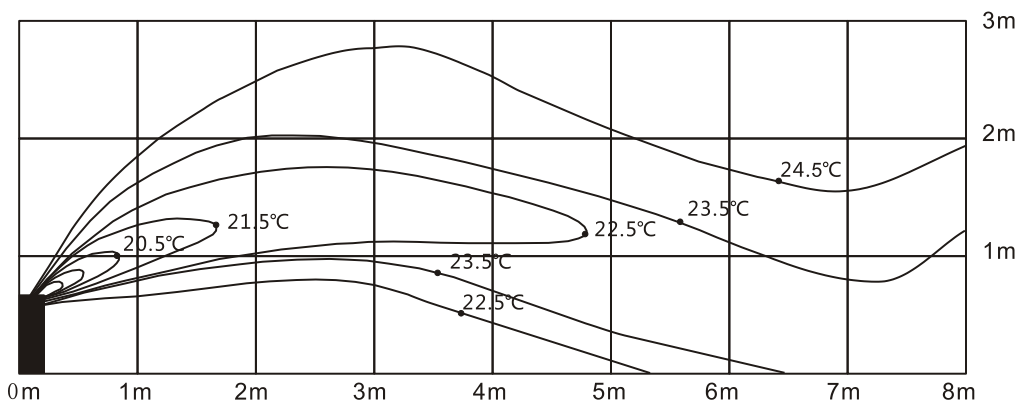
Floor installation:

Discharge angle 17°

Cooling airflow velocity distribution

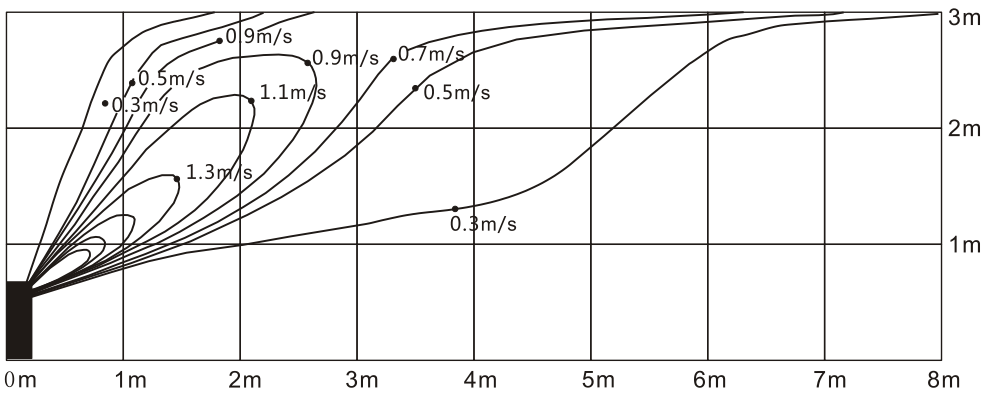


Cooling temperature distribution

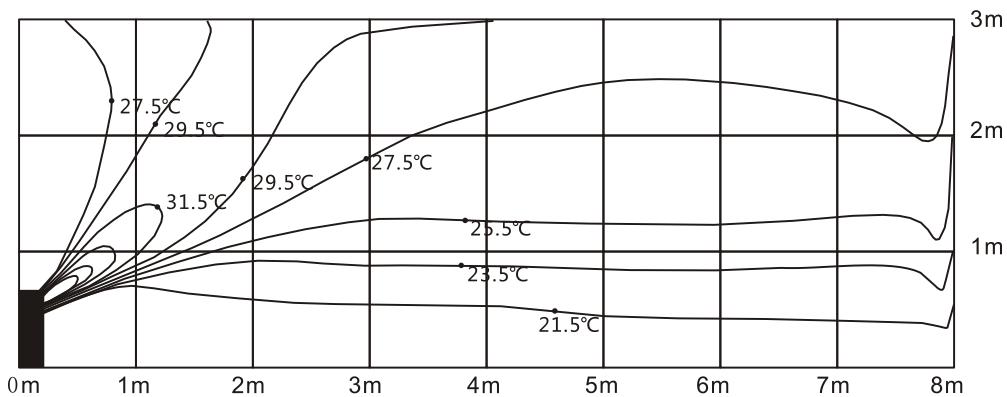


Discharge angle 50°

Heating airflow velocity distribution



Heating temperature distribution

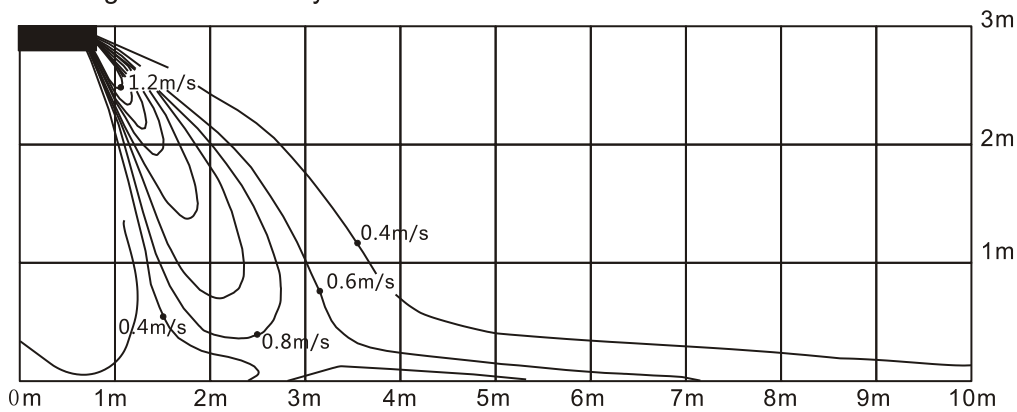


Model: ELSI-TCD048-N11, ELSI-TCD060-N11

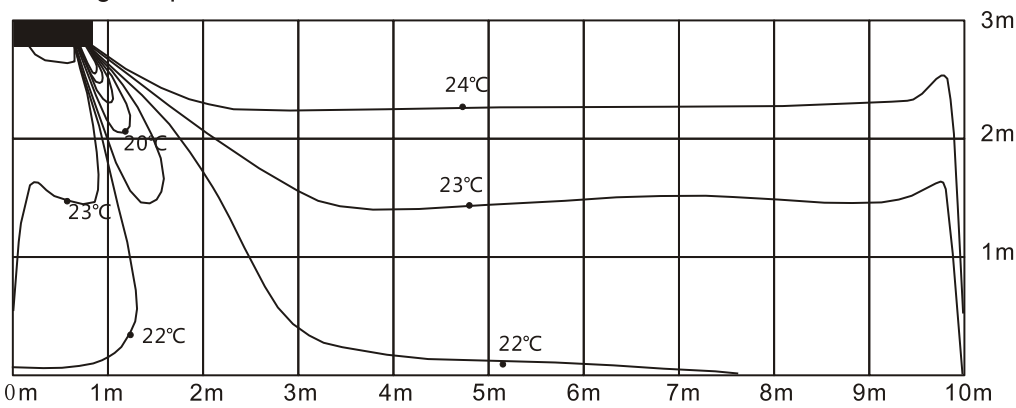
Ceiling installation:

Discharge angle 17°

Cooling airflow velocity distribution

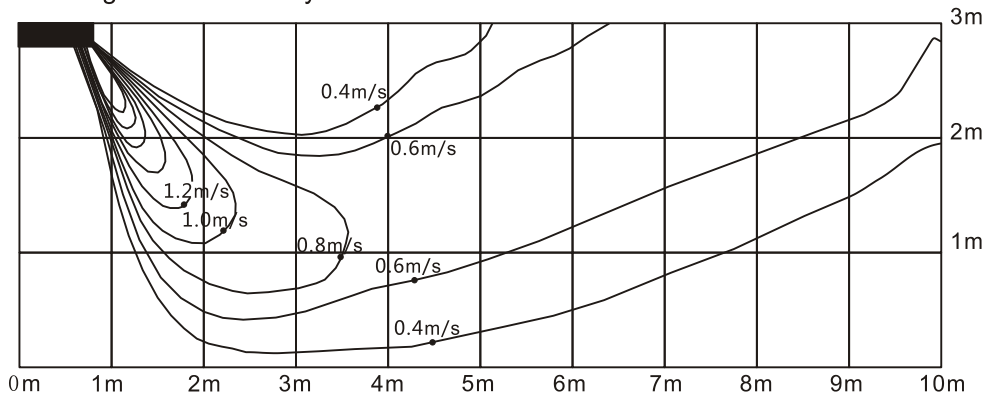


Cooling temperature distribution

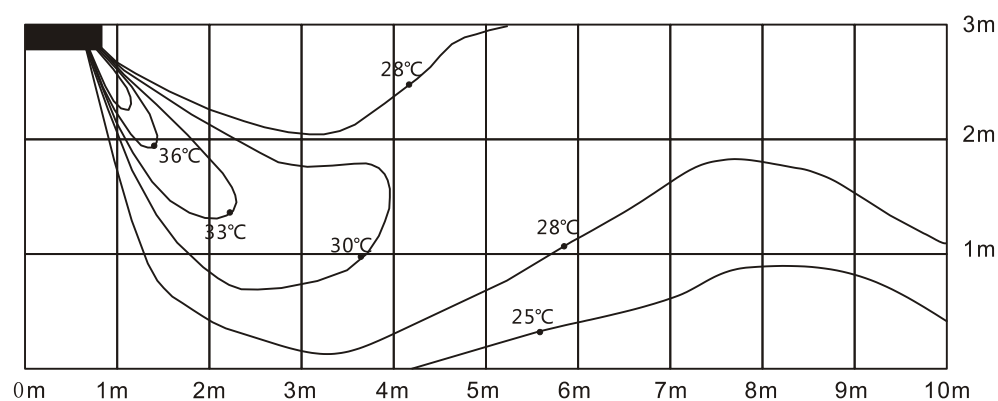


Discharge angle 50°

Heating airflow velocity distribution



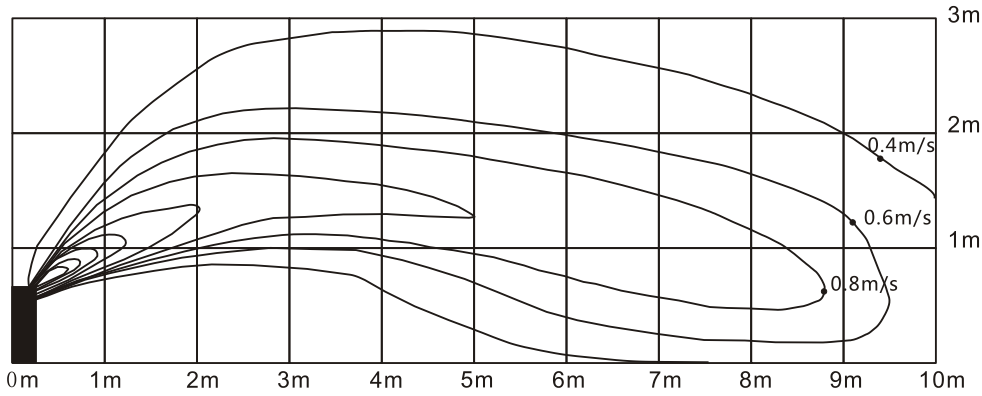
Heating temperature distribution



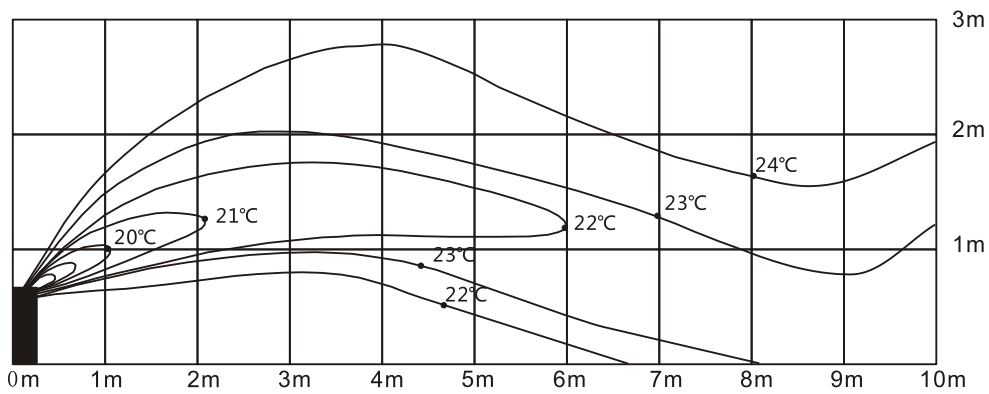
Floor installation:

Discharge angle 17°

Cooling airflow velocity distribution

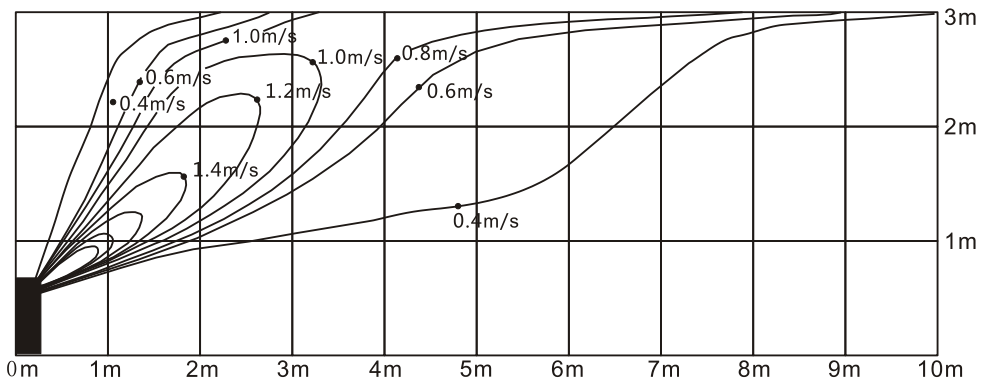


Cooling temperature distribution

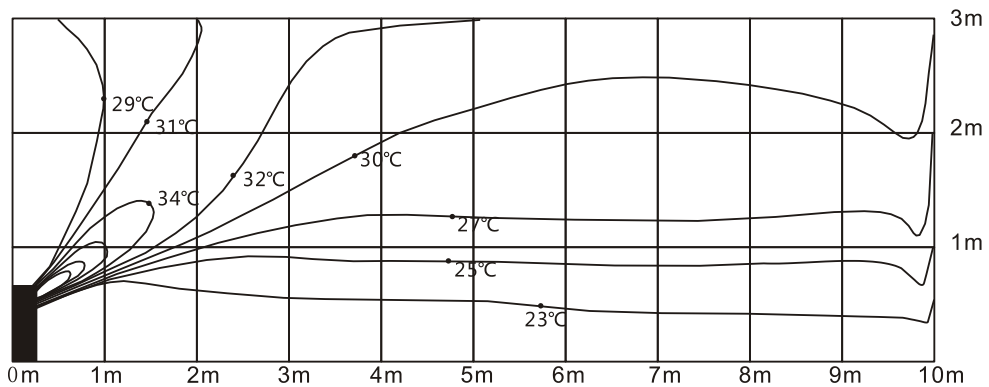


Discharge angle 50°





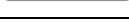

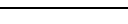
Heating airflow velocity distribution



Heating temperature distribution



8. Accessories

	Name	Shape	Quantity
Remote controller & Its holder (The product you have might not be provided the following accessories)	1. Remote controller		1
	2. Remote controller holder		1
	3. Mounting screw (ST2.9x10-C-H)		2
	4. Alkaline dry batteries (AM4)		2
Others	5. Owner's manual		1
	6. Installation manual		1
	7. Remote controller manual		1

9. The Specification of Power

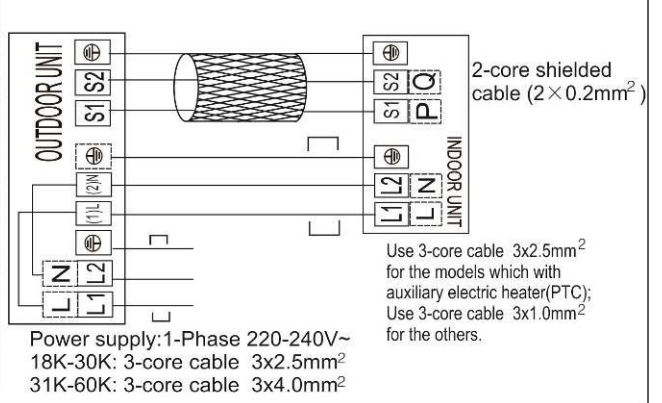
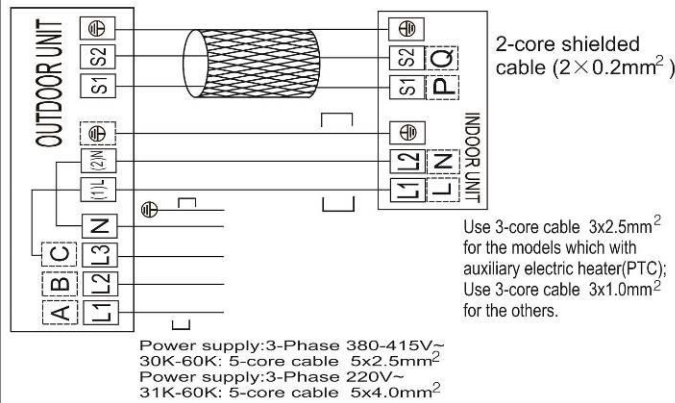
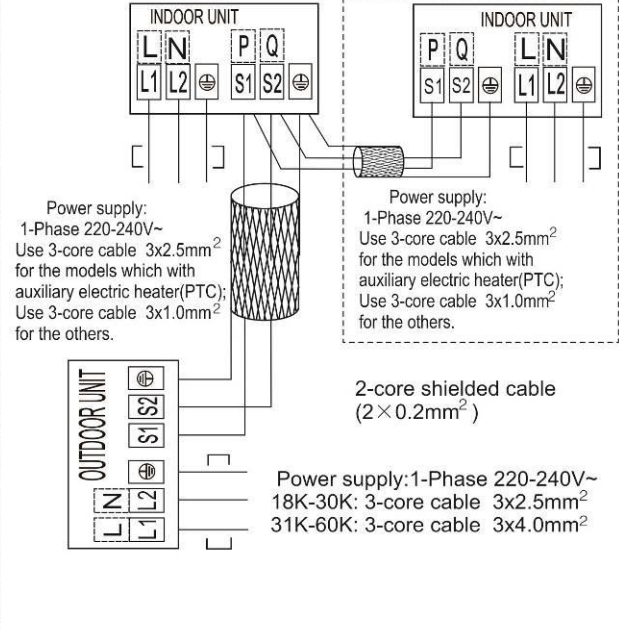
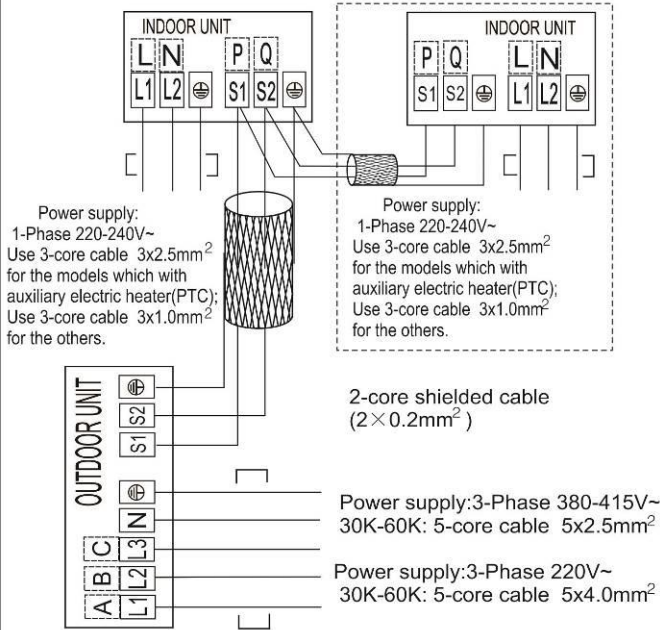
Model		12000 Btu/h	18000-24000Bt u/h	30000 Btu/h	36000 Btu/h	36000 Btu/h
INDOOR UNIT POWER	Phase	—————	1-phase	1-phase	1-phase	1-phase
	Frequency and Voltage	—————	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	POWER WIRING (mm ²)	—————	3x1.0	3x1.0	3x1.0	3x1.0
	CIRCUIT BREAKER/ Fuse (A)	—————	15/10	15/10	15/10	15/10
OUTDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase	1-phase	3-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	380-420V, 50Hz
	POWER WIRING (mm ²)	3x2.5	3x2.5	3x2.5	3x4.0	5x2.5
	CIRCUIT BREAKER/ Fuse (A)	20/16	30/20	40/30	40/30	30/20
Indoor/Outdoor Connecting Wiring (Weak Electric Signal) (mm ²)	—————	2x0.2	2x0.2	2x0.2	2x0.2	2x0.2
Indoor/Outdoor Connecting Wiring (Strong Electric Signal) (mm ²)	4x1.0	—————	—————	—————	—————	—————

Model(Btu/h)		48000	60000	42000-60000
INDOOR UNIT POWER	Phase	1-phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	Power Wiring (mm ²)	3x1.0	3x1.0	3x1.0
	Circuit Breaker/Fuse (A)	15/10	15/10	15/10
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)	3x4.0	3x4.0	5x2.5
	Circuit Breaker/Fuse (A)	40/35	50/40	30/25
Indoor/Outdoor Connecting Wiring (Weak Electric Signal) (mm ²)		2x0.2	2x0.2	2x0.2
Indoor/Outdoor Connecting Wiring (Strong Electric Signal) (mm ²)		—————	—————	—————

10. Field Wiring

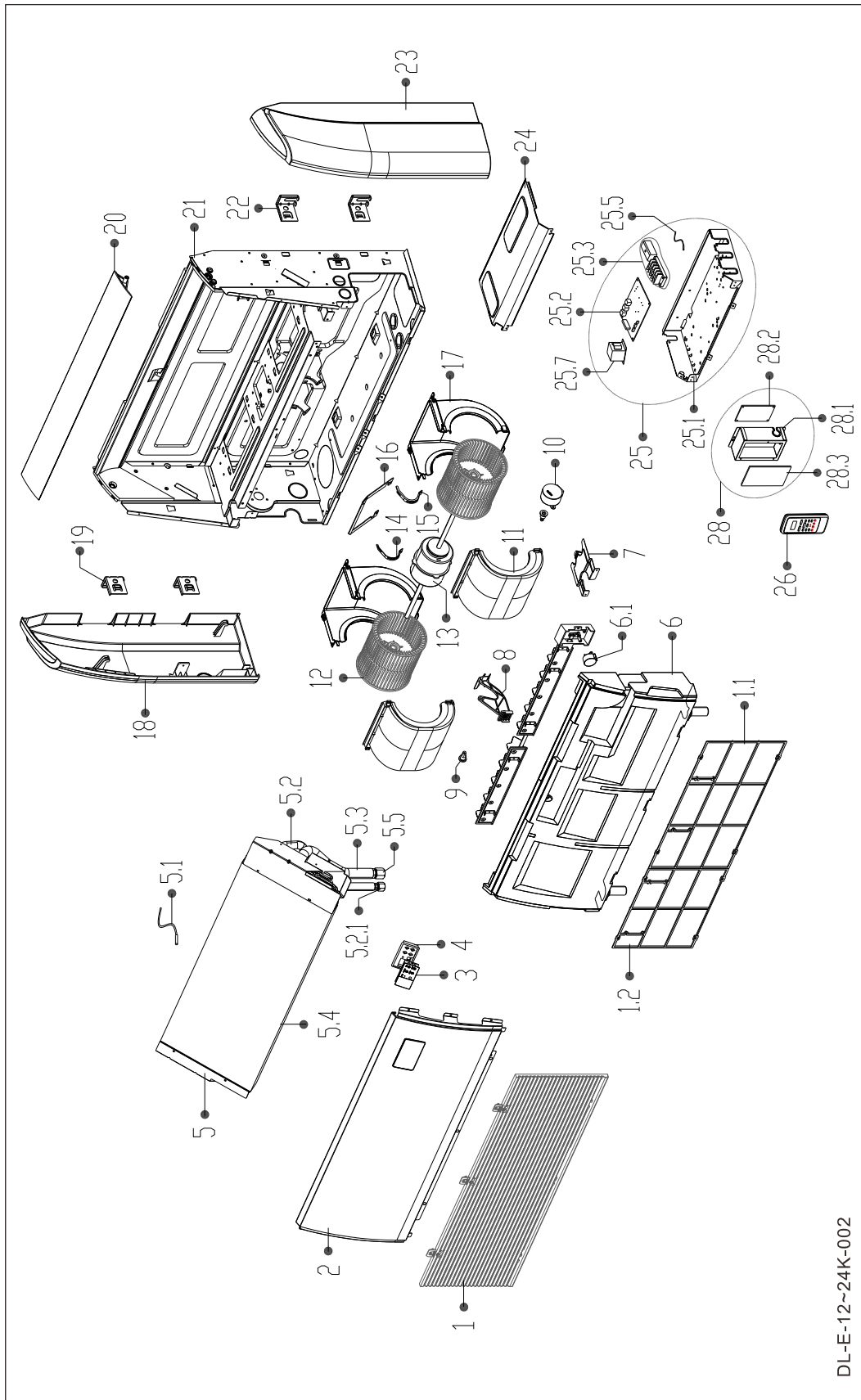
Air Condition Link-Circuit

202044790380



11.Exploded view & spare part list

11.1 Exploded view of model ELSI-TCD018-N11, ELSI-TCD024-N11



DL-E-12-24K-002

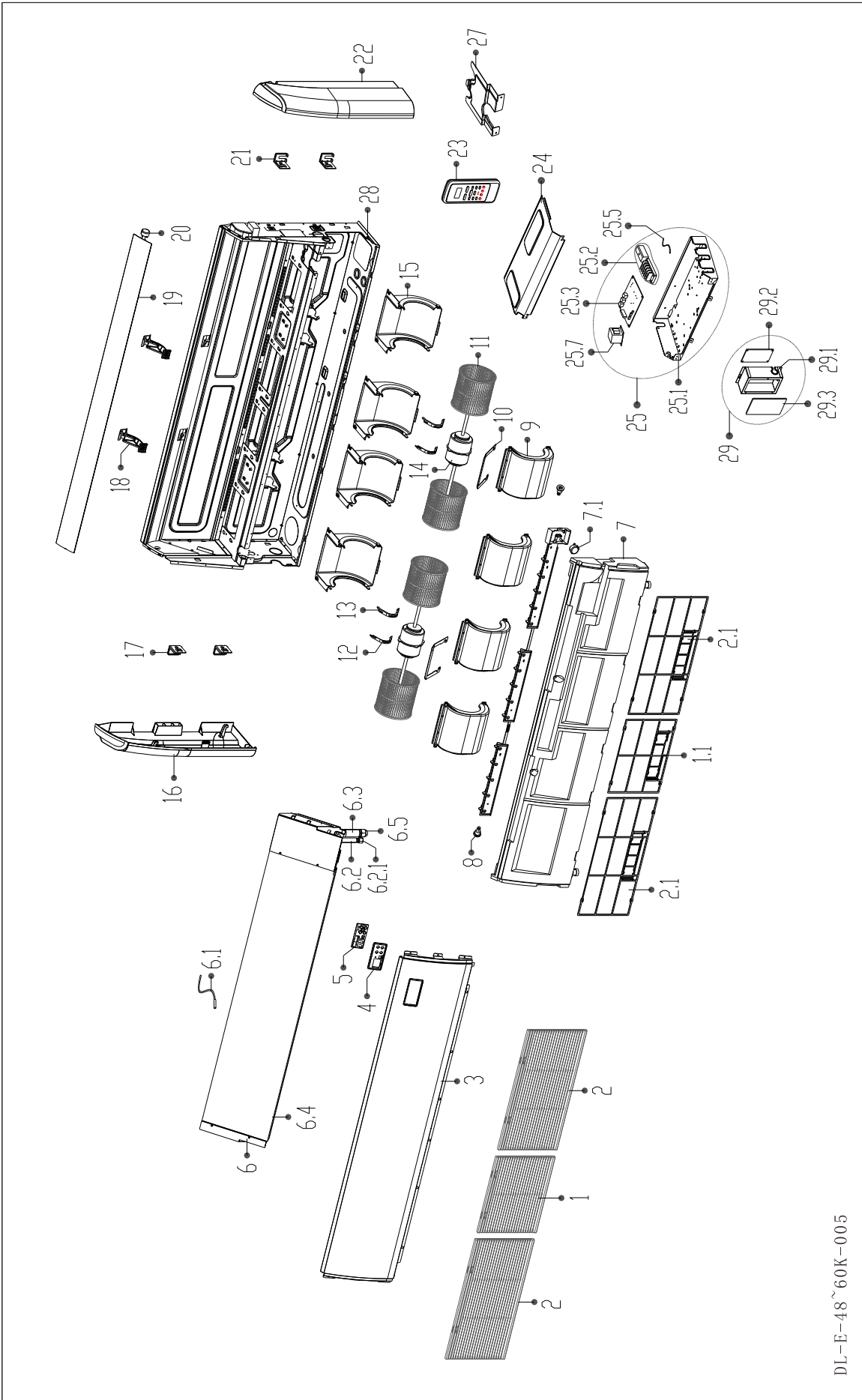
11.2 Spare part list of model ELSI-TCD018-N11

No.	BOM Code	Part Name	Quantity
1	12122700000100	Air Returning Grille Subassembly	1
1.1	12100204000718	Air Filter	1
1.2	12100204000719	Air Filter	1
2	12222700A00038	Top cover	1
3	17122700A00001	VLED Display Module	1
4	12122700A00010	Display panel box	1
5	15822700A00020	Evaporator assembly Gas valve assembly	1
5.1	11201007000006	Temperature Sensor	1
5.1	11201007000266	Temperature Sensor	1
5.2	15122700000324	Input pipes of Evaporator assemblyJoint board of Evaporator	1
5.2.1	15500406000016	Copper nut	1
5.3	15122700000201	Outlet Pipes of Evaporator	1
5.4	15822700000203	Evaporator	1
6	12822700000010	Water receiver subassembly	1
6.1	11002010000546	Stepper motor	1
7	12222700000054	Connecting pipe clamp	1
8	12122700000150	Guide holder	1
9	12122000000344	Electricity preventing axis	2
10	11002010000057	stepper motor	1
11	12122700000049	Upper Volute	2
12	12100103000165	Plastic Fan Wheel	2
13	11002015000043	Brushless DC Motor	1
14	12222500000255	Motor clamp	1
15	12222500000253	Motor clamp	1
16	12222300000230	Motor Boarding	1
17	12122700000113	Lower Scroll	2
18	12122700000087	Cover plate (right)	1
19	12222700000018	Installation hanger	2
20	12122700000061	Subassembly of Air Guide Strip	1
21	12222700000229	Chassis assembly	1
22	12222700000016	Installation hanger	2
23	12122700000093	Cover plate (left)	1
24	12222700000058	E-Part Box Cover Subassembly	1
25	17222700A01751	Electronic control box assembly	1
25.1	12222700000083	Welding Parts of Electrical Control Box	1
25.2	17122700000115	Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
25.3	17400401000026	terminal block, 2p	1
25.3	17400401000094	Wire joint, 5p	1
25.5	11201007000073	Ambient temperature sensor assembly	1
25.7	17400306000070	Reactance	1
26	17317000A01916	Remote controller	1
28	17222700000159	Electrical Control Box Subassembly	1
28.1	12223000000052	Electrical Control Box	1
28.2	17122000008562	Inverter Module Subassembly (Sticker)	1
28.3	11203803000154	Radiator	1
40	12117000000086	Mounting bracket of remote controller	1
53	12100509A00004	Drain pipe	1

11.3 Spare part list of model ELSI-TCD024-N11

No.	BOM Code	Part Name	Quantity
1	12122700000100	Air Returning Grille Subassembly	1
1.1	12100204000718	Air Filter	1
1.2	12100204000719	Air Filter	1
2	12222700A00038	Top cover	1
3	17122700A00001	VLED Display Module	1
4	12122700A00010	Display panel box	1
5	15822700A00003	Evaporator assembly Gas valve assembly	1
5.1	11201007000006	Temperature Sensor	1
5.1	11201007000266	Temperature Sensor	1
5.2	15122700000228	Input pipes of Evaporator assemblyJoint board of Evaporator	1
5.2.1	15500406000010	Copper nut	1
5.3	15122700000185	Outlet Pipes of Evaporator	1
5.4	15822700000203	Evaporator	1
6	12822700000010	Water receiver subassembly	1
6.1	11002010000546	Stepper motor	1
7	12222700000054	Connecting pipe clamp	1
8	12122700000150	Guide holder	1
9	12122000000344	Electricity preventing axis	2
10	11002010000057	stepper motor	1
11	12122700000049	Upper Volute	2
12	12100103000165	Plastic Fan Wheel	2
13	11002015000043	Brushless DC Motor	1
14	12222500000255	Motor clamp	1
15	12222500000253	Motor clamp	1
16	12222300000230	Motor Boarding	1
17	12122700000113	Lower Scroll	2
18	12122700000087	Cover plate (right)	1
19	12222700000018	Installation hanger	2
20	12122700000061	Subassembly of Air Guide Strip	1
21	12222700000229	Chassis assembly	1
22	12222700000016	Installation hanger	2
23	12122700000093	Cover plate (left)	1
24	12222700000058	E-Part Box Cover Subassembly	1
25	17222700A01751	Electronic control box assembly	1
25.1	12222700000083	Welding Parts of Electrical Control Box	1
25.2	17122700000115	Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
25.3	17400401000026	terminal block, 2p	1
25.3	17400401000094	Wire joint, 5p	1
25.5	11201007000073	Ambient temperature sensor assembly	1
25.7	17400306000070	Reactance	1
26	17317000A01916	Remote controller	1
28	17222700000159	Electrical Control Box Subassembly	1
28.1	12223000000052	Electrical Control Box	1
28.2	17122000008562	Inverter Module Subassembly (Sticker)	1
28.3	11203803000154	Radiator	1
40	12117000000086	Mounting bracket of remote controller	1
53	12100509A00004	Drain pipe	1

11.4 Exploded view of model ELSI-TCD036-N11, ELSI-TCD048-N11, ELSI-TCD060-N11



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11.5 Spare part list of model ELSI-TCD036-N11

No.	BOM Code	Part Name	Quantity
1	12122700000103	Air Returning Grille Subassembly	1
1.1	12100204000719	Air Filter	1
2	12122700000096	Air Returning Grille Subassembly	2
2.1	12100204000718	Air Filter	1
3	12222700A00035	Top cover	1
4	12122700A00010	Display panel box	1
5	17122700A00001	VLED Display Module	1
6	15822700A00011	Evaporator assembly Gas valve assembly	1
6.1	11201007000006	Temperature Sensor	1
6.1	11201007000266	Temperature Sensor	1
6.2	15122700000414	Input pipes of Evaporator assemblyJoint board of Evaporator	1
6.2.1	15500406000010	Copper nut	1
6.3	15122700000186	Outlet Pipes of Evaporator	1
6.4	15822700000197	Evaporator	1
7	12822700000009	Water receiver subassembly	1
7.1	11002010000546	Stepper motor	1
8	12122000000344	Electricity preventing axis	2
9	12122700000049	Upper Volute	4
10	12222300000230	Motor Boarding	2
11	12100103000165	Plastic Fan Wheel	4
12	12222500000255	Motor clamp	2
13	12222500000253	Motor clamp	2
14	11002015000344	Brushless DC Motor	2
15	12122700000113	Lower Scroll	4
16	12122700000087	Cover plate (right)	1
17	12222700000018	Installation hanger	2
18	12122700000150	Guide holder	2
19	12122700000059	Subassembly of Air Guide Strip	1
20	11002010000057	stepper motor	1
21	12222700000016	Installation hanger	2
22	12122700000093	Cover plate (left)	1
23	17317000A01916	Remote controller	1
24	12222700000058	E-Part Box Cover Subassembly	1
25	17222700A01752	E-Parts Box assembly	1
25.1	12222700000083	Welding Parts of Electrical Control Box	1
25.2	17400401000022	Terminal block	1
25.2	17400401000094	Wire joint, 5p	1
25.3	17122700000855	Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
25.5	11201007000073	Ambient temperature sensor assembly	1
25.7	17400306000070	Reactance	1
27	12222700000054	Connecting pipe clamp	1
28	12222700000228	Chassis assembly	1
29	17222700000162	Electrical Control Box Subassembly	2
29.1	12223000000052	Electrical Control Box	1
29.2	17122000008498	Inverter Module Subassembly (Sticker)	1
29.3	11203803000154	Radiator	1
40	12117000000086	Mounting bracket of remote controller	1
53	12100509A00004	Drain pipe	1

11.6 Spare part list of model ELSI-TCD048-N11

No.	BOM Code	Part Name	Quantity
1	12122700000103	Air Returning Grille Subassembly	1
1.1	12100204000719	Air Filter	1
2	12122700000096	Air Returning Grille Subassembly	2
2.1	12100204000718	Air Filter	1
3	12222700A00035	Top cover	1
4	12122700A00010	Display panel box	1
5	17122700A00001	VLED Display Module	1
6	15822700A00011	Evaporator assembly Gas valve assembly	1
6.1	11201007000006	Temperature Sensor	1
6.1	11201007000266	Temperature Sensor	1
6.2	15122700000414	Input pipes of Evaporator assemblyJoint board of Evaporator	1
6.2.1	15500406000010	Copper nut	1
6.3	15122700000186	Outlet Pipes of Evaporator	1
6.4	15822700000197	Evaporator	1
7	12822700000009	Water receiver subassembly	1
7.1	11002010000546	Stepper motor	1
8	12122000000344	Electricity preventing axis	2
9	12122700000049	Upper Volute	4
10	12222300000230	Motor Boarding	2
11	12100103000165	Plastic Fan Wheel	4
12	12222500000255	Motor clamp	2
13	12222500000253	Motor clamp	2
14	11002015000344	Brushless DC Motor	2
15	12122700000113	Lower Scroll	4
16	12122700000087	Cover plate (right)	1
17	12222700000018	Installation hanger	2
18	12122700000150	Guide holder	2
19	12122700000059	Subassembly of Air Guide Strip	1
20	11002010000057	stepper motor	1
21	12222700000016	Installation hanger	2
22	12122700000093	Cover plate (left)	1
23	17317000A01916	Remote controller	1
24	12222700000058	E-Part Box Cover Subassembly	1
25	17222700A01752	E-Parts Box assembly	1
25.1	12222700000083	Welding Parts of Electrical Control Box	1
25.2	17400401000022	Terminal block	1
25.2	17400401000094	Wire joint, 5p	1
25.3	17122700000855	Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
25.5	11201007000073	Ambient temperature sensor assembly	1
25.7	17400306000070	Reactance	1
27	12222700000054	Connecting pipe clamp	1
28	12222700000228	Chassis assembly	1
29	17222700000162	Electrical Control Box Subassembly	2
29.1	12223000000052	Electrical Control Box	1
29.2	17122000008498	Inverter Module Subassembly (Sticker)	1
29.3	11203803000154	Radiator	1
40	12117000000086	Mounting bracket of remote controller	1
53	12100509A00004	Drain pipe	1

11.7 Spare part list of model ELSI-TCD060-N11

No.	BOM Code	Part Name	Quantity
1	12122700000103	Air Returning Grille Subassembly	1
1.1	12100204000719	Air Filter	1
2	12122700000096	Air Returning Grille Subassembly	2
2.1	12100204000718	Air Filter	1
3	12222700A00035	Top cover	1
4	12122700A00010	Display panel box	1
5	17122700A00001	VLED Display Module	1
6	15822700A00011	Evaporator assembly Gas valve assembly	1
6.1	11201007000006	Temperature Sensor	1
6.1	11201007000266	Temperature Sensor	1
6.2	15122700000414	Input pipes of Evaporator assemblyJoint board of Evaporator	1
6.2.1	15500406000010	Copper nut	1
6.3	15122700000186	Outlet Pipes of Evaporator	1
6.4	15822700000197	Evaporator	1
7	12822700000009	Water receiver subassembly	1
7.1	11002010000546	Stepper motor	1
8	12122000000344	Electricity preventing axis	2
9	12122700000049	Upper Volute	4
10	12222300000230	Motor Boarding	2
11	12100103000165	Plastic Fan Wheel	4
12	12222500000255	Motor clamp	2
13	12222500000253	Motor clamp	2
14	11002015002521	Brushless DC Motor	2
15	12122700000113	Lower Scroll	4
16	12122700000087	Cover plate (right)	1
17	12222700000018	Installation hanger	2
18	12122700000150	Guide holder	2
19	12122700000059	Subassembly of Air Guide Strip	1
20	11002010000057	stepper motor	1
21	12222700000016	Installation hanger	2
22	12122700000093	Cover plate (left)	1
23	17317000A01916	Remote controller	1
24	12222700000058	E-Part Box Cover Subassembly	1
25	17222700A01752	E-Parts Box assembly	1
25.1	12222700000083	Welding Parts of Electrical Control Box	1
25.2	17400401000022	Terminal block	1
25.2	17400401000094	Wire joint, 5p	1
25.3	17122700000855	Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
25.5	11201007000073	Ambient temperature sensor assembly	1
25.7	17400306000070	Reactance	1
27	12222700000054	Connecting pipe clamp	1
28	12222700000228	Chassis assembly	1
29	17222700000120	Electrical Control Box Subassembly	2
29.1	12223000000052	Electrical Control Box	1
29.2	17122000008554	Inverter Module Subassembly (Sticker)	1
29.3	11203803000154	Radiator	1
40	12117000000086	Mounting bracket of remote controller	1
53	12100509A00004	Drain pipe	1

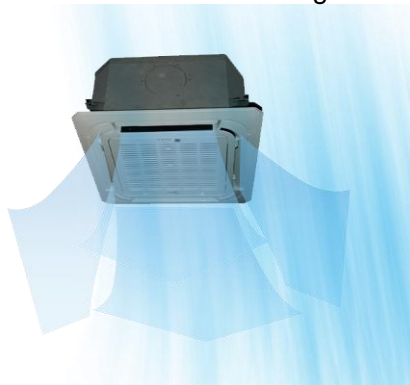
Cassette 60x60 Type

1. Features	96
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1. Features

1.1 New panel

- 360°surrounding air outlet design, affords comfortable feeling



1.2 Compact design

- The body size is 570×260×570mm, it's just smaller than the ceiling board, so it's very easy for installation and will not damage the decoration. The panel size is 647×50×647mm.
- The hooks are designed in the four corners of the body, which can save installation space.



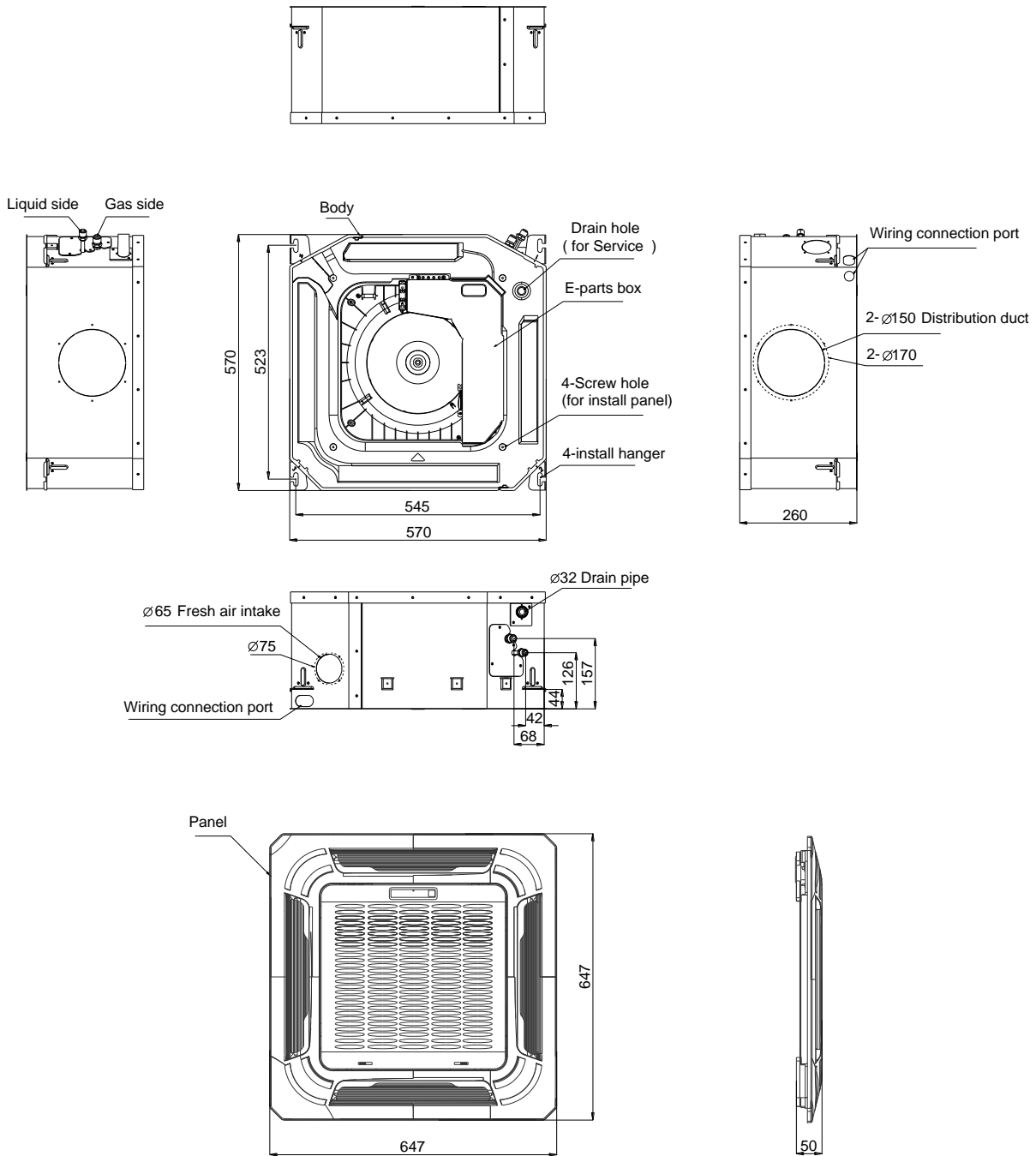
1.3 Electric control box built-in design

- The E-box is simply and safely built inside the indoor unit. It's convenient for installation and maintenance. Can check the control part easily, you only need to open the air return grille.

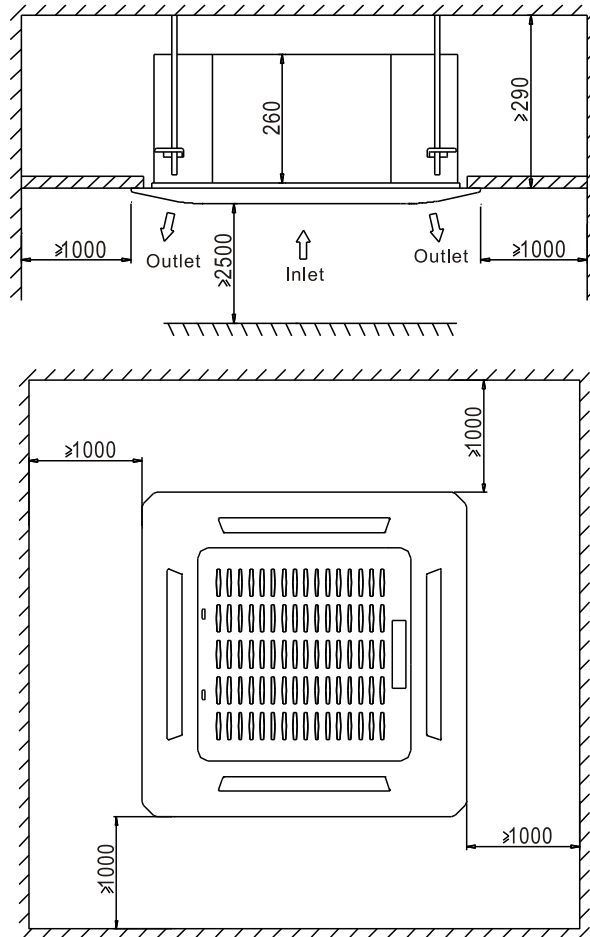


2. Dimensions

ELSI-KCD012-N11, ELSI-KCD018-N11

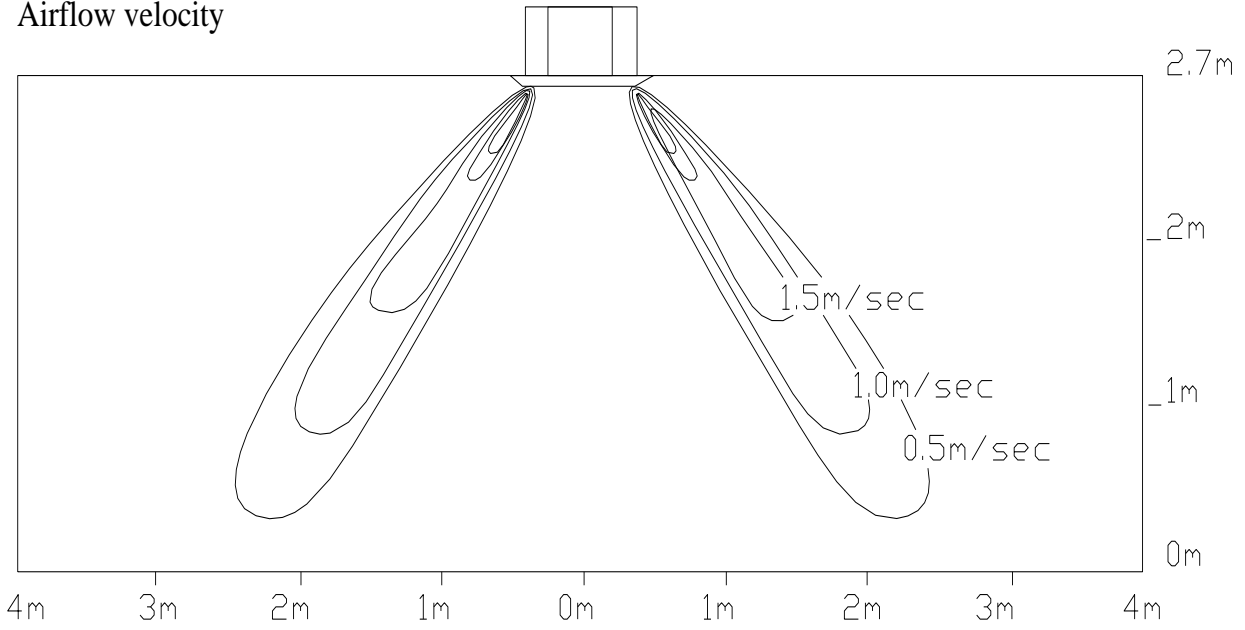


3. Service Space

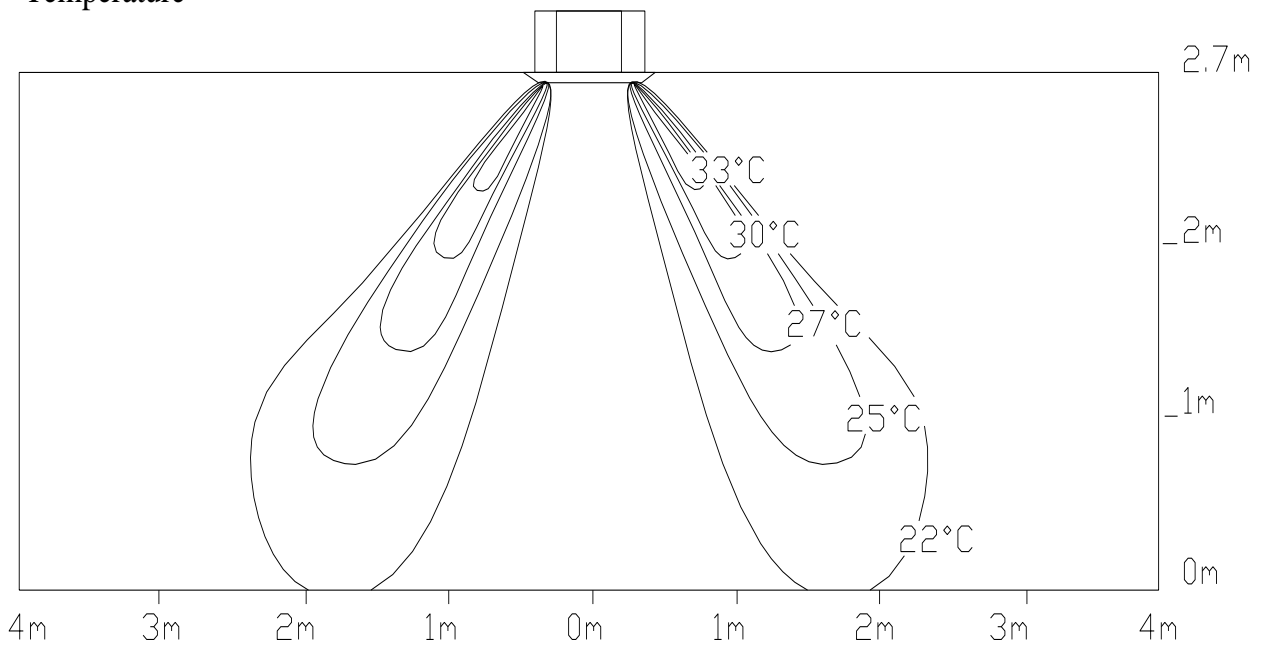


4. Air Velocity and Temperature Distributions (Reference Data)

Airflow velocity

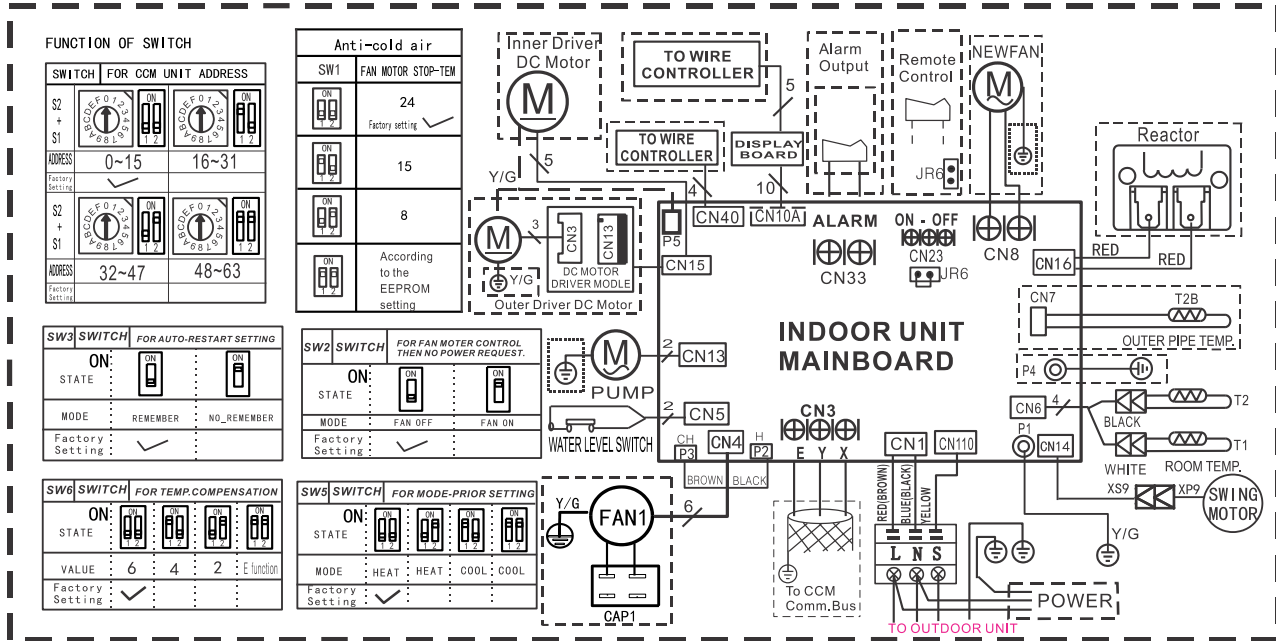


Temperature



5. Wiring diagram

Model: ELSI-KCD012-N11



Model: ELSI-KCD018-N11

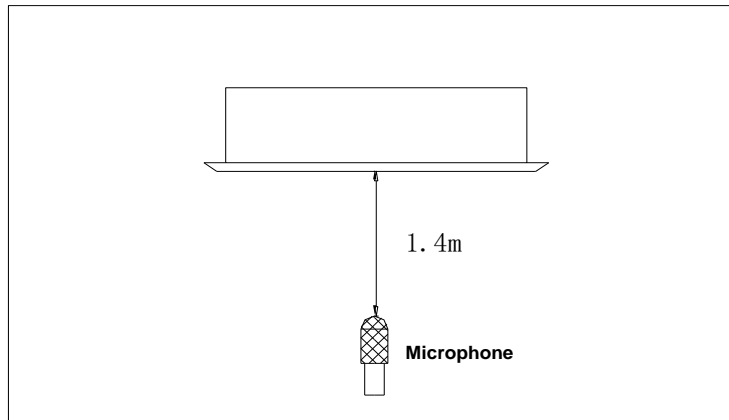
6. Electric Characteristics

Model	Indoor Units				Power Supply
	Hz	Voltage	Min.	Max.	MFA
ELSI-KCD012-N11	50	220-240	198	254	20
ELSI-KCD018-N11	50	220-240	198	254	20

Note:









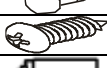




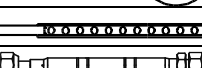
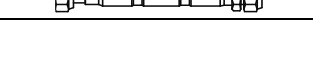

MFA: Max. Fuse Amps. (A)

7. Sound Levels



Model	Sound Power dB(A)	Sound Pressure dB(A)		
		H	M	L
ELSI-KCD012-N11	55	42	38	34
ELSI-KCD018-N11	60	44	40	36

8. Accessories

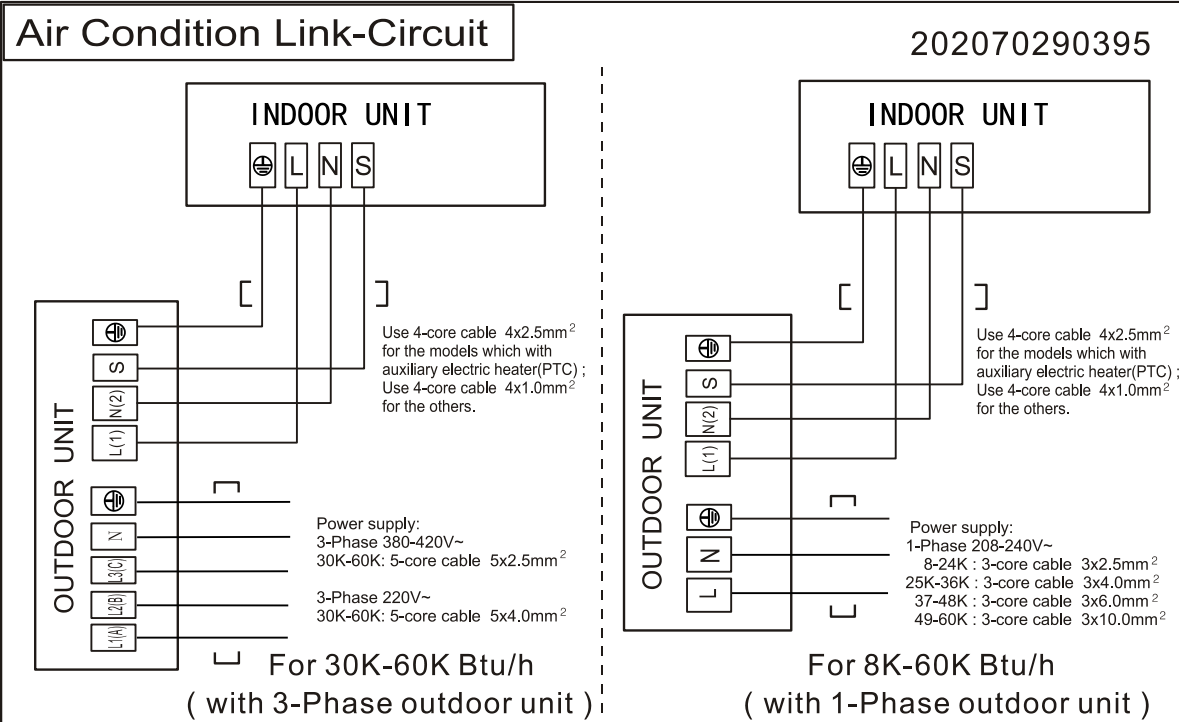
	Name	Shape	Quantity
Installation Fittings	Installation paper board		1
Tubing & Fittings	Soundproof / insulation sheath		1
Drainpipe Fittings	Out-let pipe sheath		1
	Out-let pipe clasp		1
	Drain joint		1
	Seal ring		1
Remote controller & Its Frame (The product you have might not be provided the following accessories)	Remote controller & Its Frame		1
	Remote controller holder		1
	Mounting screw(ST2.9x10-C-H)		2
	Remote controller manual		1
	Alkaline dry batteries (AM4)		2
Others	Owner's manual		1
	Installation manual		1
Installation accessory (The product you have might not be provided the following accessories)	Expansive hook		4
	Installation hook		4
	Orifice		1

9. The Specification of Power

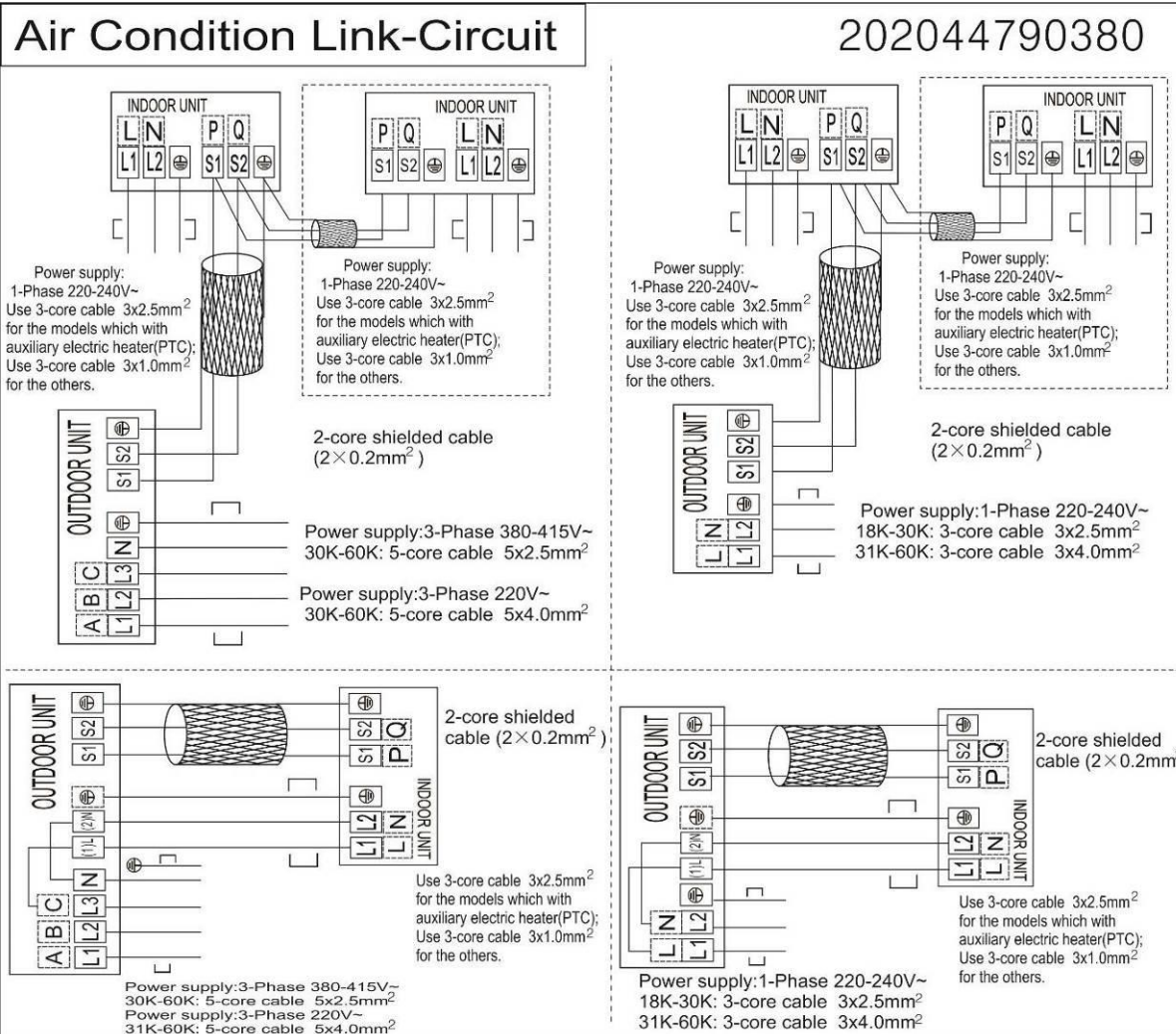
MODEL		12000 Btu/h	18000 Btu/h
Power	Phase	1-phase	1-phase
	Frequency and Voltage	220-240V, 50Hz	220-240V, 50Hz
Circuit Breaker/ Fuse (A)		25/20	25/20
Indoor Unit Power Wiring (mm ²)		—————	3x1.0
Indoor/Outdoor Connecting Wiring (mm ²)	Ground Wiring	2.5	2.5
	Outdoor Unit Power Wiring	3x2.5	3x2.5
	Strong Electric Signal	4x1.0	—————
	Weak Electric Signal	—————	2x0.2

10. Field Wiring

ELSI-KCD012-N11

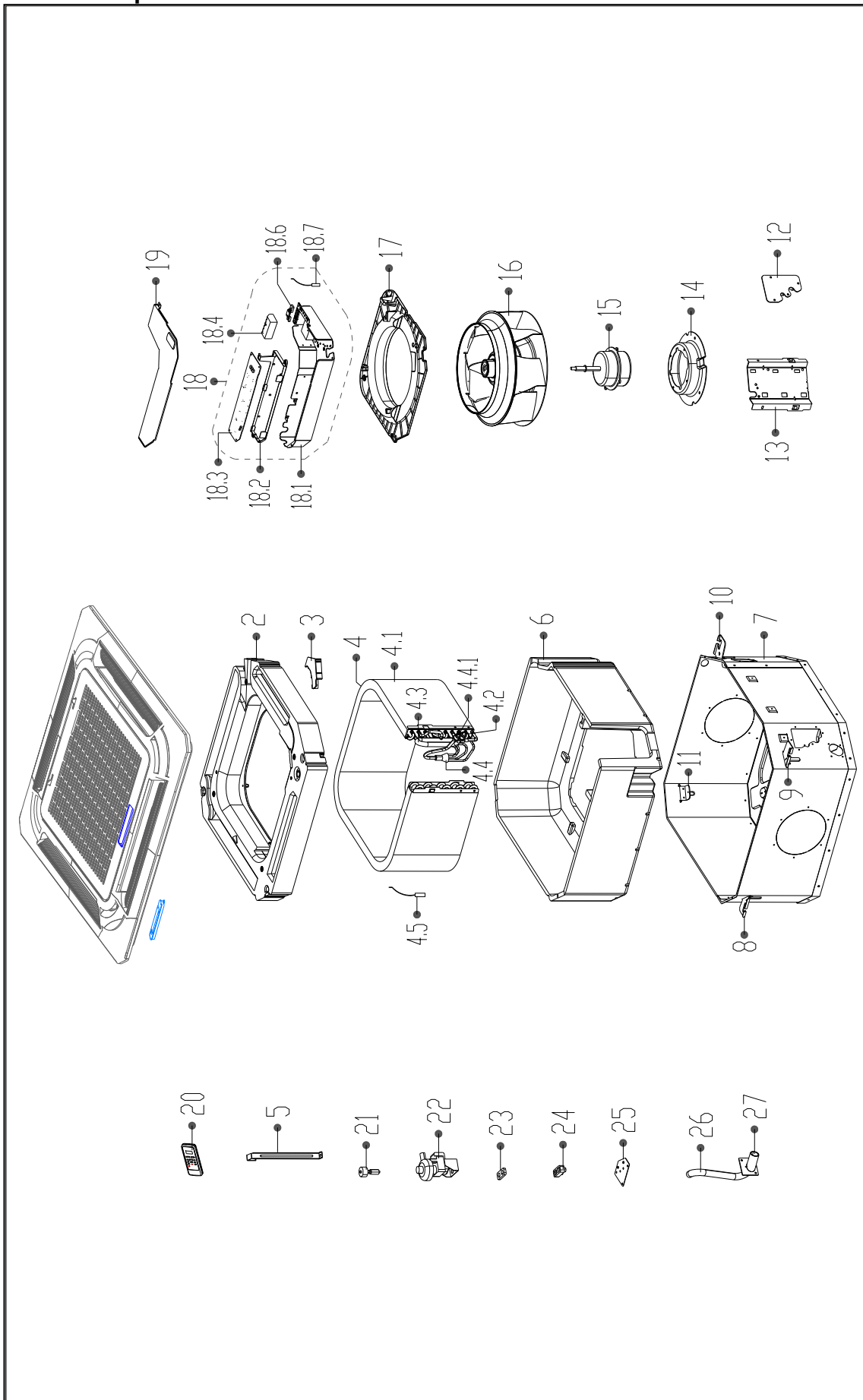


ELSI-KCD018-N11



11. Exploded view and Spare part list

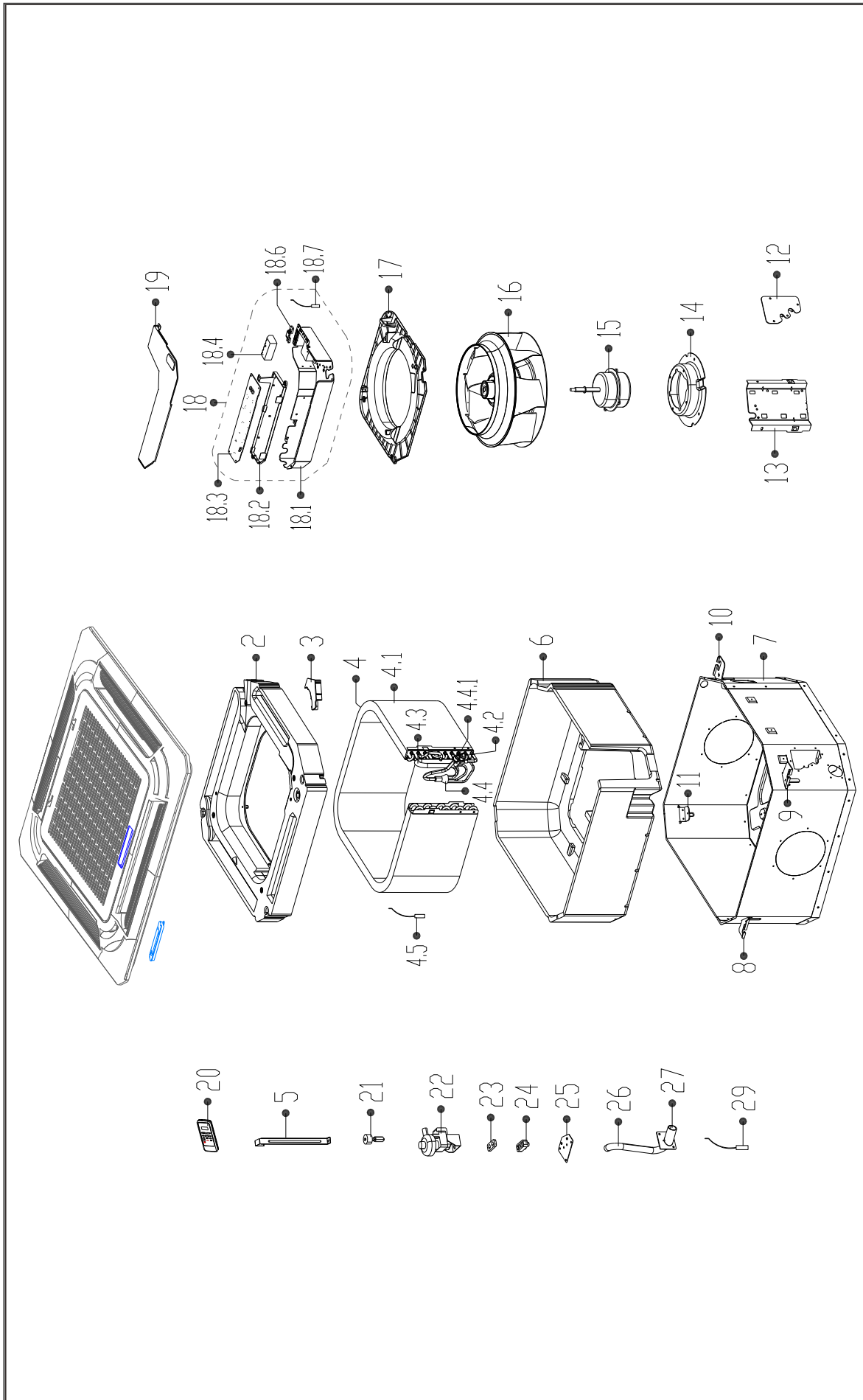
11.1 Exploded view of model: ELSI-KCD012-N11



11.2 Spare part list of model: ELSI-KCD012-N11

No.	BOM Code	Part Name	Quantity
2	12822500000017	Water receiver assembly	1
3	12122500000022	Line pressing box	1
4	15822500A01824	Evaporator Assembly	1
4.1	15822500000400	Evaporator	1
4.2	15500404000002	Copper nut	1
4.3	15122500000648	Outlet Pipes of Evaporator	1
4.4	15122500000277	Input pipes of Evaporator assembly Joint board of Evaporator	1
4.4.1	15500406000016	Copper nut	1
4.5	11201007000070	Temperature Sensor	1
5	12222500000093	Evaporator Fixing hanger	1
6	12822500000005	Chassis Foam Subassembly	1
7	12222500000224	Chassis Assembly	1
8	12222500000191	Hook II	1
9	12222500000192	Hook I	1
10	12222500000190	Hook IV	1
11	12222500000193	Hook III	1
12	12122500000330	Sealed board ass'y	1
13	12222500000197	Joint board of Evaporator	1
14	12222500000199	Motor Installing Foundation	1
15	11002015000069	Brushless DC Motor	1
16	12100103000089	Centrifugal Fan	1
17	12122500000425	Air Guide Coil	1
18	17222500000198	E-Parts Box assembly	1
18.1	12222500000165	Welding Parts of Electrical Control Box	1
18.2	12122500000029	Wiring baseplate	1
18.3	17122500000378	Indoor Main Control Board Subassembly (Sticker) Indoor Main Control Board Subassembly (Sticker, RoHS) Indoor Main Control Board Subassembly (Tie-in, RoHS)	1
18.4	17400401000097	Wire joint	1
18.6	12200203000076	Wire clamp	1
18.7	11201007000283	Room Temperature Sensor	1
19	12222500000209	Electrical Control Box Cover Subassembly	1
20	17317000A01916	Remote controller	1
21	17400511000015	Water Level Switch	1
22	11001010000063	Induction pump	1
23	12622500000005	Rubber Gasket of Water Drain Pump	1
24	12622500000003	Pump Rubber washer	1
25	12222500000352	Installing Plate of Water Drain Pump(RoHS)	1
26	12622500000012	Drainage pipe	1
27	12100510000019	Drain pipe	1
38	12117000000086	Mounting bracket of remote controller	1
43	12026200A00001	Accessory kit	1

11.3 Exploded view of model: ELSI-KCD018-N11



11.4 Spare part list of model: ELSI-KCD018-N11

No.	BOM Code	Part Name	Quantity
2	12822500000017	Water receiver assembly	1
3	12122500000022	Line pressing box	1
4	15822500000137	Evaporator assembly Gas valve assembly	1
4.1	15822500000400	Evaporator	1
4.3	15122500000226	Outlet Pipes of Evaporator	1
4.4	15122500000277	Input pipes of Evaporator assembly Joint board of Evaporator	1
4.4.1	15500406000016	Copper nut	1
4.5	11201007000070	Temperature Sensor	1
5	12222500000093	Evaporator Fixing hanger	1
6	12822500000005	Chassis Foam Subassembly	1
7	12222500000224	Chassis Assembly	1
8	12222500000191	Hook II	1
9	12222500000192	Hook I	1
10	12222500000190	Hook IV	1
11	12222500000193	Hook III	1
12	12122500000330	Sealed board ass'y	1
13	12222500000197	Joint board of Evaporator	1
14	12222500000199	Motor Installing Foundation	1
15	11002015000069	Brushless DC Motor	1
16	12100103000089	Centrifugal Fan	1
17	12122500000425	Air Guide Coil	1
18	17222500000192	Electrical Control Box Subassembly	1
18.1	12222500000165	Welding Parts of Electrical Control Box	1
18.2	12122500000029	Wiring baseplate	1
18.3	17122500000297	Indoor Main Control Board Subassembly	1
18.4	17400401000097	Wire joint	1
18.6	12200203000075	Line pressing card	1
18.7	11201007000283	Room Temperature Sensor	1
19	12222500000209	Electrical Control Box Cover Subassembly	1
20	17317000A01916	Remote controller	1
21	17400511000015	Water Level Switch	1
22	11001010000063	Induction pump	1
23	12622500000005	Rubber Gasket of Water Drain Pump	1
24	12622500000003	Pump Rubber washer	1
25	12222500000352	Installing Plate of Water Drain Pump(RoHS)	1
26	12622500000012	Drainage pipe	1
27	12100510000019	Drain pipe	1
29	11201007000266	Temperature Sensor	1
38	12117000000086	Mounting bracket of remote controller	1
43	12026200A00001	Accessory kit	1

Console Type

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1. Features

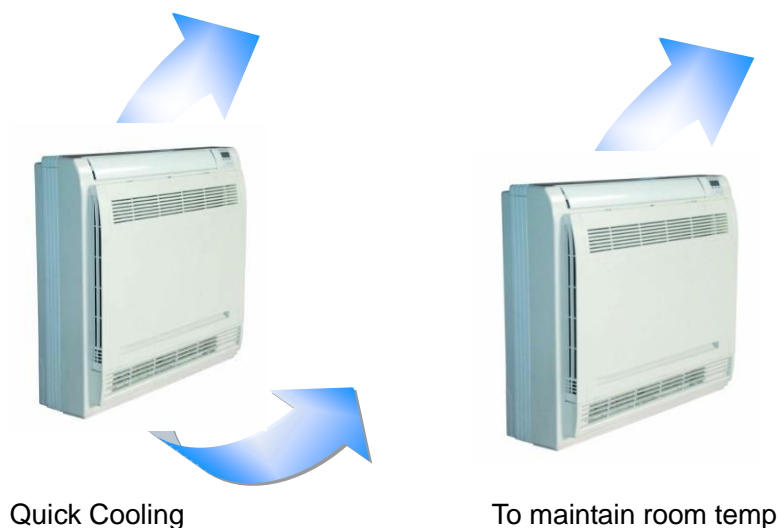
1.1. Modern and elegant appearance

- The simple and stylish designs can nicely harmonies with your living space.



1.2. Two air-outlet ways

Cooling mode



- Air outlet from top and bottom to make quick cooling -----When the A/C is just switched on, or room temp. is still high, cold air will be blown out from top and bottom air outlet to cool down the room quickly
- Air outlet from top to maintain room temp. ----When the room has been cooled down, or the A/C has been opened over 1 hour, cold air only from the top outlet to keep constant room temp

Heating mode

- Anti-cold air -----When the AC is just turn on, temperature of evaporator is very low, in this case, in order to prevent cold air direct blowing, only the upper louver is opened in a high position, the lower louver closed.



1.3. Four air inlets

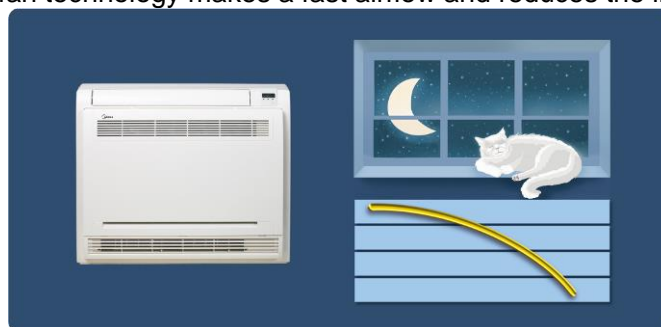


1.4. Low noise

- DC indoor fan motor, which has five speeds.
- Low noise and energy saving.

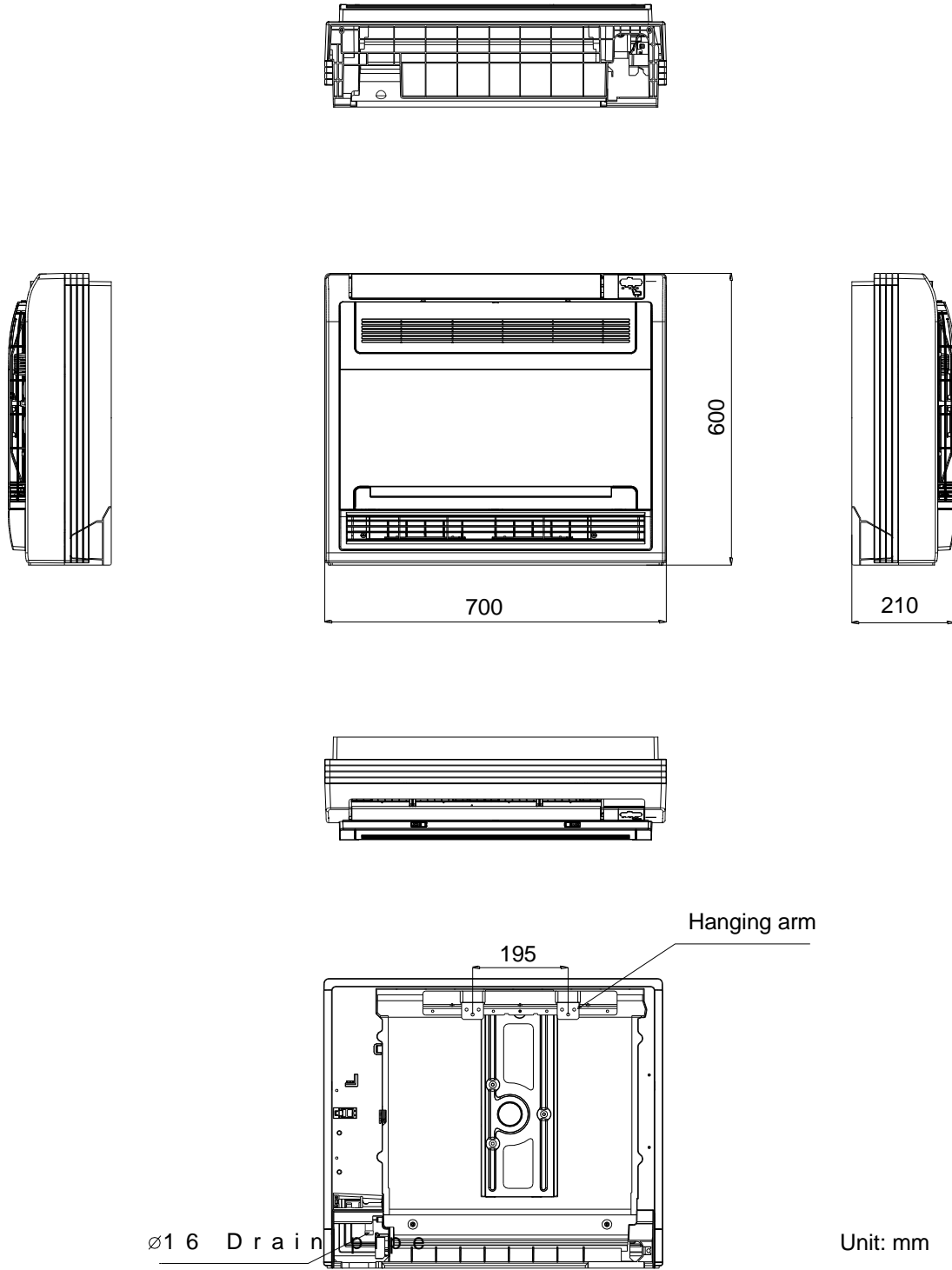


- Advanced centrifugal fan technology makes a fast airflow and reduces the indoor noise.

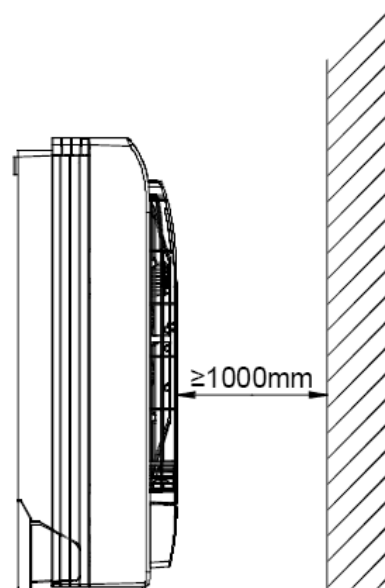
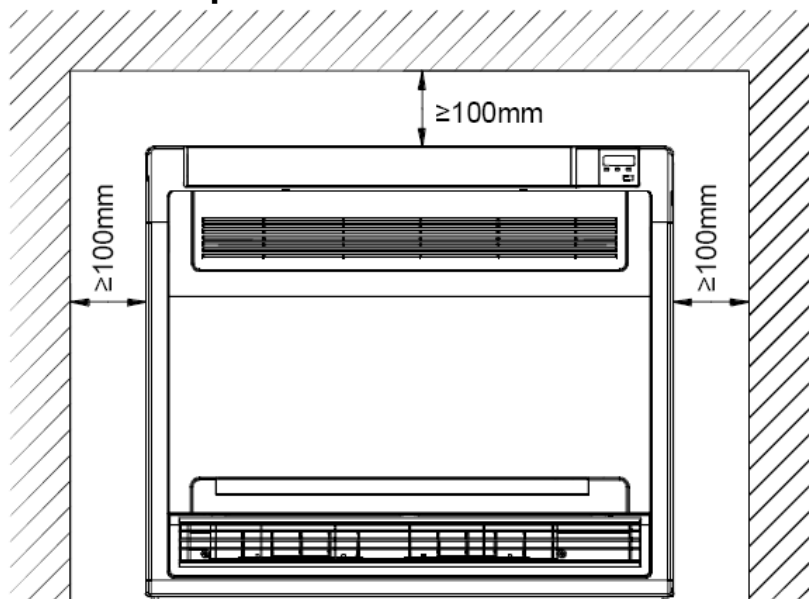


1.5. Active carbon filter is standard.

2. Dimensions



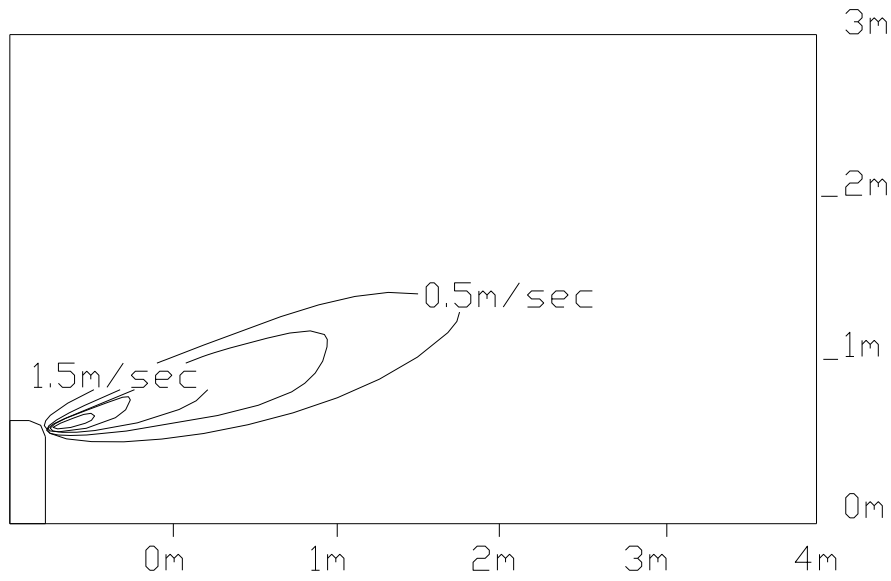
3. Service Space



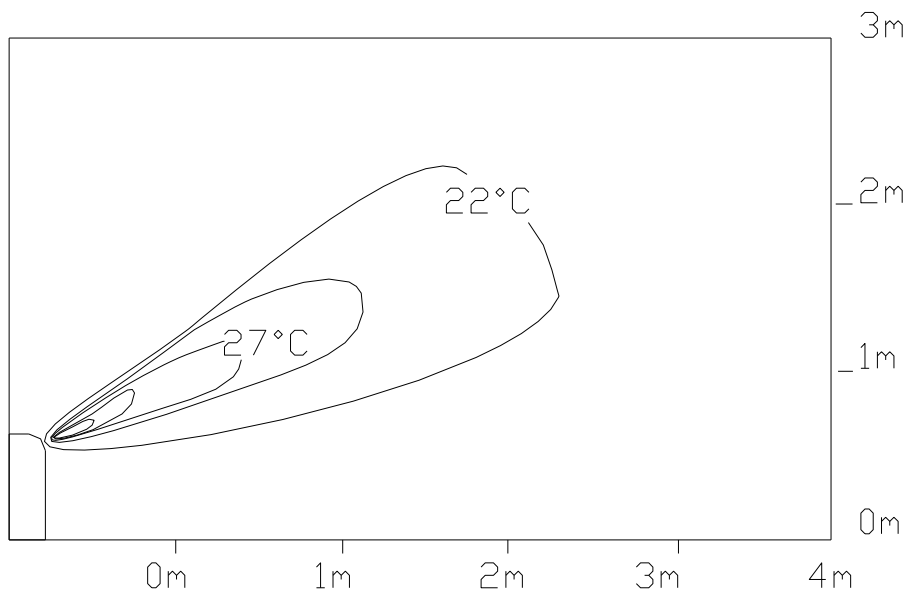
4. Air Velocity and Temperature Distributions (Reference Data)

Discharge angle 60

Airflow velocity

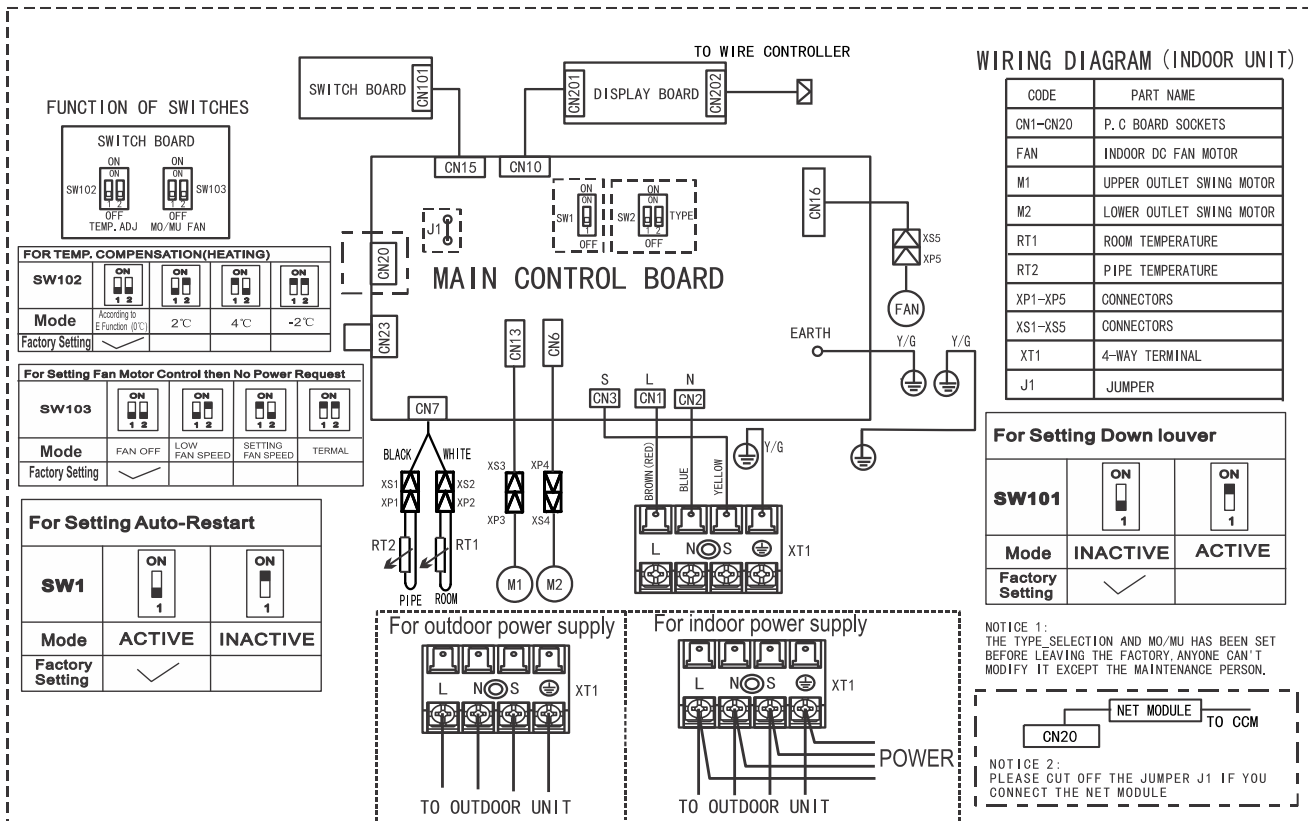


Temperature



5. Wiring diagram

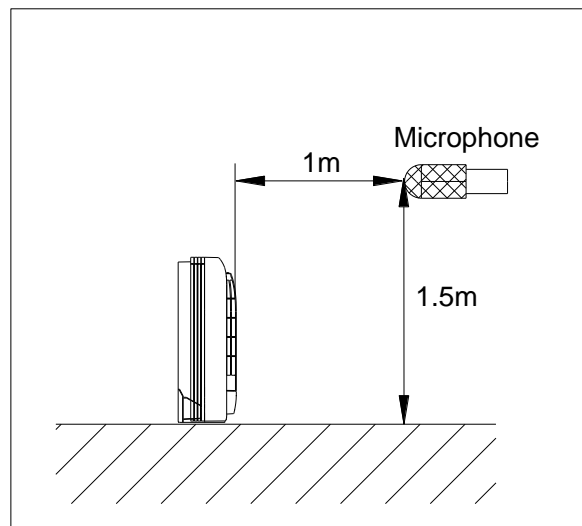
Model: ELSI-QBD012-N11



6. Electric Characteristics






Model	Indoor Units				Power Supply
	Hz	Voltage	Min.	Max.	MFA
ELSI-QBD012-N11	50	220-240	198	254	16

7. Sound Levels



Model	Sound Power dB(A)	Sound Pressure dB(A)		
		H	M	L
ELSI-QBD012-N11	58	44	40	36

8. Accessories

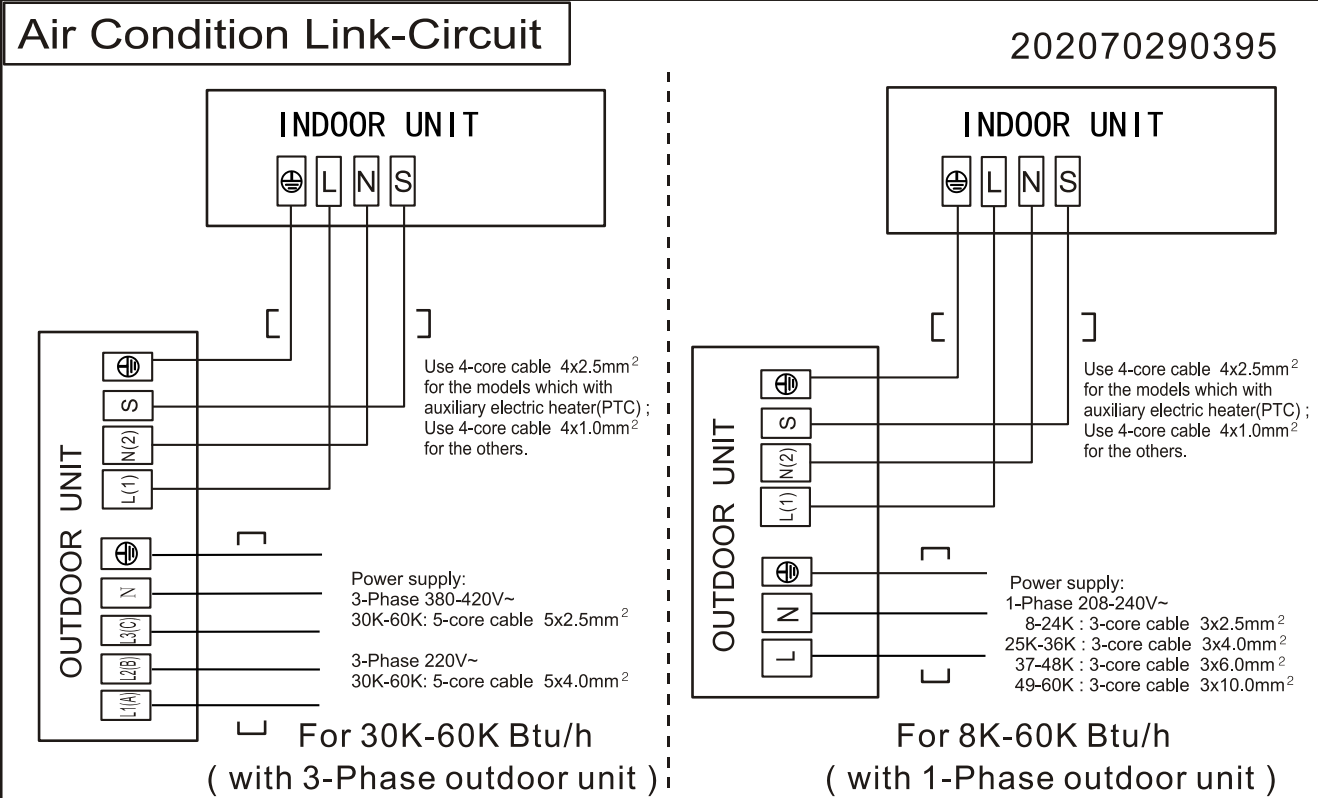
	Name	Shape	Quantity
Installation fittings	Hook		2
Remote controller & Its Frame	Remote controller		1
	Frame		1
	Mounting screw(ST2.9×10-C-H)		2
	Alkaline dry batteries (AM4)		2
Others	Installation manual	/	1
	Owner's manual	/	1

9. The Specification of Power

MODEL		12000 Btu/h
Power	Phase	1-phase
	Frequency and Voltage	220-240V, 50Hz
Circuit Breaker/ Fuse (A)		20/16
Indoor Unit Power Wiring (mm ²)		—————
Indoor/Outdoor Connecting Wiring (mm ²)	Ground Wiring	2.5
	Outdoor Unit Power Wiring	3×2.5
	Strong Electric Signal	4×1.0
	Weak Electric Signal	—————

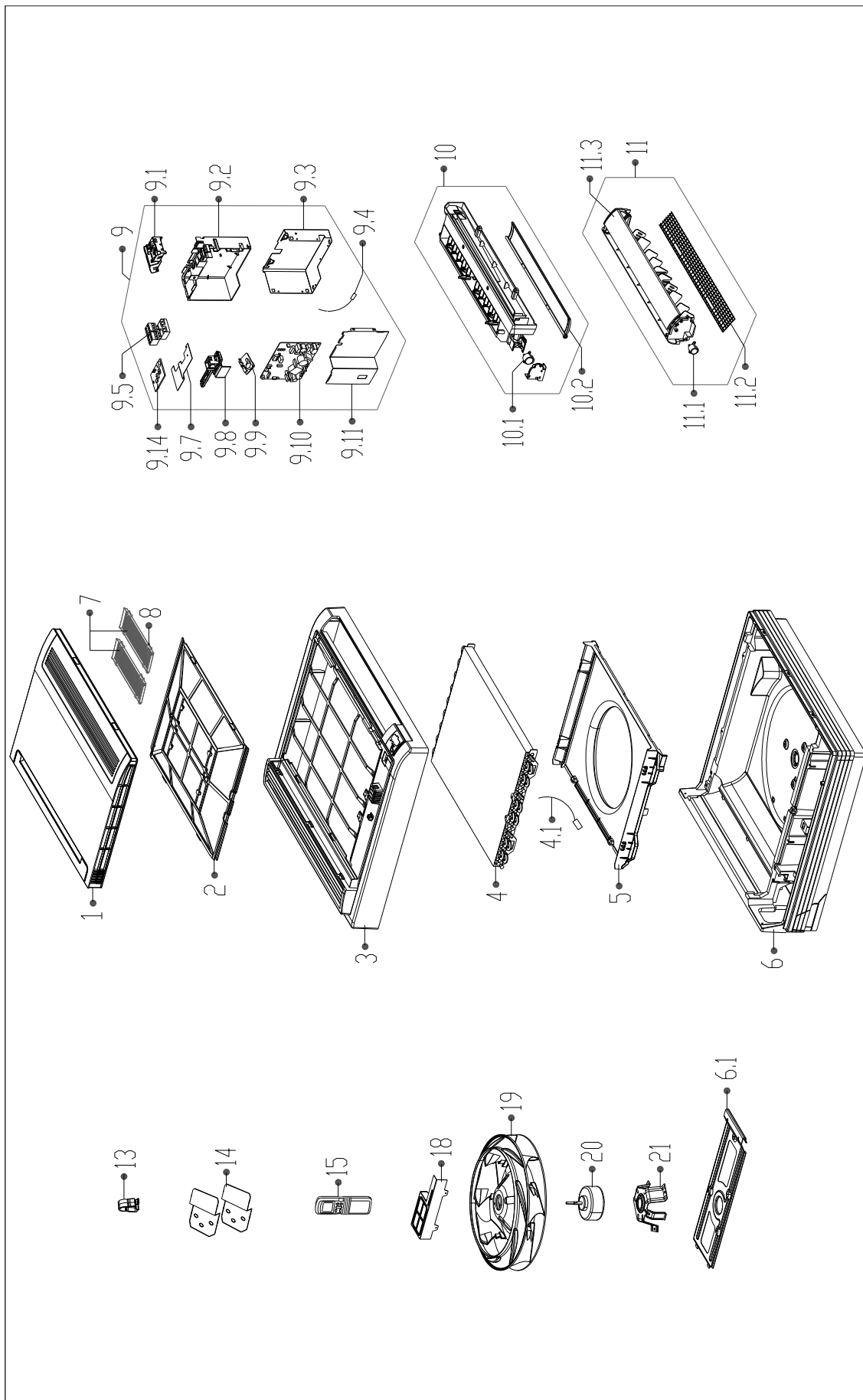
10. Field Wiring

ELSI-QBD012-N11



11. Exploded view and spare part list

11.1 Exploded view of model: ELSI-QBD012-N11



11.2 Spare part list of model: ELSI-QBD012-N11

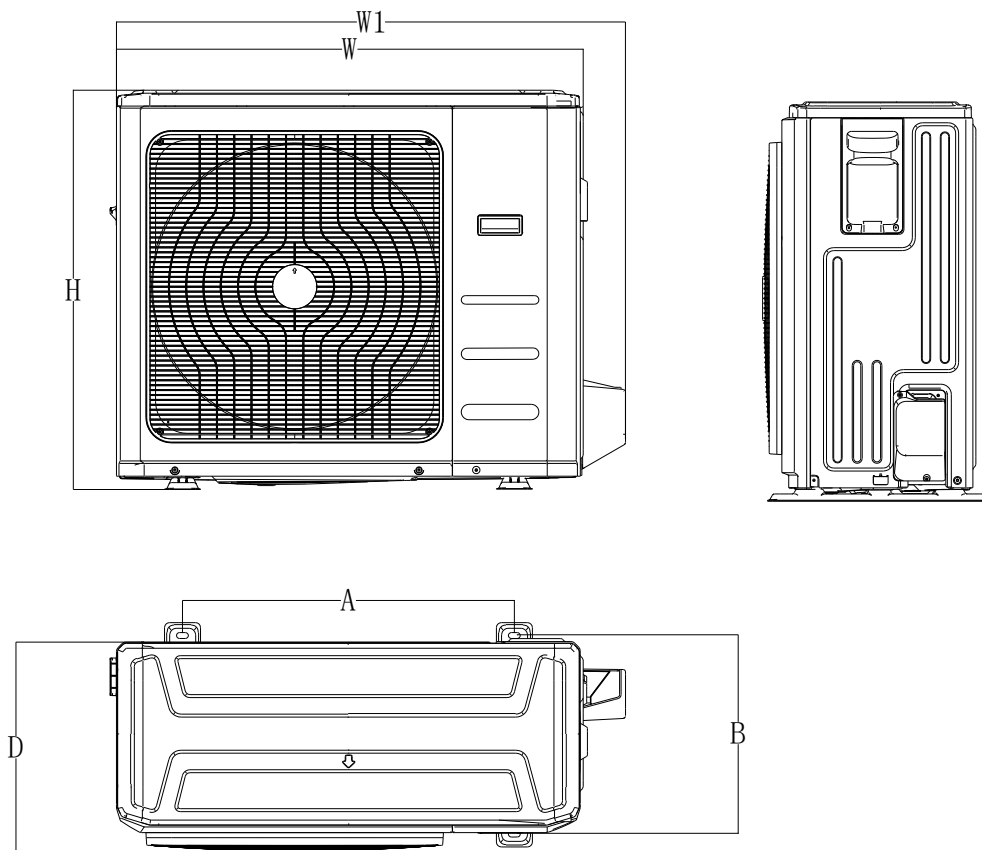
No.	BOM Code	Part Name	Quantity
1	12122600A00039	Panel assembly	1
2	12100204000704	Filter	1
3	12122600A00484	Panel frame assembly	1
4	15823000A02340	Evaporator Assembly	1
4.1	11201007000318	Pipe temperature sensor assembly	1
5	12122600000037	Air Inducting Coil Subassembly	1
6	12122600000035	Chassis Assembly	1
6.1	12222600000003	Hanging plate subassembly	1
7	12100204000685	Air cleaner	2
8	12122000007415	Air purify net	2
9	17222600000016	E-Parts Box assembly	1
9.1	12122600000030	Installation board ass'y	1
9.2	12122600000031	Electronic control box	1
9.3	12222600000010	Control box boards. II	1
9.4	11201007000073	Ambient temperature sensor assembly	1
9.5	17400401000099	Wire holder	1
9.7	12222600000008	Sealing Plate of Electrical Control Box	1
9.8	12122600000029	Electric installation board	1
9.9	17122700000267	Display board ass'y	1
9.10	17122600000022	Indoor Main Control Board Subassembly (Tie-in, RoHS)Indoor Main Control Board Subassembly (Sticker, RoHS)	1
9.11	12222600000009	Subassembly of Electrical Control Box Boarding I	1
9.14	17122700000382	Subassembly of Auxiliary Board with an auxiliary electric heater	1
10	12122600000007	Water receiver subassembly	1
10.1	11002010000002	stepper motor	1
10.2	12122600000055	Pile Coating,lower Air Guide Strip	1
11	12122600000027	Air Outlet Frame Subassembly	1
11.1	11002010000046	stepper motor	1
11.2	12222600000006	Protecting net	1
11.3	12122600000072	Upper Air Guide Strip	1
13	12100303000076	Pipe clamp	1
14	12222700000052	Installation clamp	2
15	17317000A01916	Remote controller	1
18	12222600000027	Electrical Control Box Cover Board Subassembly	1
19	12100103000016	Centrifugal Fan	1
20	11002015000337	Brushless DC Motor	1
21	12222600000004	Motor bracket	1
24	12100509000059	Drain pipe	1
25	12117000000086	Mounting bracket of remote controller	1

Part 3

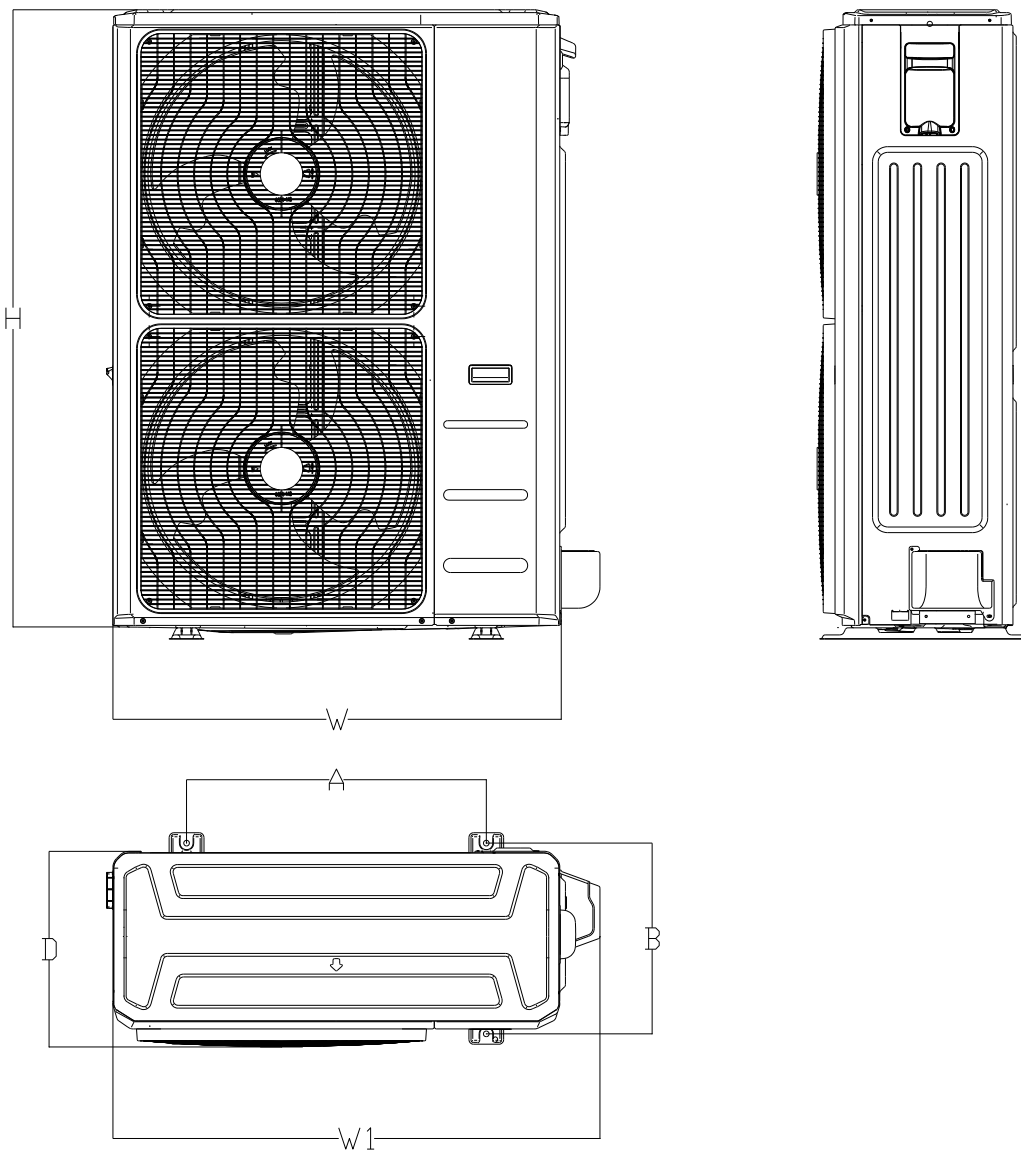
Outdoor Units

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4	Wiring diagram	122
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1 Dimensions

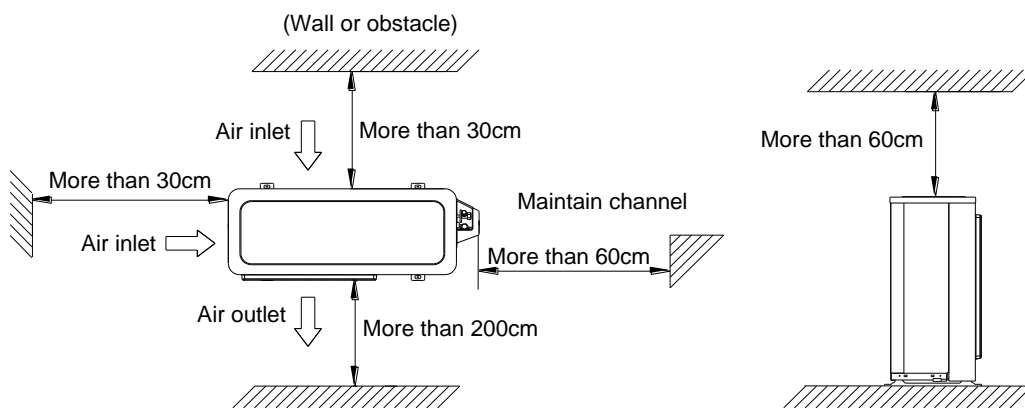


Model(KBtu/h)	Unit: mm					
	W	D	H	W1	A	B
12/18	800	333	554	870	514	340
24	845	363	702	914	540	350
30/36/42	946	410	810	1030	673	403



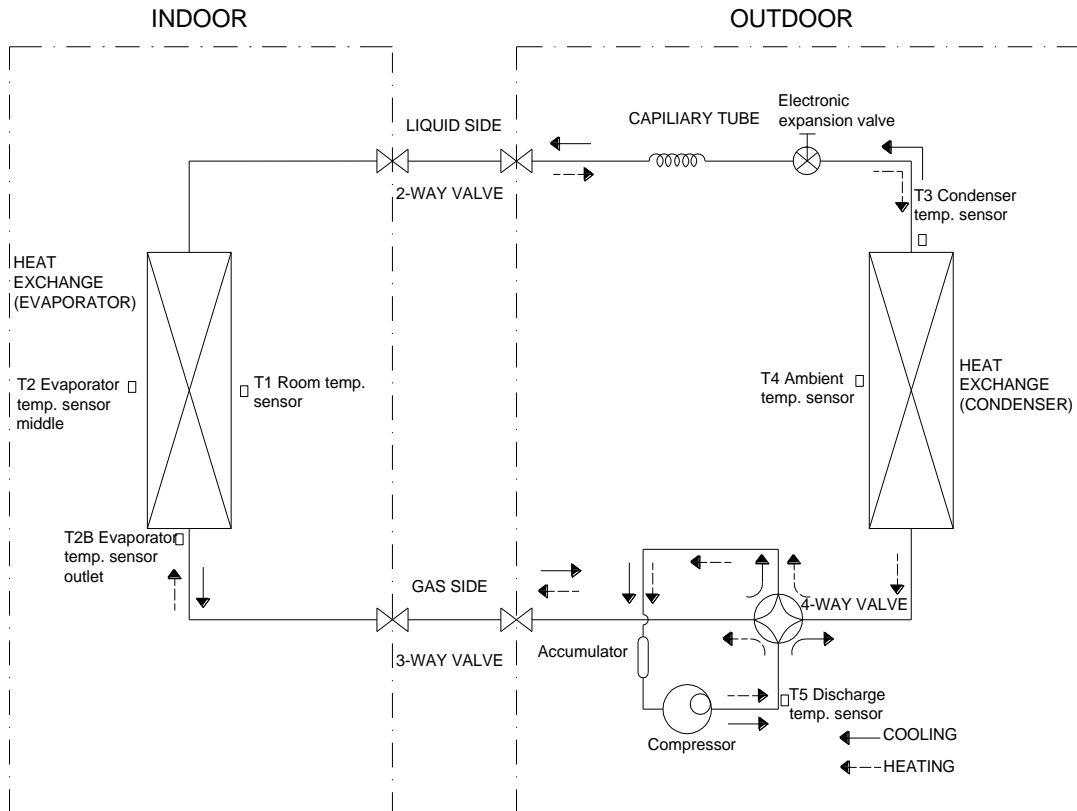
Model(KBtu/h)	Unit: mm					
	W	D	H	W1	A	B
48/60	952	415	1333	1045	634	404

2 Service Space



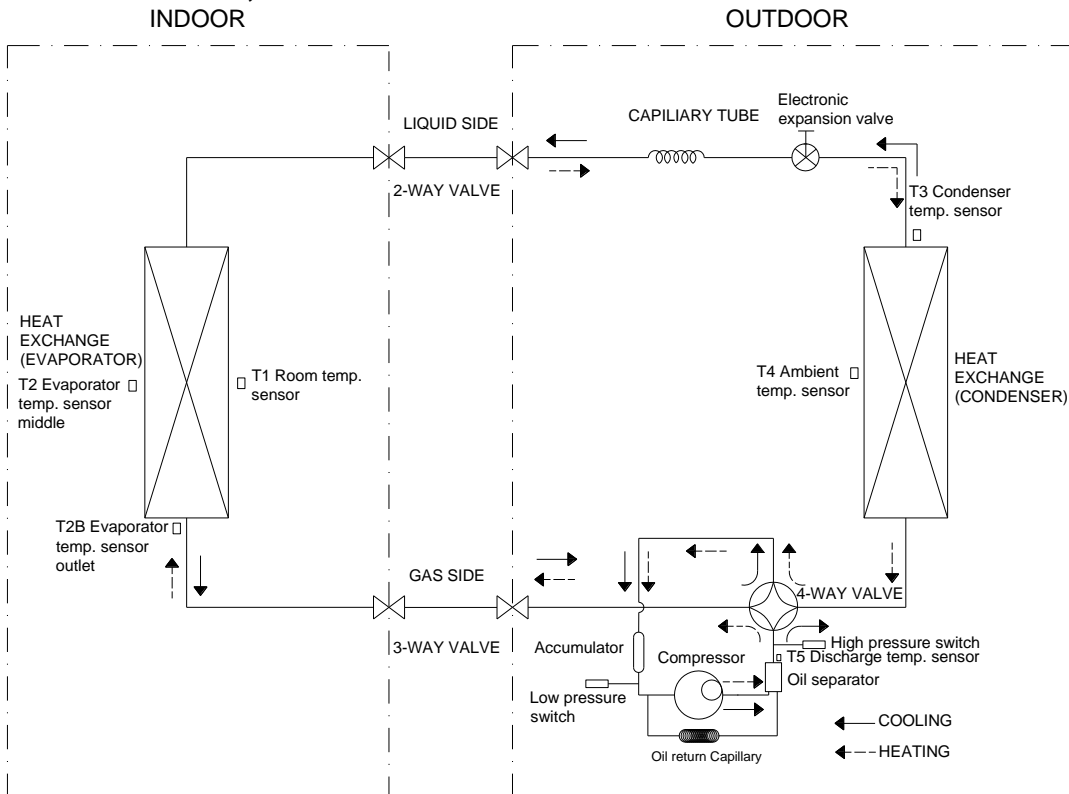
3 Piping Diagrams

ELAU-VMD012-H11, ELAU-VMD018-H11, ELAU-VMD024-H11



For ELAU-VMD024-H11, there is no accumulator.

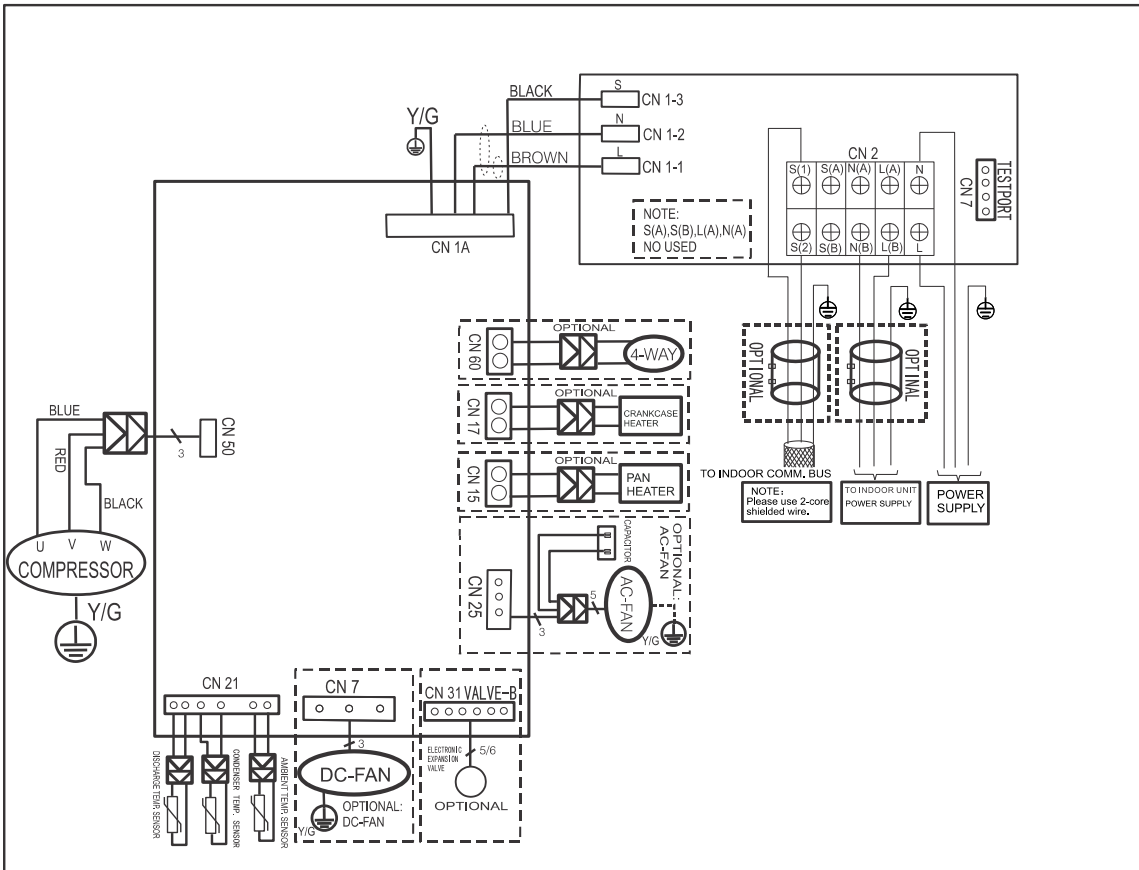
ELAU-VMD030-H11, ELAU-VMD036-H11, ELAU-VMD036-H13, ELAU-VMD042-H11, ELAU-VMD048-H13, ELAU-VMD048-H13, ELAU-VMD060-H13



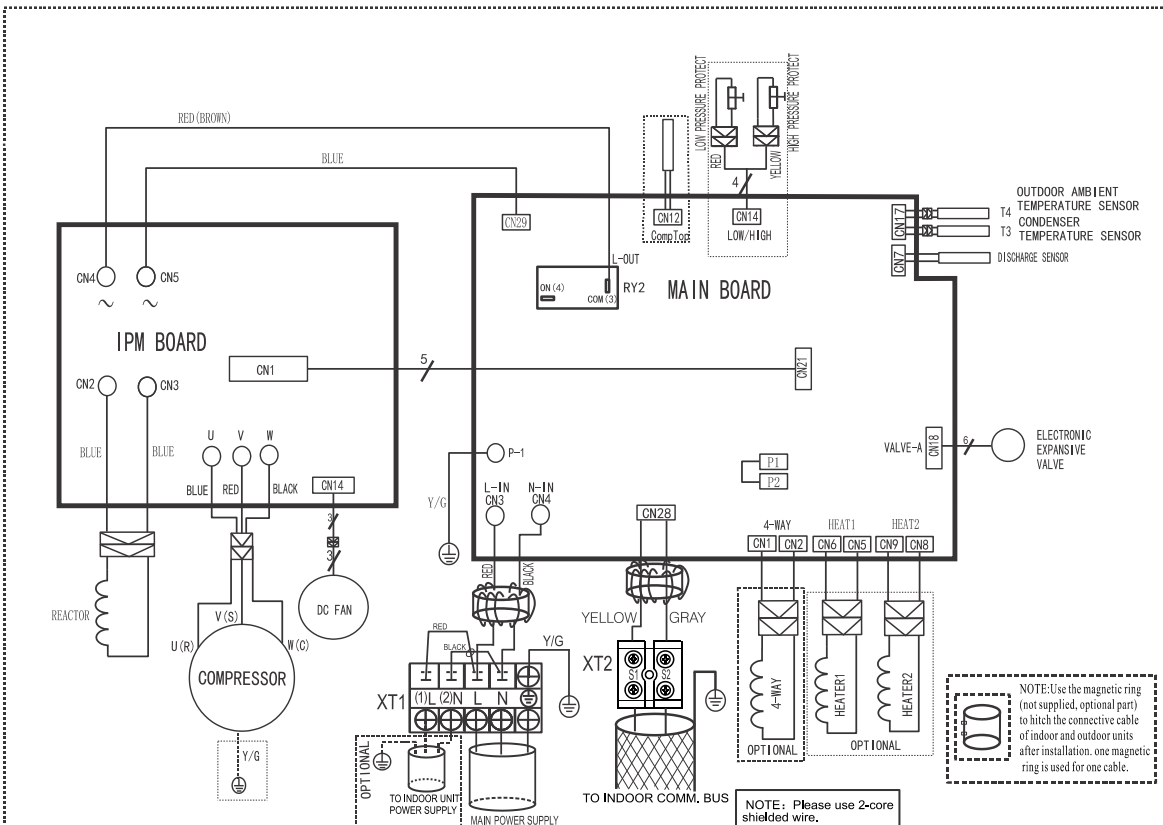
For ELAU-VMD030-H11, there are no oil separator and oil return capillary.

4 Wiring diagram

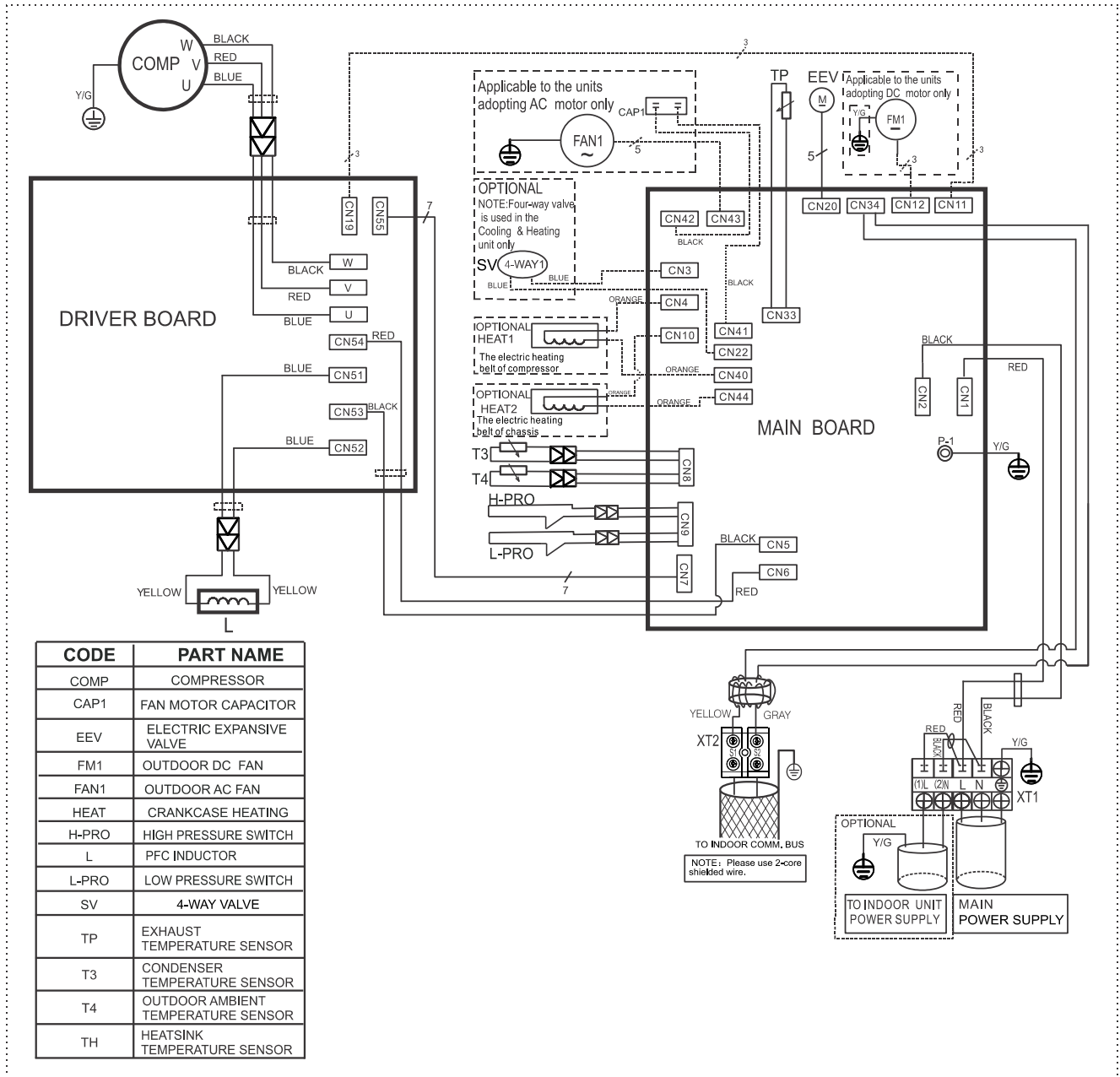
4.1 Model: ELAU-VMD012-H11, ELAU-VMD018-H11



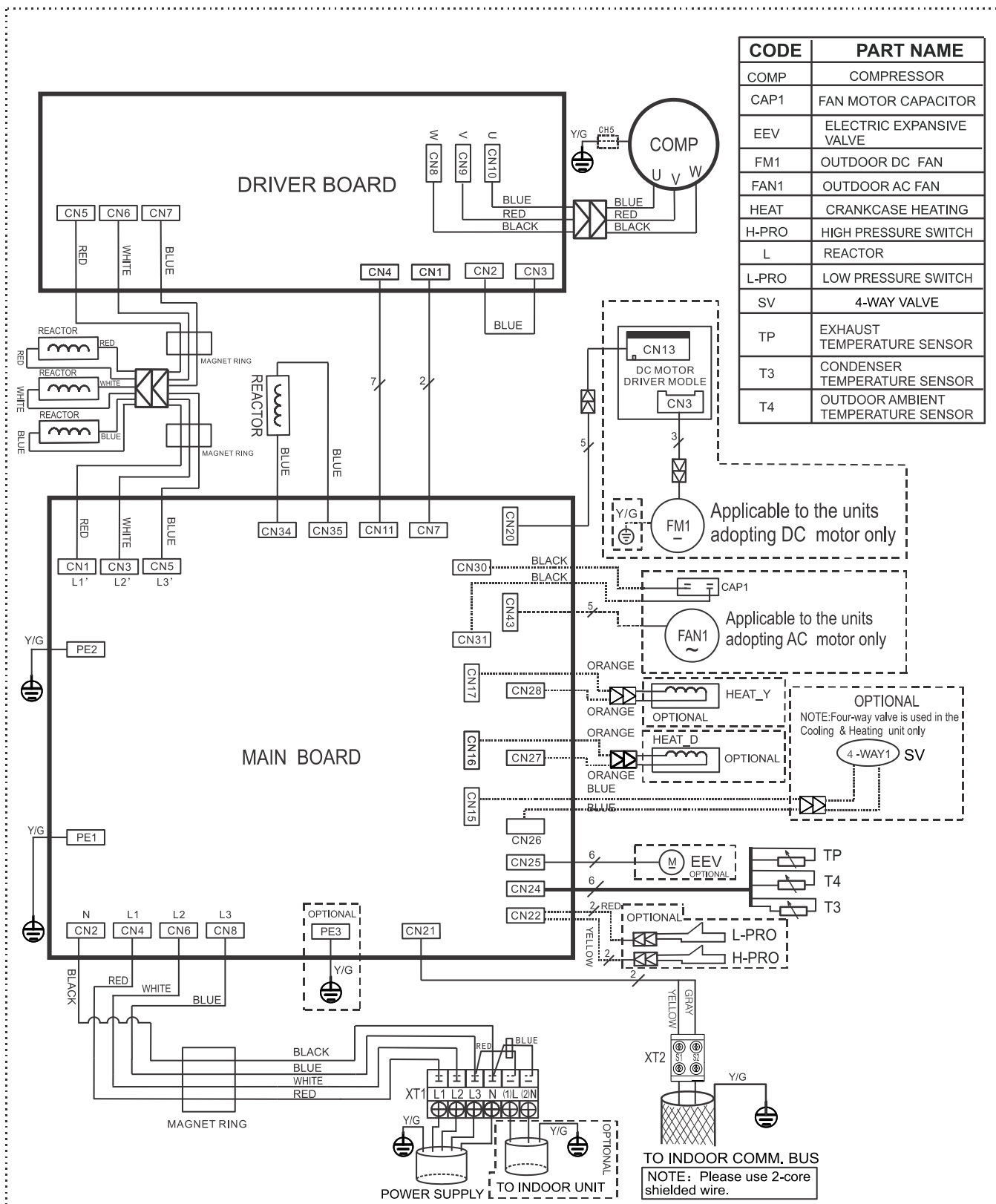
4.2 Model: ELAU-VMD024-H11, ELAU-VMD030-H11



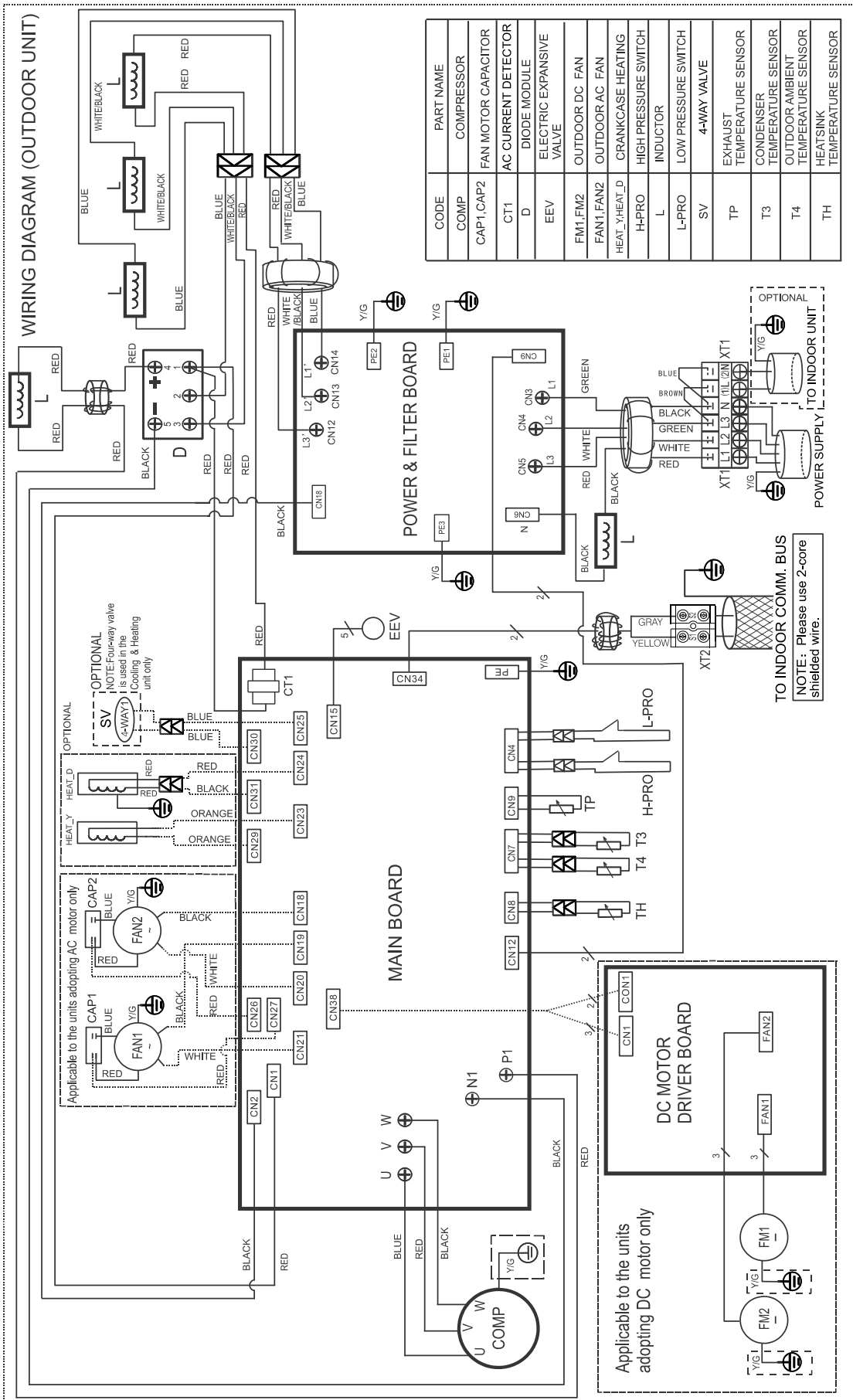
4.3 Model: ELAU-VMD036-H11



4.4 Model: ELAU-VMD036-H13



4.5 Model: ELAU-VMD048-H13, ELAU-VMD060-H13



5 Electric Characteristics

Model	Outdoor Unit			
	Hz	Voltage	Min.	Max.
ELAU-VMD012-H11 ELAU-VMD018-H11 ELAU-VMD024-H11 ELAU-VMD030-H11 ELAU-VMD036-H11	50	220-240V	198V	254V
ELAU-VMD036-H13	50	380-415V	342V	440V
ELAU-VMD042-H11 ELAU-VMD048-H11	50	220-240V	198V	254V
ELAU-VMD048-H13 ELAU-VMD060-H13	50	380-415V	342V	440V

6 Operation Limits

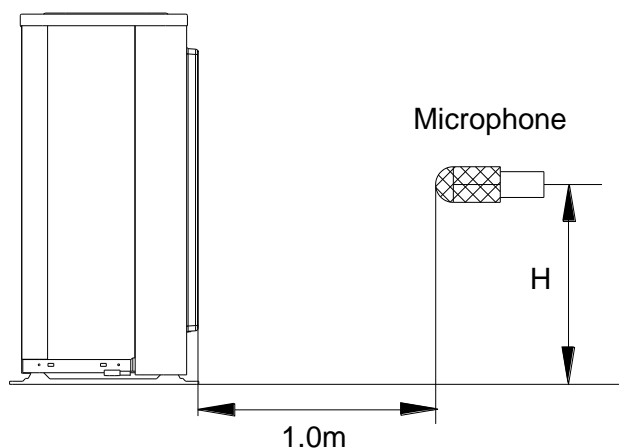
Temperature Mode	Cooling operation	Heating operation	Drying operation
Room temperature	17°C~32°C	0°C~30°C	17°C~32°C
Outdoor temperature	0°C~50°C	-15°C~24°C	0°C~50°C
	(-15°C~50°C: For the models with low temperature cooling system)		

CAUTION:

1. If the air conditioner is used beyond the above conditions, certain safety protection features may come into operation and cause the unit to operate abnormally.
2. The room relative humidity should be less than 80%. If the air conditioner operates beyond this figure, the surface of the air conditioner may attract condensation. Please set the vertical air flow louver to its maximum angle (vertically to the floor), and set HIGH fan mode.
3. The optimum performance will be achieved during this operating temperature zone.

7 Sound Levels

Outdoor Unit

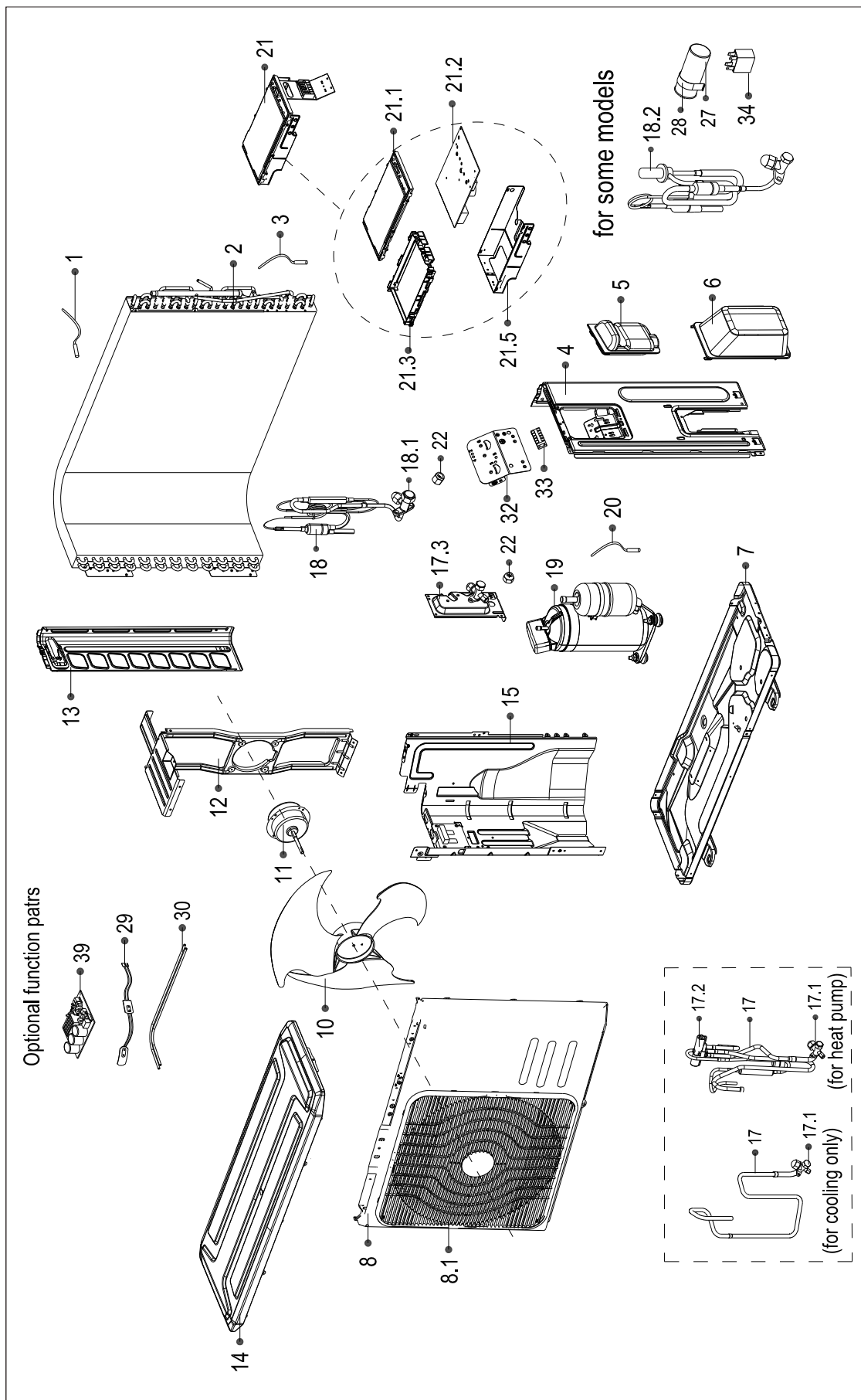


Note: H= 0.5 × height of outdoor unit

Model	Sound Power dB(A)	Sound Pressure dB(A)
ELAU-VMD012-H11	61	54
ELAU-VMD018-H11	65	54
ELAU-VMD024-H11	65	60
ELAU-VMD036-H11	67	61
ELAU-VMD036-H13	68	61
ELAU-VMD042-H11	71	62
ELAU-VMD048-H11	72	63
ELAU-VMD048-H13	72	63
ELAU-VMD060-H13	75	63

8 Exploded view and spare part list

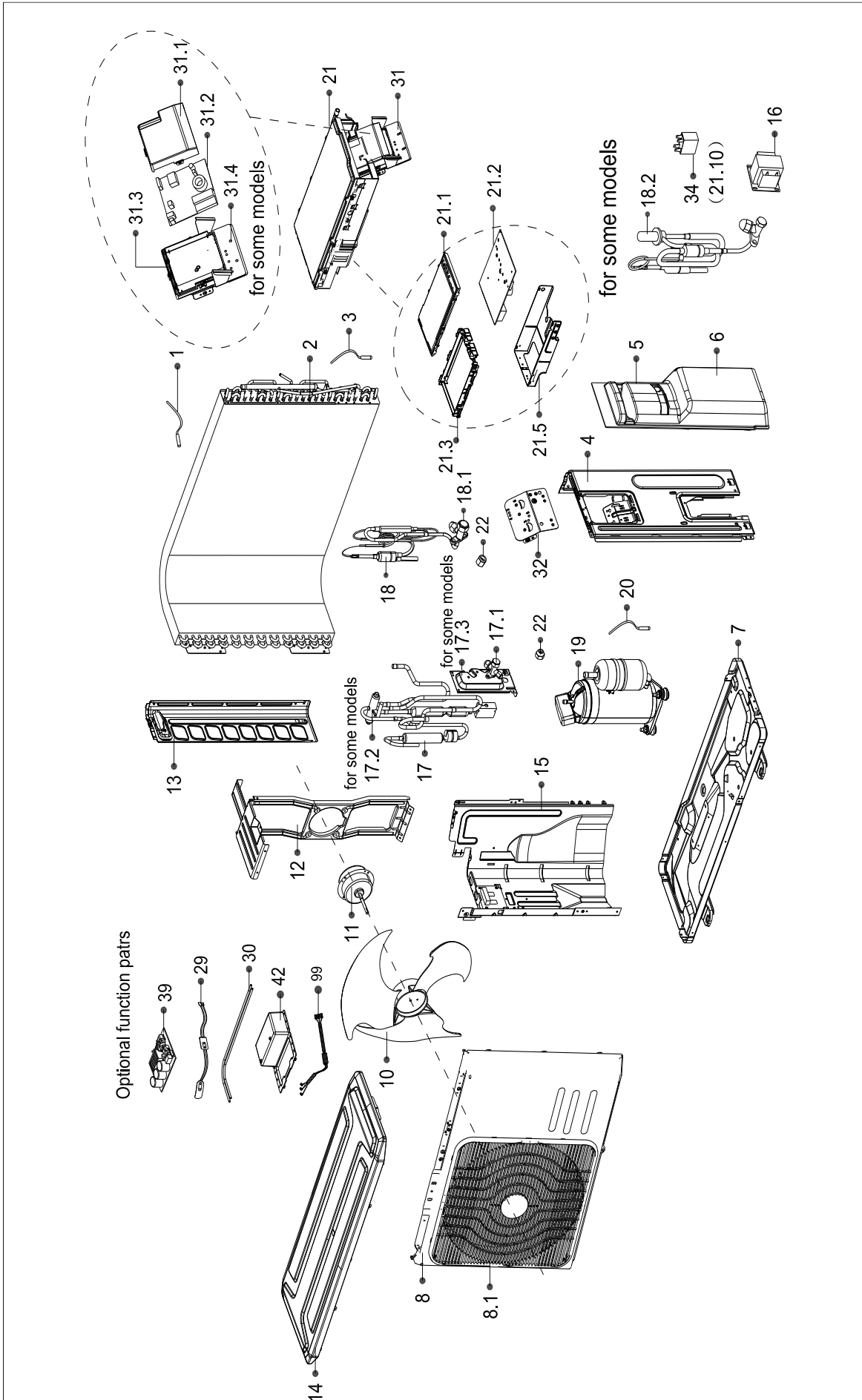
8.1 Exploded view of model: ELAU-VMD012-H11



8.2 Spare part list of model: ELAU-VMD012-H11

No.	BOM Code	Part Name	Quantity
1	11201007000039	Room Temperature Sensor	1
2	15822000003682	Condenser Assembly	1
3	11201007000136	Temperature Sensor	1
4	12222000001428	Parts fn Right Side Plate	1
5	12100701000015	Big Handle.	1
6	12122000007150	Water Collecting Cover	1
7	12222000000576	Chassis Assembly	1
8	12222000004382	Front panel	1
8.1	12122000010660	Air outlet grille	1
10	12100105000051	Axial fan	1
11	11002015000041	Brushless DC Motor	1
12	12222200001462	Fan Motor Holder Subassembly	1
13	12222000001379	Components of left supporting panel	1
14	12222000002451	Top cover assembly	1
15	12222000002226	Separation plate	1
17	15422000006692	4-Ways valve assembly	1
17.1	15500204000021	Low Pressure Valve	1
17.2	15500216000028	4-way Valve	1
17.3	12222000002571	Installing plate for valves	1
18	15422000004932	High-Voltage valve Assembly	1
18.1	15500208000028	High-Voltage valve	1
18.2	15500213000047	Electric expansive valve assembly	1
19	11103020000479	DC Inverter Rotary Compressor	1
20	11201007000005	Discharge temperature sensor assembly	1
21	17222000011929	Electronic control box assembly	1
21.1	12222000001455	Electric Installing Box Cover	1
21.2	17122000022351	Outdoor power board assembly	1
21.3	12122000006913	Installation board for E-parts	1
21.5	12222000001311	Electric Installing Box Subassembly	1
22	15500406000016	Copper nut	1
22	15500406000010	Copper nut	1
33	17400401000016	Wire holder	1

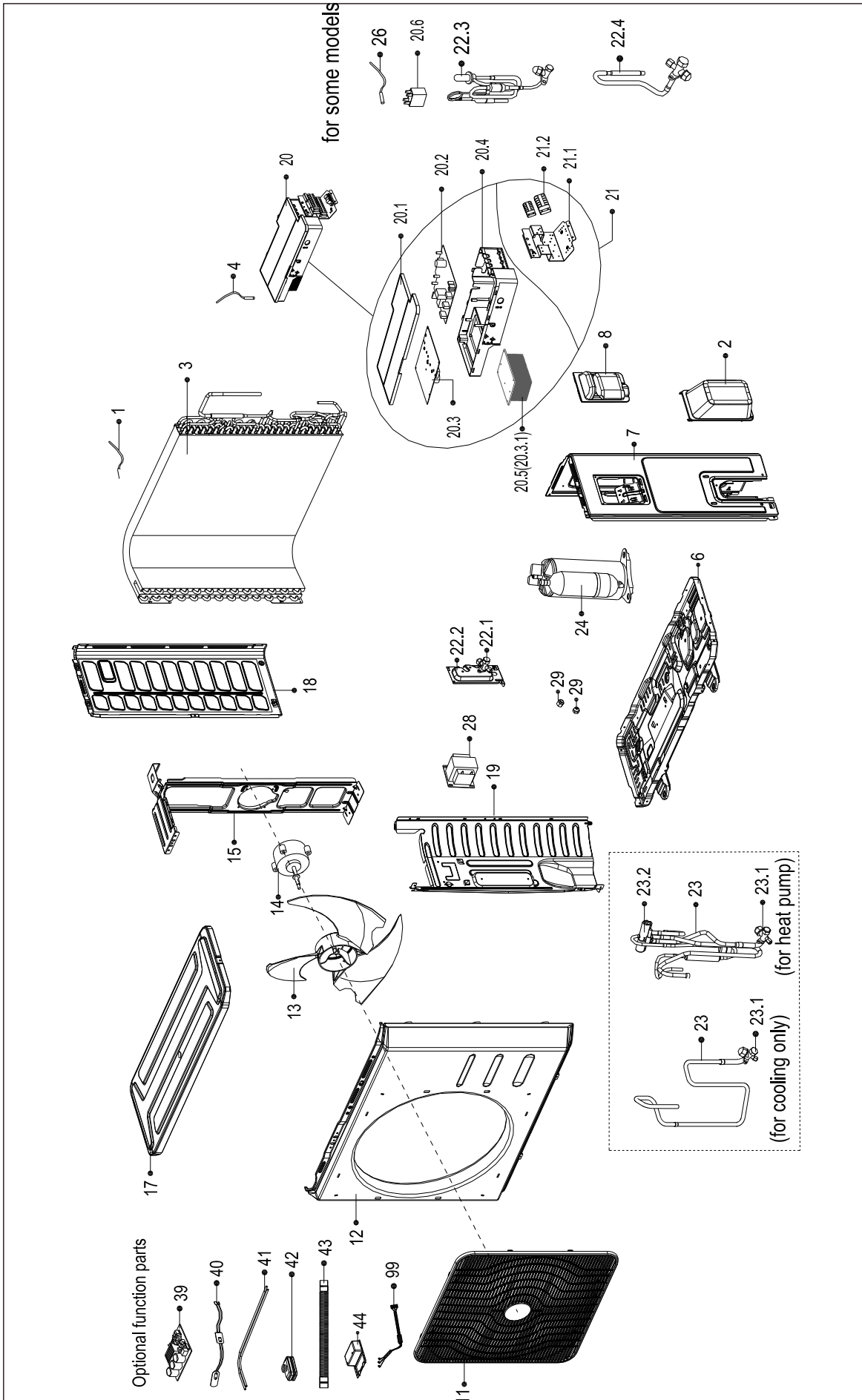
8.3 Exploded view of model: ELAU-VMD018-H11



8.4 Spare part list of model: ELAU-VMD018-H11

No.	BOM Code	Part Name	Quantity
1	11201007000039	Room Temperature Sensor	1
2	15822000003682	Condenser Assembly	1
3	11201007000136	Pipe temperature sensor assembly	1
4	12222000006565	Right Side Plate	1
6	12122000014223	Water collector	1
7	12222000000711	Chassis Assembly	1
8	12222000A02014	Front panel	1
9	12122000A03621	Air Outlet Guard	1
10	12100105000051	Axial fan	1
11	11002015000041	Brushless DC Motor	1
12	12222200002154	Supporter assembly of fan motor	1
13	12222000008484	Left supporter	1
14	12222000002451	Top cover assembly	1
15	12222000002230	Separation plate	1
17	15422000A03226	4-way Valve Assembly	1
17.1	15500204000058	Low Pressure Valve	1
17.2	15500216000026	4-way Valve	1
18	15422000004932	High-Voltage valve Assembly	1
18.1	15500208000028	Liquid valve	1
18.2	15500213000047	Electric expansive valve assembly	1
19	11103020000006	DC Inverter Rotary Compressor	1
20	11201007000005	Discharge temperature sensor assembly	1
21	17222000012668	Electronic control box assembly	1
21.1	12222000001455	Electric Installing Box Cover	1
21.2	17122000023672	Outdoor main control board assembly	1
21.3	12122000006913	Installation board for E-parts	1
21.5	12222000008644	Electric Installing Box Subassembly	1
22	15500406000012	Copper nut	1
22	15500406000016	Copper nut	1
25	12222000003622	Rear Net	1
31	17222000A42908	Terminal board assembly	1
31.1	12122000014222	Cover of electronic control box	1
31.2	17122000023668	Outdoor power board assembly	1
31.3	12122000014221	Electronic installing box	1
31.4	12222000006564	Installation board for E-parts	1
99	17401203000802	Connection cable assembly of compressor	1

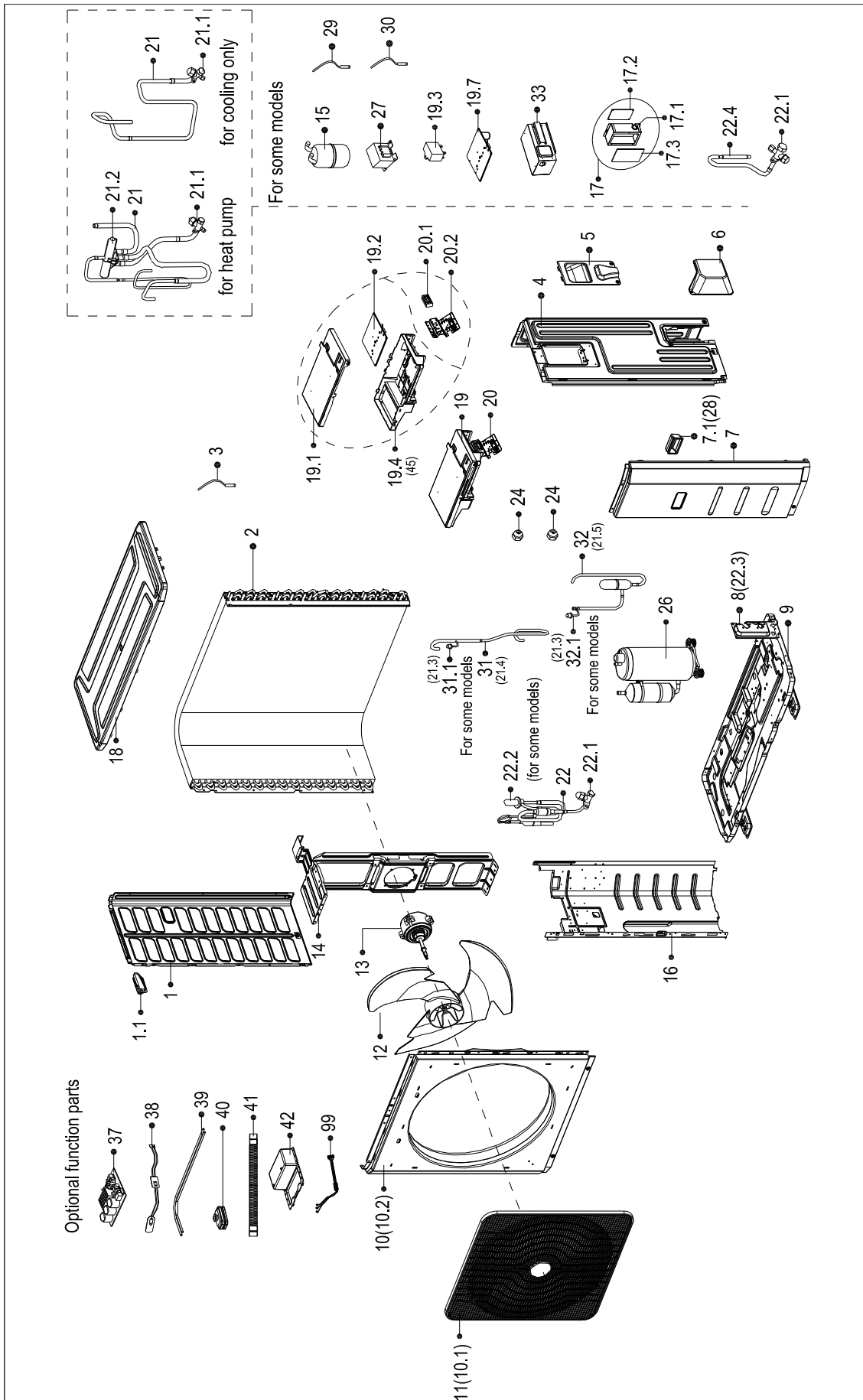
8.5 Exploded view of model: ELAU-VMD024-H11



8.6 Spare part list of model: ELAU-VMD024-H11

No.	BOM Code	Part Name	Quantity
1	11201007000282	Room Temperature Sensor	1
2	12122000007150	Water Collecting Cover	1
3	15822000A10989	Condenser Assembly	1
4	11201007000006	Temperature Sensor	1
6	12222000004823	Chassis assembly	1
7	12222000004785	Right side plate	1
8	12100701000015	Big handle	1
11	12122200A00490	Air Outlet Guard	1
12	12222000004822	Front panel	1
13	12100105000181	Axial fan	1
14	11002015000397	Brushless DC Motor	1
15	12222000004884	Supporter assembly of fan motor	1
17	12222000009205	Top cover assembly	1
18	12222000004794	Left side plate assembly	1
19	12222000004784	Partition board assembly	1
20	17223000001937	Electronic control box assembly	1
20.1	12122300000044	Electric Installing Box Cover	1
20.2	17123000001872	Outdoor main control board assembly	1
20.3	17122300001173	Inverter control board assembly	1
20.3.1	11203803000676	Radiator	1
20.3.1	11203803000856	Radiator	1
20.4	12122300000041	Electronic installing plate	1
21	17223000001936	Terminal Block Subassembly of Electrical Control Box	1
21.1	12222000006044	Terminal board	1
21.2	17400401000032	Wire holder	1
21.2	17400401000098	Wire holder	1
22	15422000005992	Liquid valve assembly	1
22.1	15500208000023	Liquid valve	1
22.2	12222000002571	Installing plate for valves	1
22.3	15500213000176	Electric expansive valve (EEV)	1
23	15422000008172	4-way Valve Assembly	1
23.1	15500204000025	Stop valve	1
23.2	15500216000003	4-way Valve	1
24	11103020000179	Inverter Controlled Rotary Compressor	1
26	11201007000246	Discharge temperature sensor assembly	1
28	17400306000058	Reactor	1
29	15500406000003	Copper net	1
29	15500406000010	Copper nut	1
33	12222000004833	Rear net	1
99	17401203000939	Connection cable assembly of compressor	1

8.7 Exploded view of model: ELAU-VMD030-H11, ELAU-VMD036-H11, ELAU-VMD036-H13



8.8 Spare part list of model: ELAU-VMD030-H11

No.	BOM Code	Part Name	Quantity
1	12222500000539	Components of left panel	1
2	15822000A07049	Condenser Assembly	1
3	11201007000136	Pipe temperature sensor assembly	1
4	12222500000534	Parts of Rear Right Side Plate	1
5	12222200001115	Big Handle.	1
6	12122200002695	Water Collecting Cover	1
7	12222500000633	Front right clapboard assembly	1
7.1	12100702000038	Little Handle	1
9	12222000004762	Chassis assembly	1
10	12222000004983	Front panel	1
11	12122200A00489	Air Outlet Guard	1
12	12100105000084	Axial fan	1
13	11002015000247	Brushless DC Motor	1
14	12222000005162	Holder for fan motor assembly	1
15	15500508000002	Accumulator cylinder	1
16	12222200001156	Separator Assembly	1
18	12222500000541	Top cover assembly	1
19	17222500001260	Electronic control box assembly	1
19.1	12122000006905	Electric Installing Box Cover	1
19.2	17122500001591	Outdoor main control board assembly	1
19.4	12122300000170	Electric Installing Box	1
19.7	17122300001552	Inverter control board assembly	1
20	17223000000579	Terminal Block Subassembly of Electrical Control Box	1
20.1	17400401000032	Wire holder	1
20.1	17400401000098	Wire holder	1
20.2	12222200001476	Wiring terminal installing plate	1
21	15422000004953	4-ways valve assembly	1
21.1	15500204000025	Stop valve	1
21.2	15500216000361	4-ways valve	1
21.4	15122000011327	Compressor Vent-Pipe	1
21.5	15122000011326	Compressor exhaust pipe	1
22	15422000003309	Liquid valve Assembly	1
22.1	15500204000021	Low Pressure Valve	1
22.2	15500213000265	Electronic expansion valve	1
22.3	12222200002110	Installation plate for valves	1
24	15500406000003	Copper net	1
24	15500406000010	Copper nut	1
25	12222000006604	Rear net	1
26	11103020000179	Inverter Controlled Rotary Compressor	1
27	17400306000058	Reactor	1
29	11201007000246	Discharge temperature sensor assembly	1
30	11201007000039	Room Temperature Sensor	1
31	15122000017794	Compressor suction pipe Assembly	1
32	15122000017796	Compressor exhaust pipe Assembly	1
99	17401203000939	Connection cable assembly of compressor	1

8.9 Spare part list of model: ELAU-VMD036-H11

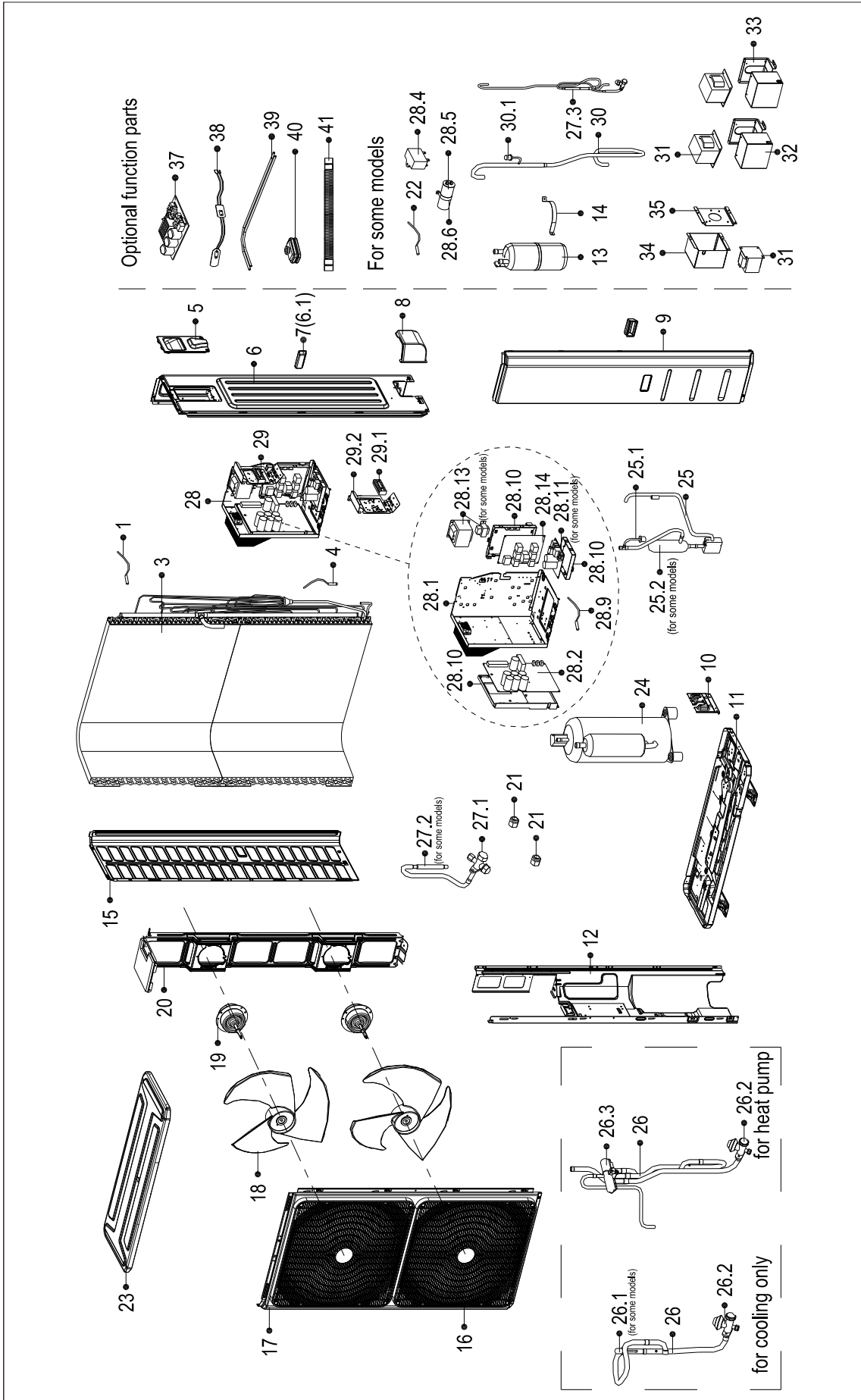
No.	BOM Code	Part Name	Quantity
1	1222500000539	Components of left panel	1
2	15822000A07069	Condenser Assembly	1
3	11201007000006	Temperature Sensor	1
4	1222500000534	Parts of Rear Right Side Plate	1
5	1222200001115	Big Handle.	1
6	12122200002695	Water Collecting Cover	1
7	1222500000633	Front right clapboard assembly	1
7.1	12100702000038	Little Handle	1
9	12222000004762	Chassis assembly	1
10	12222000004983	Front panel	1
11	12122200A00489	Air Outlet Guard	1
12	12100105000084	Axial fan	1
13	11002015000247	Brushless DC Motor	1
14	12222000005162	Holder for fan motor assembly	1
15	15500508000315	Accumulator cylinder	1
16	1222200001158	Separator Assembly	1
18	1222500000587	Topcap assembly	1
19	17222500000702	E-Parts Box assembly	1
19.1	12122200002719	Electric Installing Box Subassembly	1
19.2	17122500001175	Sticker Subassembly of Outdoor Main Control Board	1
19.4	12122200002715	Electric Installing Box Subassembly	1
19.7	17122500001174	Outdoor Inverter Module Subassembly	1
20	17223000000580	Terminal Block Subassembly of Electrical Control Box	1
20.1	17400401000032	Wire holder	1
20.1	17400401000098	Wire holder	1
20.2	12222200001476	Wiring terminal installing plate	1
21	15422500000197	4-ways valve assembly	1
21.1	15500204000025	Stop valve	1
21.2	15500216000361	4-ways valve	1
21.4	15122500001082	Compressor Vent-Pipe	1
21.5	15122500001081	Compressor exhaust pipe	1
22	15422500000196	High-Voltage valve Assembly	1
22.1	15500204000008	Stop valve	1
22.2	15500213000245	Electronic expansion valve	1
22.3	12222200002110	Installation plate for valves	1
24	15500406000003	Copper net	1
24	15500406000010	Copper nut	1
25	12222000006604	Rear net	1
26	11103020000439	DC Inverter Rotary Compressor	1
29	11201007000246	Discharge temperature sensor assembly	1
30	11201007000039	Room Temperature Sensor	1
31	15122500001556	Parts of compressor return pipe	1
31.1	17400516000024	Pressure switch	1
32	15122500001079	Parts of compressor exhaust pipe	1
32.1	17400516000007	Pressure switch	1
99	17401203000909	Connection cable assembly of compressor	1

8.10 Spare part list of model: ELAU-VMD036-H13

No.	BOM Code	Part Name	Quantity
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1	1222500000539	Components of left panel	1
2	15822000A07069	Condenser Assembly	1
3	11201007000287	Temperature Sensor	1
4	1222500000534	Parts of Rear Right Side Plate	1
5	1222200001115	Big Handle.	1
6	12122200002695	Water Collecting Cover	1
7	1222500000633	Front right clapboard assembly	1
7.1	12100702000038	Little Handle	1
9	12222000004762	Chassis assembly	1
10	12222000004983	Front panel	1
11	12122200A00489	Air Outlet Guard	1
12	12100105000084	Axial fan	1
13	11002015000247	Brushless DC Motor	1
14	12222000005162	Holder for fan motor assembly	1
15	15500508000315	Accumulator cylinder	1
16	1222200001158	Separator Assembly	1
17	17222000009112	Electronic control box assembly	1
17.1	12223000000052	Electrical Control Box	1
17.2	11203803000154	Radiator	1
17.3	17122000018428	Inverter control board assembly	1
18	1222500000587	Topcap assembly	1
19	1722500000700	E-Parts Box assembly	1
19.1	12122200002719	Electric Installing Box Subassembly	1
19.2	17122500001172	Sticker Subassembly of Outdoor Main Control Board	1
19.4	12122200002715	Electric Installing Box Subassembly	1
19.7	17122500001171	Inverter control board assembly	1
20	1722500000701	Terminal board assembly	1
20.1	17400401000016	Wire holder	1
20.1	17400401000098	Wire holder	1
20.2	1222200001476	Wiring terminal installing plate	1
21	15422500000197	4-ways valve assembly	1
21.1	15500204000025	Stop valve	1
21.2	15500216000361	4-ways valve	1
21.4	15122500001082	Compressor Vent-Pipe	1
21.5	15122500001081	Compressor exhaust pipe	1
22	15422500000196	High-Voltage valve Assembly	1
22.1	15500204000008	Stop valve	1
22.2	15500213000245	Electronic expansion valve	1
22.3	1222200002110	Installation plate for valves	1
24	15500406000003	Copper net	1
25	12222000006604	Rear net	1
26	11103020000439	DC Inverter Rotary Compressor	1
27	17400306000057	Reactor	1
27	17400306000183	Reactor	3
27	16022500002224	Wiring Diagram for Outdoor Unit	1
31	15122500001556	Parts of compressor return pipe	1
31.1	17400516000024	Pressure switch	1
32	15122500001079	Parts of compressor exhaust pipe	1
32.1	17400516000007	Pressure switch	1
33	1222200001792	Inductor Cover Assembly	1
99	17401203000939	Connection cable assembly of compressor	1

8.11 Exploded view of model: ELAU-VMD048-H13, ELAU-VMD060-H13



8.12 Spare part list of model: ELAU-VMD048-H13

No.	BOM Code	Part Name	Quantity
1	11201007000039	Room Temperature Sensor	1
2	12222000007944	Rear net	1
3	15822200A01072	Condenser Assembly	1
3	15822000007119	Condenser Assembly	1
4	11201007001006	Temperature Sensor	1
5	12222200001115	Big Handle.	1
6	12222200004215	Rear right clapboard assembly	1
8	12122000014023	Water collector	1
9	12222000006287	Front clapboard assembly	1
10	12222200002361	Valve plate	1
11	12222000006290	Chassis	1
12	12222000005733	Partition board assembly	1
13	15500508000009	Accumulator cylinder	1
15	12222200002363	Left side plate assembly of cabinet	1
16	12122000A49238	Air outlet grille	2
17	12222000006291	Front panel	1
18	12100105000022	Axial fan	2
19	11002015002241	Brushless DC Motor	1
19	11002015004201	Brushless DC Motor	1
20	12222000006288	Supporter assembly of fan motor	1
21	15500406000003	Copper net	1
21	15500406000010	Copper nut	1
22	11201007000138	Discharge temperature sensor assembly	1
23	12222200002359	Top cover assembly	1
24	11103020000029	Inverter Controlled Rotary Compressor	1
25	15123000008507	Parts of compressor exhaust pipe	1
25.1	17400516000020	Pressure controller	1
26	15423000002958	Gas Valve Assembly	1
26.2	15500204000061	Low Pressure Valve	1
26.3	15500216000681	4-way valve	1
27	15423000002959	Liquid valve assembly	1
27.1	15500208000026	Liquid valve	1
27.3	15500213000245	Electronic expansion valve	1
28	17222500001440	Electronic control box assembly	1
28.1	12222000006289	Installation plate of electric parts	1
28.2	17123000002072	Main control board assembly	1
28.9	11201007000157	Discharge temp sensor assembly	1
28.10	12122000014021	Installation box of electric parts	1
28.10	12122000014022	Installation box of electric parts	1
28.10	12122000014182	Installation box of electric parts	1
28.11	17122000021908	Main control board assembly	1
28.13	17400306000032	Reactor	1
28.13	17400306000070	Reactance	1
28.14	17123000002732	Filter board assembly	1
29	17223000002557	Terminal Block Subassembly of Electrical Control Box	1
29.1	17400401000016	Wire holder	1
29.1	17400401000098	Wire holder	1
29.2	17223000001877	Wire joint	1
30	15123000008516	Parts of compressor return pipe	1
30.1	17400516000008	Pressure switch	1
31	17400306000183	Reactor or Inductance	3
33	12222000006292	Installation base of inductance	2
34	12222000006284	Cover of inductance	1
35	12222000006286	Installation base of inductance	1

8.13 Spare part list of model: ELAU-VMD060-H13

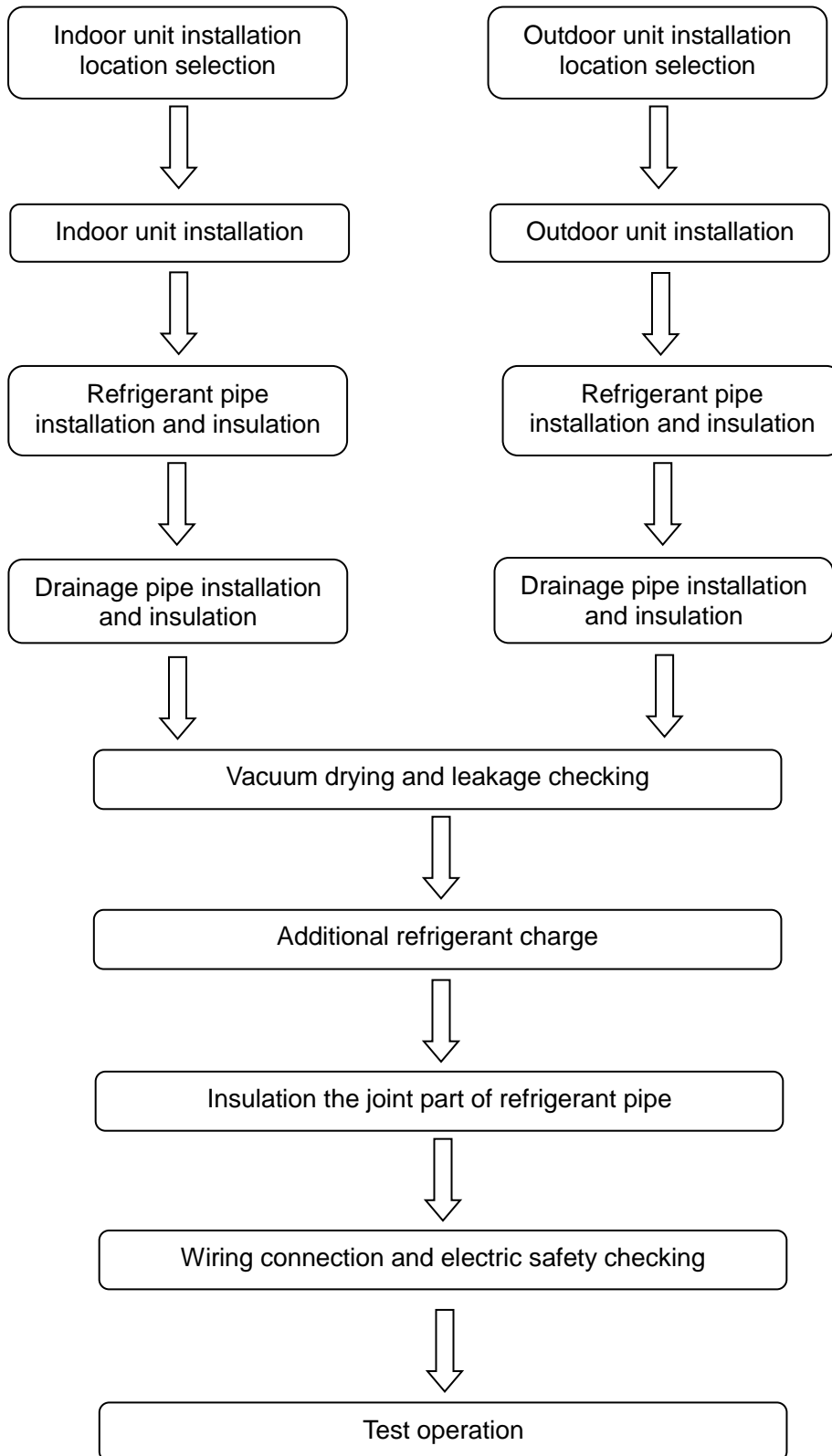
No.	BOM Code	Part Name	Quantity
1	11201007000039	Room Temperature Sensor	1
2	12222000007944	Rear net	1
3	15822200A01073	Condenser Assembly	1
3	15822000007118	Condenser Assembly	1
4	11201007001006	Temperature Sensor	1
5	12222200001115	Big Handle.	1
6	12222200004215	Rear right clapboard assembly	1
8	12122000014023	Water collector	1
9	12222000006287	Front clapboard assembly	1
10	12222200002361	Valve plate	1
11	12222000006290	Chassis	1
12	12222000005733	Partition board assembly	1
13	15500508000009	Accumulator cylinder	1
15	12222200002363	Left side plate assembly of cabinet	1
16	12122000A49238	Air outlet grille	2
17	12222000006291	Front panel	1
18	12100105000022	Axial fan	2
19	11002015002241	Brushless DC Motor	1
19	11002015004201	Brushless DC Motor	1
20	12222000006288	Supporter assembly of fan motor	1
21	15500406000003	Copper net	1
21	15500406000010	Copper nut	1
22	11201007000138	Discharge temperature sensor assembly	1
23	12222200002359	Top cover assembly	1
24	11103020000029	Inverter Controlled Rotary Compressor	1
25	15123000008507	Parts of compressor exhaust pipe	1
25.1	17400516000020	Pressure controller	1
26	15423000002958	Gas Valve Assembly	1
26.2	15500204000061	Low Pressure Valve	1
26.3	15500216000681	4-way valve	1
27	15423000002959	Liquid valve assembly	1
27.1	15500208000026	Liquid valve	1
27.3	15500213000245	Electronic expansion valve	1
28	17223000002556	Electronic control box assembly	1
28.1	12222000006289	Installation plate of electric parts	1
28.2	17123000002032	Main control board assembly	1
28.9	11201007000157	Discharge temp sensor assembly	1
28.10	12122000014021	Installation box of electric parts	1
28.10	12122000014022	Installation box of electric parts	1
28.10	12122000014182	Installation box of electric parts	1
28.11	17122000021908	Main control board assembly	1
28.13	17400306000032	Reactor	1
28.13	17400306000070	Reactance	1
28.14	17123000002732	Filter board assembly	1
29	17223000002557	Terminal Block Subassembly of Electrical Control Box	1
29.1	17400401000016	Wire holder	1
29.1	17400401000098	Wire holder	1
29.2	17223000001877	Wire joint	1
30	15123000008516	Parts of compressor return pipe	1
30.1	17400516000008	Pressure switch	1
31	17400306000183	Reactor or Inductance	3
33	12222000006292	Installation base of inductance	2
34	12222000006284	Cover of inductance	1
35	12222000006286	Installation base of inductance	1

Part 4

Installation

1. Installation Procedure	143
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1. Installation Procedure



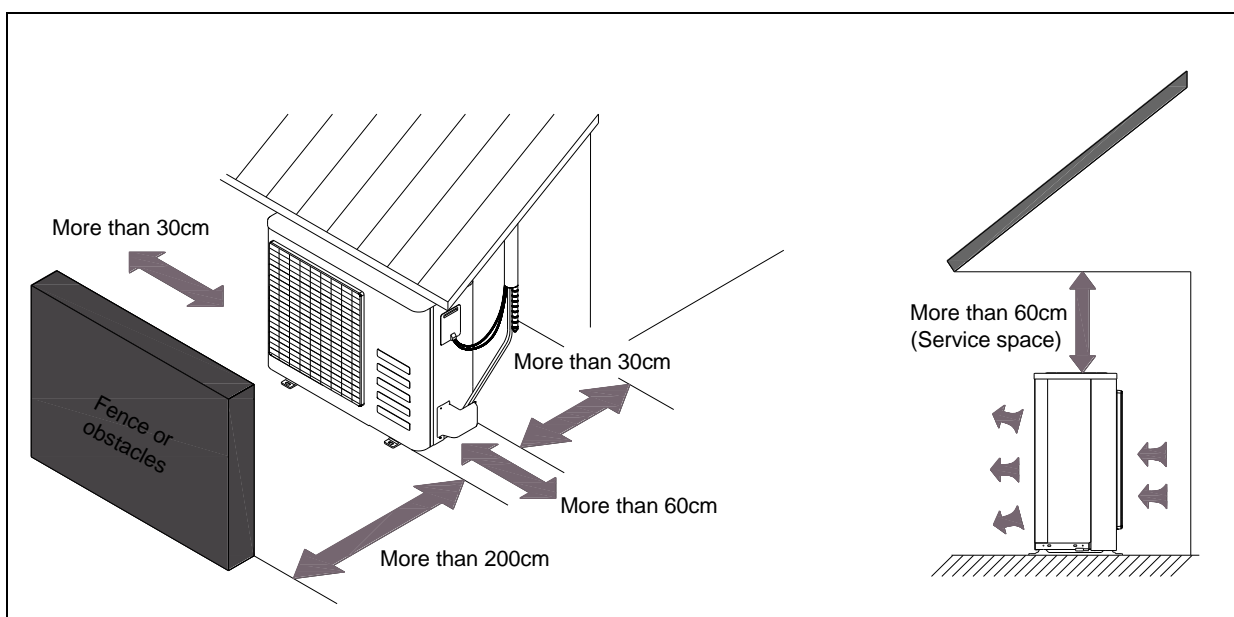
2. Location selection

2.1 Indoor unit location selection

- The place shall easily support the indoor unit's weight.
- The place can ensure the indoor unit installation and inspection.
- The place can ensure the indoor unit horizontally installed.
- The place shall allow easy water drainage.
- The place shall easily connect with the outdoor unit.
- The place where air circulation in the room should be good.
- There should not be any heat source or steam near the unit.
- There should not be any oil gas near the unit
- There should not be any corrosive gas near the unit
- There should not be any salty air neat the unit
- There should not be strong electromagnetic wave near the unit
- There should not be inflammable materials or gas near the unit
- There should not be strong voltage vibration.

2.2 Outdoor unit location selection

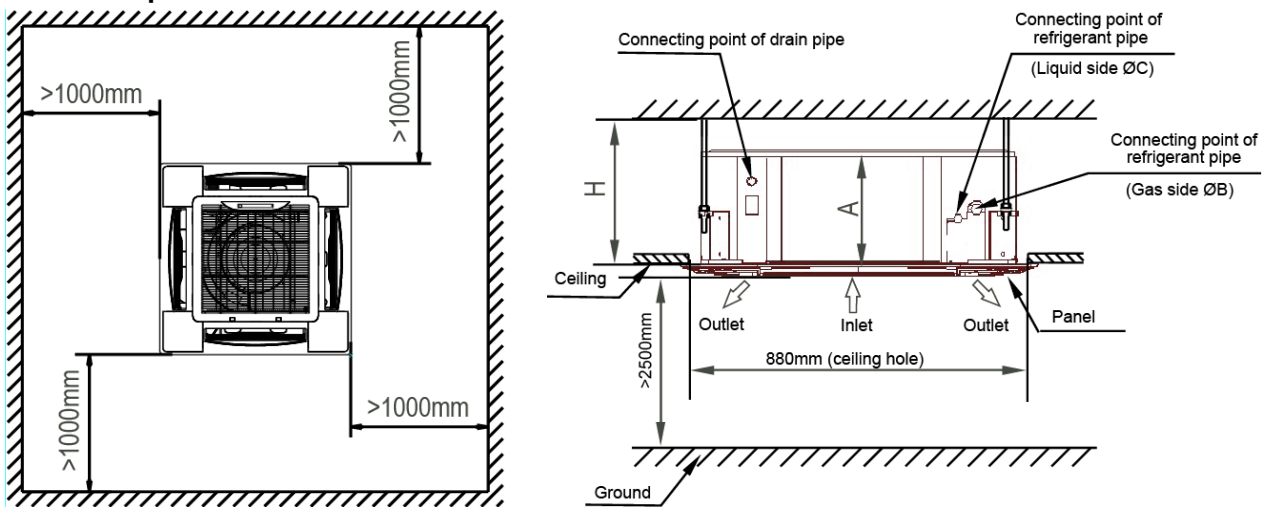
- The place shall easily support the outdoor unit's weight.
- Locate the outdoor unit as close to indoor unit as possible
- The piping length and height drop can not exceed the allowable value.
- The place where the noise, vibration and outlet air do not disturb the neighbors.
- There is enough room for installation and maintenance.
- The air outlet and the air inlet are not impeded, and not face the strong wind.
- It is easy to install the connecting pipes and cables.
- There is no danger of fire due to leakage of inflammable gas.
- It should be a dry and well ventilation place
- The support should be flat and horizontal
- Do not install the outdoor unit in a dirty or severely polluted place, so as to avoid blockage of the heat exchanger in the outdoor unit.
- If is built over the unit to prevent direct sunlight, rain exposure, direct strong wend, snow and other scraps accumulation, make sure that heat radiation from the condenser is not restricted.



3. Indoor unit installation

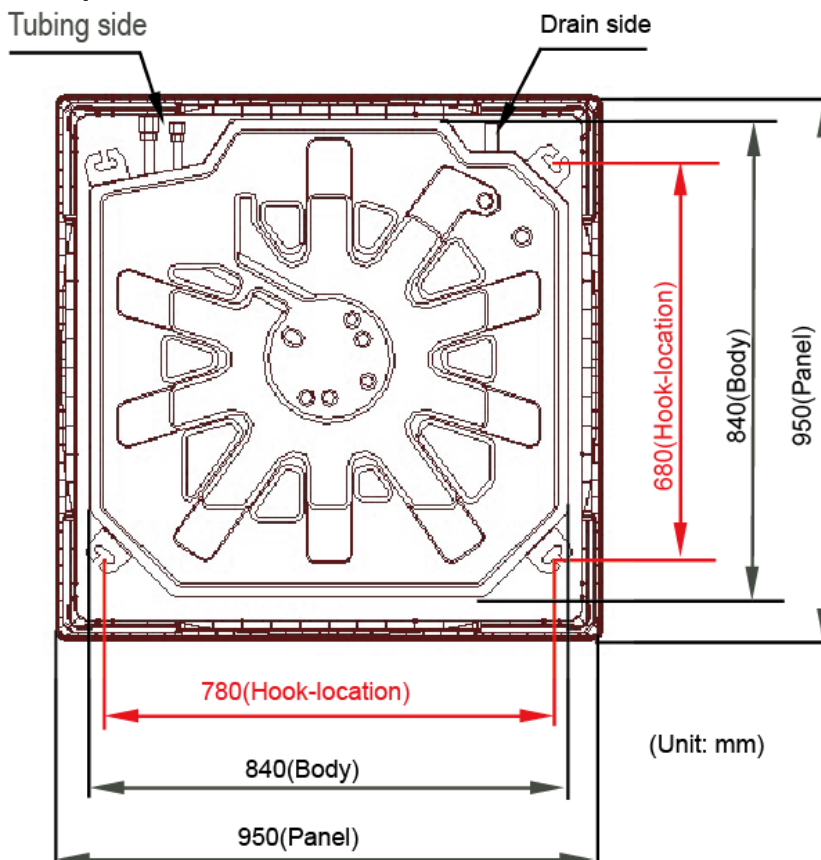
3.1 Super slim cassette indoor unit installation

3.1.1 Service space for indoor unit



Model	A	H
18	205	>235
24~42	245	>275
48/55	287	>317

3.1.2 Bolt pitch



3.1.3 Install the pendant bolt

Select the position of installation hooks according to the hook holes positions showed in upper picture. Drill four holes of $\text{Ø}12\text{mm}$, 45~50mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).

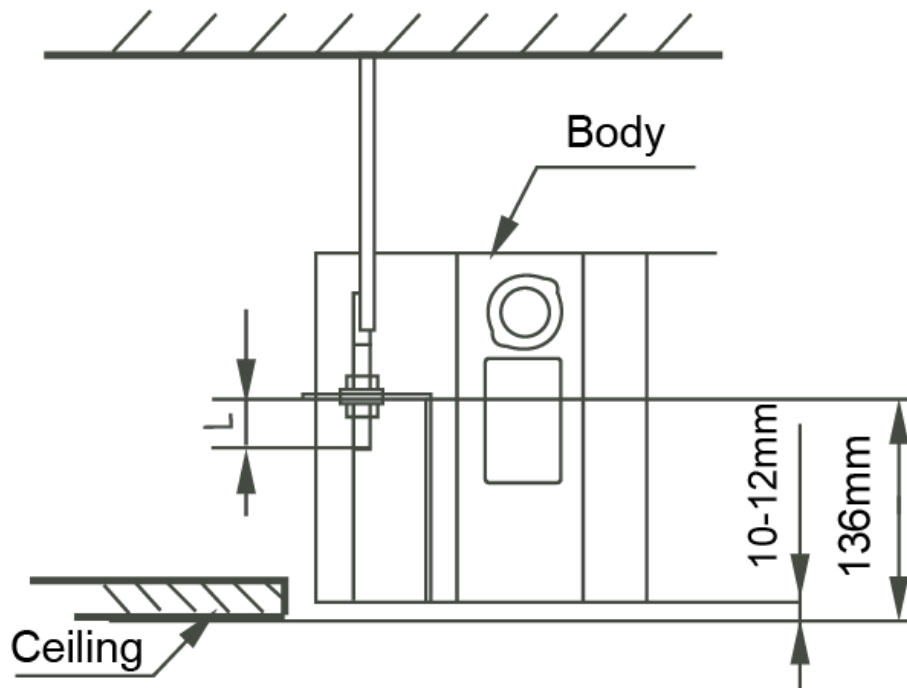


3.1.4 Install the main body

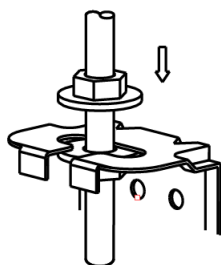
Make the 4 suspender through the 4 hanger of the main body to suspend it. Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body. Use a leveling instrument to make sure the levelness of the main body is within $\pm 1^\circ$.



Adjust the position to ensure the gaps between the body and the four sides of ceiling are even. The body's lower part should sink into the ceiling for 10~12 mm. In general, L is half of the screw length of the installation hook.

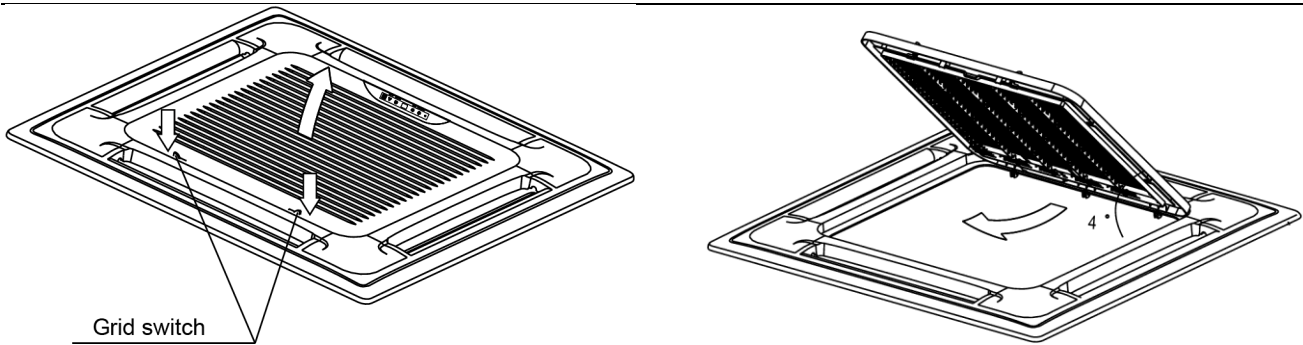


Locate the air conditioner firmly by wrenching the nuts after having adjusted the body's position well.

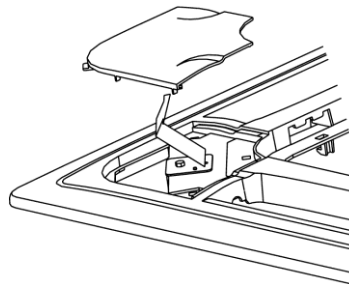


3.1.5 Install the panel

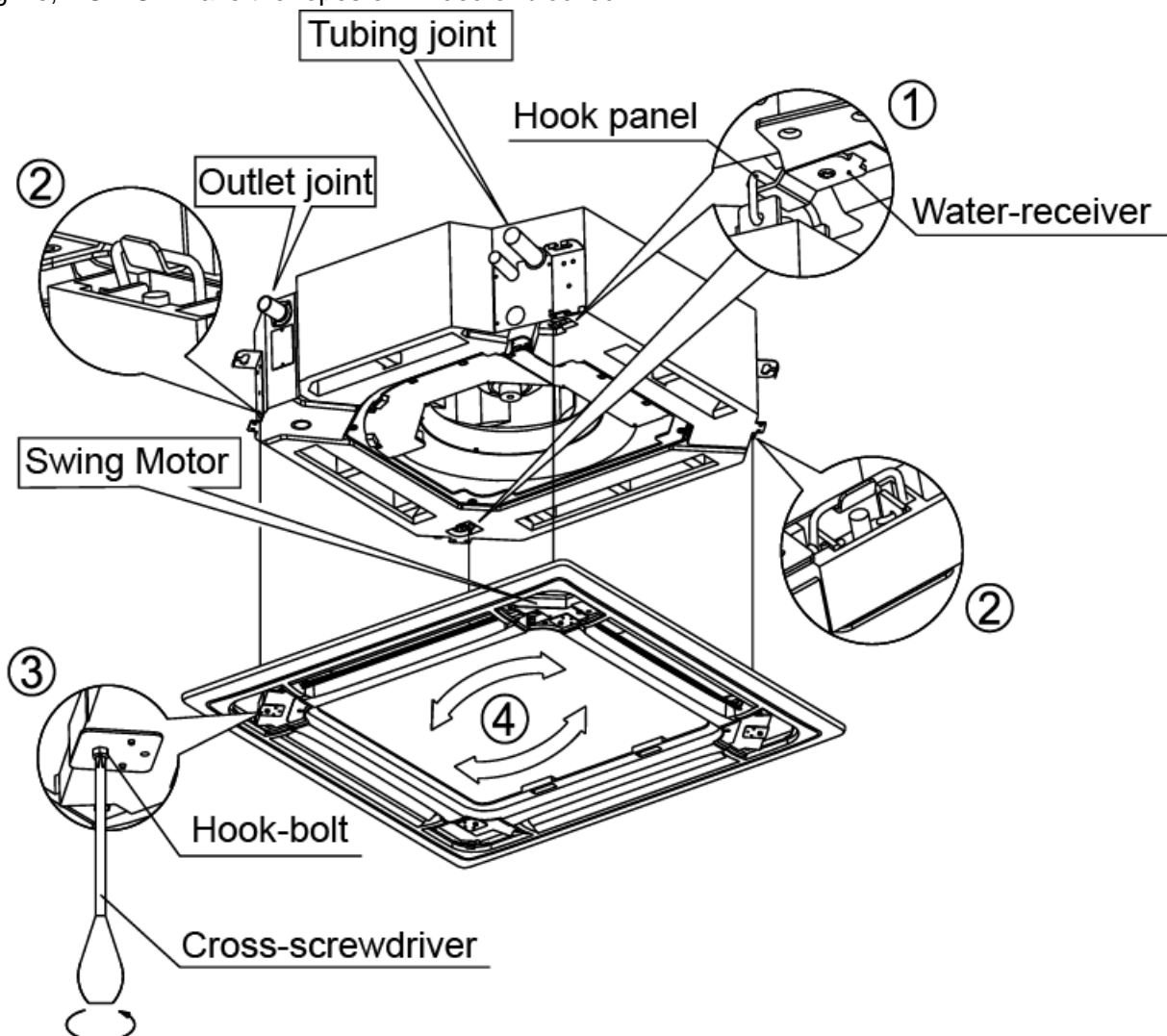
Remove the grille



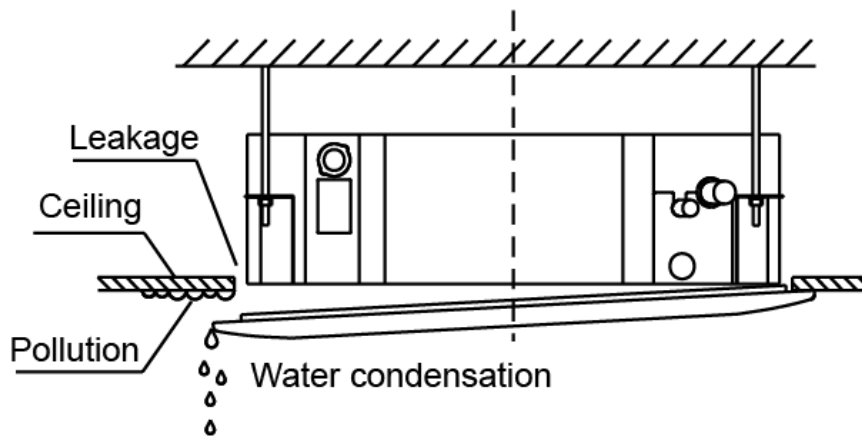
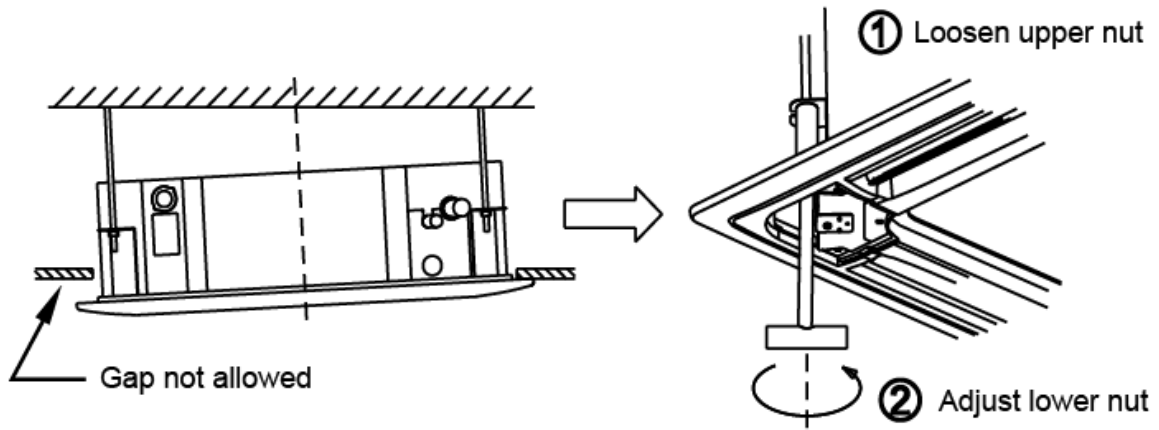
Remove the 4 corner covers.



Hang the panel to the hooks on the mainbody. If the panel is with auto-lift grille, please watch the ropes lifing the grille, DO NOT make the ropes enwinded or blocked.

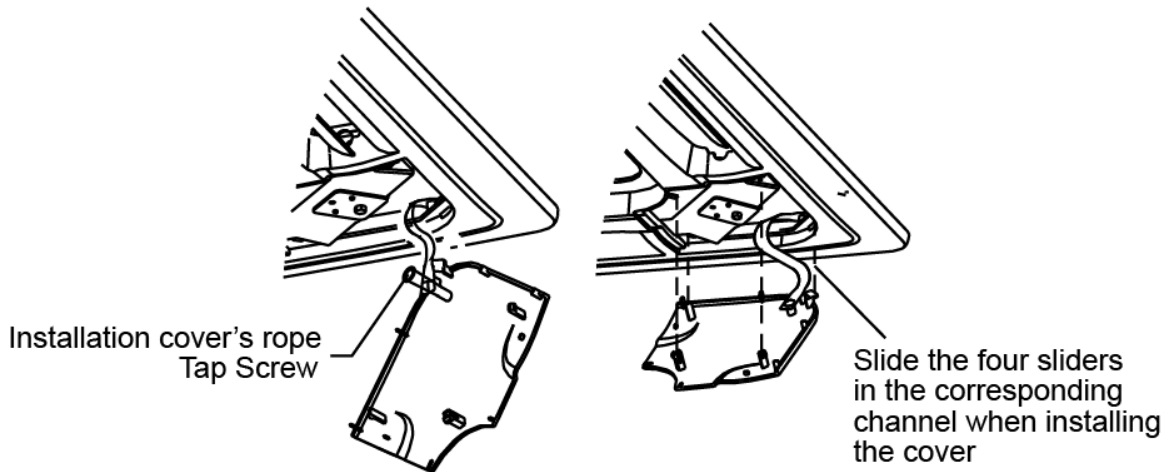


Tighten the screws under the panel hooks till the panel closely stick on the ceiling to avoid condensate water.



Hang the air-in grill to the panel, then connect the lead terminator of the swing motor and that of the control box with corresponding terminators on the body respectively.

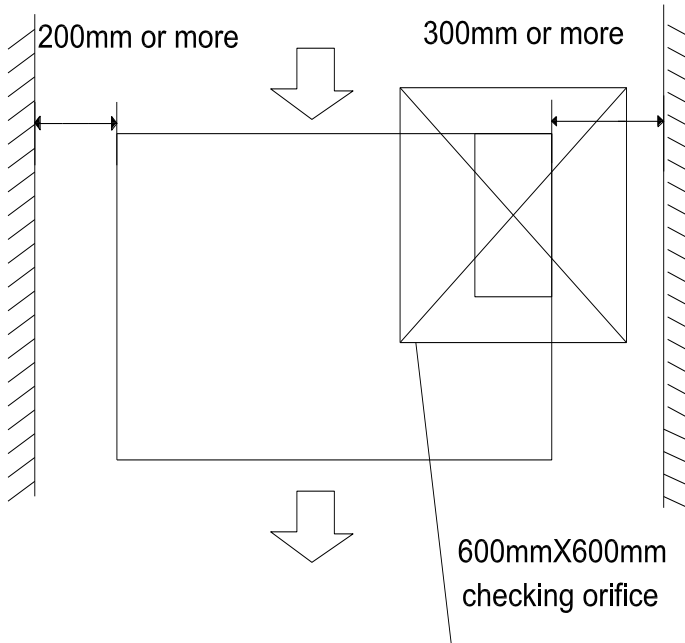
Install the 4 corner covers back.



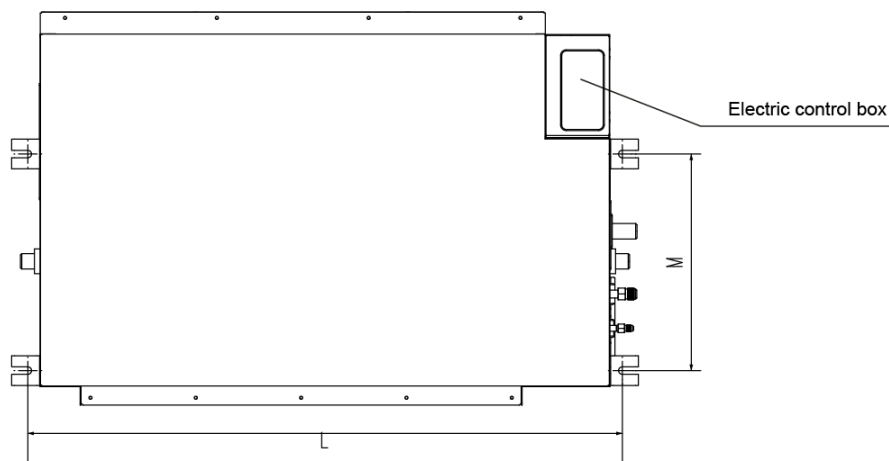
Note: The panel shall be installed after the wiring connected.

3.2 A5 duct indoor unit installation

3.2.1 Service space for indoor unit



3.2.2 Bolt pitch



Capacity(KBtu)	Size of outline dimension mounted plug	
	L	M
12	740	350
18/24	960	350
30	1240	500
36-60	1240	500

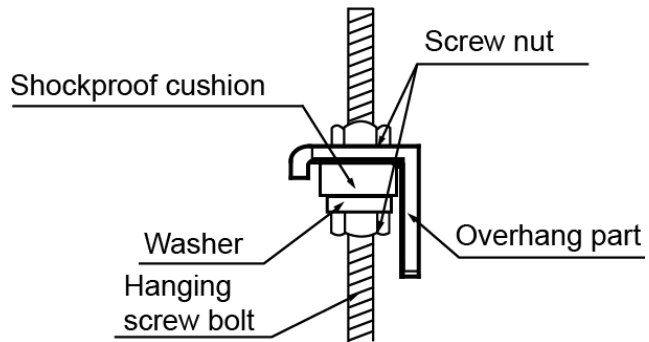
3.2.3 Install the pendant bolt

Select the position of installation hooks according to the hook holes positions showed in upper picture. Drill four holes of Ø12mm, 45~50mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).



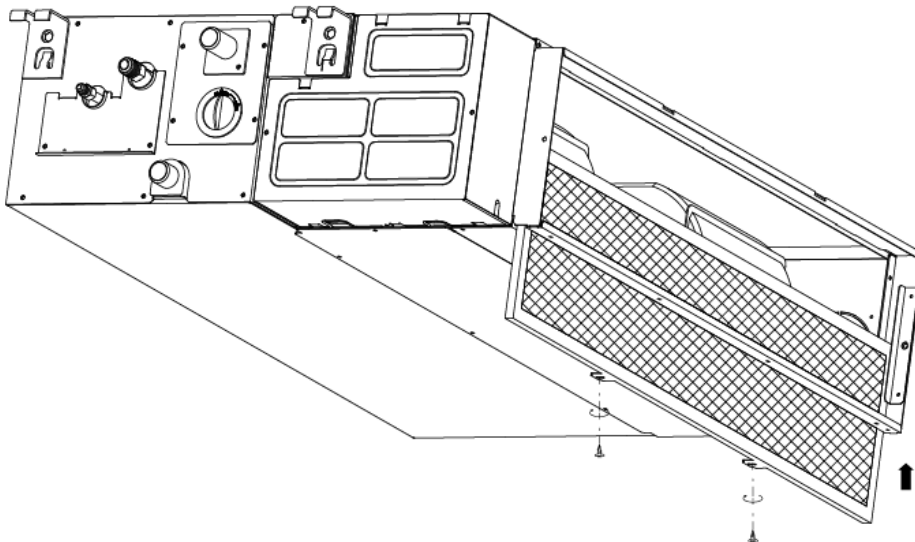
3.2.4 Install the main body

Make the 4 suspender through the 4 hanger of the main body to suspend it. Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body. Use a leveling instrument to make sure the levelness of the main body is within $\pm 1^\circ$.



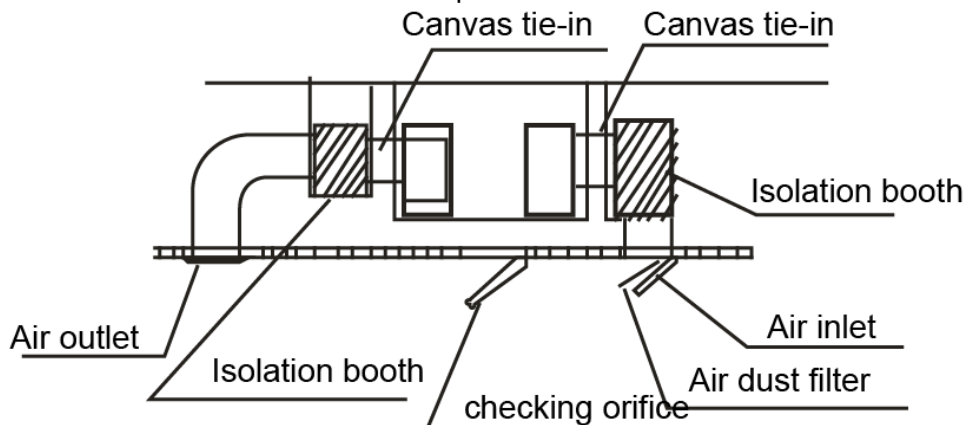
3.2.5 Install the air filter

Insert the air filter through the filter slot and fix it with 2 screws.



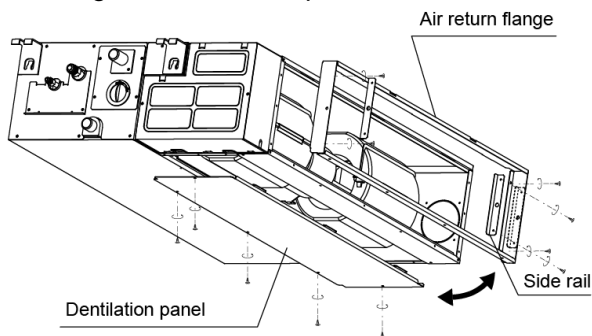
3.2.6 Install the air duct

Please design the air duct as below recommended picture

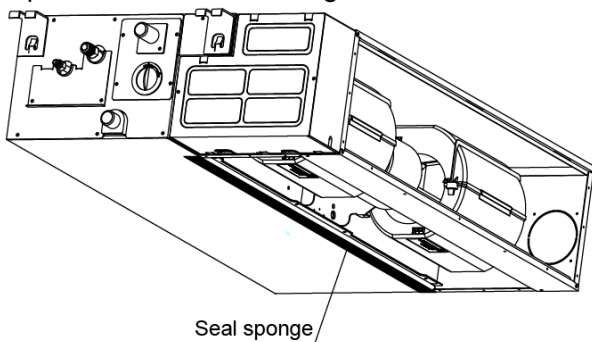


3.2.7 Change the air inlet direction

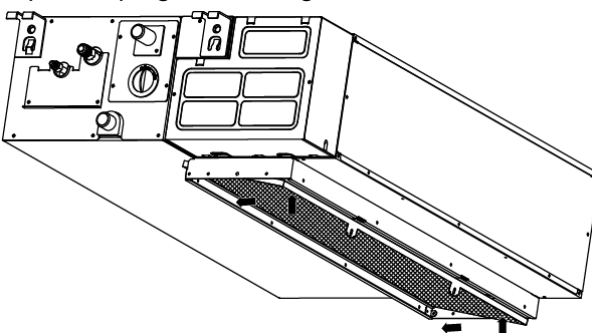
- ① Take off ventilation panel and flange, cut off the staples at side rail.



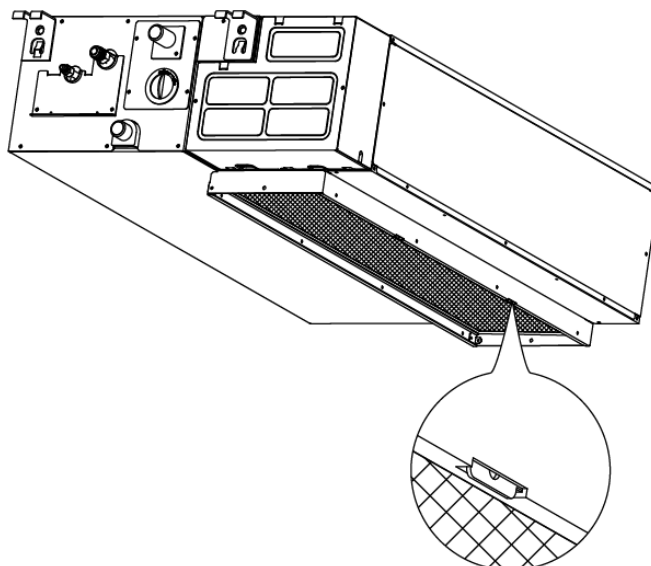
- ② Stick the attached seal sponge as per the indicating place in the following fig, and then change the mounting positions of air return panel and air return flange .



- ③ When install the filter mesh, please plug it into flange inclined from air return opening, and then push up.

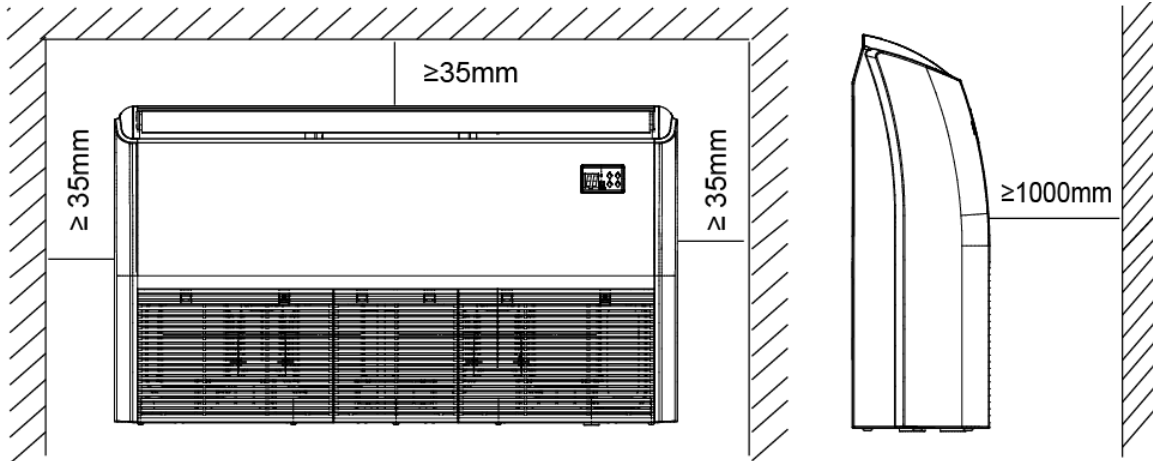


- ④ The installation has finish, upon filter mesh which fixing blocks have been insert to the flange positional holes.



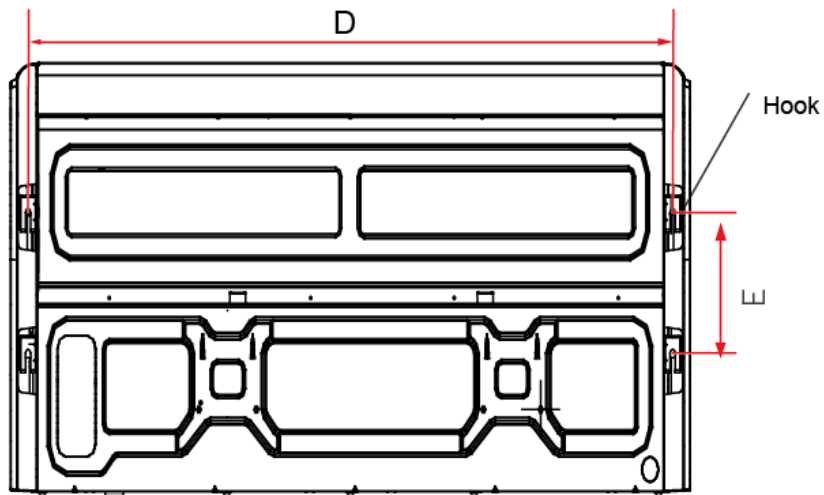
3.3 Ceiling & floor indoor unit installation

3.3.1 Service space for indoor unit



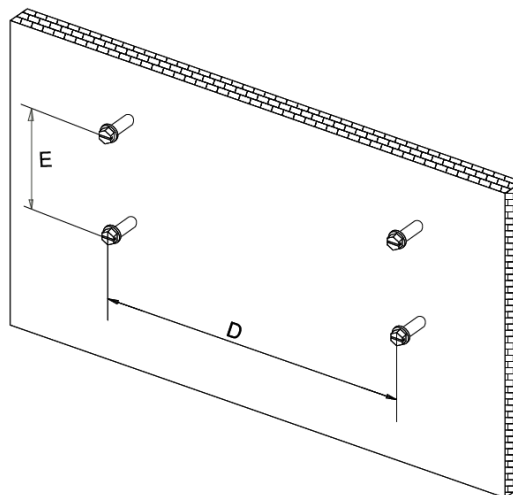
3.3.2 Bolt pitch

① Ceiling installation



Capacity (KBtu/h)	D	E
18/24	983	220
30K	1200	220
36-60	1565	220

② Wall-mounted installation



3.3.3 Install the pendant bolt

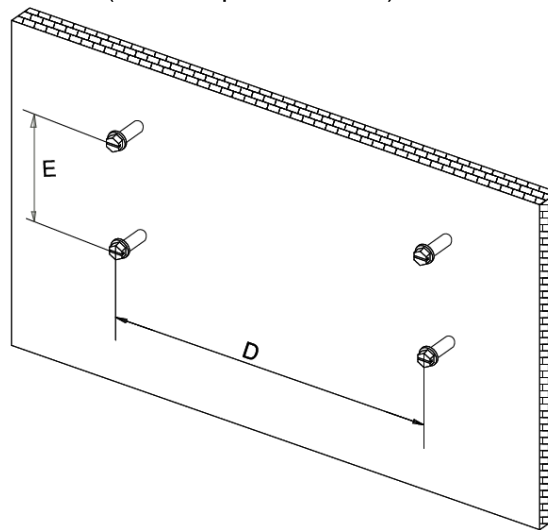
① Ceiling installation

Select the position of installation hooks according to the hook holes positions showed in upper picture. Drill four holes of Ø12mm, 45~50mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).



② Wall-mounted installation

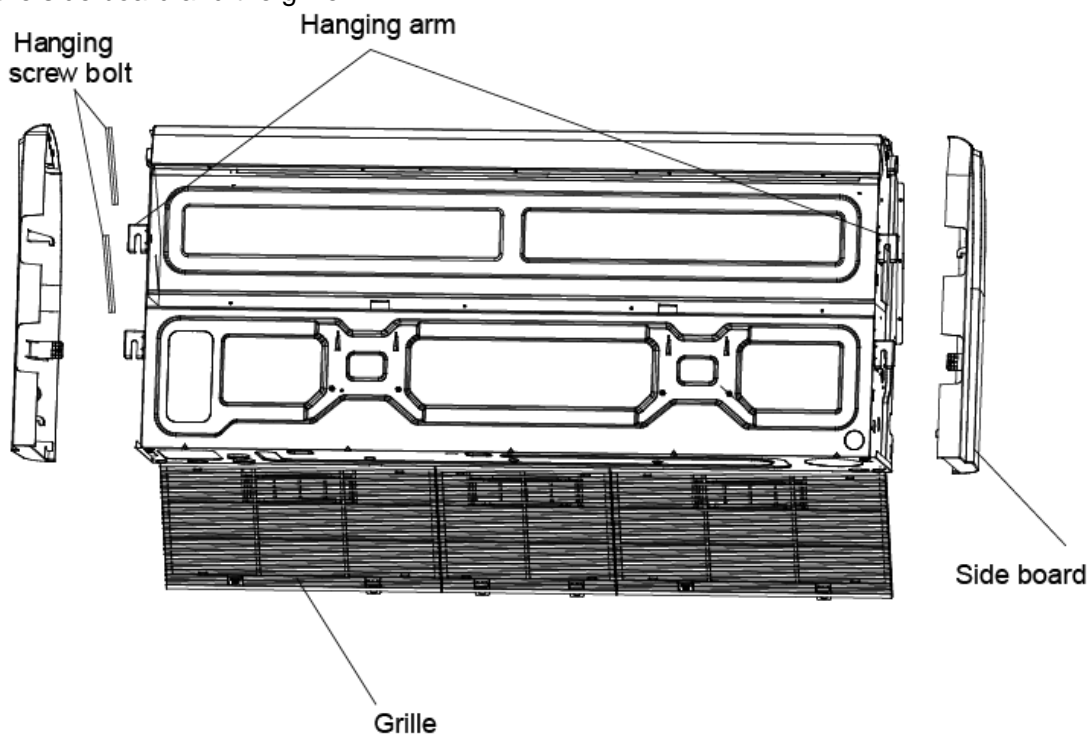
Install the tapping screws onto the wall.(Refer to picture below)



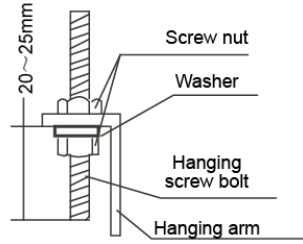
3.3.4 Install the main body

① Ceiling installation (The only installation method for the unit with drain pump)

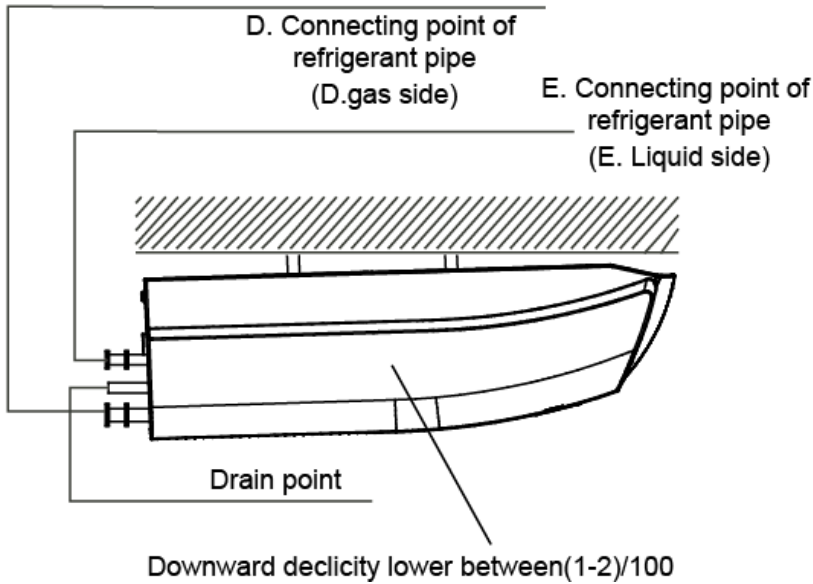
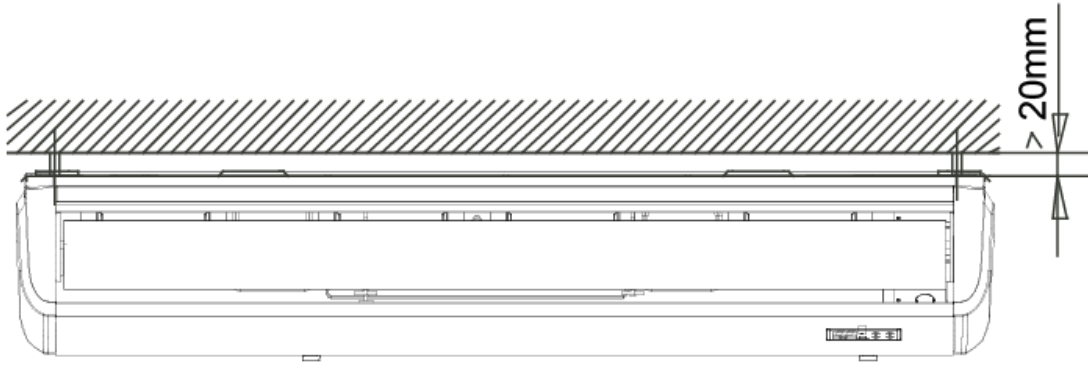
Remove the side board and the grille.



Locate the hanging arm on the hanging screw bolt. Prepare the mounting bolts on the unit.

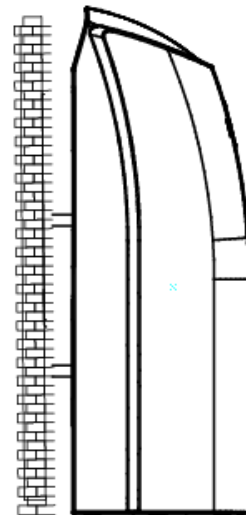
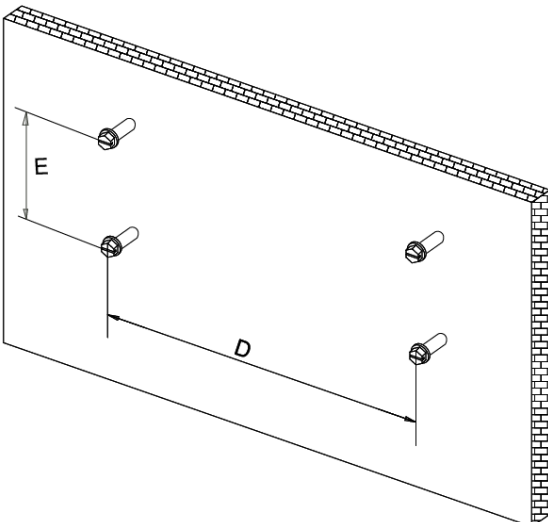


Put the side panels and grilles back.



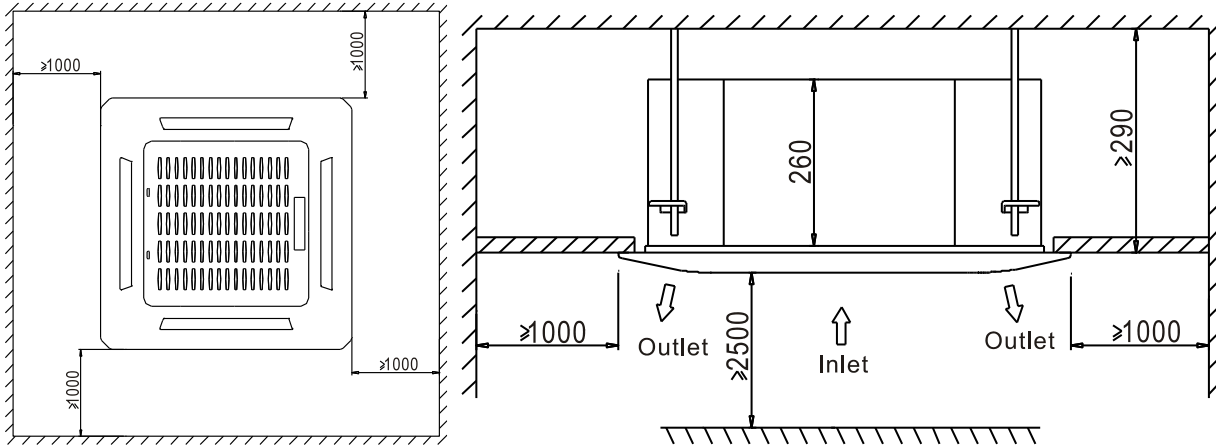
② Wall-mounted installation

Hang the indoor unit by insert the tapping screws into the hanging arms on the main unit. (The bottom of body can touch with floor or suspended, but the body must install vertically.)

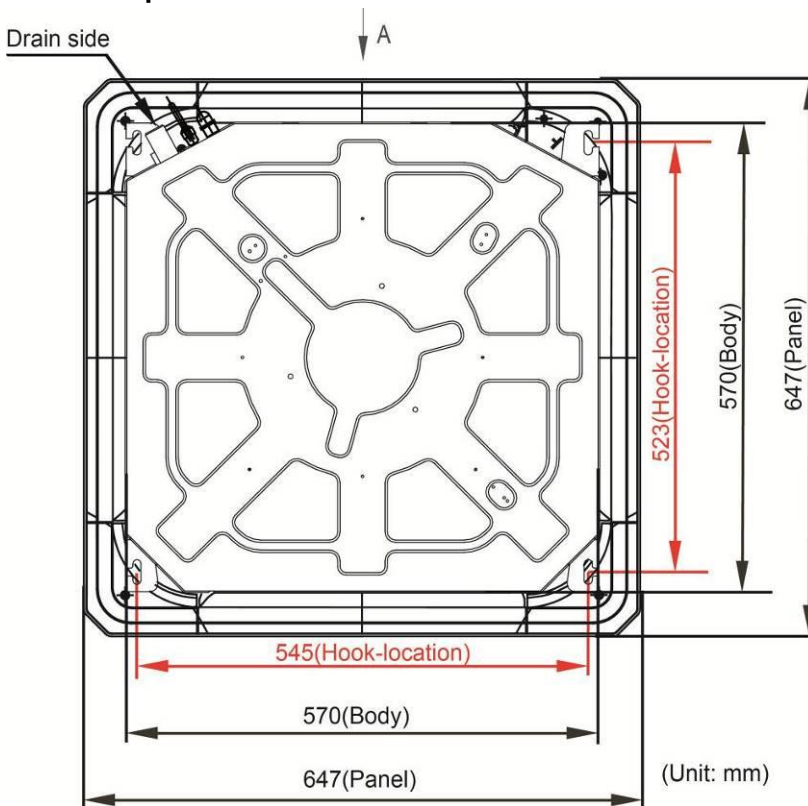


3.4 Compact cassette indoor unit installation

3.4.1 Service space for indoor unit



3.4.2 Bolt pitch



3.4.3 Install the pendant bolt

Select the position of installation hooks according to the hook holes positions showed in upper picture. Drill four holes of $\varnothing 12\text{mm}$, 45~50mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).

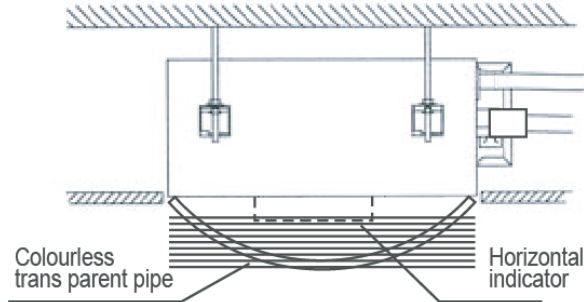


Face the concave side of the installation hooks toward the expansible hooks. Determine the length of the installation hooks from the height of ceiling, then cut off the unnecessary part.

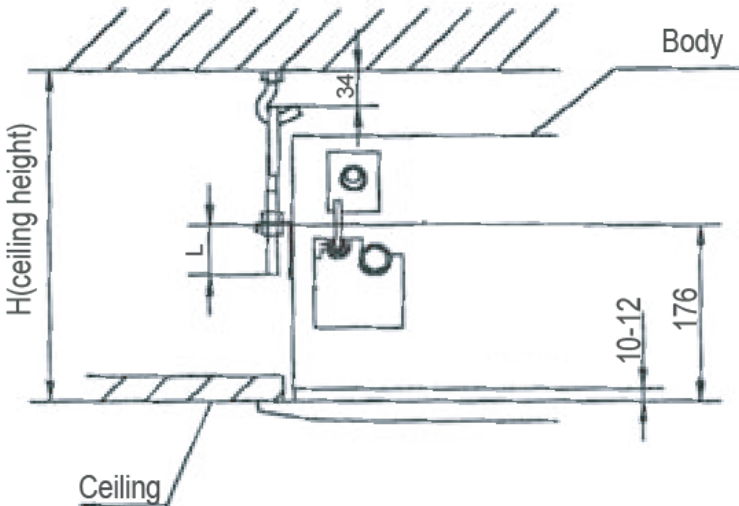
If the ceiling is extremely high, please determine the length of the installation hook depending on the real situation.

3.4.4 Install the main body

Make the 4 suspender through the 4 hanger of the main body to suspend it. Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body. Use a leveling instrument to make sure the levelness of the main body is within $\pm 1^\circ$.



Adjust the position to ensure the gaps between the body and the four sides of ceiling are even. The body's lower part should sink into the ceiling for 10~12 mm. In general, L is half of the screw length of the installation hook.

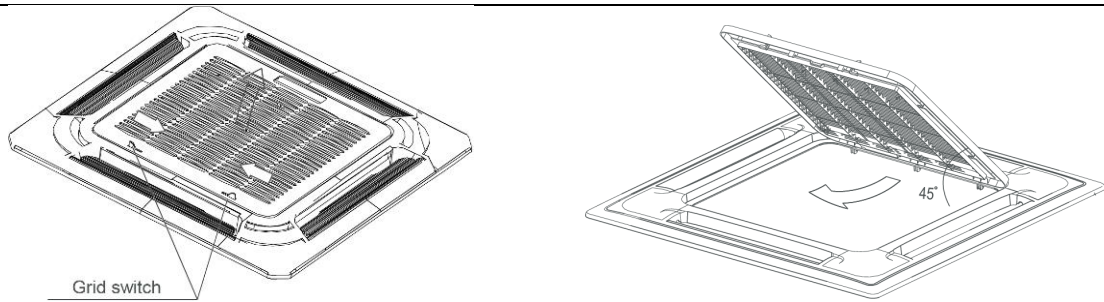


Locate the air conditioner firmly by wrenching the nuts after having adjusted the body's position well.

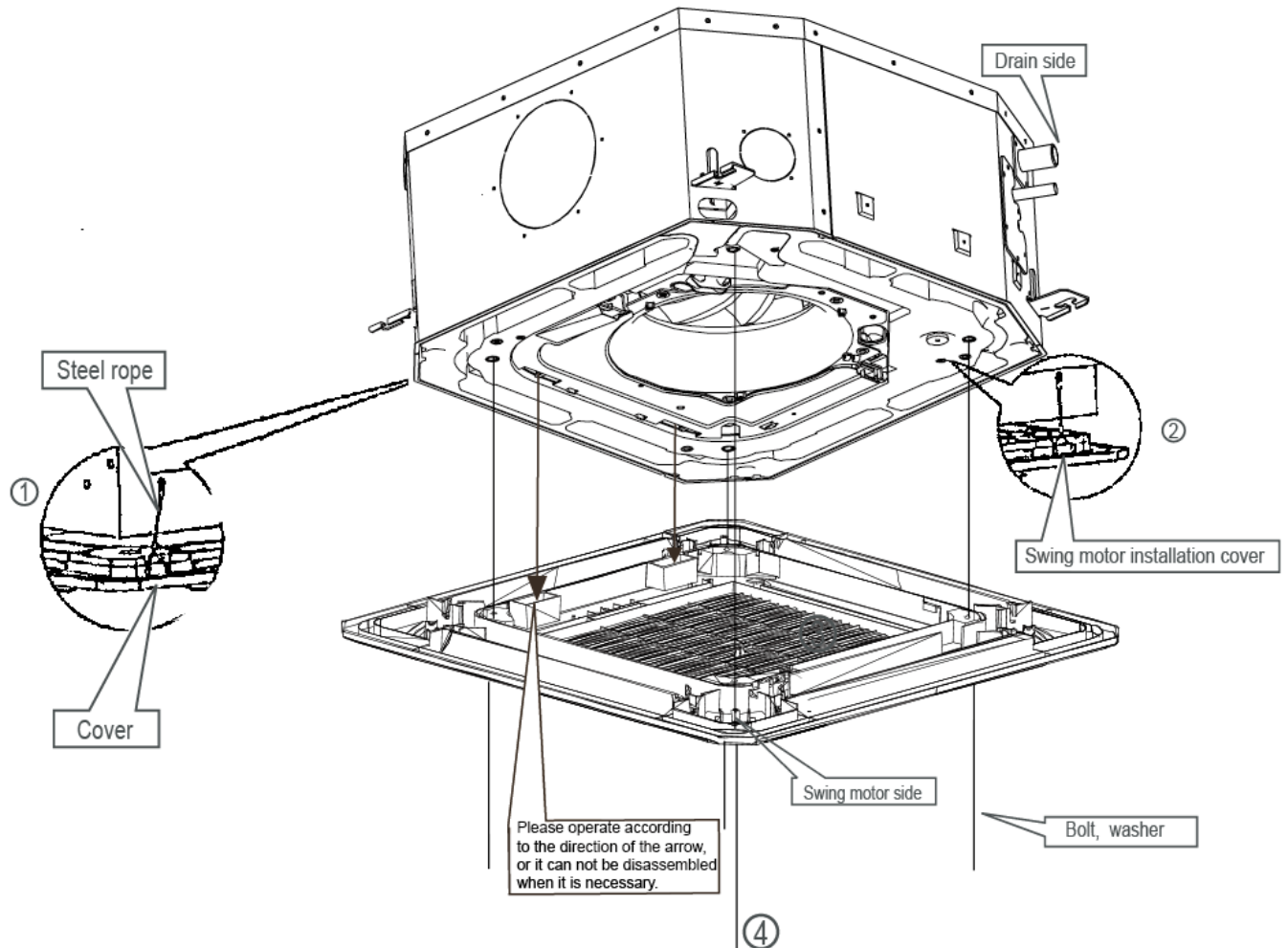


3.4.5 Install the panel

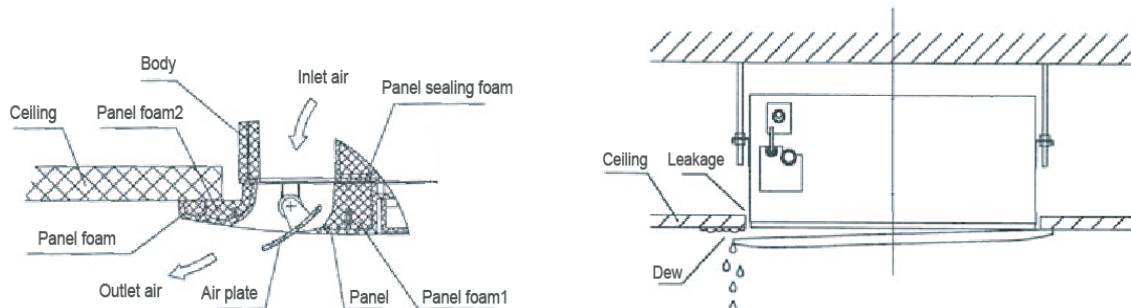
Remove the grille



Hang the panel to the hooks on the mainbody.



Tighten the screws under the panel hooks till the panel closely stick on the ceiling to avoid condensate water.

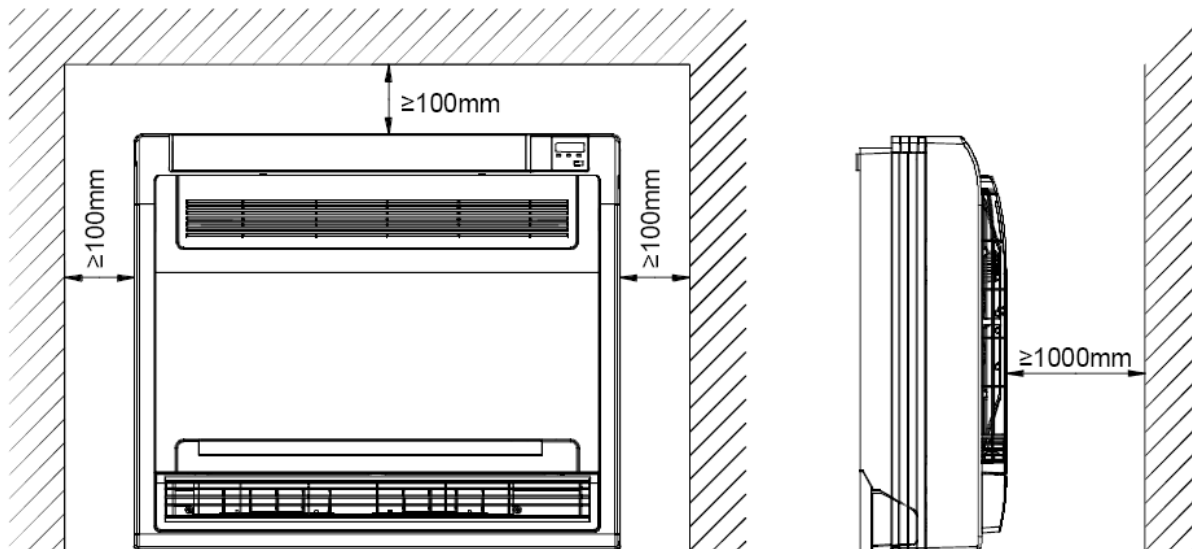


Hang the air-in grill to the panel, then connect the lead terminator of the swing motor and that of the control box with corresponding terminators on the body respectively.

Note: The panel shall be installed after the wiring connected.

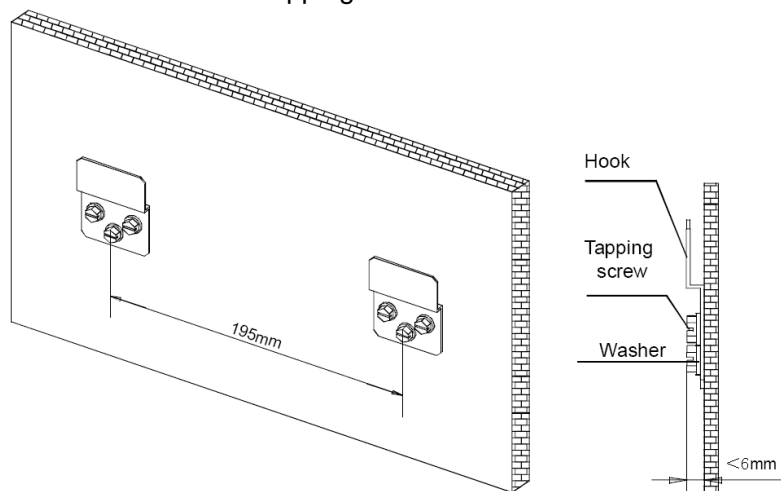
3.5 Console indoor unit installation

3.7.7 Service space for indoor unit

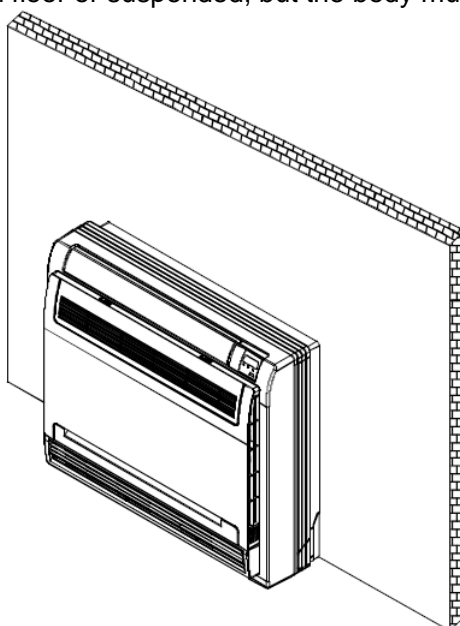


3.7.8 Install the main body

- Fix the hook with tapping screw onto the wall

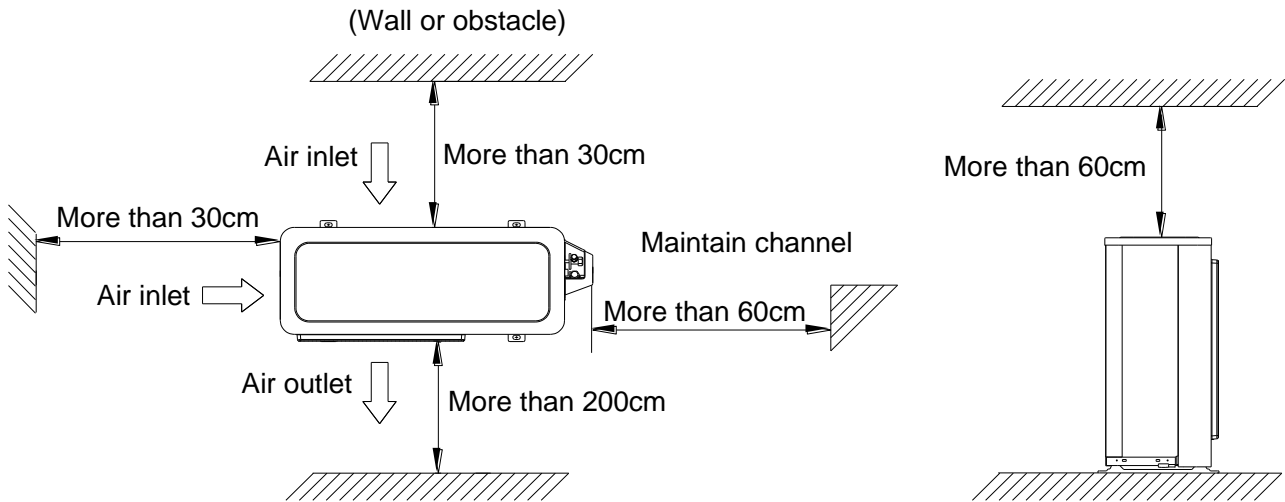


- Hang the indoor unit on the hook.
(The bottom of body can touch with floor or suspended, but the body must install vertically.)

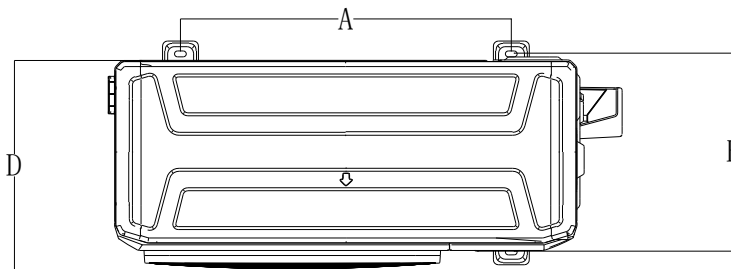


4. Outdoor unit installation (Side Discharge Unit)

4.1 Service space for outdoor unit



4.2 Bolt pitch



Model	A	B	D
12/18	514	340	333
24	540	350	363
30~42	673	403	410
48/60	634	404	415

4.3 Install the Unit

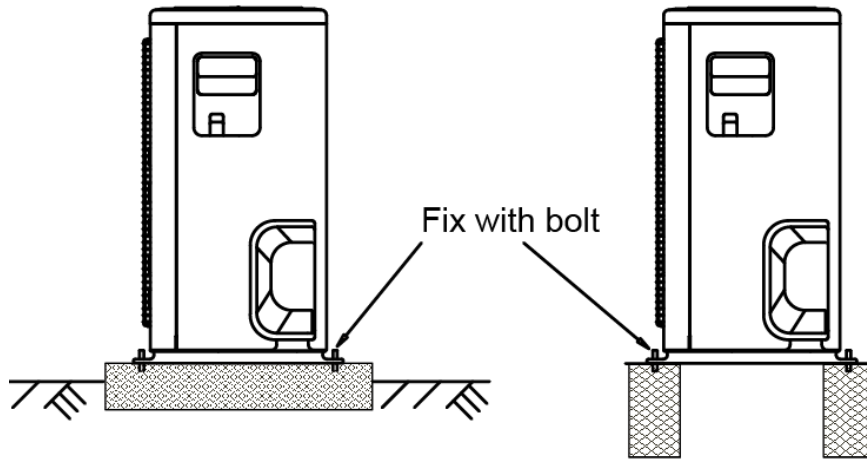
Since the gravity center of the unit is not at its physical center, so please be careful when lifting it with a sling. Never hold the inlet of the outdoor unit to prevent it from deforming.

Do not touch the fan with hands or other objects.

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

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

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



5. Refrigerant pipe installation

5.1 Maximum pipe length and height drop

Considering the allowable pipe length and height drop to decide the installation position. Make sure the distance and height drop between indoor and outdoor unit not exceeded the data in the following table.

Model	Max. Length	Max. Elevation
12,000Btu/h	25m	10m
18,000Btu/h	30m	20m
24,000Btu/h~30,000Btu/h	50m	25m
36,000Btu/h ~60,000Btu/h	65m	30m

5.2 The procedure of connecting pipes

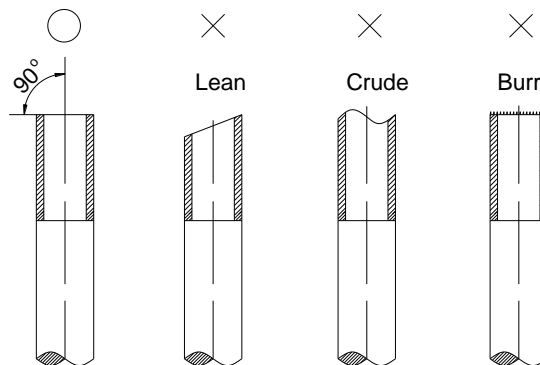
5.2.1 Choose the pipe size according to the specification table.

5.2.2 Confirm the cross way of the pipes.

5.2.3 Measure the necessary pipe length.

5.2.4 Cut the selected pipe with pipe cutter

- Make the section flat and smooth.



5.2.5 Insulate the copper pipe

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

5.2.6 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	Flare dimension A (mm)		Flare shape
	Min	Max	
1/4" (6.35)	8.3	8.7	
3/8" (9.52)	12.0	12.4	
1/2" (12.7)	15.4	15.8	
5/8" (15.9)	18.6	19.1	
3/4" (19)	22.9	23.3	

➤ 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.

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

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

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

5.2.10 Set the wall conduit

5.2.11 Set the supporter for the pipe.

5.2.12 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.

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

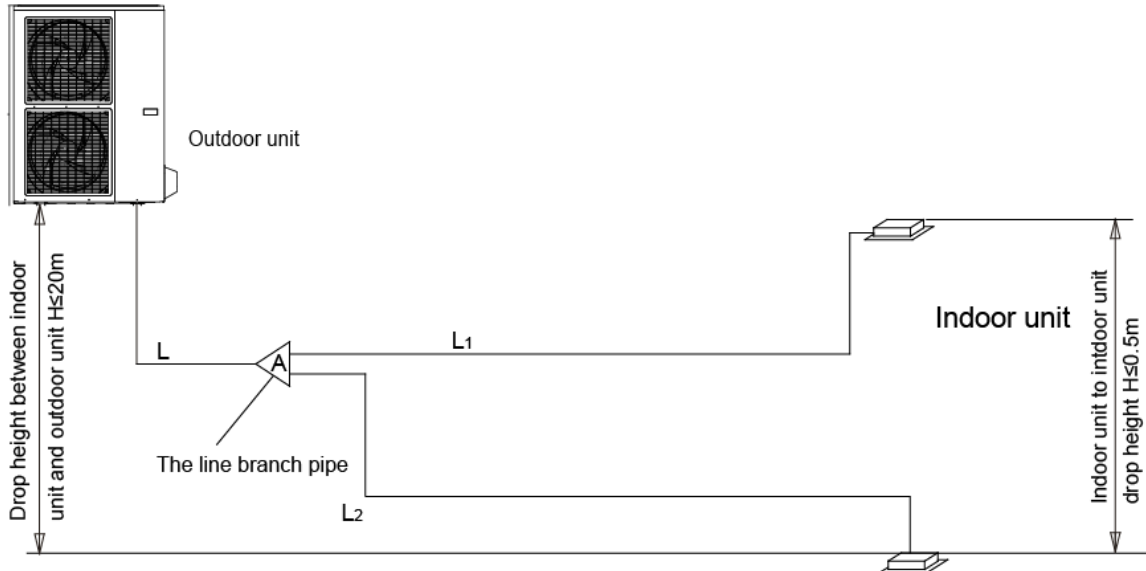
➤ Be sure to use two spanners and proper torque to fasten the nut, too large torque will damage the bellmouthing, and too small torque may cause leakage. Refer the following table for different pipe connection.

Pipe Diameter	Torque		Sketch map
	(kgf.cm)	(N.cm)	
1/4" (6.35)	144~176	1420~1720	
3/8" (9.52)	333~407	3270~3990	
1/2" (12.7)	504~616	4950~6030	
5/8" (15.9)	630~770	6180~7540	
3/4" (19)	990~1210	9270~11860	

5.3 For Units with Twins Function

5.3.1 Length and drop height permitted of the refrigerant piping

Note: Reduced length of the branching tube is the 0.5m of the equivalent length of the pipe.



Note: All used branch pipe must use the one recommended, otherwise it causes malfunction. The indoor units should be installed equivalently at the both side of the U type branch pipe.

		Permitted Value		Piping
Pipe Length	Total pipe length (Actual)	18K+18K	30m	L+L1+L2
		24K+24K	50m	
		30K+30K	50m	
	Max. branch pipe length		15m	L1, L2
	Max. branch pipe length difference		10m	L1-L2
Drop Height	Max. height difference between indoor unit and outdoor unit		20m	H1
	Max. height difference between indoor units		0.5m	H2

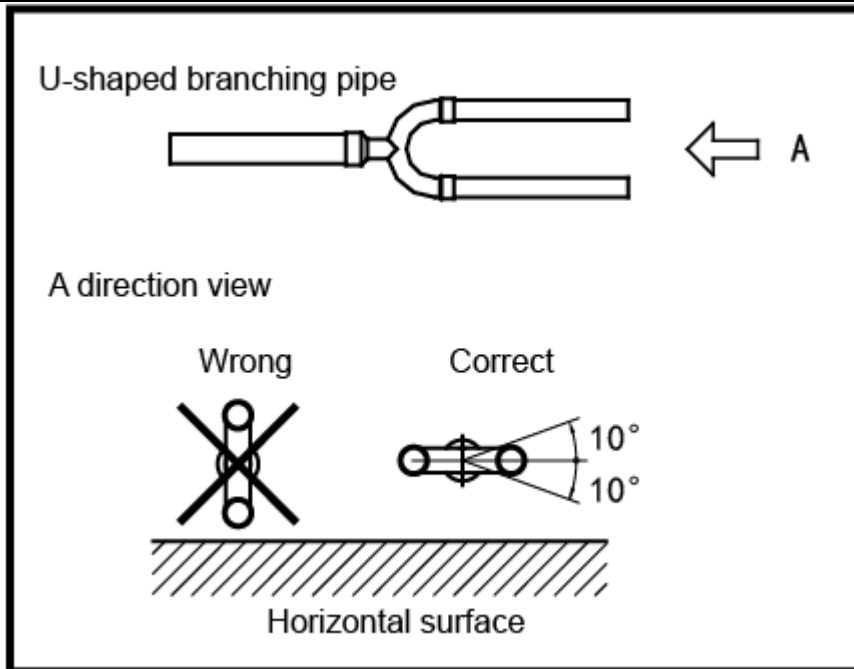
5.3.2 Size of joint pipes for indoor unit (R410a)

Capacity of indoor unit (A)	Size of main pipe(mm)		
	Gas side	Liquid side	Available branching pipe
18K	Φ12.7	Φ6.35	CE-FQZHN-01C
24K	Φ15.9	Φ9.5	CE-FQZHN-01C
30K	Φ15.9	Φ9.5	CE-FQZHN-01C

5.3.3 Size of joint pipes for outdoor unit (R410a)

Model	the size of main pipe(mm)		
	Gas side	Liquid side	The 1st branching pipe
36K	Φ15.9	Φ9.5	CE-FQZHN-01C
48K	Φ15.9	Φ9.5	CE-FQZHN-01C
60K	Φ15.9	Φ9.5	CE-FQZHN-01C

5.3.4 The branching pipe must be installed horizontally, error angle of it should not large than 10°. Otherwise, malfunction will be caused.



6. Drainage pipe installation

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

6.1 Installation principle

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

6.2 Key points of drainage water pipe installation

6.2.1 Considering the pipeline route and elevation

- Before installing condensate water pipeline, determine its route and elevation to avoid intersection with other pipelines and ensure slope is straight.

6.2.2 Drainage pipe selection

- The drainage pipe diameter shall not small than the drain hose of indoor unit
- According to the water flowrate and drainage pipe slope to choose the suitable pipe, the water flowrate is decided by the capacity of indoor unit.

Relationship between water flowrate and capacity of indoor unit

Capacity (x1000Btu)	Water flowrate (H)
12	2.4
18	4
24	6
30	7
36	8
42	10
48	12
60	14

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

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

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

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

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

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

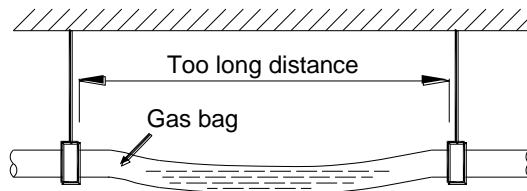
Attention: Adopt PVC40 or bigger pipe to be the main pipe.

6.2.3 Individual design of drainage pipe system

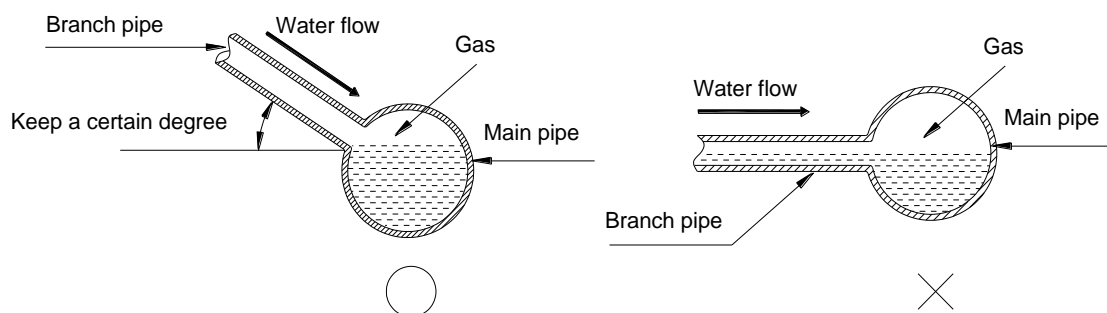
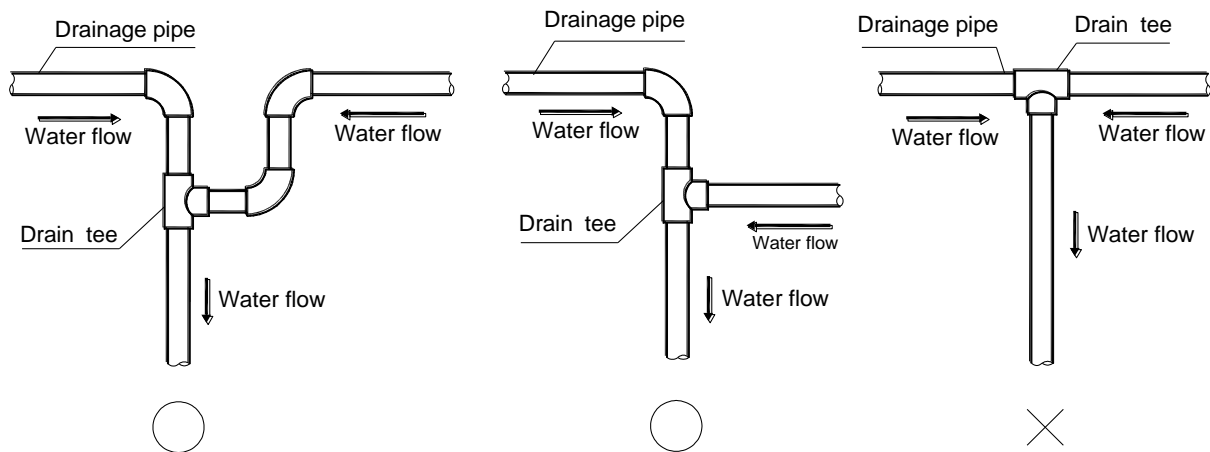
- The drainage pipe of air conditioner shall be installed separately with other sewage pipe, rainwater pipe and drainage pipe in building.
- The drainage pipe of the indoor unit with water pump should be apart from the one without water pump.

6.2.4 Supporter gap of drainage pipe

- In general, the supporter gap of the drainage pipe horizontal pipe and vertical pipe is respectively 1m~1.5m and 1.5m~2.0m.
- Each vertical pipe shall be equipped with not less than two hangers.
- Overlarge hanger gap for horizontal pipe shall create bending, thus leading to air block.



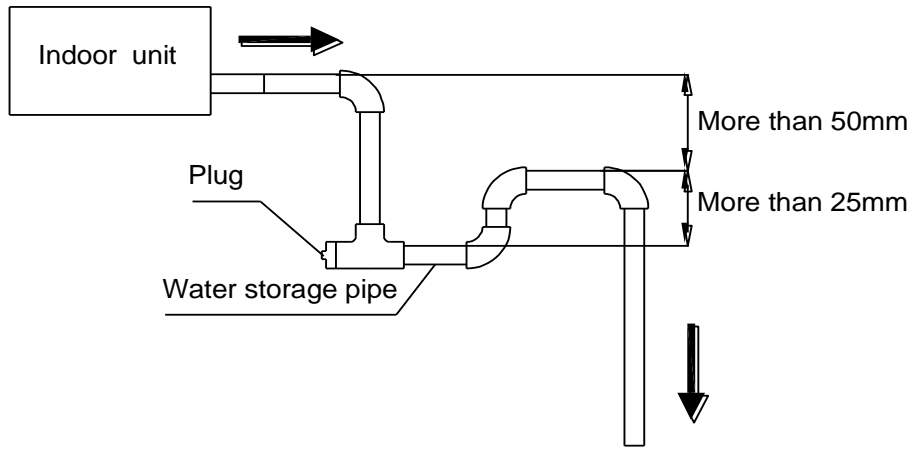
6.2.5 The horizontal pipe layout should avoid converse flow or bad flow



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

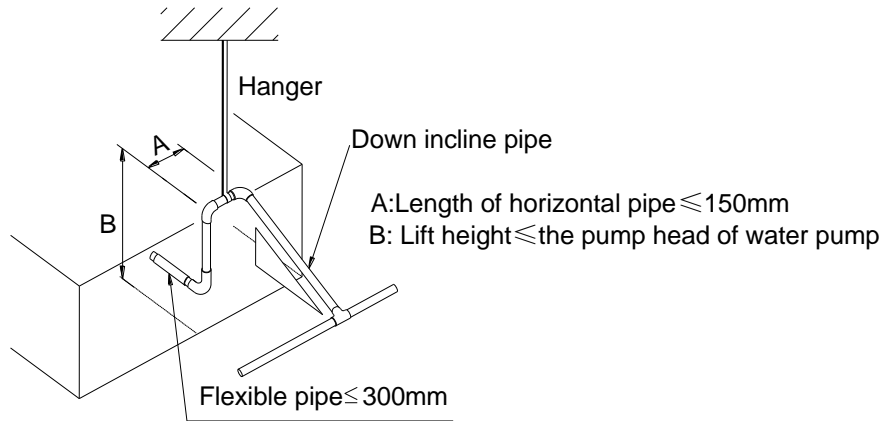
6.2.6 Water storage pipe setting

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



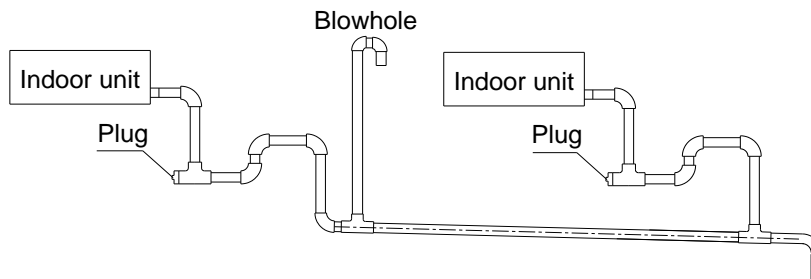
6.2.7 Lifting pipe setting of indoor unit with water pump

- The length of lifting pipe should not exceed the pump head of indoor unit water pump.
Pump head of big four way cassette: 750mm
Pump head of compact four way cassette: 500mm
- The drainage pipe should be set down inclined after the lifting pipe immediately to avoid wrong operation of water level switch.
- Refer the following picture for installation reference.



6.2.8 Blowhole setting

- For the concentrated drainage pipe system, there should design a blowhole at the highest point of main pipe to ensure the condensate water discharge smoothly.
- The air outlet shall face down to prevent dirt entering pipe.
- Each indoor unit of the system should be installed it.
- The installation should be considering the convenience for future cleaning.



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

6.3 Drainage test

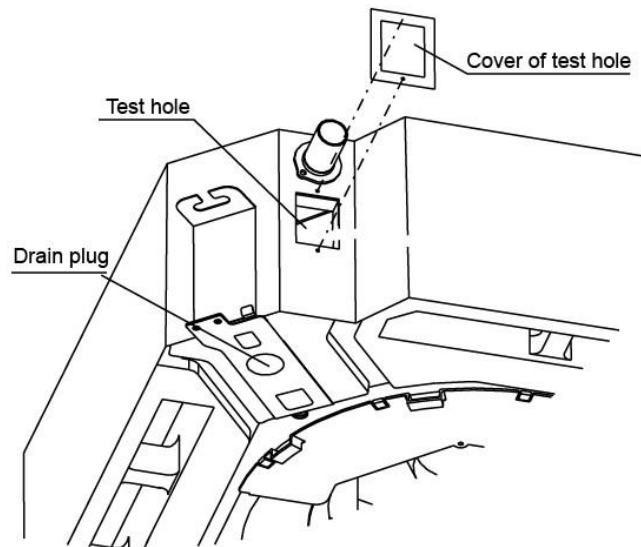
6.3.1 Water leakage test

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

6.3.2 Water discharge test

1. Natural drainage mode(the indoor unit with outdoor drainage pump)

Infuse above 600ml water through water test hole slowly into the water collector, observe whether the water can discharge through the transparent hard pipe at drainage outlet.
2. Pump drainage mode
 - 2.1 Disconnect the plug of water level switch, remove the cover of water test hole and slowly infuse about 2000ml water through the water test hole, be sure that the water will not touch the motor of drainage pump.



- 2.2 Power on and let the air conditioner operate for cooling. Check operation status of drainage pump, and then connect the plug of water level switch, check the operation sound of water pump and observe whether the water can discharge through the transparent hard pipe at drainage outlet. (In light of the length of drainage pipe, water shall be discharged about 1 minute delayed)
- 2.3 Stop the operation of air conditioner, power off the power supply and put the cover of water test hole back to the original place.
 - a. After stopped the air conditioner 3 minutes, check whether there is anything abnormal. If drainage pipes have not been distributed properly, over back-flow water shall cause the flashing of alarm indicator at remote-controlled receiving board and even water shall run over the water collector.
 - b. Continuously infusing water until water level alarmed, check whether the drainage pump could discharge water at once. If water level does not decline under warning water level 3 minutes later, it shall cause shutdown of unit. When this situation happens, the normal startup only can be recovered by turning down power supply and eliminating accumulated water.

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

6.4 Insulation work of drainage pipe

Refer the introduction to the insulation engineering parts.

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 1hour (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)	Φ6.35	Φ9.52
Formula	$V=15g/m \times (L-5)$	$V=30g/m \times (L-5)$

V: Additional refrigerant charge volume (g).

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

Note:

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

9. Engineering of insulation

9.1 Insulation of refrigerant pipe

9.1.1 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

9.1.2 Purpose of refrigerant pipe insulation

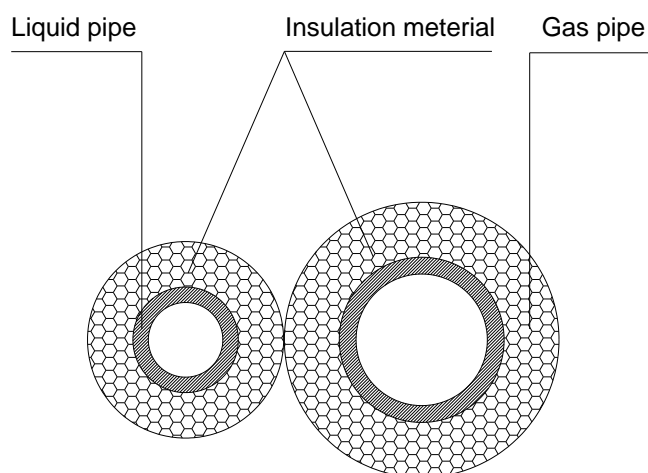
- During operation, temperature of gas pipe and liquid pipe shall be over-heating or over-cooling extremely. Therefore, it is necessary to carry out insulation; otherwise it shall debase the performance of unit and burn compressor.
- Gas pipe temperature is very low during cooling. If insulation is not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

9.1.3 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.

9.1.4 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

9.2.1 Operational procedure of refrigerant pipe insulation

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

9.2.2 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.

9.2.3 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.

9.2.4 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 data 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.

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

Set the air conditioner under the mode of "COOLING" by remote controller, 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.

Part 5

Electrical Control System

1.	Electrical Control Function	175
2.	Troubleshooting	185

1. Electrical Control Function

1.1 Definition

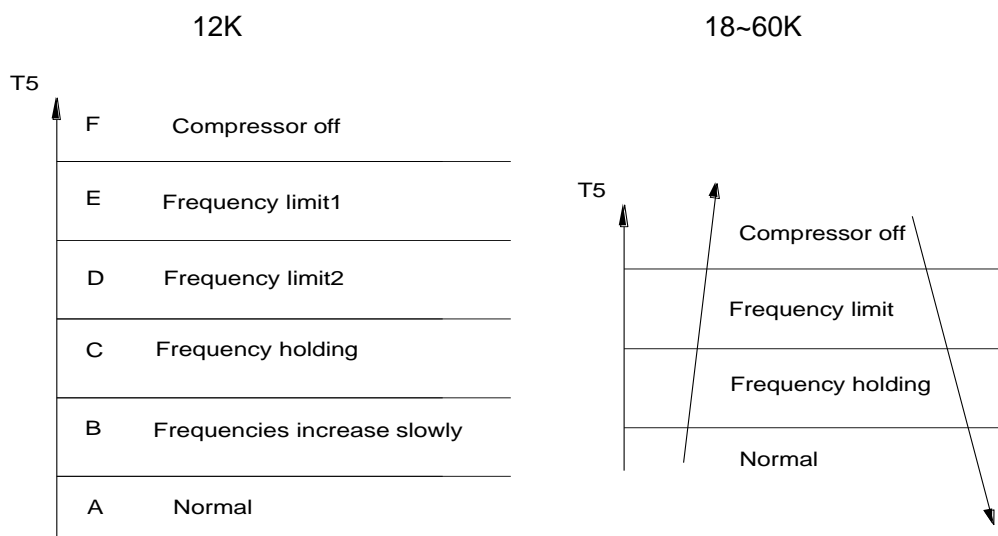
- T1: Indoor room temperature
- T2: Coil temperature of indoor heat exchanger middle.
- T2B: Coil temperature of indoor heat exchanger outlet.
- T3: Coil temperature of condenser
- T4: Outdoor ambient temperature
- T5: Compressor discharge temperature

1.2 Main Protection

1.2.1 Time delay at restart for compressor.

1.2.2 Temperature protection of compressor discharge

When the compressor discharge temp. is getting higher, the running frequency will be limited as below rules:



1.2.3 Sensor protection at open circuit and breaking disconnection.

1.2.5 Indoor fan delayed open function

When the unit starts up, the louver will be active immediately and the indoor fan will open 7s later. If the unit runs in heating mode, the indoor fan will be also controlled by anti-cold wind function.

1.2.6 Fan speed is out of control

For console:

When indoor fan speed keeps too low (300RPM) for certain time, the unit will stop and the LED will display the failure.

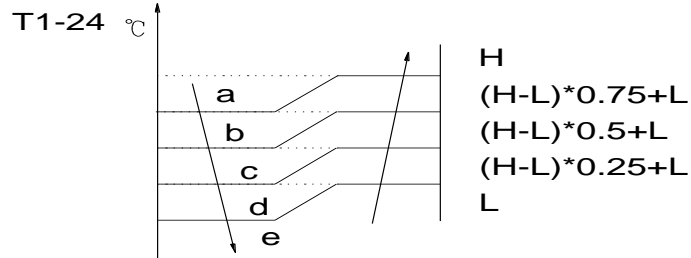
For other models:

When indoor fan speed keeps too low (lower than 300 RPM) for 50s, the indoor fan will shut off and restart 30s later, if protection happened 3 times when fan motor restart continuously, the unit will stop and the LED will display the failure.

1.3 Operation Modes and Functions

1.3.1 Fan mode

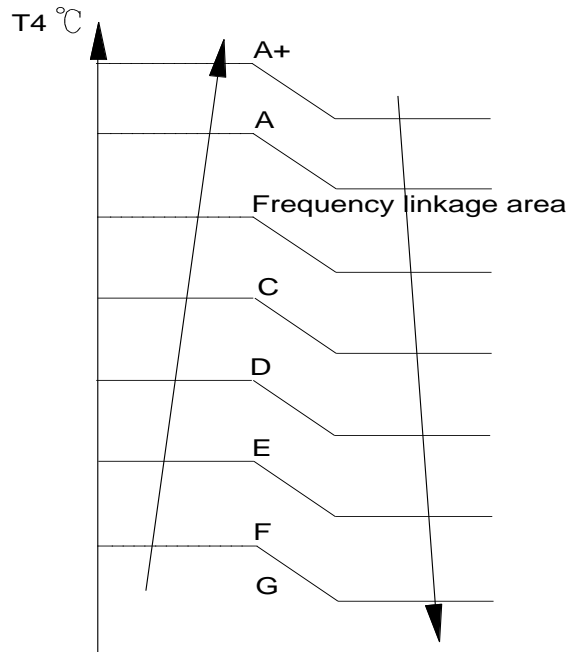
- (1) Outdoor fan and compressor stop.
- (2) Temperature setting function is disabled, and no setting temperature is displayed.
- (3) The louver operates same as in cooling mode.
- (4) Auto fan:



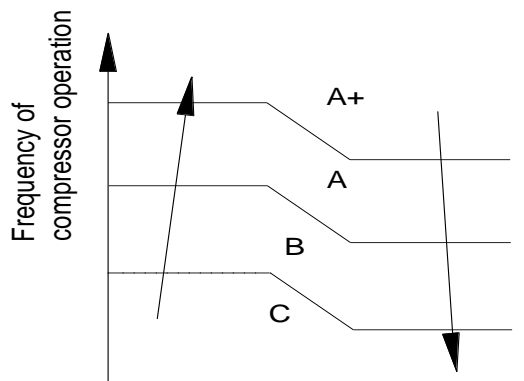
1.3.2 Cooling Mode

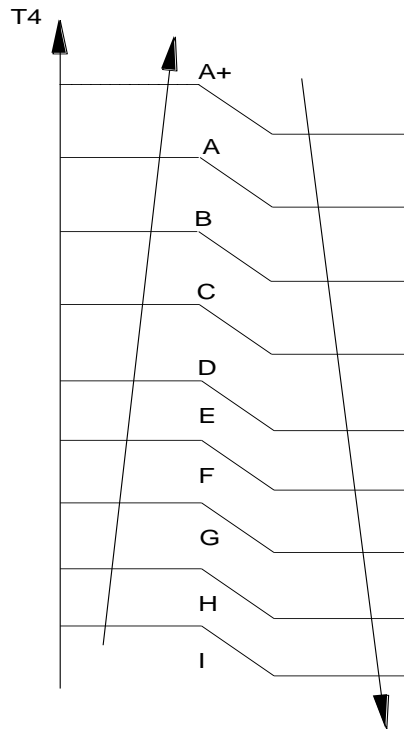
1.3.2.1 Outdoor fan running rules

The outdoor unit will be run at different fan speed according to T4.
 For different outdoor units, the fan speeds are different.
 12K



Frequency linkage area:



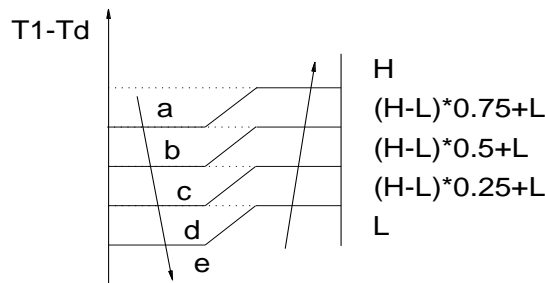


1.3.2.3 Indoor fan running rules

In cooling mode, indoor fan runs all the time and the speed can be selected as high, medium, low, auto and silent. When the compressor is running, the indoor fan is controlled as below:

Setting fan speed	T1-Td °C(°F)	Actual fan speed
H	A	H+ (H+=H+G)
	B	H (=H)
	C	H- (H-=H-G)
M	D	M+ (M+=M+Z)
	E	M (M=M)
	F	M- (M-=M-Z)
L	G	L+ (L+=L+D)
	H	L (L=L)
	I	L- (L-=L-D)

The auto fan acts as below rules:



1.3.2.3 Evaporator low temperature T2 protection.

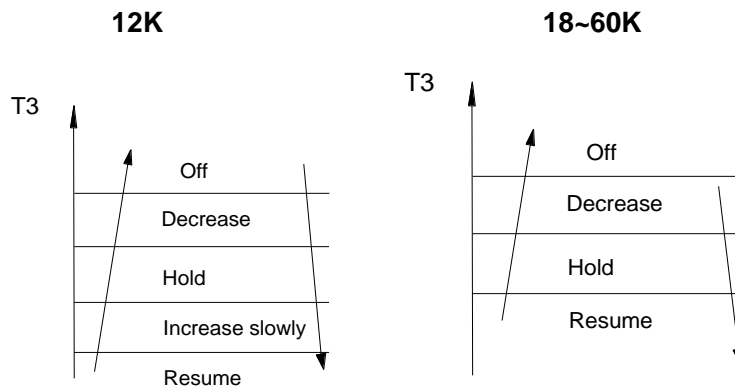
--- $T_2 < 0^\circ\text{C}$, the compressor will stop and restart when $T_2 \geq 5^\circ\text{C}$.

--- $0^\circ\text{C} \leq T_2 < 4^\circ\text{C}$, the compressor frequency will be limited and decreased to the lower level

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

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

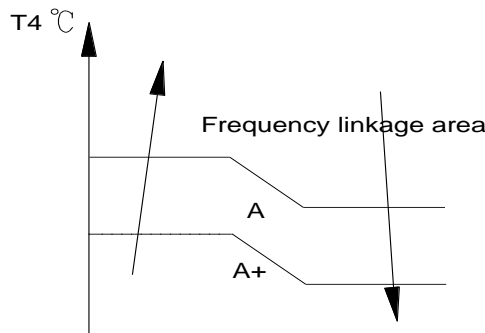
1.3.2.4 Condenser high temperature T3 protection



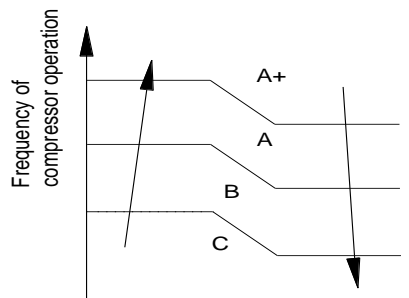
1.3.3 Heating Mode

1.3.3.1 Outdoor fan running rules:

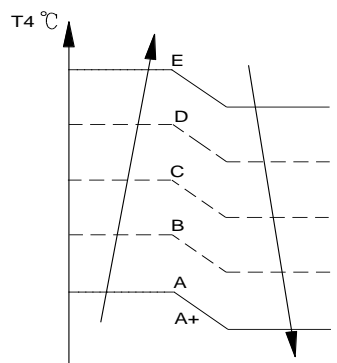
12K



Frequency linkage area:



18~60K:



1.3.3.2 Indoor fan running rules:

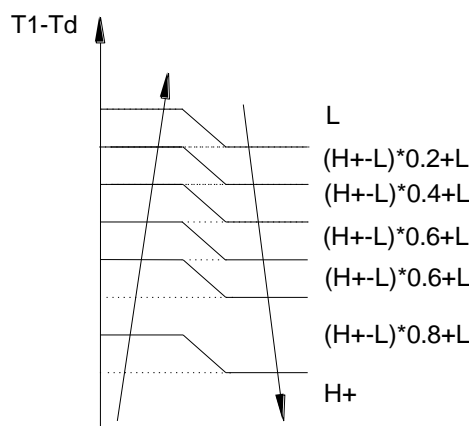
In heating mode, indoor fan can be selected as high, medium, low, auto and silent. The anti-cold- wind function has the priority.

When the compressor is running, the indoor fan is controlled as below:

Setting fan speed	T1-Td°C	Actual fan speed
H		H- (H=H-G)
		H (=H)
		H+(H+=H+G)
M		M-(M=M-Z)
		M(M=M)
		M+(M+=M+Z)
L		L-(L=L-D)
		L(L=L)
		L+(L+=L+D)

If the compressor stops caused by the room temperature rising, the indoor fan will be forced to run 127 seconds with breeze. During this period, the anti-cold-wind is disabled.

Auto fan action in heating mode:



1.3.3.3 Defrosting mode:

Condition of defrosting:

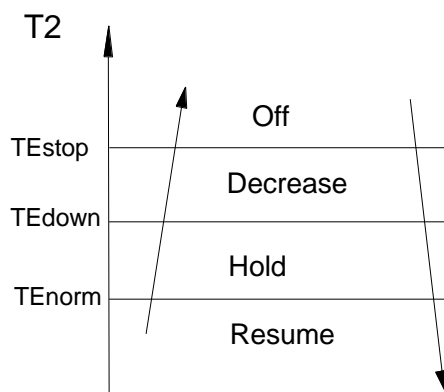
AC will enter the defrosting mode according to the value of temp. of T3 and the value range of temp. change of T3 and also the compressor running time.

Condition of ending defrosting:

If any one of the following items is satisfied, the defrosting will finish and the machine will turn to normal heating mode.

- T3 rises to be higher than TCDE1°C.
- T3 keeps to be higher than TCDE2°C for 80 seconds.
- The machine has run for 10 minutes in defrosting mode.

1.3.3.4 High evaporator coil temp.T2 protection:



Off: Compressor stops.

Decrease: Decrease the running frequency to the lower level.

Hold: Keep the current frequency.

Resume: No limitation for frequency.

1.3.4 Auto-mode

This mode can be chosen with remote controller and the setting temperature can be changed between 17~30°C.

In auto mode, the machine will choose cooling, heating or fan-only mode according to ΔT ($\Delta T = T1 - Ts$).

$\Delta T = T1 - Ts$	Running mode
$\Delta T > 2^\circ C$	Cooling
$-2 < \Delta T \leq 2^\circ C$	Fan-only
$\Delta T \leq -2^\circ C$	Heating

Indoor fan will run at auto fan of the relevant mode.

The louver operates same as in relevant mode.

If the machine switches mode between heating and cooling, the compressor will keep stopping for 15 minutes and then choose mode according to $T1 - Ts$.

If the setting temperature is modified, the machine will choose running function again.

1.3.5 Drying mode

Indoor fan speed is fixed at breeze and can't be changed.

All protections are active and the same as that in cooling mode.

Low indoor room temperature protection

In drying mode, if room temperature is lower than 10°C, the compressor will stop and not resume until room temperature exceeds 12°C.

1.3.6 Timer function

1.3.6.1 Timing range is 24 hours.

1.3.6.2 Timer on. The machine will turn on automatically when reaching the setting time.

1.3.6.3 Timer off. The machine will turn off automatically when reaching the setting time.

1.3.6.4 Timer on/off. The machine will turn on automatically when reaching the setting "on" time, and then turn off automatically when reaching the setting "off" time.

1.3.6.5 Timer off/on. The machine will turn off automatically when reaching the setting "off" time, and then turn on automatically when reaching the setting "on" time.

1.3.6.6 The timer function will not change the AC current operation mode. Suppose AC is off now, it will not start up firstly after setting the "timer off" function. And when reaching the setting time, the timer LED will be off and the AC running mode has not been changed.

1.3.6.7 The setting time is relative time.

1.3.7 Economy function

1.3.7.1 The sleep function is available in cooling, heating or auto mode.

1.3.7.2. Operation process in sleep mode is as follow:

When cooling, the setting temperature rises 1°C (be lower than 30°C) every one hour, 2 hours later the setting temperature stops rising and the indoor fan is fixed at low speed.

When heating, the setting temperature decreases 1°C (be higher than 17°C) every one hour, 2 hours later the setting temperature stops rising and indoor fan is fixed at low speed. (Anti-cold wind function has the priority).

1.3.7.3 Operation time in sleep mode is 7 hours. After 7 hours the AC quits this mode but doesn't turns off, but for console, the unit will turn off.

1.3.7.4 Timer setting is available

1.3.8 Auto-Restart function

The indoor unit is equipped with auto-restart function, which is carried out through an auto-restart module. In case of a sudden power failure, the module memorizes the setting conditions before the power failure. The unit will resume the previous operation setting (not including economy function and auxiliary functions) automatically after 3 minutes when power returns.

1.3.9 Drain pump control (For Cassette)

Adopt the water-level switch to control the action of drain pump.

Main action under different condition :(every 5 seconds the system will check the water level one time)

1. When the A/C operates with cooling (including auto cooling) and forced cooling mode, the pump will start running immediately and continuously, till stop cooling.
2. Once the water level increase and up to the control point, LED will alarm and the drain pump open and continue checking the water level. If the water level fall down and LED disarmed (drain pump delay close 1 minute) and operate with the last mode. Otherwise the entire system stop operating (including the pump) and LED remain alarming after 3 minutes.

1.3.10 Follow me(Optional)

- 1) If the indoor PCB receives the signal which results from pressing the FOLLOW ME button on remote controller, the buzzer will emit a sound and this indicates the follow me function is initiated. But when the indoor PCB receives signal which sent from remote controller every 3 minutes, the buzzer will not respond. When the unit is running with follow-me function, the PCB will control the unit according to the temperature from follow-me signal, and the temperature collection function of room temperature sensor will be shielded.
- 2) When the follow-me function is available, the PCB will not respond according to the setting temperature from follow-me signal every 3 minutes.
- 3) The PCB will take action to the mode change information from remote controller signal, and the follow-me function will be turned off. (if the wired remote controller does not initiate follow me function).

- 4) When the unit is running with follow-me function, if the PCB doesn't receive any signal from remote controller for 7 minutes or pressing FOLLOW ME button again, the follow-me function will be turned off automatically, and the temperature collection function of room temperature sensor will be available, the PCB will control the unit according to the room temperature detected from its own room temperature sensor and setting temperature.
- 5) When the indoor PCB receives the follow-me signal from wired remote controller, the control is the same as that from wireless remote controller, but buzzer will not respond. When the PCB receives turning-off follow-me signal from wired remote controller, the unit will quit follow-me function at once. The follow-me function controlled by wired remote controller prevails that by wireless remote controller.

1.3.11 Point Check Function(Excluding 12K)

There is a check switch in outdoor PCB.

Press the switch SW1 to check the states of unit when the unit is running.

Press the switch N times it will display the content corresponding to No. N. After getting into the check function, it will display No. N with 1.5s, meanwhile the low bit decimal of digit display flashing, indicated to get into the check function display. After 1.5s, it will display the content corresponding to No. N.

the digital display tube will display the follow procedure when push SW1 each time.

N	Display	Remark
00	Normal display	Display 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	
06	Indoor unit evaporator outlet temp.(heating T2, cooling T2B)	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: "——"
07	Condenser pipe temp.(T3)	
08	Outdoor ambient temp.(T4)	
09	Compressor discharge temp.(T5)	The display value is between 0~129 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 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 hex number.
11	AD value of voltage	
12	Indoor unit running mode code	Off:0, Fan only 1,Cooling:2, Heating:3, Forced cooling:4, Dry:6,Self-clean:8, Forced defrosting:10
13	Outdoor unit running mode code	Off:0, Fan only 1,Cooling:2, Heating:3, Forced cooling:4, Dry:6,Self-clean:8, Forced defrosting:10
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 120x4=480p.)

15	Frequency limit symbol	Bit7	Frequency limit caused by IGBT radiator	The display value is hex number. For example, the digital display tube show 2A, then Bit5=1, Bit3=1, Bit1=1. It means frequency limit caused by T4, T3 and current.
		Bit6	Frequency limit caused by PFC	
		Bit5	Frequency limit caused by T4.	
		Bit4	Frequency limit caused by 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	DC fan motor speed	0: Off 1 Turbo 2 High 3 Medium 4.Low 5 Breeze 6 Supper breeze		
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	Condenser pipe temp. 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 capacity demand is 0, , the digital display tube will show "0. If the indoor unit is not connected, the digital display tube will show: "——"(heating T2, cooling T2B)		
20	Condenser pipe temp. of 2# indoor unit			
21	Reserved			
22	1# 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). If the indoor unit is not connected, the digital display tube will show: "——"		
23	2# Indoor unit capacity demand code			
24	Reserved			
25	Indoor room temp. 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 capacity demand is 0, , the digital display tube will show "0. If the indoor unit is not connected, the digital display tube will show: "——"		
26	Indoor room temp. 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 capacity demand is 0, , the digital display tube will show "0. If the indoor unit is not connected, the digital display tube will show: "——"		
27	Average of Indoor room temp.	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".		
28	Shutdown reason	Refer to Appendix		
29	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 capacity demand is 0, , the digital display tube will show "0. If the indoor unit is not connected, the digital display tube will show: "——"		
30	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 capacity demand is 0, , the digital display tube will show "0. If the indoor unit is not connected, the digital display tube will show: "——"		

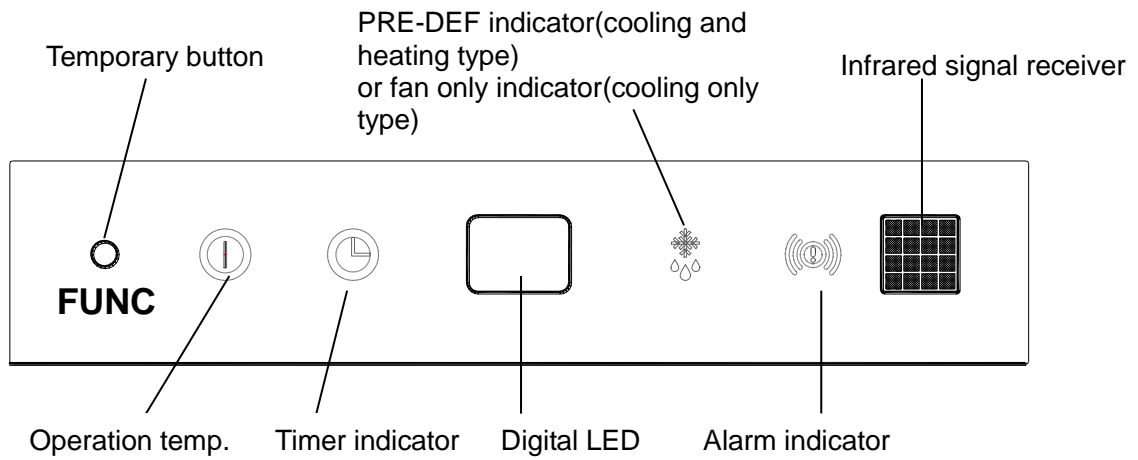
Appendix

Shutdown Reason	Code
Frequency limit caused by current	1
Frequency limit caused by T2.in cooling	2
Frequency limit caused by T2.in heating	3
Reach to the setting temperature	4
Frequency limit caused by T4.	5
Defrosting	6
Mode switching	7
High discharge temperature protection	9
High evaporator coil temp.T2 protection	10
Evaporator low temperature T2 protection	11
Condenser high temperature T3 protection	12
Low indoor room temperature protection in drying mode	13
Too low ambient temperature protection	14
Refrigerant leakage detection	15
Communication malfunction between indoor and outdoor units	16
Communication error between outdoor main chip and compressor driven chip IR341	17
AC voltage protection	18
Top temperature protection of compressor	19
Outdoor EE Malfunction	20
Fan speed has been out of control	21
Open or short circuit of temperature sensor	22
Overcurrent protection	23
IMP overcurrent protection	24
Compressor lack of phase	25
Compressor has been out of control	26
Low pressure protection of 311	27
Fan current protection	28
Fan lack of phase	29
Fan zero speed protection	30
PFC module protection	31
High pressure protection of 311	32
Zero speed malfunction	33
PWM malfunction	34
MCE malfunction	35
Compressor overcurrent protection	36
Compressor EE malfunction	37
Compressor start-up malfunction	38
311 fan speed has been out of control	39
Low pressure protection	40
High pressure protection	41
PFC module malfunction	42
Shutdown stop	49
Electrical disconnect	50
DR stop	51

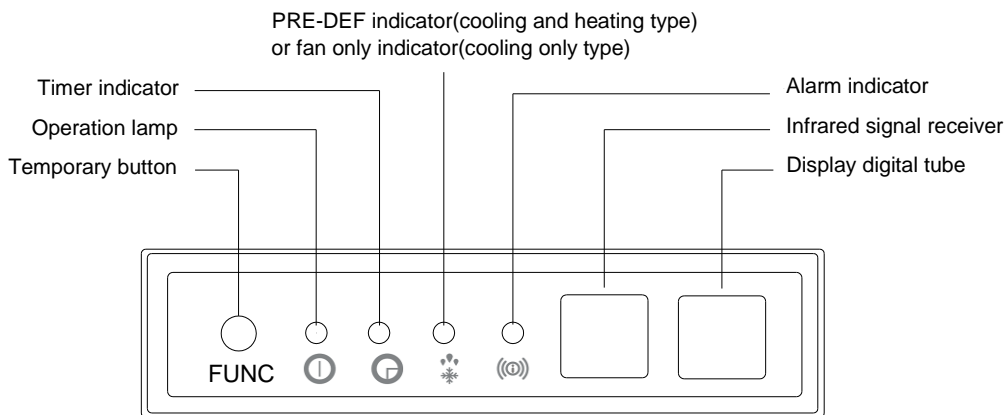
2. Troubleshooting

2.1 Display board

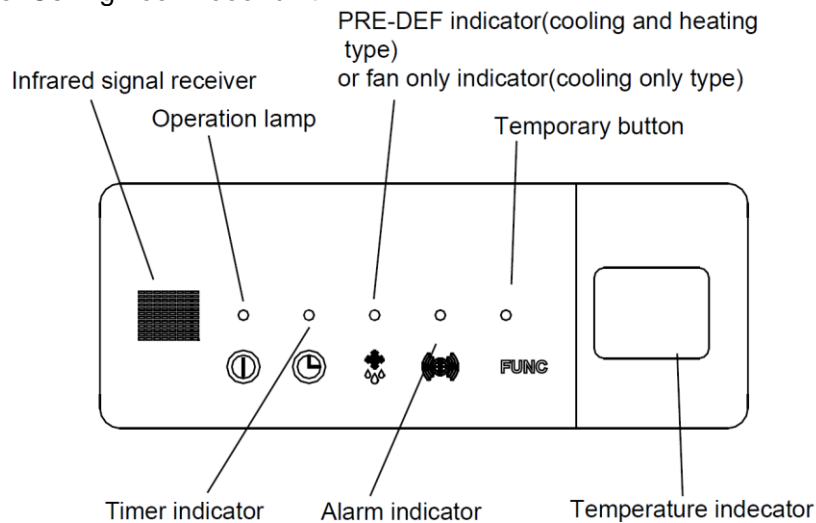
2.1.1 Icon explanation on indoor display board (Super slim cassette).



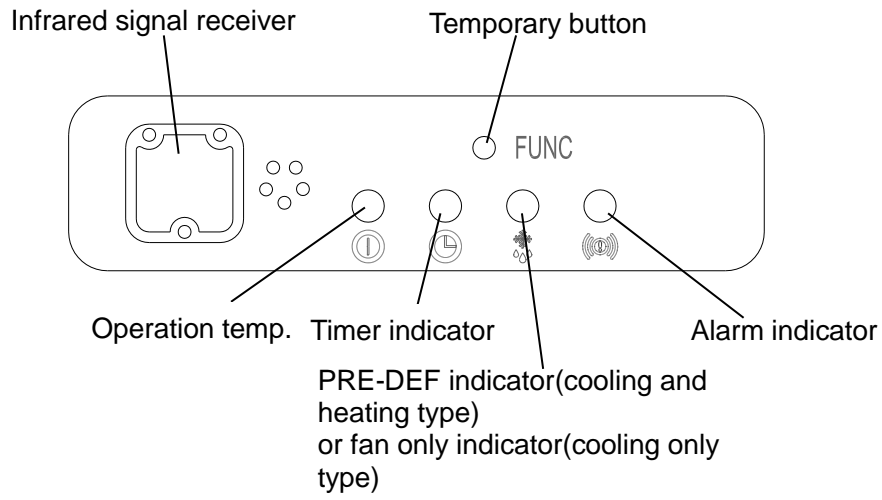
2.1.2 Icon explanation on indoor display board (Duct)



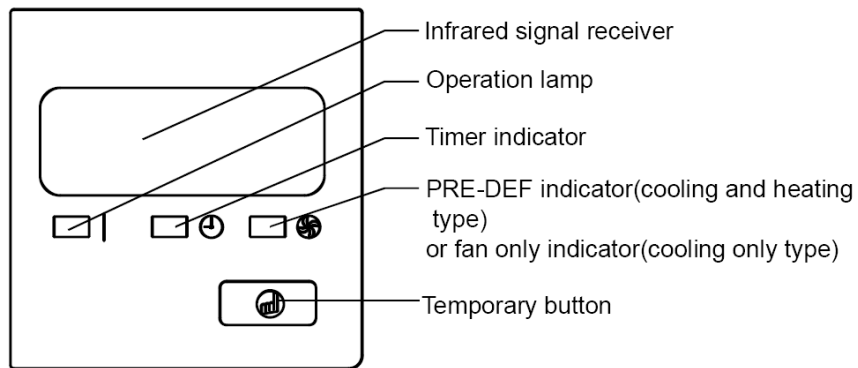
2.1.3 Display board of Ceiling-floor indoor unit



2.1.5 Icon explanation on indoor display board (Cassette 60x60).



2.1.6 Icon explanation on indoor display board (Console)



2.2 Indoor unit malfunction

For Console

Malfunction	Timer Lamp	Operation Lamp (flashes)
Indoor EEPROM malfunction	X	1
Communication malfunction between indoor and outdoor units	X	2
Indoor fan speed has been out of control	X	4
Open or short circuit of T1 temperature sensor	X	5
Open or short circuit of T2 temperature sensor	X	6
Refrigerant leakage detection	X	7
Overcurrent protection (For some units)	O	1
Open or short circuit of T4 temperature sensor	O	2
Open or short circuit of T3 temperature sensor	O	3
Open or short circuit of T5 temperature sensor	O	4
Outdoor EEPROM malfunction (For some units)	O	5
Outdoor fan speed is out of control	O	6
Open or short circuit of T2B temperature sensor (For free-match indoor units)	O	7
IPM module malfunction	☆	1
Over voltage or over low voltage protection	☆	2
Too low ambient temperature protection	☆	4
Inverter compressor drive protection	☆	5
Low pressure protection of compressor	☆	7
O (on) X(off) ☆(flash at 2Hz)		

For other type (12K)

Malfunction	Error Code	Timer Lamp	Operation Lamp (flashes)
Indoor EEPROM malfunction	E0	X	1
Communication malfunction between indoor and outdoor units	E1	X	2
Indoor fan speed has been out of control	E3	X	4
Open or short circuit of T1 temperature sensor	E4	X	5
Open or short circuit of T2 temperature sensor	E5	X	6
Refrigerant leakage detection	EC	X	7
Water level alarm	EE	X	8
Communication error between master and slave unit (for twins system)	E8	X	9
Another indoor unit malfunction (for twins system)	E9	X	10
Overcurrent protection (For some units)	F0	O	1
Open or short circuit of T4 temperature sensor	F1	O	2
Open or short circuit of T3 temperature sensor	F2	O	3
Open or short circuit of T5 temperature sensor	F3	O	4
Outdoor EEPROM malfunction (For some units)	F4	O	5
Outdoor fan speed is out of control	F5	O	6
Open or short circuit of T2B temperature sensor (For free-match indoor units)	F6	O	7
IPM module malfunction	P0	☆	1
Over voltage or over low voltage protection	P1	☆	2
Too low ambient temperature protection	P3	☆	4
Inverter compressor drive protection	P4	☆	5
Low pressure protection of compressor	P6	☆	7
O (on) X(off) ☆(flash at 2Hz)			

For other type (18K-60K):

Malfunction	Error Code	Timer Lamp	Operation Lamp (flashes)
Indoor EEPROM malfunction	E0	X	1
Communication malfunction between indoor and outdoor units	E1	X	2
Indoor fan speed has been out of control	E3	X	4
Open or short circuit of T1 temperature sensor	E4	X	5
Open or short circuit of T2 temperature sensor	E5	X	6
Refrigerant leakage detection	EC	X	7
Water level alarm	EE	X	8
Communication error between master and slave unit (for twins system)	E8	X	9
Another indoor unit malfunction (for twins system)	E9	X	10
Outdoor unit is faulty (for old communication protocol)	Ed	X	11
Overcurrent protection (For some units)	F0	O	1
Open or short circuit of T4 temperature sensor	F1	O	2
Open or short circuit of T3 temperature sensor	F2	O	3
Open or short circuit of T5 temperature sensor	F3	O	4
Outdoor EEPROM malfunction (For some units)	F4	O	5
Outdoor fan speed is out of control	F5	O	6
Open or short circuit of T2B temperature sensor (For free-match indoor units)	F6	O	7
Communication error between auto-lifting panel and slim cassette (For slim cassette with auto-lifting panel)	F7	O	8
Auto-lifting panel is faulty (For slim cassette with auto-lifting panel)	F8	O	9
Auto-lifting panel is not closed (For slim cassette with auto-lifting panel)	F9	O	10
IPM module malfunction	P0	☆	1
Over voltage or over low voltage protection	P1	☆	2
High temperature protection of top of compressor	P2	☆	3
Too low ambient temperature protection	P3	☆	4
Inverter compressor drive protection	P4	☆	5
Low pressure protection of compressor	P6	☆	7
Sensor of outdoor IGBT is faulty	P7	☆	8
O (on) X(off) ☆(flash at 2Hz)			

2.3 Outdoor unit malfunction

For 18~60K:

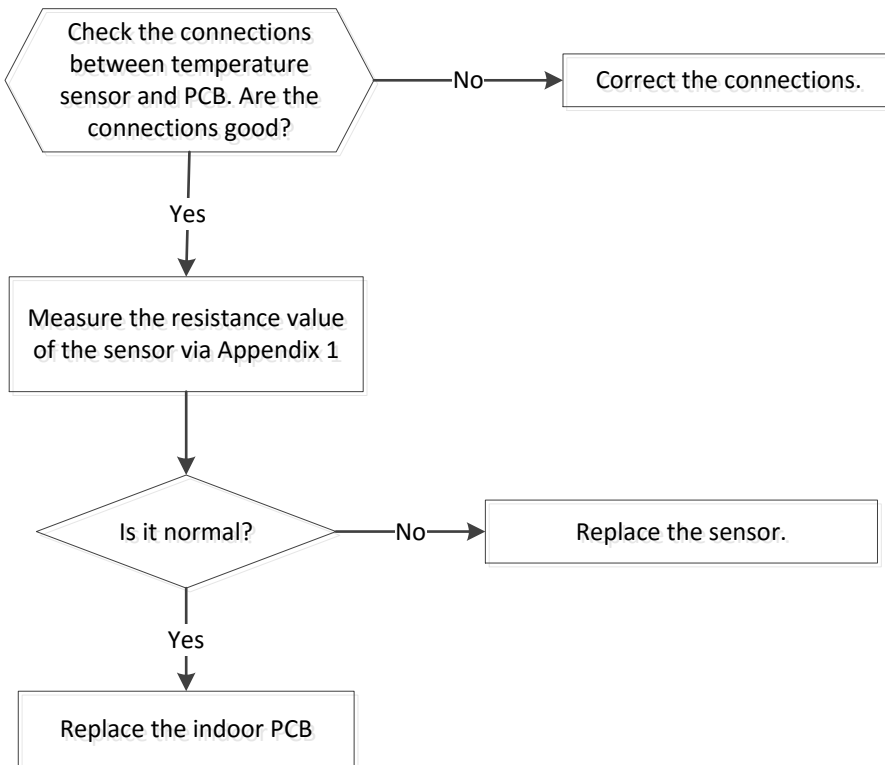
Display	Malfunction or Protection
E1	Communication malfunction between indoor and outdoor units
F0	Overcurrent protection
F1	Ambient temperature sensor (T4) is malfunction
F2	Outdoor heat-exchanger temperature sensor (T3) is malfunction
F3	Discharge temperature sensor (T5) is malfunction
F4	Outdoor EEPROM is malfunction
F5	Outdoor fan speed has been out of control
P0	IPM module protection
P1	Voltage protection (too high or too low)
P3	Protection of ultra-low ambient temperature
P4	Rotor position protection of compressor
J0	High temperature protection of indoor heat exchanger in heating mode
J1	High temperature protection of outdoor heat exchanger in cooling mode
J2	High discharge temperature protection
J3	PFC module protection
J4	Communication error between outdoor main chip and compressor driven chip IR341
J5	High pressure protection
J6	Low pressure protection
P7	IGBT sensor is malfunction
J8	AC voltage protection

In low ambient cooling mode, the LED displays “LC” or alternative displays between running frequency and “LC”(each displays 0.5s)

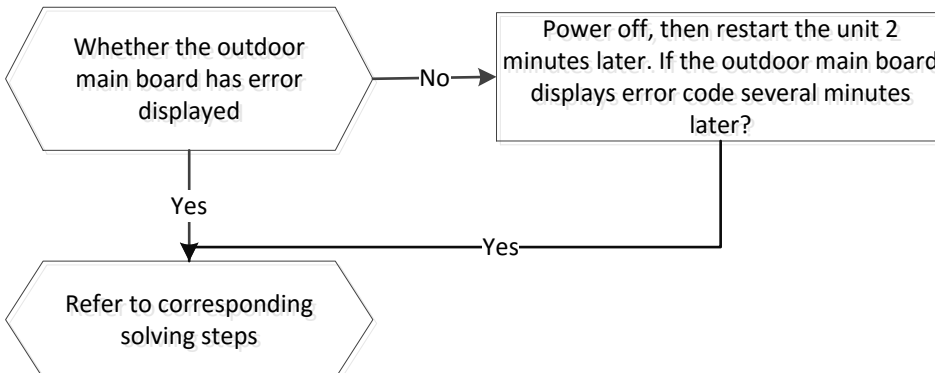
2.4 Solving steps for typical malfunction

2.4.1 For the indoor unit

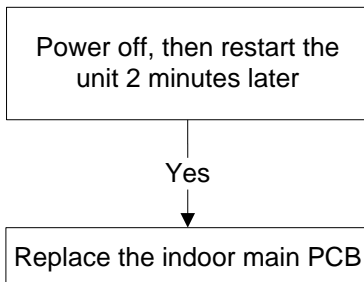
2.4.1.1 Open or short circuit of temperature sensor



2.4.1.2. Outdoor unit malfunction

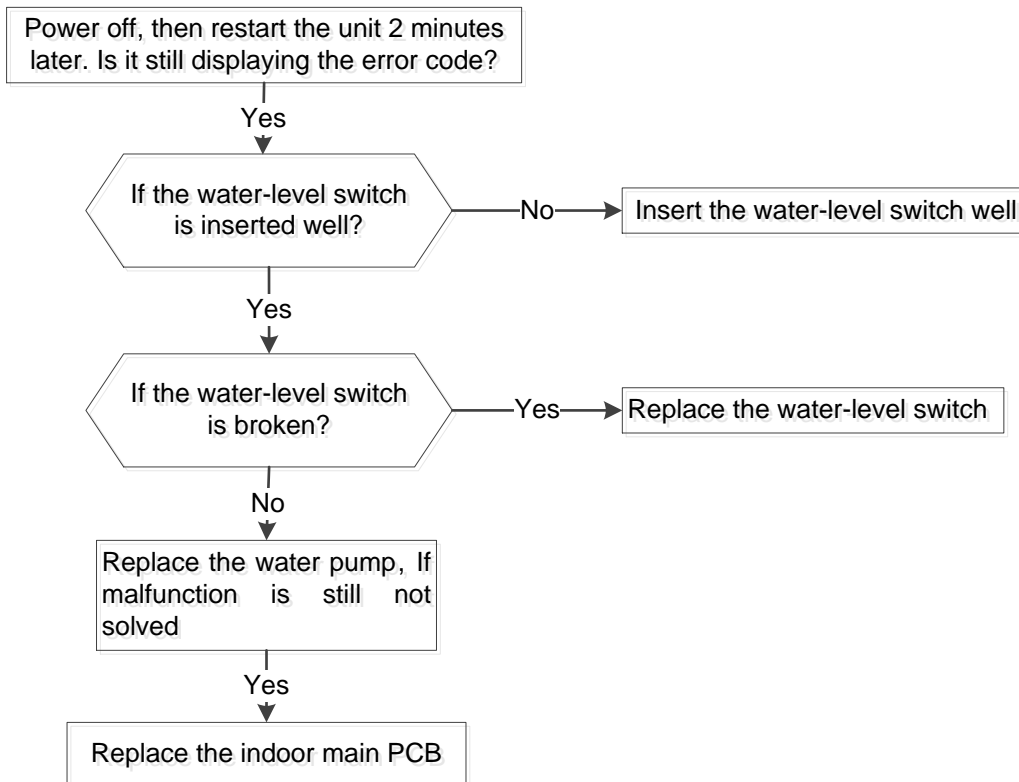


2.4.1.3. Indoor EEPROM malfunction

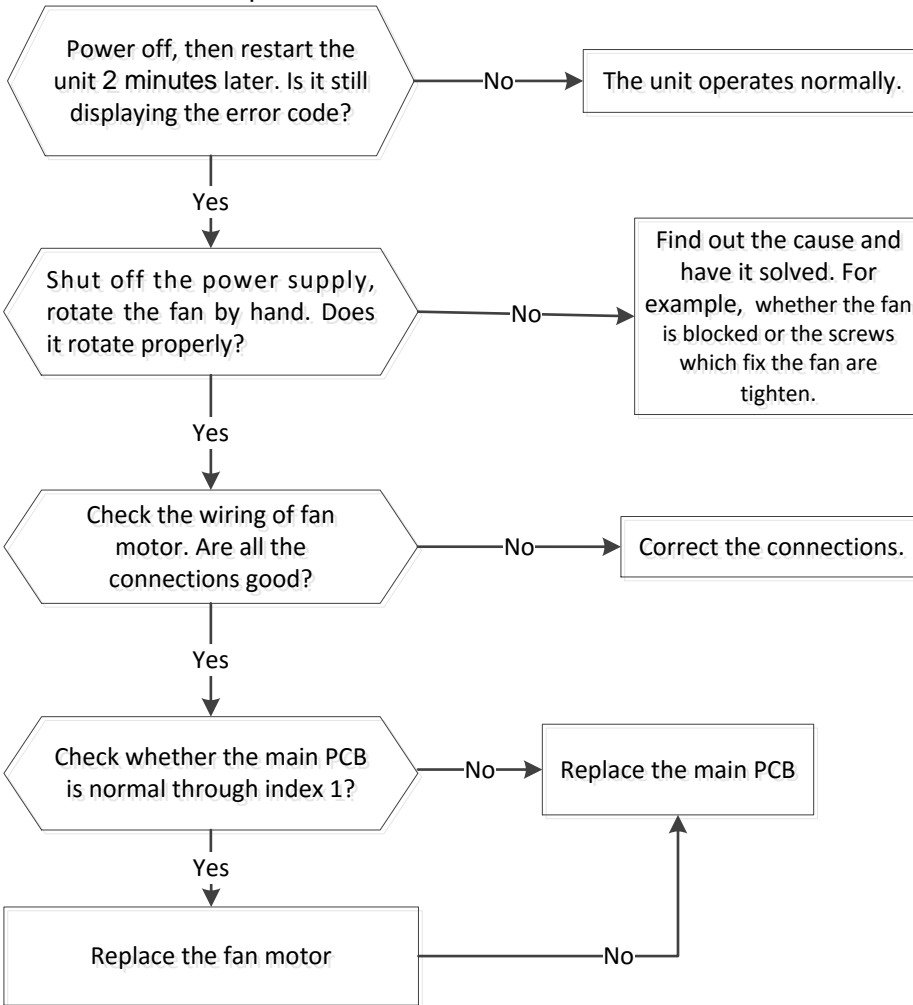


EEPROM: An electrically erasable programmable read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.

2.4.1.4. Water-level alarm malfunction



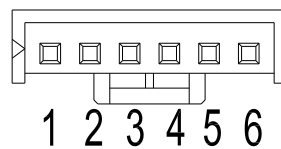
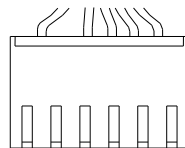
2.4.1.5. Indoor fan speed has been out of control.



Index 1:

1. Indoor DC fan motor(control chip is inside fan motor)

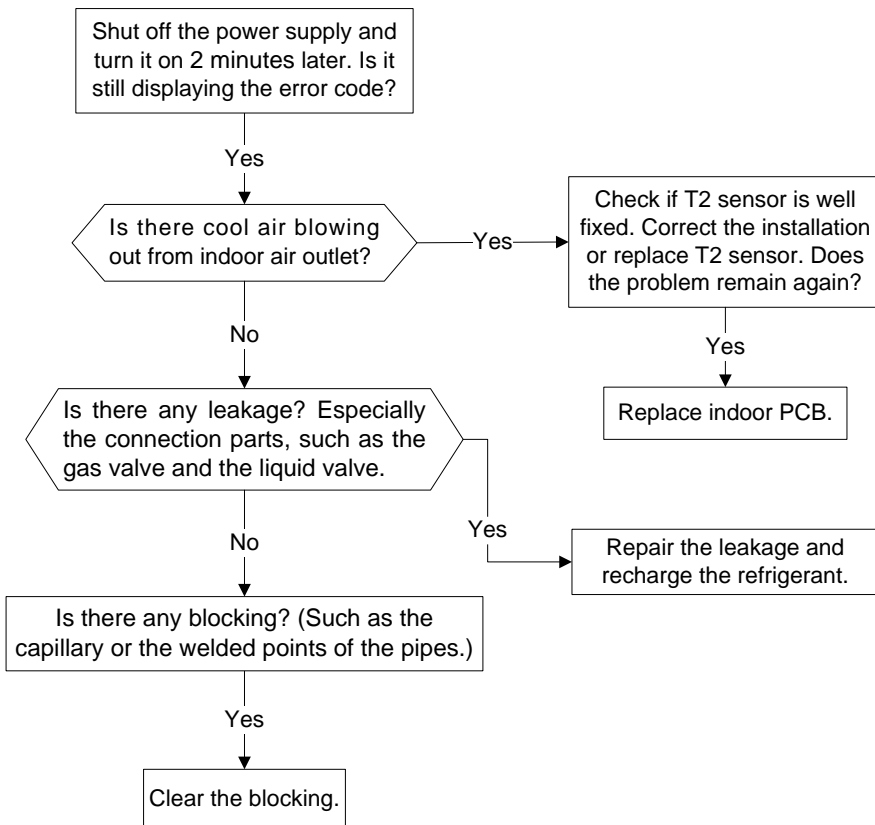
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must have problems and need to be replaced.



DC motor voltage input and output

NO.	Color	Signal	Voltage
1	Red	Vs/Vm	200V~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

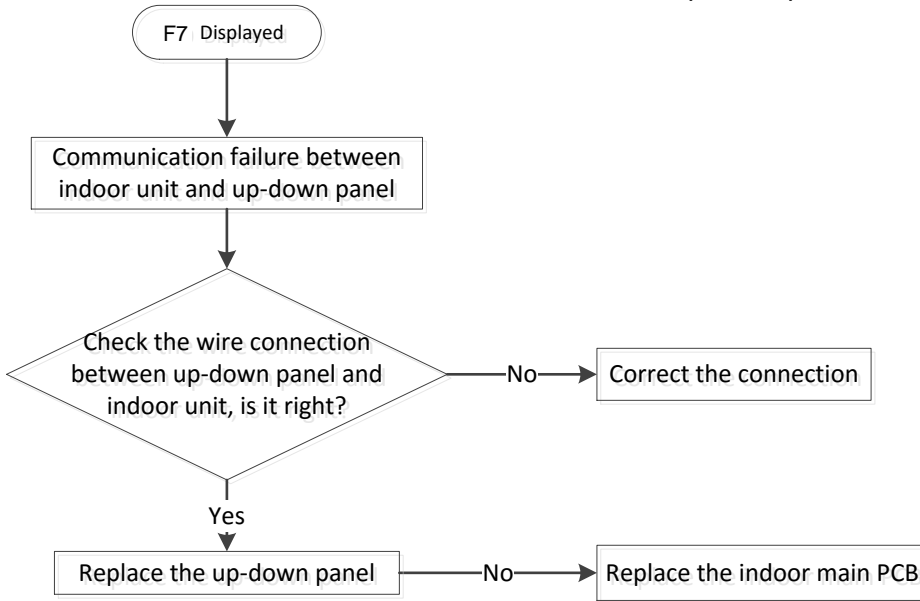
2.4.1.6. Refrigerant Leakage Detection



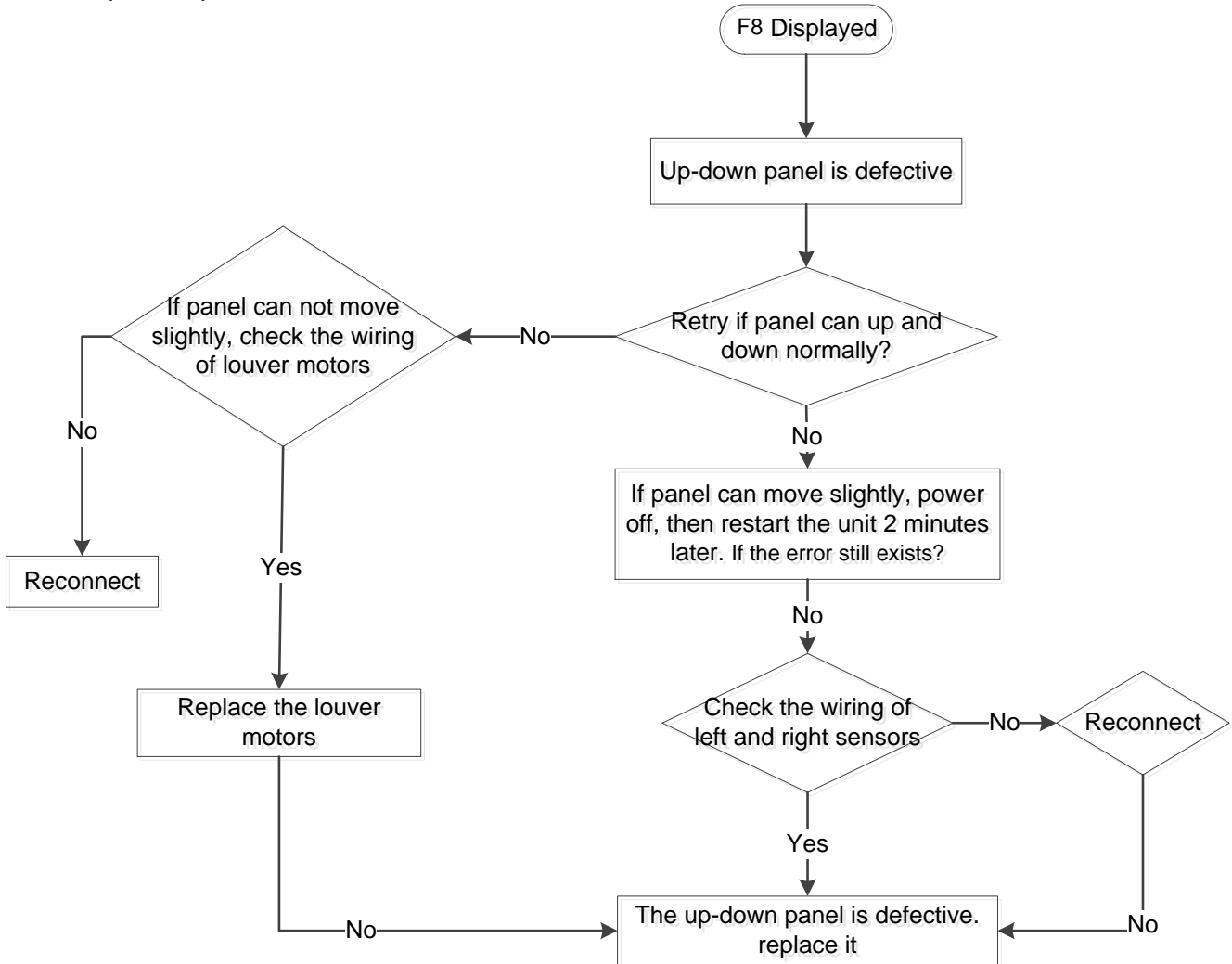
2.4.1.7 Communication malfunction between indoor and outdoor units
 The same as E1 in outdoor.

2.4.2 For the super-slim cassette with up-down panel

2.4.2.1 Communication error between indoor unit and up-down panel

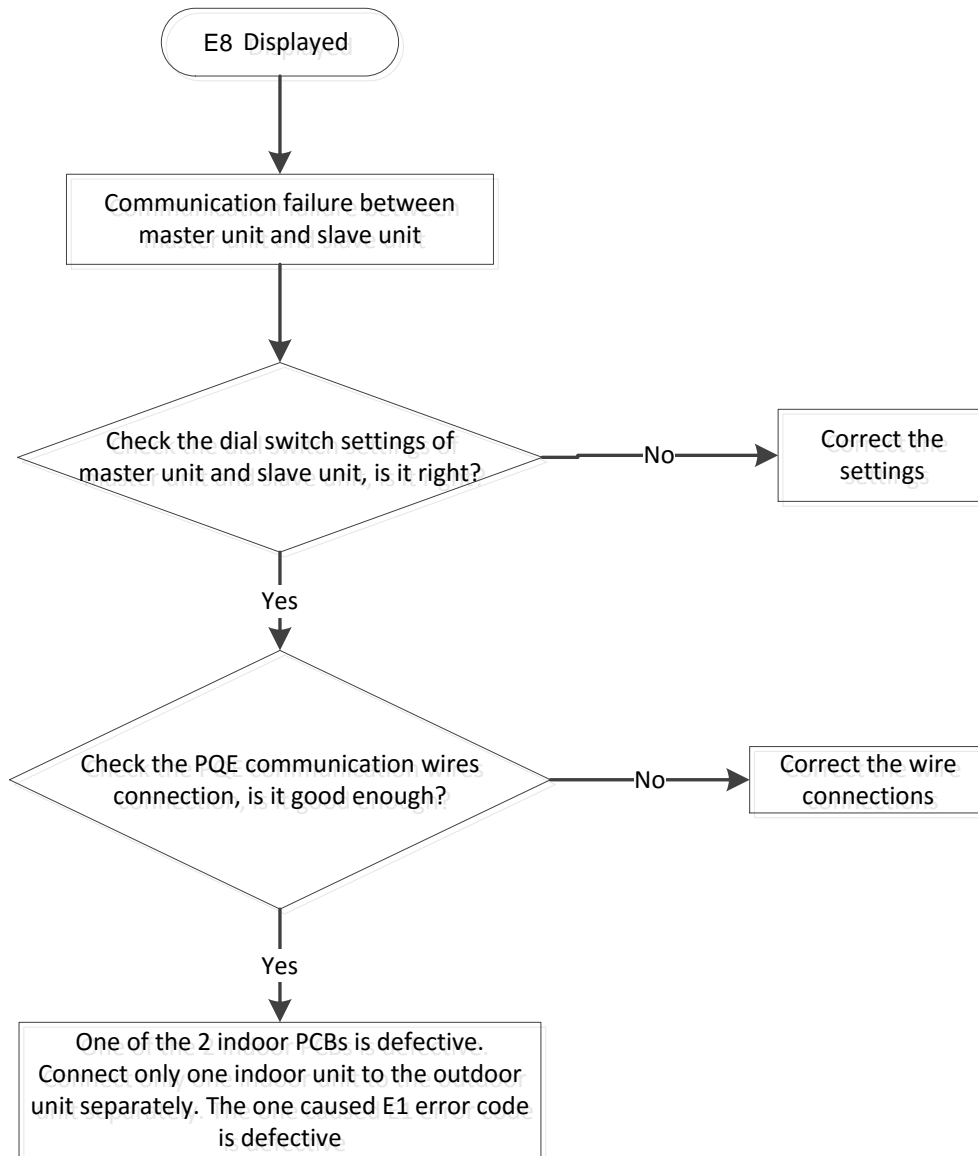


2.4.2.2 Up-down panel is defective



2.4.3 For the unit with TWINS function (For the Cassette & Duct)

2.4.3.1 Communication malfunction between master unit and indoor unit

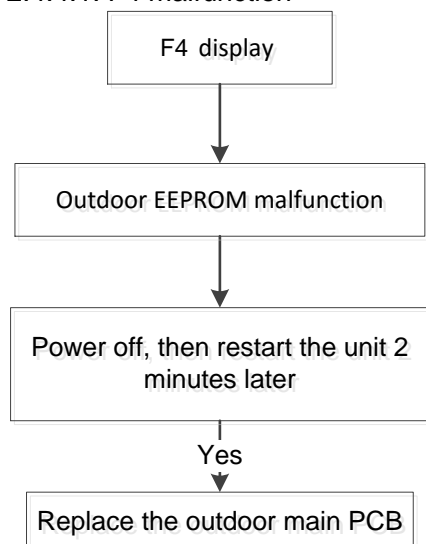


2.4.3.2 Other malfunction between master unit and indoor unit

One indoor unit displays "E9", which means another indoor unit is faulty. Check another indoor unit's error code and then follow the appropriate solutions to solve the malfunction.

2.4.4 For the outdoor unit

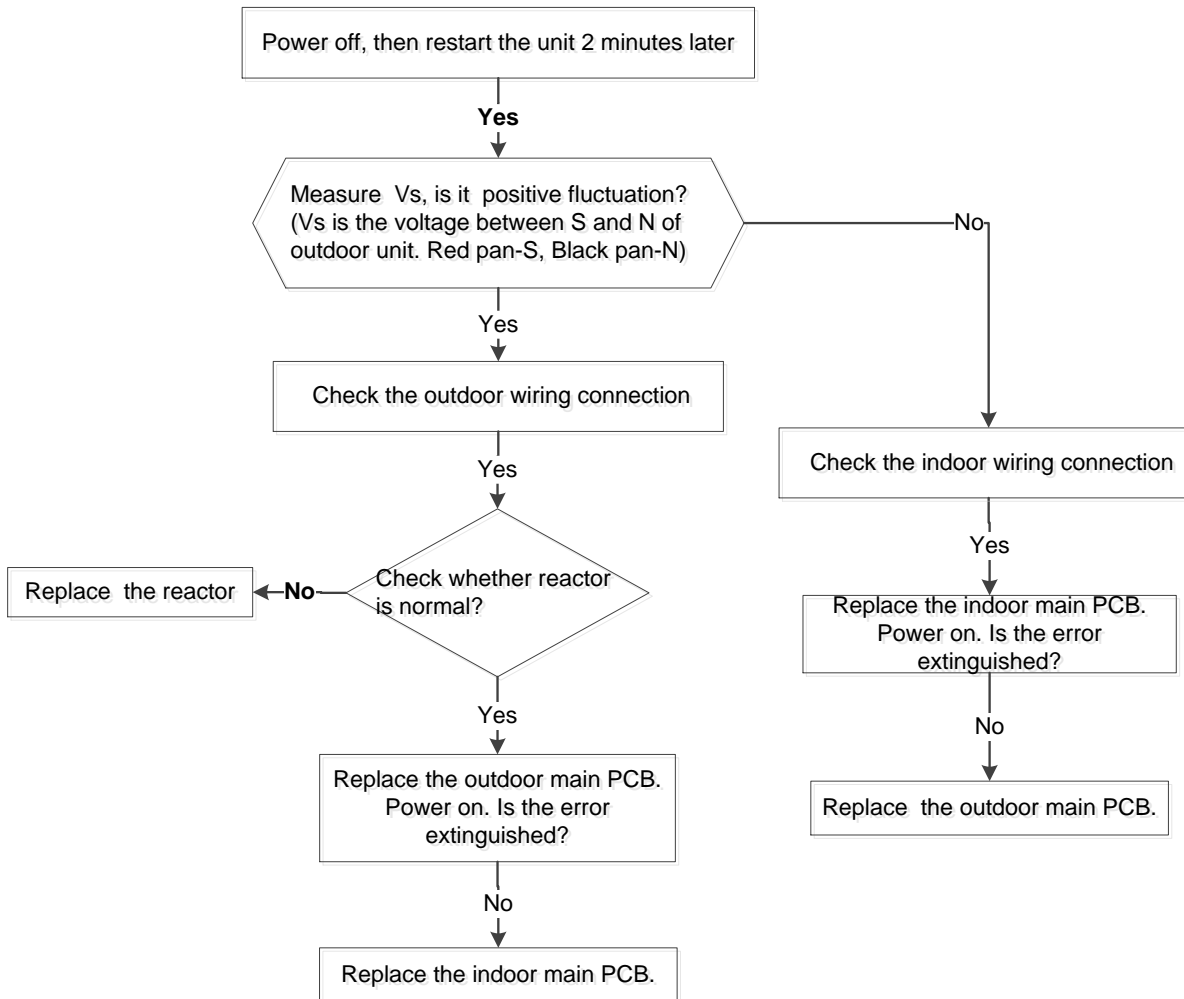
2.4.4.1. F4 malfunction



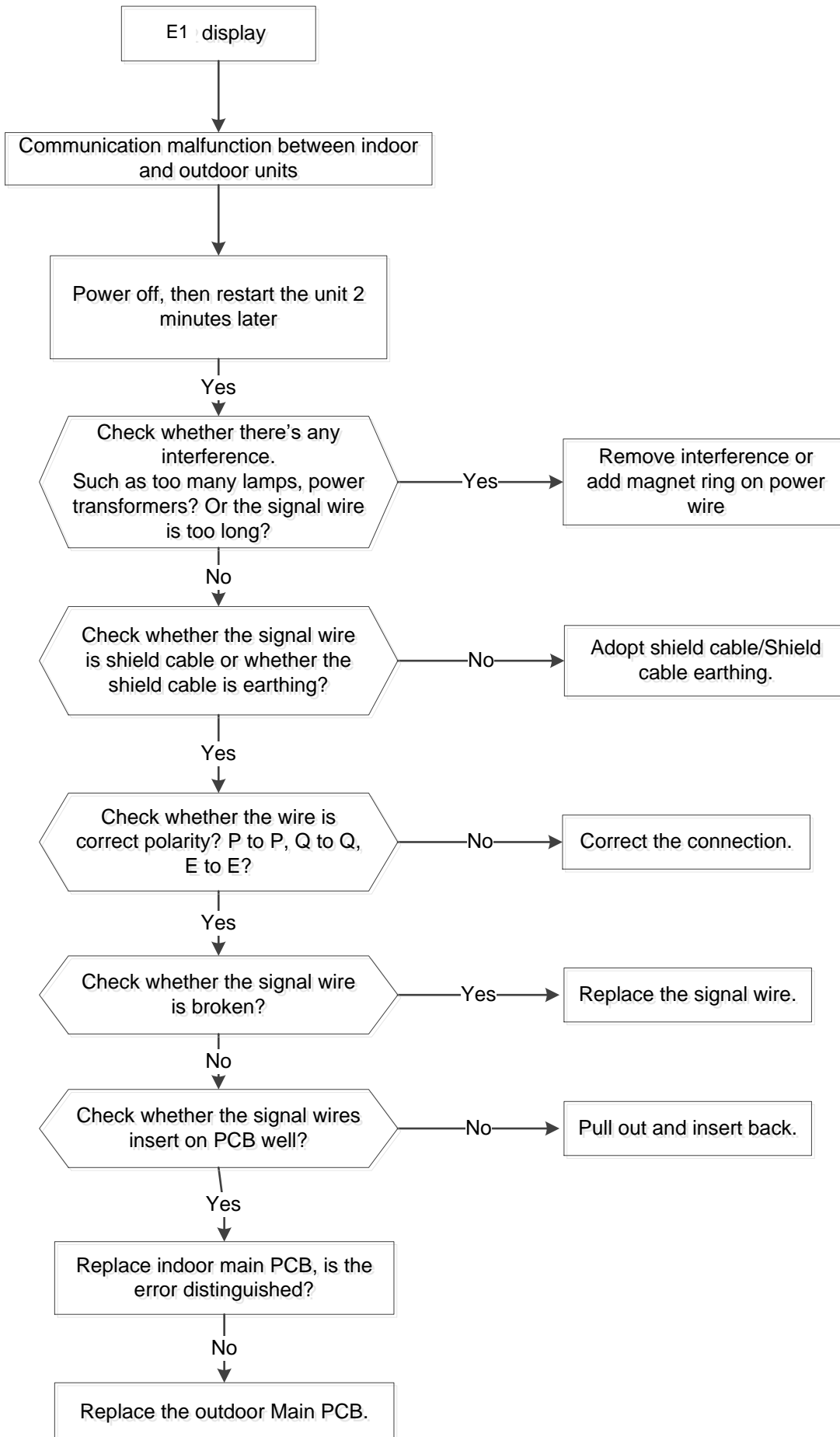
EEPROM: An electrically erasable programmable read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.

2.4.4.2. E1 malfunction

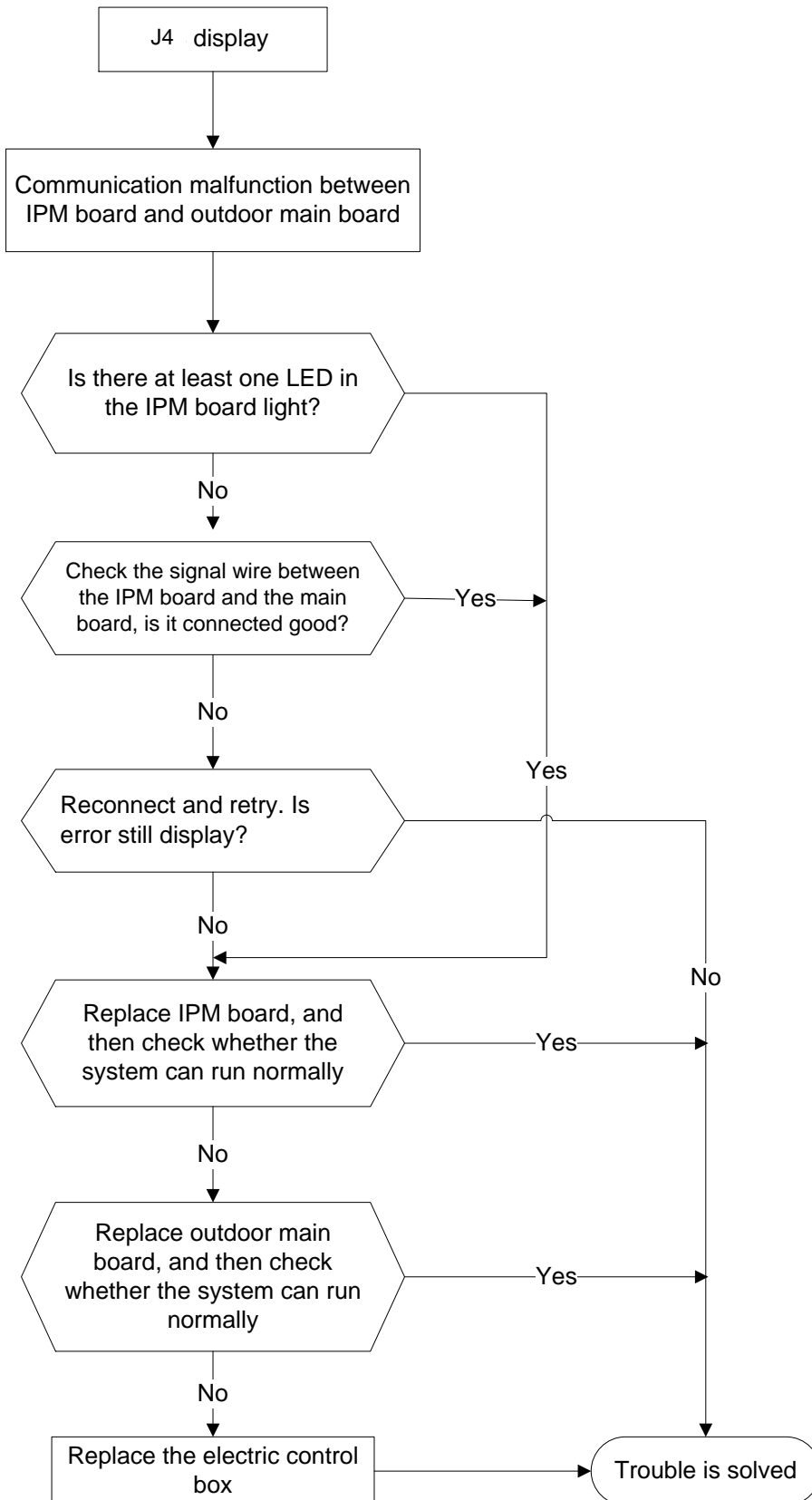
For current loop communication:



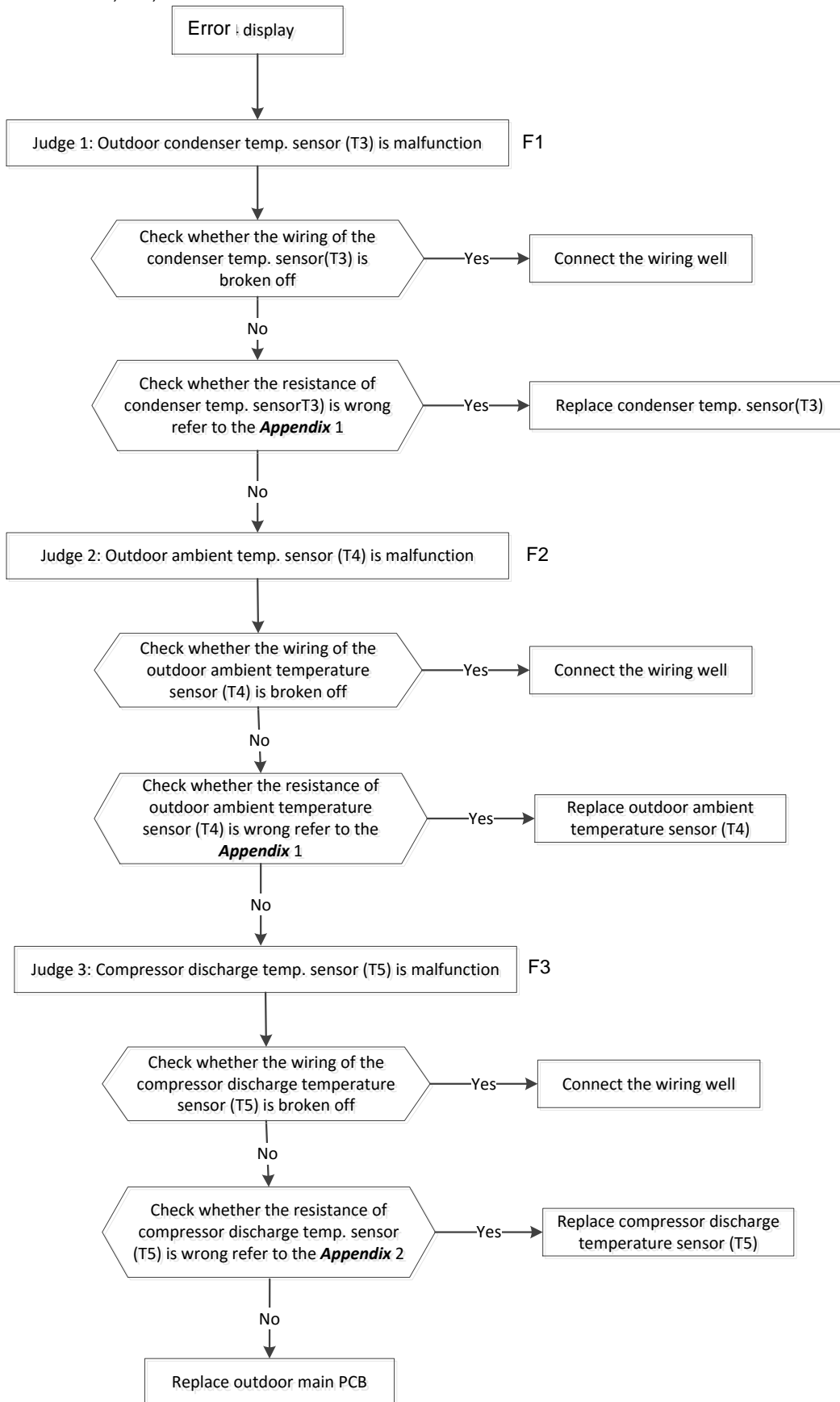
For 485 communication

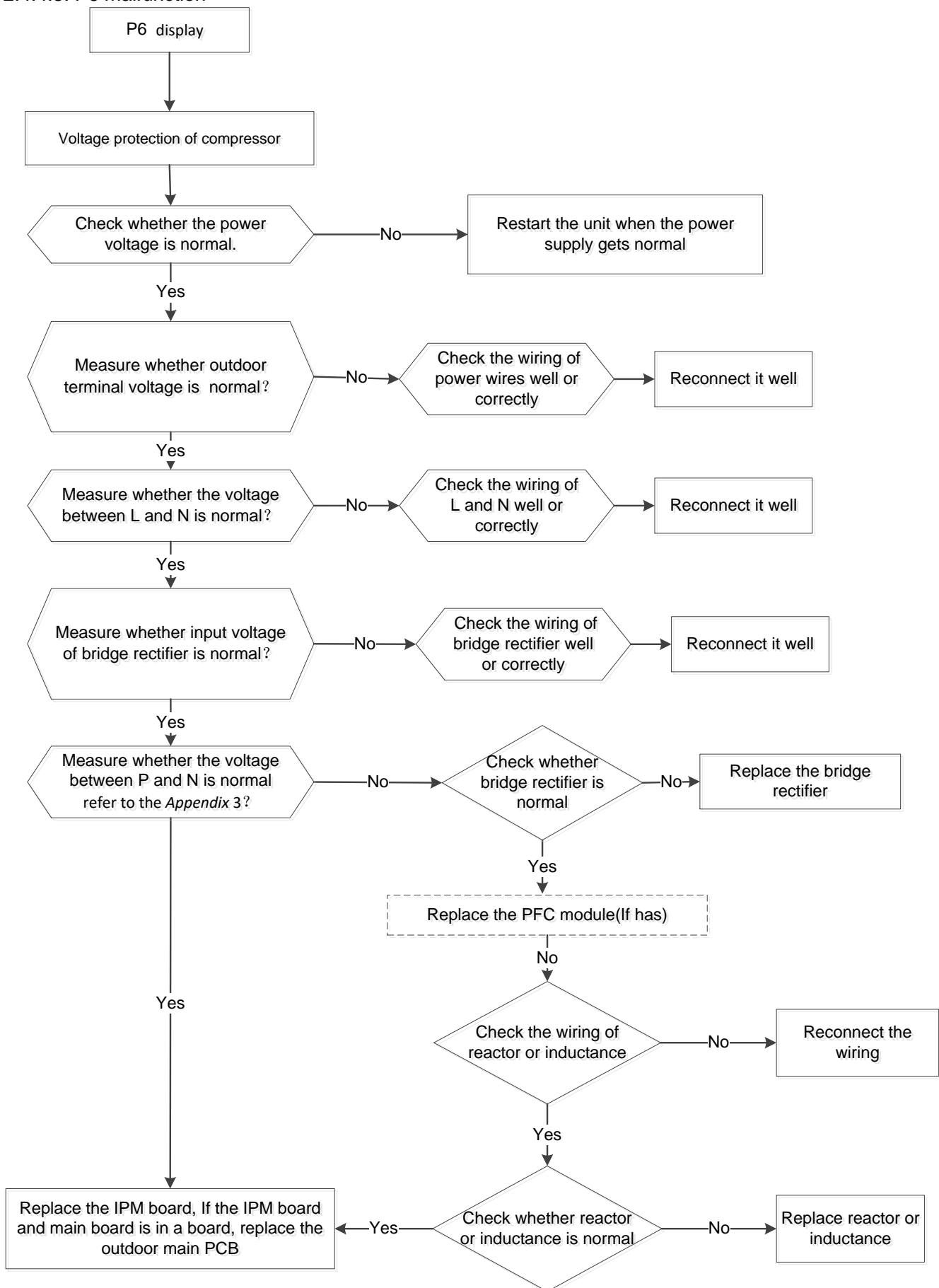


2.4.4.3. J4 malfunction



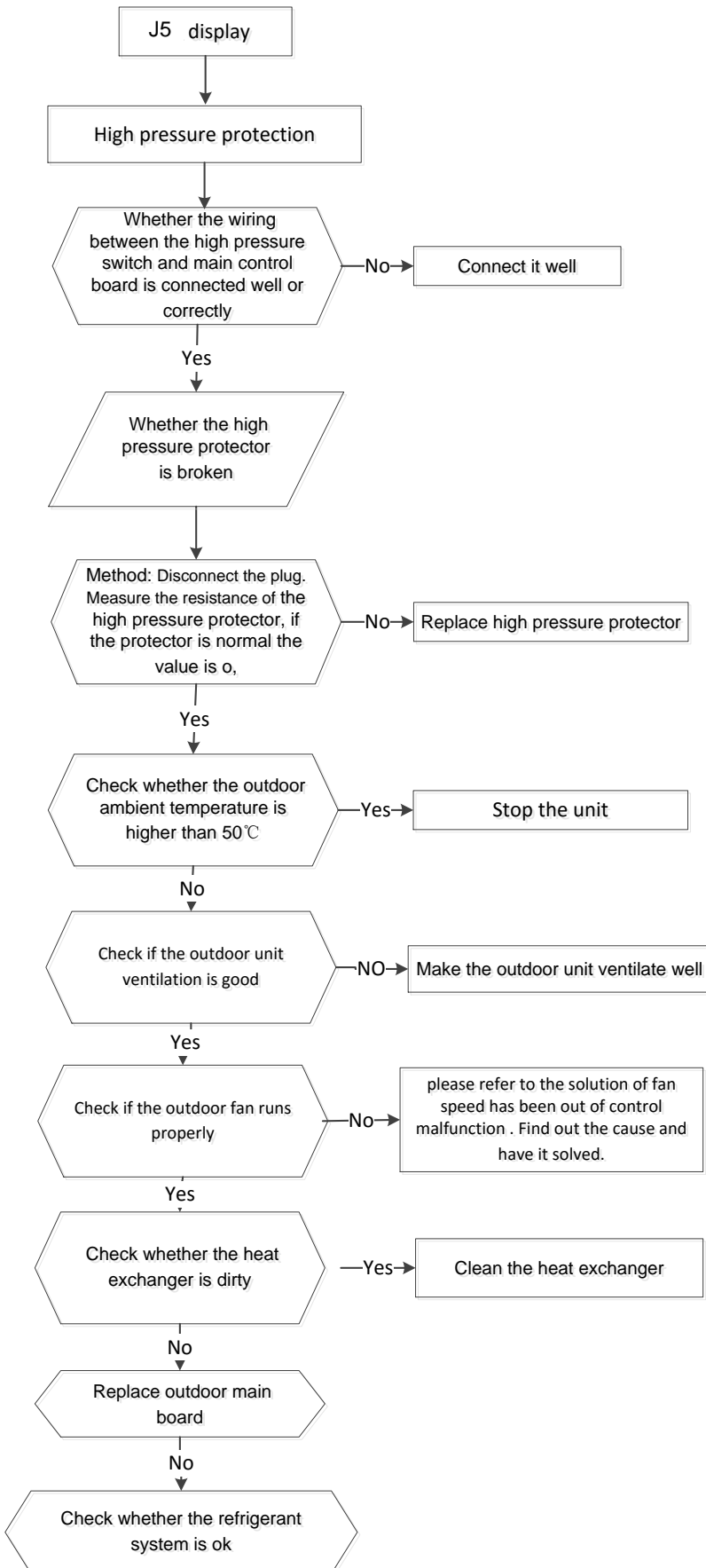
2.4.4.4. F1, F2, F3 malfunction



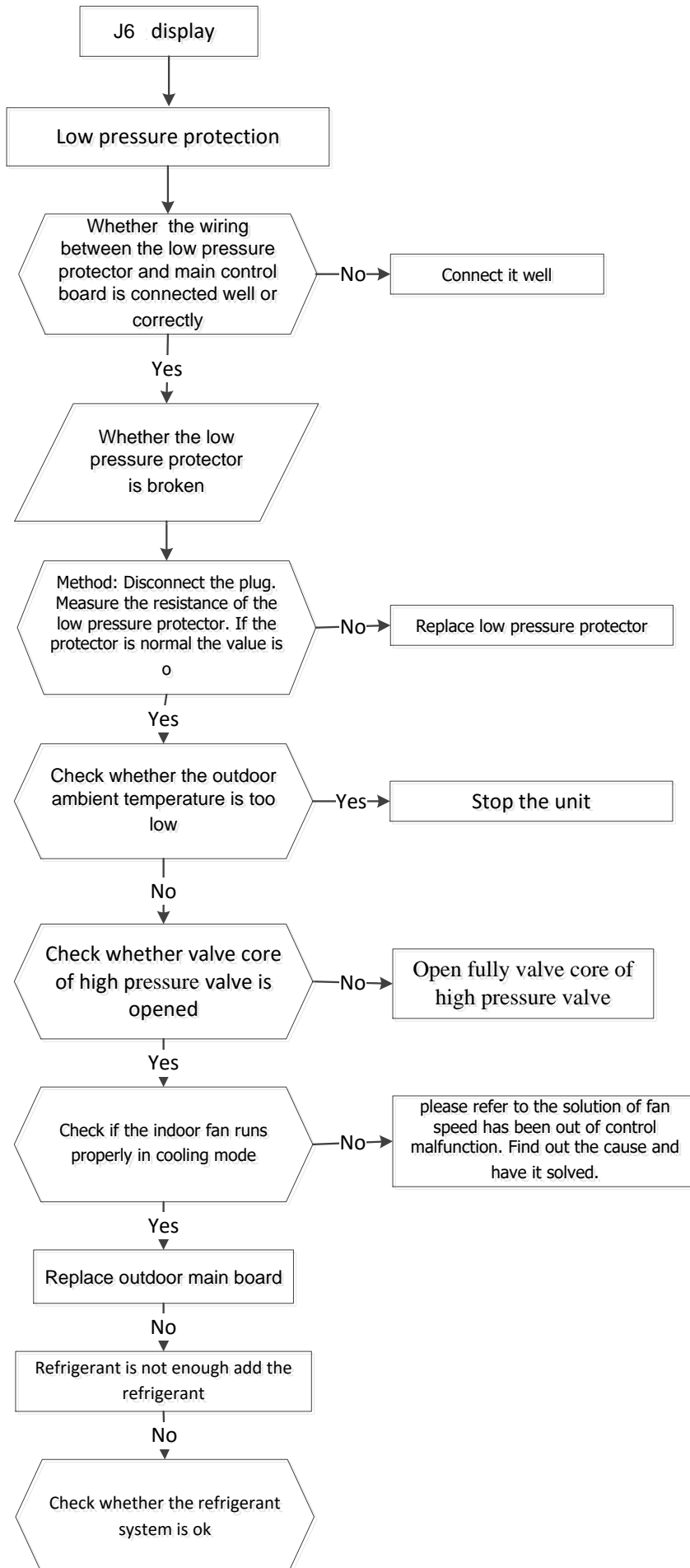


2.4.4.6. F5 malfunction
The same as E3 in indoor.

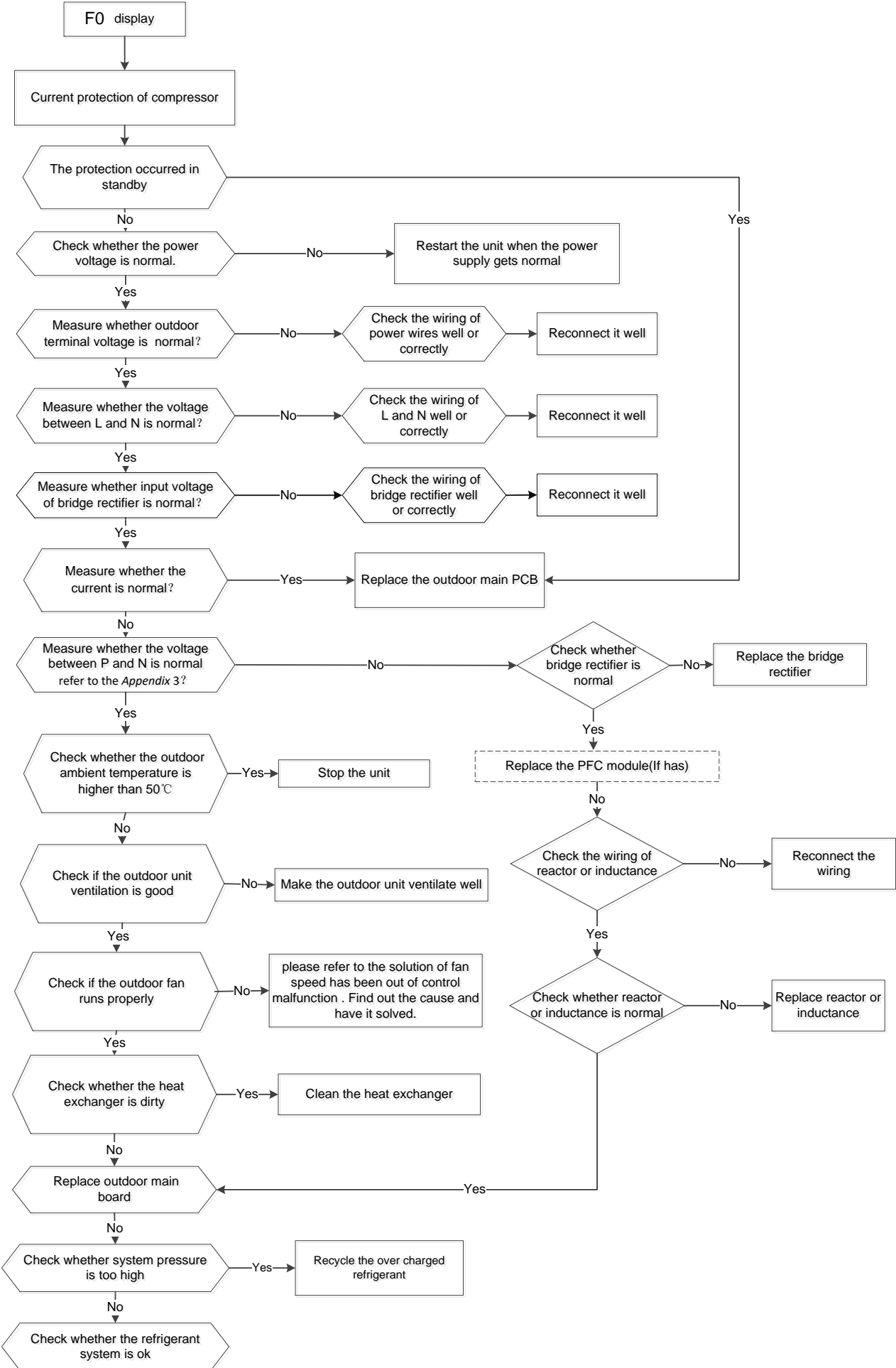
2.4.4.7. J5 malfunction



2.4.4.8. J6 malfunction

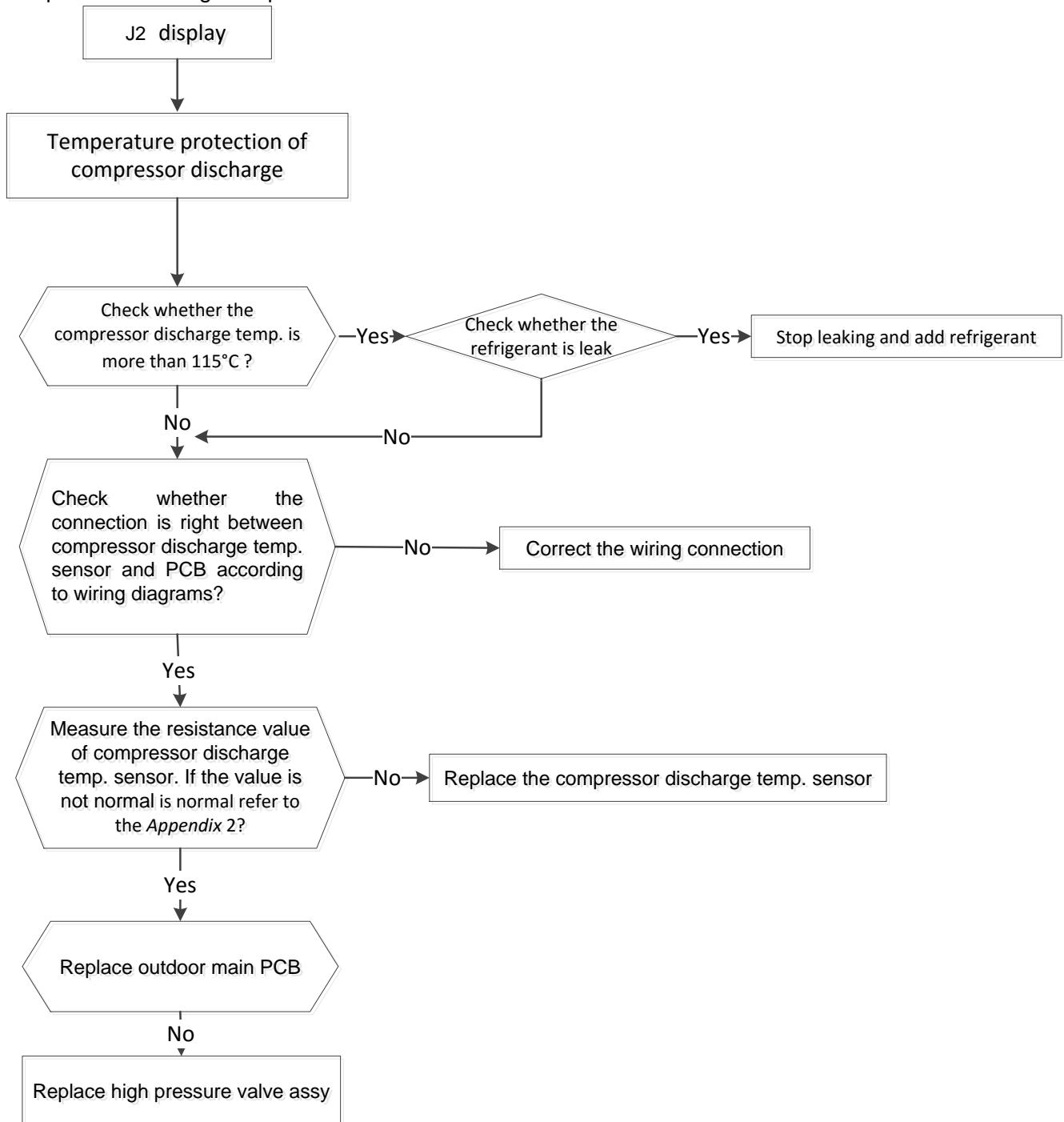


2.4.4.9. F0 malfunction



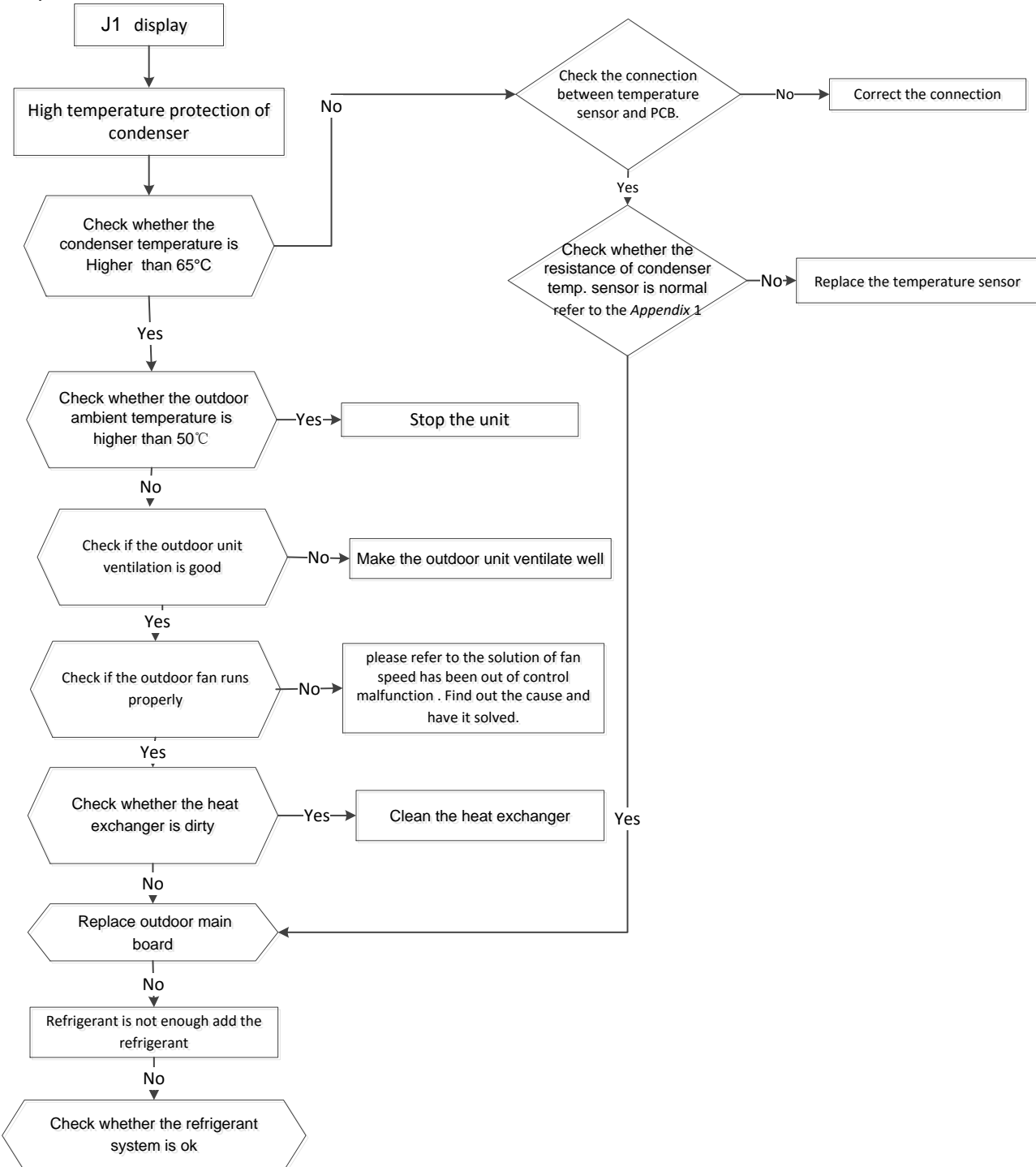
2.4.4.10. J2 malfunction

When compressor discharge temperature is higher than 115°C, the unit will stop, and unit runs again when compressor discharge temperature is lower than 90°C.



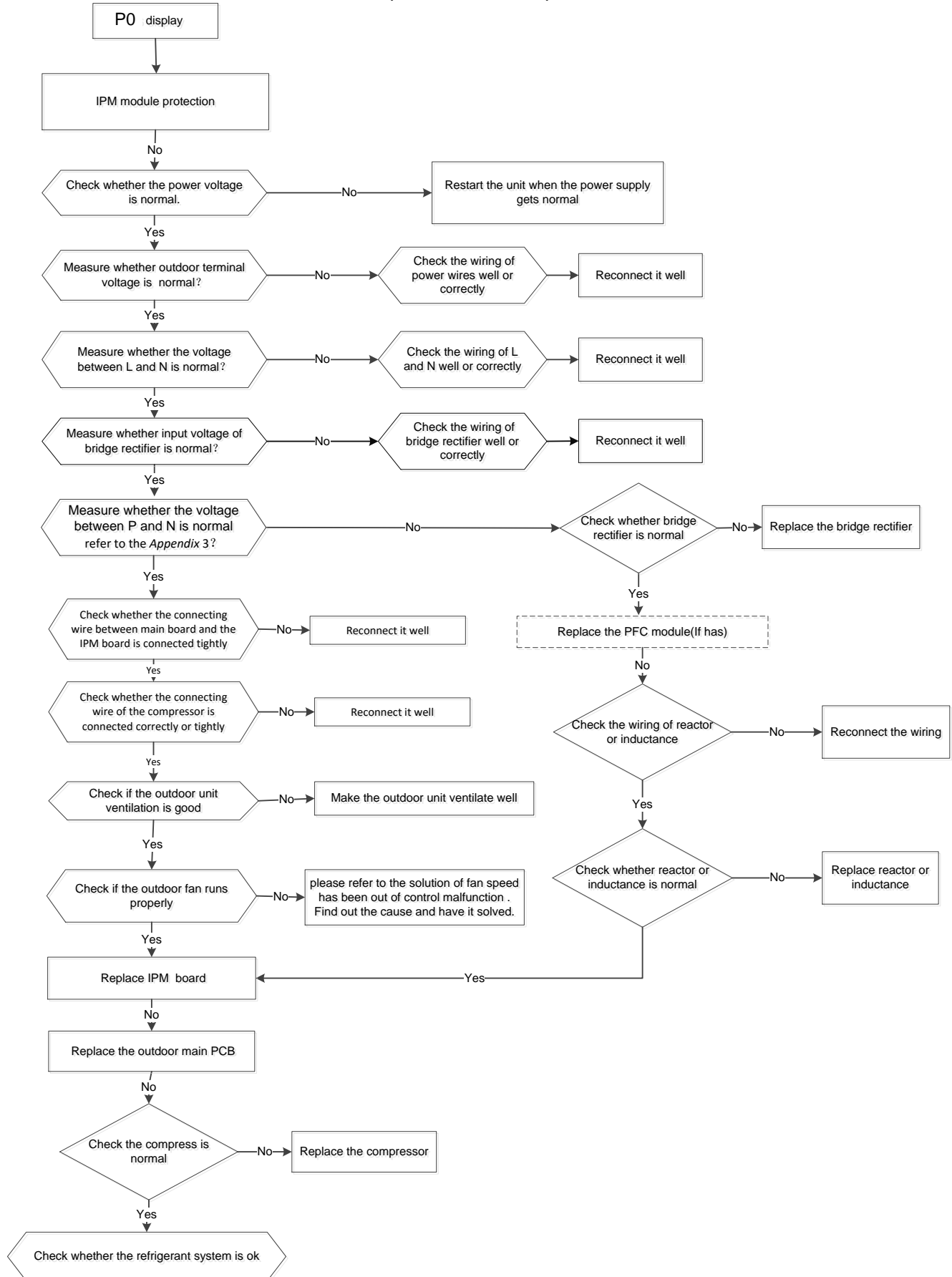
2.4.4.11. J1 malfunction

When condenser high temp. is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temp. less than 52°C.

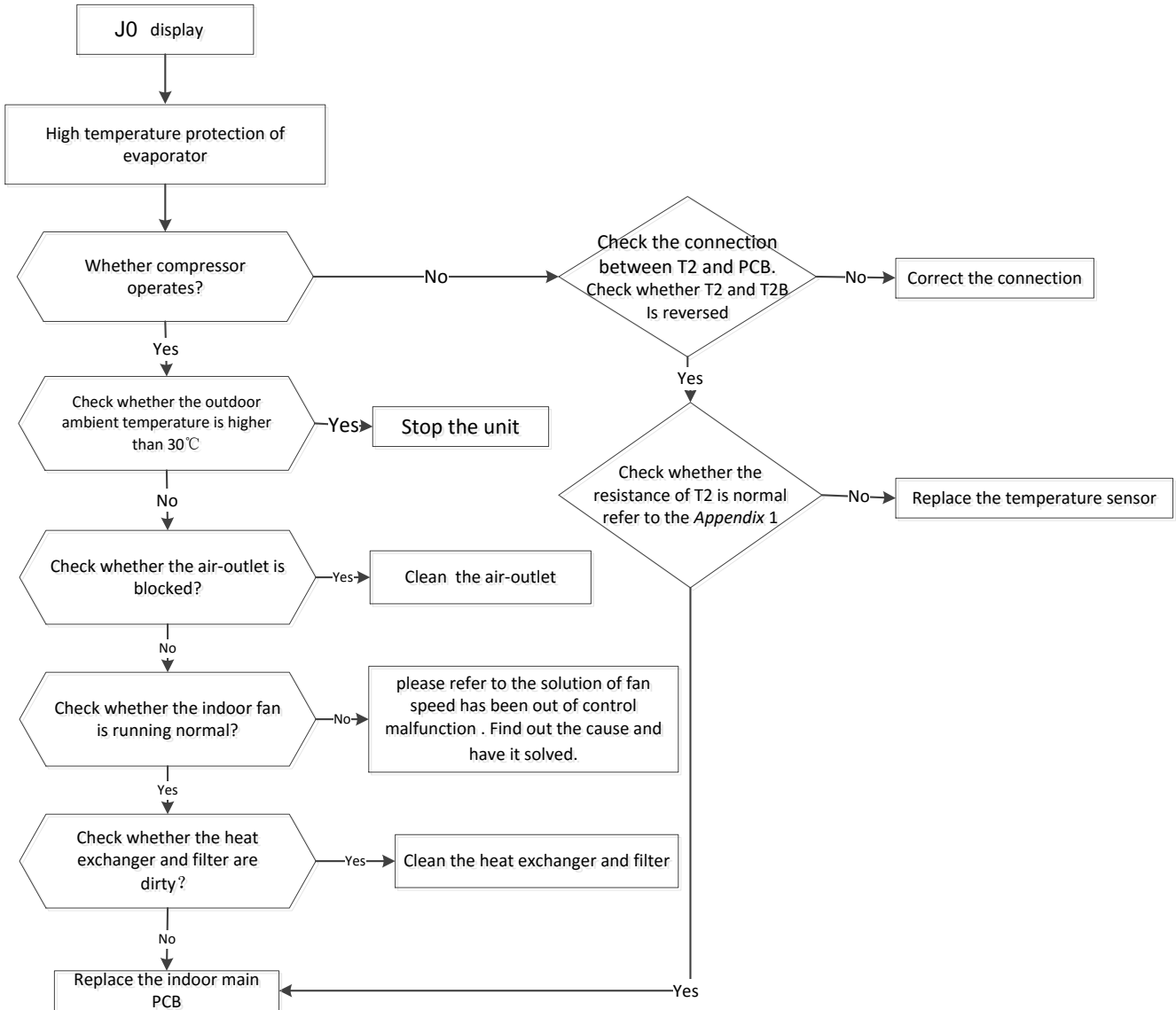


2.4.4.12. P0 malfunction

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:



2.4.4.13. J0 malfunction



Appendix 1 Temperature Sensor Resistance Value Table (°C--K)

°C	K Ohm	°C	K Ohm	°C	K Ohm	°C	K Ohm
-20	115.266	20	12.6431	60	2.35774	100	0.62973
-19	108.146	21	12.0561	61	2.27249	101	0.61148
-18	101.517	22	11.5000	62	2.19073	102	0.59386
-17	96.3423	23	10.9731	63	2.11241	103	0.57683
-16	89.5865	24	10.4736	64	2.03732	104	0.56038
-15	84.2190	25	10.0000	65	1.96532	105	0.54448
-14	79.3110	26	9.55074	66	1.89627	106	0.52912
-13	74.5360	27	9.12445	67	1.83003	107	0.51426
-12	70.1698	28	8.71983	68	1.76647	108	0.49989
-11	66.0898	29	8.33566	69	1.70547	109	0.48600
-10	62.2756	30	7.97078	70	1.64691	110	0.47256
-9	58.7079	31	7.62411	71	1.59068	111	0.45957
-8	56.3694	32	7.29464	72	1.53668	112	0.44699
-7	52.2438	33	6.98142	73	1.48481	113	0.43482
-6	49.3161	34	6.68355	74	1.43498	114	0.42304
-5	46.5725	35	6.40021	75	1.38703	115	0.41164
-4	44.0000	36	6.13059	76	1.34105	116	0.40060
-3	41.5878	37	5.87359	77	1.29078	117	0.38991
-2	39.8239	38	5.62961	78	1.25423	118	0.37956
-1	37.1988	39	5.39689	79	1.21330	119	0.36954
0	35.2024	40	5.17519	80	1.17393	120	0.35982
1	33.3269	41	4.96392	81	1.13604	121	0.35042
2	31.5635	42	4.76253	82	1.09958	122	0.3413
3	29.9058	43	4.57050	83	1.06448	123	0.33246
4	28.3459	44	4.38736	84	1.03069	124	0.32390
5	26.8778	45	4.21263	85	0.99815	125	0.31559
6	25.4954	46	4.04589	86	0.96681	126	0.30754
7	24.1932	47	3.88673	87	0.93662	127	0.29974
8	22.5662	48	3.73476	88	0.90753	128	0.29216
9	21.8094	49	3.58962	89	0.87950	129	0.28482
10	20.7184	50	3.45097	90	0.85248	130	0.27770
11	19.6891	51	3.31847	91	0.82643	131	0.27078
12	18.7177	52	3.19183	92	0.80132	132	0.26408
13	17.8005	53	3.07075	93	0.77709	133	0.25757
14	16.9341	54	2.95896	94	0.75373	134	0.25125
15	16.1156	55	2.84421	95	0.73119	135	0.24512
16	15.3418	56	2.73823	96	0.70944	136	0.23916
17	14.6181	57	2.63682	97	0.68844	137	0.23338
18	13.9180	58	2.53973	98	0.66818	138	0.22776
19	13.2631	59	2.44677	99	0.64862	139	0.22231

Appendix 2

Unit: °C---K		Discharge temp. sensor table					
-20	542.7	20	68.66	60	13.59	100	3.702
-19	511.9	21	65.62	61	13.11	101	3.595
-18	483	22	62.73	62	12.65	102	3.492
-17	455.9	23	59.98	63	12.21	103	3.392
-16	430.5	24	57.37	64	11.79	104	3.296
-15	406.7	25	54.89	65	11.38	105	3.203
-14	384.3	26	52.53	66	10.99	106	3.113
-13	363.3	27	50.28	67	10.61	107	3.025
-12	343.6	28	48.14	68	10.25	108	2.941
-11	325.1	29	46.11	69	9.902	109	2.86
-10	307.7	30	44.17	70	9.569	110	2.781
-9	291.3	31	42.33	71	9.248	111	2.704
-8	275.9	32	40.57	72	8.94	112	2.63
-7	261.4	33	38.89	73	8.643	113	2.559
-6	247.8	34	37.3	74	8.358	114	2.489
-5	234.9	35	35.78	75	8.084	115	2.422
-4	222.8	36	34.32	76	7.82	116	2.357
-3	211.4	37	32.94	77	7.566	117	2.294
-2	200.7	38	31.62	78	7.321	118	2.233
-1	190.5	39	30.36	79	7.086	119	2.174
0	180.9	40	29.15	80	6.859	120	2.117
1	171.9	41	28	81	6.641	121	2.061
2	163.3	42	26.9	82	6.43	122	2.007
3	155.2	43	25.86	83	6.228	123	1.955
4	147.6	44	24.85	84	6.033	124	1.905
5	140.4	45	23.89	85	5.844	125	1.856
6	133.5	46	22.89	86	5.663	126	1.808
7	127.1	47	22.1	87	5.488	127	1.762
8	121	48	21.26	88	5.32	128	1.717
9	115.2	49	20.46	89	5.157	129	1.674
10	109.8	50	19.69	90	5	130	1.632
11	104.6	51	18.96	91	4.849		
12	99.69	52	18.26	92	4.703		
13	95.05	53	17.58	93	4.562		
14	90.66	54	16.94	94	4.426		
15	86.49	55	16.32	95	4.294	B(25/50)=3950K	
16	82.54	56	15.73	96	4.167		
17	78.79	57	15.16	97	4.045	R(90°C)=5KΩ±3%	
18	75.24	58	14.62	98	3.927		
19	71.86	59	14.09	99	3.812		

Appendix 3

Normal voltage of P and N			
208-240V(1-phase,3-phase)		380-420V(3-phase)	
In standby			
around 310VDC		around 530VDC	
In operation			
With passive PFC module	With partial active PFC module	With fully active PFC module	/
>200VDC	>310VDC	>370VDC	>450VDC