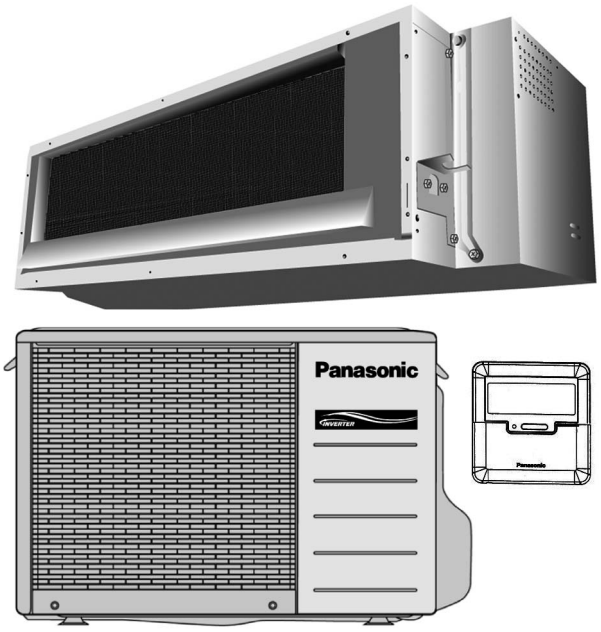
Order No. PHAAM1003092C2

Service Manual

Air Conditioner

Indoor Unit **CS-E10KD3EA**

Outdoor Unit **CU-E10HBEA**



Please file and use this manual together with the service manual for Model No. CU-2E15LBE CU-2E18LBE CU-3E18LBE CU-4E23LBE, Order No. PHAAM1003090C3 and CS-ME10CKPG CS-ME12CKPG CS-ME14CKPG CS-ME18CKPG CS-ME7CKPG CU-2E15CBPG CU-2E18CBPG CU-3E23CBPG CU-4E27CBPG Order No. RAC0209005C2

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

⚠ PRECAUTION OF LOW TEMPERATURE

In order to avoid frostbite, be assured of no refrigerant leakage during the installation or repairing of refrigeration circuit.

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1 Safety Precautions

- Read the following “SAFETY PRECAUTIONS” carefully before perform any servicing.
- Electrical work must be installed or serviced by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation or servicing due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

⚠ **WARNING**	This indication shows the possibility of causing death or serious injury.
⚠ **CAUTION**	This indication shows the possibility of causing injury or damage to properties.

- The items to be followed are classified by the symbols:

⃠	This symbol denotes item that is PROHIBITED from doing.

- Carry out test run to confirm that no abnormality occurs after the servicing. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

⚠ **WARNING**	
1. Do not modify the machine, part, material during repairing service.	
2. If wiring unit is supplied as repairing part, do not repair or connect the wire even only partial wire break. Exchange the whole wiring unit.	
3. Do not wrench the fasten terminal. Pull it out or insert it straightly.	
4. Engage dealer or specialist for installation and servicing. If installation of servicing done by the user is defective, it will cause water leakage, electrical shock or fire.	
5. Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.	
6. Use the attached accessories parts and specified parts for installation and servicing. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.	
7. Install at a strong and firm location which is able to withstand the set’s weight. If the strength is not enough or installation is not properly done, the set will drop and cause injury.	
8. For electrical work, follow the local national wiring standard, regulation and the installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.	
9. This equipment is strongly recommended to install with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may cause electrical shock and fire in case equipment breakdown or insulation breakdown.	
10. Do not use joint cable for indoor / outdoor connection cable. Use the specified Indoor/Outdoor connection cable, refer to installation instruction CONNECT THE CABLE TO THE INDOOR UNIT and connect tightly for indoor / outdoor connection. Clamp the cable so that no external force will be acted on the terminal. If connecting or fixing is not perfect, it will cause heat up or fire at the connection.	
11. Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause heat-up or fire at the connection point of terminal, fire or electrical shock.	
12. When install or relocate air conditioner, do not let any substance other than the specified refrigerant, eg. air etc. mix into refrigeration cycle (piping). (Mixing of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.)	
13. Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit at veranda of high rise building, child may climb up to outdoor unit and cross over the handrail and causing accident.	
14. This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may cause electric shock in case equipment breakdown or insulation breakdown.	⃠
15. Keep away from small children, the thin film may cling to nose and mouth and prevent breathing.	⃠
16. Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire.	⃠
17. Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage.	⃠
18. In case of using existing (R22) pipes during installation of R410 models, must carry out pump down properly to collect back the refrigerant and oil before installation new unit. Thickness of copper pipes used with R410A must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm. It is desirable that the amount of residual oil is less than 40 mg/10m.	⃠

⚠ WARNING

19. During installation, install the refrigerant piping properly before run the compressor. (Operation of compressor without fixing refrigeration piping and valves at opened condition will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.).
20. During pump down operation, stop the compressor before remove the refrigeration piping. (Removal of compressor while compressor is operating and valves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.)
21. After completion of the installation servicing, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.
22. Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire.
23. Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury.

24. Must not use other parts except original parts describe in catalog and manual.

⚠ CAUTION

1. Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.

2. Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.
3. Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage.
4. Do not touch outdoor unit air inlet and aluminium fin. It may cause injury.

5. Select an installation location which is easy for maintenance.
6. Pb free solder has a higher melting point than standard solder; typically the melting point is 50°F - 70°F (30°C - 40°C) higher. Please use a high temperature solder iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C). Pb free solder will tend to splash when heated too high (about 1100°F / 600°C).
7. Power supply connection to the air conditioner.
   Use power supply cord 4×1.5 mm^2 type designation 245 IEC 57 or heavier cord.
   Connect the power supply cord of the air conditioner to the mains using one of the following methods.
   Power supply point should be in easily accessible place for power disconnection in case of emergency.
   In some countries, permanent connection of this air conditioner to the power supply is prohibited.
   1. Power supply connection to the receptacle using a power plug.
      Use an approved 15/16A power plug with earth pin for the connection to the socket.
   2. Power supply connection to a circuit breaker for the permanent connection. Use an approved 16A circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3.5 mm contact gap.
8. Do not release refrigerant during piping work for installation, servicing, reinstallation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.

9. Installation or servicing work. It may need two people to carry out the installation or servicing work.
10. Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc.

11. Do not sit or step on the unit, you may fall down accidentally.

12. Do not touch the sharp aluminium fin, sharp parts may cause injury.

2 Specifications

2.1. CS-E10KD3EA CU-E10HBEA

MODEL		INDOOR	CS-E10KD3EA					
		OUTDOOR	CU-E10HBEA					
Performance Test Condition			EUROVENT / AS					
Power Supply		Phase, Hz	Single, 50					
		V	230			240		
			Min.	Mid.	Max.	Min.	Mid.	Max.
Cooling	Capacity	kW	0.60	2.50	3.00	0.60	2.50	3.00
		BTU/h	2050	8530	10200	2050	8530	10200
		Kcal/h	520	2150	2580	520	2150	2580
	Running Current	A	—	3.1	—	—	3.0	—
	Input Power	W	155	680	850	155	680	850
	Annual Consumption	kWh	—	340	—	—	—	—
	EER	W/W	3.87	3.68	3.53	3.87	3.68	3.53
		Btu/hW	13.2	12.5	12.0	13.2	12.5	12.0
	Power Factor	%	—	95	—	—	94	—
	Indoor Noise (H / L / QLo)	dB-A	33 / 27 / 24			33 / 27 / 24		
		Power Level dB	49 / - / -			49 / - / -		
	Outdoor Noise (H / L)	dB-A	46 / - / -			46 / - / -		
		Power Level dB	59 / - / -			59 / - / -		
Heating	Capacity	kW	0.60	3.20	5.00	0.60	3.20	5.00
		BTU/h	2050	10900	17100	2050	10900	17100
		Kcal/h	520	2750	4300	520	2750	4300
	Running Current	A	—	4.1	—	—	4.0	—
	Input Power	W	135	880	1.53k	135	880	1.53k
	COP	W/W	4.44	3.64	3.27	4.44	3.64	3.27
		Btu/hW	15.2	12.4	11.2	15.2	12.4	11.2
	Power Factor	%	—	93	—	—	92	—
	Indoor Noise (H / L / QLo)	dB-A	35 / 28 / 25			35 / 28 / 25		
		Power Level dB	51 / - / -			51 / - / -		
	Outdoor Noise (H / L)	dB-A	47 / - / -			47 / - / -		
		Power Level dB	60 / - / -			60 / - / -		
Max Current (A) / Max Input Power (W)			6.9 / 1.53k					
Starting Current (A)			4.1					
Compressor	Type		Hermetic Motor					
	Motor Type		Brushless (4-poles)					
	Output Power	W	750					

MODEL				INDOOR	CS-E10KD3EA
				OUTDOOR	CU-E10HBEA
INDOOR FAN	Type				Sirocco
	Material				ABS + GF 10%
	Motor Type				DC Motor (8-poles)
	Output Power			W	30
	Speed	QLo	Cool	rpm	1000
			Heat	rpm	1040
		Lo	Cool	rpm	1070
			Heat	rpm	1100
		Me	Cool	rpm	1185
			Heat	rpm	1235
		Hi	Cool	rpm	1300
			Heat	rpm	1370
		SHi	Cool	rpm	1400
			Heat	rpm	1440
OUTDOOR FAN	Type				Propeller Fan
	Material				PP
	Motor Type				Transistor (8-poles)
	Output Power			W	40
	Speed	Hi	Cool	rpm	800
			Heat	rpm	790
Moisture Removal				L/h (Pt/h)	1.5 (3.2)
Indoor Airflow		QLo	Cool	m^3/min (ft^3/min)	4.0 (140)
			Heat	m^3/min (ft^3/min)	4.6 (160)
		Lo	Cool	m^3/min (ft^3/min)	5.3 (190)
			Heat	m^3/min (ft^3/min)	5.8 (210)
		Me	Cool	m^3/min (ft^3/min)	6.7 (240)
			Heat	m^3/min (ft^3/min)	7.3 (261)
		Hi	Cool	m^3/min (ft^3/min)	6.9 (240)
			Heat	m^3/min (ft^3/min)	8.1 (290)
		SHi	Cool	m^3/min (ft^3/min)	7.9 (280)
			Heat	m^3/min (ft^3/min)	8.9 (310)
Outdoor Airflow		Hi	Cool	m^3/min (ft^3/min)	29.8 (1050)
			Heat	m^3/min (ft^3/min)	29.5 (1040)
Refrigeration Cycle		Control Device			Expansion Valve
		Refrigerant Oil		cm^3	RB68A or Freol Alpha 68M (400)
		Refrigerant Type		g (oz)	R410A, 1.15k (40.6)
Dimension		Height (I/D / O/D)		mm (inch)	235 (9-9/32) / 540 (21-9/32)
		Width (I/D / O/D)		mm (inch)	750 (29-17/32) / 780 (30-23/32)
		Depth (I/D / O/D)		mm (inch)	370 (14-19/32) / 289 (11-13/32)
Weight		Net (I/D / O/D)		kg (lb)	17 (37) / 35 (77)
PIPING	Pipe Diameter (Liquid / Gas)			mm (inch)	6.35 (1/4) / 9.52 (3/8)
	Standard Length			m (ft)	7.5 (24.6)
	Length Range (min - max)			m (ft)	3 (9.8) ~ 20 (65.6)
	I/D & O/D Height Different			m (ft)	15 (49.2)
	Additional Gas Amount			g/m (oz/ft)	20 (0.2)
	Length for Additional Gas			m (ft)	10.0 (32.8)
Drain Hose		Inner Diameter		mm	14
		Length		mm	255

MODEL			INDOOR	CS-E10KD3EA	
			OUTDOOR	CU-E10HBEA	
Indoor Heat Exchanger	Fin Material			Aluminium (Pre Coat)	
	Fin Type			Louver Fin	
	Row × Stage × FPI			2 × 8 × 20	
	Size (W × H × L)		mm	620 × 203.2 × 44	
Outdoor Heat Exchanger	Fin Material			Aluminium	
	Fin Type			Corrugated Fin	
	Row × Stage × FPI			2 × 24 × 17	
	Size (W × H × L)		mm	18.19 × 504 × 713	
Power Supply				Outdoor Power Supply	
Power Supply Cord			A	Nil	
Thermostat				Electronic Control	
Protection Device				Electronic Control	
				Dry Bulb	Wet Bulb
Indoor Operation Range		Cooling	Maximum	32	23
			Minimum	16	11
		Heating	Maximum	30	—
			Minimum	16	—
Outdoor Operation Range		Cooling	Maximum	43	26
			Minimum	-10	—
		Heating	Maximum	24	18
			Minimum	-10	—

1. Cooling capacities are based on indoor temperature of 27°C Dry Bulb (80.6°F Dry Bulb), 19.0°C Wet Bulb (66.2°F Wet Bulb) and outdoor air temperature of 35°C Dry Bulb (95°F Dry Bulb), 24°C Wet Bulb (75.2°F Wet Bulb)
2. Heating capacities are based on indoor temperature of 20°C Dry Bulb (68°F Dry Bulb) and outdoor air temperature of 7°C Dry Bulb (44.6°F Dry Bulb), 6°C Wet Bulb (42.8°F Wet Bulb)
3. Specifications are subjected to change without prior notice for further improvement.

2.2. CU-2E15LBE

Item			Unit	OUTDOOR UNIT	
Indoor Unit Combination				2.5kW + 2.5kW	
Power Source				1 Phase, 230V, 50Hz (Power supply from outdoor unit)	
Cooling Operation	Capacity		kW	4.5 (1.5 ~ 5.2)	
			BTU/h	15300 (5120 ~ 17700)	
	Electrical Data	Running Current	A	5.75	
		Power Input	kW	1.23 (0.25 ~ 1.52)	
		EER	W/W	3.66 (6.00 ~ 3.42)	
	Noise	Sound Pressure Level	dB-A (H/L)	47 / -	
		Sound Power Level	dB (H/L)	62 / -	
Heating Operation	Capacity		kW	5.4 (1.1 ~ 7.0)	
			BTU/h	18400 (3750 ~ 23900)	
	Electrical Data	Running Current	A	5.20	
		Power Input	kW	1.17 (0.21 ~ 1.67)	
		COP	W/W	4.62 (5.24 ~ 4.19)	
	Noise	Sound Pressure Level	dB-A (H/L)	49 / -	
		Sound Power Level	dB (H/L)	64 / -	
Maximum Current			A	12.0	
Starting Current			A	5.75	
Circuit Breaker Capacity			A	15	
Dimension	Height		mm	540	
	Width		mm	780 (+70)	
	Depth		mm	289	
Net Weight			kg	38	
Connection Cable				3 + 1 (Earth) ø1.5 mm^2	
Pipe Length Range (1 room)			m	3 ~ 20	
Maximum Pipe Length (Total Room)			m	30	
Refrigerant Pipe Diameter	Liquid Side		mm (inch)	6.35 (1/4)	
	Gas Side		mm (inch)	9.52 (3/8)	
Compressor	Type			Hermetic Motor	
	Motor Type			Brushless (4-poles)	
	Rated Output		W	1.20k	
Air Circulation	Type			Propeller Fan	
	Motor Type			DC Motor (8-poles)	
	Rated Output		W	40	
Fan Speed	High (Cooling / Heating)		RPM	860 / 860	
Heat Exchanger	Type			Plate fin configuration forced draft type	
	Tube Material			Copper	
	Fin Material			Aluminum (Pre Coat)	
	Row / Stage			2 / 20	
	FPI			19	
Air Volume	High (Cooling / Heating)		m^3/min	33.3 / 28.5	
Refrigerant Control Device				Expansion Valve	
Refrigerant Oil				RB68A / Freol Alpha68M	
Refrigerant (R410A)			g	1.45k	
				Dry Bulb	Wet Bulb
Indoor Operation Range	Cooling	Maximum		32	23
		Minimum		16	11
	Heating	Maximum		30	—
		Minimum		16	—
Outdoor Operation Range	Cooling	Maximum		43	26
		Minimum		16	11
	Heating	Maximum		24	18
		Minimum		-10	-11

Note

• Specifications are subject to change without notice for further improvement.

2.3. CU-2E18LBE

Item			Unit	OUTDOOR UNIT	
Indoor Unit Combination				3.2kW + 3.2kW	
Power Source				1 Phase, 230V, 50Hz (Power supply from outdoor unit)	
Cooling Operation	Capacity		kW	5.2 (1.5 ~ 5.4)	
			BTU/h	17700 (5120 ~ 18400)	
	Electrical Data	Running Current	A	7.10	
		Power Input	kW	1.52 (0.25 ~ 1.58)	
		EER	W/W	3.42 (6.00 ~ 3.42)	
	Noise	Sound Pressure Level	dB-A (H/L)	49 / -	
		Sound Power Level	dB (H/L)	64 / -	
Heating Operation	Capacity		kW	5.6 (1.1 ~ 7.2)	
			BTU/h	19100 (3750 ~ 24600)	
	Electrical Data	Running Current	A	5.35	
		Power Input	kW	1.21 (0.21 ~ 1.70)	
		COP	W/W	4.63 (5.24 ~ 4.24)	
	Noise	Sound Pressure Level	dB-A (H/L)	51 / -	
		Sound Power Level	dB (H/L)	66 / -	
Maximum Current			A	12.0	
Starting Current			A	7.1	
Circuit Breaker Capacity			A	15	
Dimension	Height		mm	540	
	Width		mm	780 (+70)	
	Depth		mm	289	
Net Weight			kg	38	
Connection Cable				3 + 1 (Earth) ø1.5 mm^2	
Pipe Length Range (1 room)			m	3 ~ 20	
Maximum Pipe Length (Total Room)			m	30	
Refrigerant Pipe Diameter	Liquid Side		mm (inch)	6.35 (1/4)	
	Gas Side		mm (inch)	9.52 (3/8)	
Compressor	Type			Hermetic Motor	
	Motor Type			Brushless (4-poles)	
	Rated Output		W	1.50k	
Air Circulation	Type			Propeller Fan	
	Motor Type			DC Motor (8-poles)	
	Rated Output		W	40	
Fan Speed	High (Cooling / Heating)		RPM	890 / 890	
Heat Exchanger	Type			Plate fin configuration forced draft type	
	Tube Material			Copper	
	Fin Material			Aluminum (Pre Coat)	
	Row / Stage			2 / 20	
	FPI			19	
Air Volume	High (Cooling / Heating)		m^3/min	34.5 / 31.0	
Refrigerant Control Device				Expansion Valve	
Refrigerant Oil				RB68A / Freol Alpha68M	
Refrigerant (R410A)			g	1.45k	
				Dry Bulb	Wet Bulb
Indoor Operation Range	Cooling	Maximum		32	23
		Minimum		16	11
	Heating	Maximum		30	—
		Minimum		16	—
Outdoor Operation Range	Cooling	Maximum		43	26
		Minimum		16	11
	Heating	Maximum		24	18
		Minimum		-10	-11

Note

- Specifications are subject to change without notice for further improvement.

2.4. CU-3E18LBE

Item			Unit	OUTDOOR UNIT	
Indoor Unit Combination				2.0kW + 2.0kW + 5.0kW	
Power Source				1 Phase, 230V, 50Hz (Power supply from outdoor unit)	
Cooling Operation	Capacity		kW	5.2 (1.8 ~ 7.3)	
			BTU/h	17700 (6140 ~ 24900)	
	Electrical Data	Running Current	A	5.3	
		Power Input	kW	1.20 (0.36 ~ 2.18)	
		EER	W/W	4.33 (5.00 ~ 3.35)	
	Noise	Sound Pressure Level	dB-A (H/L)	46 / -	
		Sound Power Level	dB (H/L)	60 / -	
Heating Operation	Capacity		kW	6.8 (1.6 ~ 8.3)	
			BTU/h	23200 (5460 ~ 28300)	
	Electrical Data	Running Current	A	6.5	
		Power Input	kW	1.40 (0.32 ~ 2.11)	
		COP	W/W	4.86 (5.00 ~ 3.93)	
	Noise	Sound Pressure Level	dB-A (H/L)	47 / -	
		Sound Power Level	dB (H/L)	61 / -	
Maximum Current			A	15.2	
Starting Current			A	6.5	
Circuit Breaker Capacity			A	16	
Dimension	Height		mm	795	
	Width		mm	875 (+95)	
	Depth		mm	320	
Net Weight			kg	71	
Connection Cable				3 + 1 (Earth) ø1.5 mm^2	
Pipe Length Range (1 room)			m	3 ~ 25	
Maximum Pipe Length (Total Room)			m	50	
Refrigerant Pipe Diameter	Liquid Side		mm (inch)	6.35 (1/4)	
	Gas Side		mm (inch)	9.52 (3/8)	
Compressor	Type			Hermetic Motor	
	Motor Type			Brushless (4-poles)	
	Rated Output		W	1.30k	
Air Circulation	Type			Propeller Fan	
	Motor Type			DC Motor (8-poles)	
	Rated Output		W	60	
Fan Speed	High (Cooling / Heating)		RPM	580 / 580	
Heat Exchanger	Type			Plate fin configuration forced draft type	
	Tube Material			Copper	
	Fin Material			Aluminum (Pre Coat)	
	Row / Stage			2 / 36	
	FPI			19	
Air Volume	High		m^3/min	41.7	
Refrigerant Control Device				Expansion Valve	
Refrigerant Oil				FV50S	
Refrigerant (R410A)			g	2.64k	
				Dry Bulb	Wet Bulb
Indoor Operation Range	Cooling	Maximum		32	23
		Minimum		16	11
	Heating	Maximum		30	—
		Minimum		16	—
Outdoor Operation Range	Cooling	Maximum		46	26
		Minimum		-10	—
	Heating	Maximum		24	18
		Minimum		-15	-16

Note

- Specifications are subject to change without notice for further improvement.

2.5. CU-4E23LBE

Item			Unit	OUTDOOR UNIT	
Indoor Unit Combination				2.0kW + 2.0kW + 2.0kW + 5.0kW	
Power Source				1 Phase, 230V, 50Hz (Power supply from outdoor unit)	
Cooling Operation	Capacity		kW	6.8 (1.9 ~ 8.8)	
			BTU/h	23200 (6480 ~ 30000)	
	Electrical Data	Running Current	A	7.5	
		Power Input	kW	1.68 (0.34 ~ 2.47)	
		EER	W/W	4.05 (5.59 ~ 3.56)	
	Noise	Sound Pressure Level	dB-A (H/L)	48 / -	
		Sound Power Level	dB (H/L)	62 / -	
Heating Operation	Capacity		kW	8.6 (3.0 ~ 10.6)	
			BTU/h	29300 (10200 ~ 36100)	
	Electrical Data	Running Current	A	8.6	
		Power Input	kW	1.85 (0.58 ~ 2.60)	
		COP	W/W	4.65 (5.17 ~ 4.08)	
	Noise	Sound Pressure Level	dB-A (H/L)	49 / -	
		Sound Power Level	dB (H/L)	63 / -	
Maximum Current			A	15.6	
Starting Current			A	8.6	
Circuit Breaker Capacity			A	20	
Dimension	Height		mm	795	
	Width		mm	875 (+95)	
	Depth		mm	320	
Net Weight			kg	72	
Connection Cable				3 + 1 (Earth) ø1.5 mm^2	
Pipe Length Range (1 room)			m	3 ~ 25	
Maximum Pipe Length (Total Room)			m	60	
Refrigerant Pipe Diameter	Liquid Side		mm (inch)	6.35 (1/4)	
	Gas Side		mm (inch)	9.52 (3/8)	
Compressor	Type			Hermetic Motor	
	Motor Type			Brushless (4-poles)	
	Rated Output		W	1.30k	
Air Circulation	Type			Propeller Fan	
	Motor Type			DC Motor (8-poles)	
	Rated Output		W	60	
Fan Speed	High (Cooling / Heating)		RPM	600 / 620	
Heat Exchanger	Type			Plate fin configuration forced draft type	
	Tube Material			Copper	
	Fin Material			Aluminum (Pre Coat)	
	Row /S tage			2 / 36	
	FPI			19	
Air Volume	High (Cooling / Heating)		m^3/min	42.5 / 44.1	
Refrigerant Control Device				Expansion Valve	
Refrigerant Oil				FV50S	
Refrigerant (R410A)			g	2.46k	
				Dry Bulb	Wet Bulb
Indoor Operation Range	Cooling	Maximum		32	23
		Minimum		16	11
	Heating	Maximum		30	—
		Minimum		16	—
Outdoor Operation Range	Cooling	Maximum		46	26
		Minimum		-10	—
	Heating	Maximum		24	18
		Minimum		-15	-16

Note

- Specifications are subject to change without notice for further improvement.

2.6. CU-4E27CBPG

Item			Unit	OUTDOOR UNIT
Indoor Unit Combination				3.2kW + 3.2kW + 3.2kW + 4.0kW
Power Source				Single Phase, 230V, 50Hz (Power supply from outdoor unit)
Cooling Operation	Capacity		kW	8.0 (3.0 - 9.2)
	Electrical Data	Running Current	A	8.70
		Power Input	W	1980 (530 - 2870)
		EER	W/W	4.04
	Noise	Sound Pressure Level	dB	48
		Sound Power Level	dB	61
Heating Operation	Capacity		kW	9.4 (4.2 - 10.6)
	Electrical Data	Running Current	A	9.10
		Power Input	W	2080 (700 - 3060)
		COP	W/W	4.52
	Noise	Sound Pressure Level	dB	49
		Sound Power Level	dB	62
Maximum Current			A	19.0
Starting Current			A	9.10
Circuit Breaker Capacity			A	20
Dimension	Height		mm	908
	Width		mm	900
	Depth		mm	320
Net Weight			kg	73
Connection Cable				3 + 1 (Earth) ø1.5 mm^2
Pipe Length Range (1 room)			m	3 - 25
Maximum Pipe Length (Total Room)			m	70
Refrigerant Pipe Diameter	Liquid Side		mm	6.35
	Gas Side		mm	9.52
Compressor	Type			Hermetically Sealed Swing Type
	Motor Type			DC Brushless (4-poles)
	Rated Output		W	2200
Air Circulation	Type			Propeller Fan
	Motor Type			DC Brushless (8-poles)
	Rated Output		W	51
Fan Speed	Low		rpm	680
	High		rpm	780
Heat Exchanger	Type			Plate fin configuration forced draft type
	Tube Material			Copper
	Fin Material			Aluminum
	Row / Stage			2 / 40
	FPI			19
Air Volume	Low Cooling (Heating)		m^3/min	42 (42)
	High Cooling (Heating)		m^3/min	48.5 (45)
Refrigerant Control Device				Expansion Valve
Refrigerant Oil				FOC50K (Ethers)
Refrigerant (R410A)			g	3,100

Note

- Specifications are subject to change without notice for further improvement.

• **Multi Split Combination Possibility:**

- A single outdoor unit enables air conditioning of up to two separate rooms for CU-2E15LBE, CU-2E18LBE.
- A single outdoor unit enables air conditioning of up to three separate rooms for CU-3E18LBE.
- A single outdoor unit enables air conditioning of up to four separate rooms for CU-4E23LBE, CU-4E27CBPG.

CONNECTABLE INDOOR UNIT			OUTDOOR UNIT													
			CU-2E15LBE		CU-2E18LBE		CU-3E18LBE			CU-4E23LBE				CU-4E27CBPG			
Type \ ROOM			A	B	A	B	A	B	C	A	B	C	D	A	B	C	D
Wall	2.0kW	CS-E7LKEW CS-XE7LKEW	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	2.5kW	CS-E9LKEW CS-XE9LKEW CS-E10KB4EA CS-E10KD3EA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3.2kW	CS-E12LKEW CS-XE12LKEW	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	4.0kW	CS-E15LKEW CS-XE15LKEW	—	—	—	—	●	●	●	●	●	●	●	●	●	●	●
	5.0kW	CS-E18LKEW CS-XE18LKEW	—	—	—	—	●	●	●	●	●	●	●	●	●	●	●
	6.0kW	CS-E21LKEW CS-XE21LKEW	—	—	—	—	—	—	—	●	●	●	●	—	—	—	—

Capacity range of connectable indoor units		From 4.0kW to 5.6kW	From 4.0kW to 6.4kW	From 4.5kW to 9.0kW	From 4.5kW to 11.0kW	From 4.5kW to 13.6kW
Pipe length	1-room maximum pipe length (m)	20	20	25	25	25
	Allowable elevation (m)	10	10	15	15	15
	Total allowable pipe length (m)	30	30	50	60	70
	Total pipe length for maximum chargeless length (m)	20	20	30	30	40
	Additional gas amount over chargeless length (g/m)	20	20	20	20	20

Note: " ● " : Available

Remarks for CU-2E15LBE / CU-2E18LBE

1. At least two indoor units must be connected.
2. The total nominal cooling capacity of indoor units that will be connected to outdoor unit must be within connectable capacity range of indoor unit. (as shown in the table above)
   Example: The indoor units' combination below is possible to connect to CU-2E15LBE. (Total nominal capacity of indoor units is between 4.0kW to 5.6kW)
   1) Two CS-E7LKEW only (Total nominal cooling capacity is 4.0kW)
   2) One CS-E7LKEW and one CS-E9LKEW. (Total nominal cooling capacity is 4.5kW)

Remarks for CU-3E18LBE / CU-4E23LBE / CU-4E27CBPG

1. At least two indoor units must be connected.
2. The total nominal cooling capacity of indoor units that will be connected to outdoor unit must be within connectable capacity range of indoor unit. (as shown in the table above)
   Example: The indoor units' combination below is possible to connect to CU-3E18LBE. (Total nominal capacity of indoor units is between 4.5kW to 9.0kW)
   1) Two CS-E9LKEW only (Total nominal cooling capacity is 5.0kW)
   2) Three CS-E12LKEW. (Total nominal cooling capacity is 9.6kW)

• Outdoor Unit : CU-2E15LBE

Indoor unit capacity Cooling		Total	Cooling Capacity(kW)						Input Power (W)				EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME l/h
			Room A	Room B			Total	min ～ max	Rating	min ～ max			W/W	CLASS			
1 Room	20	20	2.00				2.00	1.1 ～ 2.9	520	220 ～ 750			3.85	A	260	2.45	1.3
	25	25	2.50				2.50	1.1 ～ 3.5	670	220 ～ 1000			3.73	A	335	3.15	1.5
	28	28	2.80				2.80	1.1 ～ 3.5	750	220 ～ 1000			3.73	A	375	3.50	1.6
	32	32	3.20				3.20	1.1 ～ 4.0	920	220 ～ 1220			3.48	A	460	4.30	1.8
2 Room	20 + 20	40	2.00	2.00			4.00	1.5 ～ 5.0	1090	250 ～ 1350			3.66	A	545	5.10	1.3 + 1.3
	20 + 25	45	2.00	2.50			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.3 + 1.5
	20 + 28	48	1.85	2.65			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.2 + 1.6
	20 + 32	52	1.75	2.75			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.1 + 1.6
	25 + 25	50	2.25	2.25			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.5 + 1.5
	25 + 28	53	2.10	2.40			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.4 + 1.5
	28 + 28	56	2.25	2.25			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.5 + 1.5

Indoor unit capacity Heating		Total	Heating Capacity(kW)						Input Power (W)				COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME l/h
			Room A	Room B			Total	min ～ max	Rating	min ～ max			W/W	CLASS			
1 Room	20	20	3.20				3.20	0.7 ～ 4.8	850	170 ～ 1410			3.76	A	425	3.75	
	25	25	3.60				3.60	0.7 ～ 5.5	1030	170 ～ 1700			3.50	B	515	4.55	
	28	28	4.00				4.00	0.7 ～ 5.5	1150	170 ～ 1700			3.48	B	575	5.10	
	32	32	4.50				4.50	0.7 ～ 6.2	1250	170 ～ 1810			3.60	B	625	5.55	
2 Room	20 + 20	40	2.70	2.70			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	20 + 25	45	2.40	3.00			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	20 + 28	48	2.25	3.15			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	20 + 32	52	2.10	3.30			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	25 + 25	50	2.70	2.70			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	25 + 28	53	2.55	2.85			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	28 + 28	56	2.70	2.70			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	

• Outdoor Unit : CU-2E18LBE

Indoor unit capacity Cooling		Total	Cooling Capacity(kW)						Input Power (W)				EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME l/h
			Room A	Room B			Total	min ～ max	Rating	min ～ max			W/W	CLASS			
1 Room	20	20	2.00				2.00	1.1 ～ 2.9	520	220 ～ 750			3.85	A	260	2.45	1.3
	25	25	2.50				2.50	1.1 ～ 3.5	670	220 ～ 1000			3.73	A	335	3.15	1.5
	28	28	2.80				2.80	1.1 ～ 3.5	750	220 ～ 1000			3.73	A	375	3.50	1.6
	32	32	3.20				3.20	1.1 ～ 4.0	920	220 ～ 1220			3.48	A	460	4.30	1.8
2 Room	20 + 20	40	2.00	2.00			4.00	1.5 ～ 5.0	1090	250 ～ 1350			3.66	A	545	5.10	1.3 + 1.3
	20 + 25	45	2.00	2.50			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.3 + 1.5
	20 + 28	48	1.85	2.65			4.50	1.5 ～ 5.2	1230	250 ～ 1520			3.66	A	615	5.75	1.2 + 1.6
	20 + 32	52	1.85	2.95			4.80	1.5 ～ 5.3	1310	250 ～ 1540			3.66	A	655	6.10	1.2 + 1.7
	25 + 25	50	2.40	2.40			4.80	1.5 ～ 5.2	1310	250 ～ 1520			3.66	A	655	6.10	1.5 + 1.5
	25 + 28	53	2.25	2.55			4.80	1.5 ～ 5.2	1310	250 ～ 1520			3.66	A	655	6.10	1.5 + 1.6
	25 + 32	57	2.20	2.80			5.00	1.5 ～ 5.3	1490	250 ～ 1540			3.36	A	745	6.95	1.4 + 1.6
	28 + 28	56	2.40	2.40			4.80	1.5 ～ 5.2	1310	250 ～ 1520			3.66	A	655	6.10	1.5 + 1.5
	28 + 32	60	2.35	2.65			5.00	1.5 ～ 5.3	1490	250 ～ 1540			3.36	A	745	6.95	1.5 + 1.6
	32 + 32	64	2.60	2.60			5.20	1.5 ～ 5.4	1520	250 ～ 1580			3.42	A	760	7.10	1.6 + 1.6

Indoor unit capacity Heating		Total	Heating Capacity(kW)						Input Power (W)				COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME l/h
			Room A	Room B			Total	min ～ max	Rating	min ～ max			W/W	CLASS			
1 Room	20	20	3.20				3.20	0.7 ～ 4.8	850	170 ～ 1410			3.76	A	425	3.75	
	25	25	3.60				3.60	0.7 ～ 5.5	1030	170 ～ 1700			3.50	B	515	4.55	
	28	28	4.00				4.00	0.7 ～ 5.5	1150	170 ～ 1700			3.48	B	575	5.10	
	32	32	4.50				4.50	0.7 ～ 6.2	1250	170 ～ 1810			3.60	B	625	5.55	
2 Room	20 + 20	40	2.70	2.70			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	20 + 25	45	2.40	3.00			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	20 + 28	48	2.25	3.15			5.40	1.1 ～ 7.0	1170	210 ～ 1670			4.62	A	585	5.20	
	20 + 32	52	2.15	3.45			5.60	1.1 ～ 7.2	1230	210 ～ 1720			4.55	A	615	5.45	
	25 + 25	50	2.80	2.80			5.60	1.1 ～ 7.2	1250	210 ～ 1740			4.48	A	625	5.55	
	25 + 28	53	2.65	2.95			5.60	1.1 ～ 7.2	1250	210 ～ 1740			4.48	A	625	5.55	
	25 + 32	57	2.45	3.15			5.60	1.1 ～ 7.2	1230	210 ～ 1720			4.55	A	615	5.45	
	28 + 28	56	2.80	2.80			5.60	1.1 ～ 7.2	1250	210 ～ 1740			4.48	A	625	5.55	
	28 + 32	60	2.60	3.00			5.60	1.1 ～ 7.2	1230	210 ～ 1720			4.55	A	615	5.45	
	32 + 32	64	2.80	2.80			5.60	1.1 ～ 7.2	1210	210 ～ 1700			4.63	A	605	5.35	

• Outdoor Unit : CU-3E18LBE

	Indoor unit capacity Cooling	Total	Cooling Capacity(kW)						Input Power (W)				EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME 1/h
			Room A	Room B	Room C		Total	min ～ max	Rating	min ～ max			W/W	CLASS			
1 Room	20	20	2.00				2.00	1.8 ～ 2.9	500	340 ～ 810			4.00	A	250	2.5	1.3
	25	25	2.50				2.50	1.8 ～ 2.9	630	340 ～ 810			4.00	A	315	3.0	1.5
	28	28	2.80				2.80	1.8 ～ 2.9	700	340 ～ 810			4.00	A	350	3.3	1.6
	32	32	3.20				3.20	1.8 ～ 3.8	800	340 ～ 1360			4.00	A	400	3.7	1.8
	40	40	4.00				4.00	1.8 ～ 4.3	1240	340 ～ 1990			3.23	A	620	5.6	2.3
	50	50	5.00				5.00	1.9 ～ 5.7	1550	340 ～ 2130			3.23	A	775	6.8	2.7
2 Room	20 + 20	40	2.00	2.00			4.00	1.9 ～ 6.2	1010	350 ～ 2100			3.96	A	505	4.5	1.3 + 1.3
	20 + 25	45	2.00	2.50			4.50	1.9 ～ 6.2	1270	350 ～ 2100			3.55	A	635	5.6	1.3 + 1.5
	20 + 28	48	2.00	2.80			4.80	1.9 ～ 6.2	1350	350 ～ 2100			3.55	A	675	6.0	1.3 + 1.6
	20 + 32	52	2.00	3.20			5.20	1.9 ～ 6.3	1490	350 ～ 2110			3.49	A	745	6.6	1.3 + 1.8
	20 + 40	60	1.73	3.47			5.20	1.9 ～ 6.4	1450	350 ～ 2110			3.59	A	725	6.4	1.1 + 2.0
	20 + 50	70	1.49	3.71			5.20	1.9 ～ 6.8	1290	360 ～ 2150			4.03	A	645	5.7	0.9 + 2.2
	25 + 25	50	2.50	2.50			5.00	1.9 ～ 6.2	1540	350 ～ 2100			3.25	A	770	6.8	1.5 + 1.5
	25 + 28	53	2.45	2.75			5.20	1.9 ～ 6.2	1540	350 ～ 2100			3.38	A	770	6.8	1.5 + 1.6
	25 + 32	57	2.28	2.92			5.20	1.9 ～ 6.3	1480	350 ～ 2110			3.51	A	740	6.5	1.5 + 1.7
	25 + 40	65	2.00	3.20			5.20	1.9 ～ 6.4	1440	350 ～ 2110			3.61	A	720	6.4	1.3 + 1.8
	25 + 50	75	1.73	3.47			5.20	1.9 ～ 6.8	1290	360 ～ 2150			4.03	A	645	5.7	1.1 + 2.0
	28 + 28	56	2.60	2.60			5.20	1.9 ～ 6.2	1540	350 ～ 2100			3.38	A	770	6.8	1.6 + 1.6
	28 + 32	60	2.43	2.77			5.20	1.9 ～ 6.3	1480	350 ～ 2110			3.51	A	740	6.5	1.5 + 1.6
	28 + 40	68	2.14	3.06			5.20	1.9 ～ 6.4	1440	350 ～ 2110			3.61	A	720	6.4	1.4 + 1.7
	28 + 50	78	1.87	3.33			5.20	1.9 ～ 6.8	1290	360 ～ 2150			4.03	A	645	5.7	1.2 + 1.9
	32 + 32	64	2.60	2.60			5.20	1.9 ～ 6.4	1450	350 ～ 2120			3.59	A	725	6.4	1.6 + 1.6
	32 + 40	72	2.31	2.89			5.20	1.9 ～ 6.5	1410	350 ～ 2120			3.69	A	705	6.3	1.5 + 1.7
	32 + 50	82	2.03	3.17			5.20	1.9 ～ 6.9	1250	360 ～ 2150			4.16	A	625	5.5	1.3 + 1.8
	40 + 40	80	2.60	2.60			5.20	1.9 ～ 6.5	1410	350 ～ 2120			3.69	A	705	6.2	1.6 + 1.6
	40 + 50	90	2.31	2.89			5.20	1.9 ～ 6.9	1250	360 ～ 2160			4.16	A	625	5.5	1.5 + 1.7
3 Room	20 + 20 + 20	60	1.73	1.73	1.73		5.19	1.9 ～ 7.2	1220	360 ～ 2170			4.25	A	610	5.3	1.1 + 1.1 + 1.1
	20 + 20 + 25	65	1.60	1.60	2.00		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	1.0 + 1.0 + 1.3
	20 + 20 + 28	68	1.53	1.53	2.14		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	1.0 + 1.0 + 1.4
	20 + 20 + 32	72	1.44	1.44	2.32		5.20	1.9 ～ 7.2	1210	360 ～ 2180			4.30	A	605	5.3	0.9 + 0.9 + 1.5
	20 + 20 + 40	80	1.30	1.30	2.60		5.20	1.8 ～ 7.3	1210	360 ～ 2180			4.30	A	605	5.3	0.8 + 0.8 + 1.6
	20 + 20 + 50	90	1.16	1.16	2.88		5.20	1.8 ～ 7.3	1200	360 ～ 2180			4.33	A	600	5.3	0.7 + 0.7 + 1.7
	20 + 25 + 25	70	1.48	1.86	1.86		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	0.9 + 1.2 + 1.2
	20 + 25 + 28	73	1.42	1.78	2.00		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	0.9 + 1.1 + 1.3
	20 + 25 + 32	77	1.35	1.69	2.16		5.20	1.9 ～ 7.2	1210	360 ～ 2180			4.30	A	605	5.3	0.9 + 1.1 + 1.4
	20 + 25 + 40	85	1.22	1.53	2.45		5.20	1.8 ～ 7.3	1200	360 ～ 2180			4.33	A	600	5.3	0.8 + 1.0 + 1.5
	20 + 28 + 28	76	1.36	1.92	1.92		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	0.9 + 1.2 + 1.2
	20 + 28 + 32	80	1.30	1.82	2.08		5.20	1.9 ～ 7.2	1210	360 ～ 2180			4.30	A	605	5.3	0.8 + 1.2 + 1.3
	20 + 28 + 40	88	1.18	1.65	2.37		5.20	1.8 ～ 7.3	1200	360 ～ 2180			4.33	A	600	5.3	0.7 + 1.1 + 1.5
	20 + 32 + 32	84	1.24	1.98	1.98		5.20	1.8 ～ 7.3	1200	360 ～ 2180			4.33	A	600	5.3	0.8 + 1.3 + 1.3
	25 + 25 + 25	75	1.73	1.73	1.73		5.19	1.9 ～ 7.2	1220	360 ～ 2170			4.25	A	610	5.3	1.1 + 1.1 + 1.1
	25 + 25 + 28	78	1.67	1.67	1.86		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	1.1 + 1.1 + 1.2
	25 + 25 + 32	82	1.59	1.59	2.02		5.20	1.9 ～ 7.2	1210	360 ～ 2180			4.30	A	605	5.3	1.0 + 1.0 + 1.3
	25 + 25 + 40	90	1.44	1.44	2.32		5.20	1.8 ～ 7.3	1200	360 ～ 2180			4.33	A	600	5.3	0.9 + 0.9 + 1.5
	25 + 28 + 28	81	1.60	1.80	1.80		5.20	1.9 ～ 7.2	1220	360 ～ 2170			4.26	A	610	5.3	1.0 + 1.2 + 1.2
	25 + 28 + 32	85	1.53	1.71	1.96		5.20	1.9 ～ 7.2	1210	360 ～ 2180			4.30	A	605	5.3	1.0 + 1.1 + 1.3
	25 + 32 + 32	89	1.46	1.87	1.87		5.20	1.8 ～ 7.3	1200	360 ～ 2180			4.33	A	600	5.3	0.9 + 1.2 + 1.2
	28 + 28 + 28	84	1.73	1.73	1.73		5.19	1.9 ～ 7.2	1220	360 ～ 2170			4.25	A	610	5.3	1.1 + 1.1 + 1.1
	28 + 28 + 32	88	1.65	1.65	1.90		5.20	1.9 ～ 7.2	1210	360 ～ 2180			4.30	A	605	5.3	1.1 + 1.1 + 1.2

	Indoor unit capacity Heating	Total	Heating Capacity(kW)						Input Power (W)				COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME 1/h
			Room A	Room B	Room C		Total	min ～ max	Rating	min ～ max			W/W	CLASS			
1 Room	20	20	3.20				3.20	1.2 ～ 4.1	740	300 ～ 1230			4.32	A	370	3.7	
	25	25	3.60				3.60	1.2 ～ 4.3	940	300 ～ 1230			3.83	A	470	4.5	
	28	28	4.00				4.00	1.2 ～ 4.3	1050	300 ～ 1230			3.81	A	525	5.0	
	32	32	4.50				4.50	1.2 ～ 5.8	1230	300 ～ 2100			3.66	A	615	5.8	
	40	40	5.60				5.60	1.2 ～ 6.8	1720	300 ～ 2930			3.26	C	860	7.7	
	50	50	6.80				6.80	1.2 ～ 6.9	2100	300 ～ 2520			3.24	C	1050	9.2	
2 Room	20 + 20	40	2.90	2.90			5.80	1.4 ～ 7.0	1450	310 ～ 2550			4.00	A	725	6.4	
	20 + 25	45	2.84	3.56			6.40	1.4 ～ 7.0	1720	310 ～ 2550			3.72	A	860	7.6	
	20 + 28	48	2.67	3.73			6.40	1.4 ～ 7.0	1720	310 ～ 2550			3.72	A	860	7.6	
	20 + 32	52	2.62	4.18			6.80	1.4 ～ 7.3	1840	310 ～ 2520			3.70	A	920	8.2	
	20 + 40	60	2.27	4.53			6.80	1.4 ～ 7.3	1800	310 ～ 2510			3.78	A	900	7.9	
	20 + 50	70	1.94	4.86			6.80	1.4 ～ 8.0	1520	310 ～ 2200			4.47	A	760	6.7	
	25 + 25	50	3.40	3.40			6.80	1.4 ～ 7.0	1930	310 ～ 2550			3.52	B	965	8.5	
	25 + 28	53	3.21	3.59			6.80	1.4 ～ 7.0	1930	310 ～ 2550			3.52	B	965	8.5	
	25 + 32	57	2.98	3.82			6.80	1.4 ～ 7.3	1840	310 ～ 2520			3.70	A	920	8.1	
	25 + 40	65	2.62	4.18			6.80	1.4 ～ 7.3	1800	310 ～ 2510			3.78	A	900	8.0	
	25 + 50	75	2.27	4.53			6.80	1.4 ～ 8.0	1520	310 ～ 2200			4.47	A	760	6.7	
	28 + 28	56	3.40	3.40			6.80	1.4 ～ 7.0	1930	310 ～ 2550			3.52	B	965	8.5	
	28 + 32	60	3.17	3.63			6.80	1.4 ～ 7.3	1840	310 ～ 2520			3.70	A	920	8.1	
	28 + 40	68	2.80	4.00			6.80	1.4 ～ 7.3	1800	310 ～ 2510			3.78	A	900	8.0	
	28 + 50	78	2.44	4.36			6.80	1.4 ～ 8.0	1520	310 ～ 2200			4.47	A	760	6.7	
	32 + 32	64	3.40	3.40			6.80	1.4 ～ 7.5	1750	310 ～ 2490			3.89	A	875	7.7	
	32 + 40	72	3.02	3.78			6.80	1.4 ～ 7.5	1750	310 ～ 2470			3.89	A	875	7.8	
	32 + 50	82	2.65	4.15			6.80	1.4 ～ 8.0	1500	310 ～ 2180			4.53	A	750	6.6	
	40 + 40	80	3.40	3.40			6.80	1.4 ～ 7.6	1710	310 ～ 2470			3.98	A	855	7.5	
	40 + 50	90	3.02	3.78			6.80	1.4 ～ 8.0	1500	310 ～ 2170			4.53	A	750	6.6	
3 Room	20 + 20 + 20	60	2.26	2.26	2.26		6.78	1.5 ～ 8.1	1510	320 ～ 2120			4.49	A	755	6.7	
	20 + 20 + 25	65	2.09	2.09	2.62		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	20 + 20 + 28	68	2.00	2.00	2.80		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	20 + 20 + 32	72	1.89	1.89	3.02		6.80	1.4 ～ 8.3	1470	320 ～ 2110			4.63	A	735	6.5	
	20 + 20 + 40	80	1.70	1.70	3.40		6.80	1.6 ～ 8.3	1440	320 ～ 2110			4.72	A	720	6.4	
	20 + 20 + 50	90	1.51	1.51	3.78		6.80	1.6 ～ 8.3	1400	320 ～ 2110			4.86	A	700	6.5	
	20 + 25 + 25	70	1.94	2.43	2.43		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	20 + 25 + 28	73	1.86	2.33	2.61		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	20 + 25 + 32	77	1.76	2.21	2.83		6.80	1.4 ～ 8.3	1470	320 ～ 2110			4.63	A	735	6.5	
	20 + 25 + 40	85	1.60	2.00	3.20		6.80	1.6 ～ 8.3	1400	320 ～ 2110			4.86	A	700	6.5	
	20 + 28 + 28	76	1.78	2.51	2.51		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	20 + 28 + 32	80	1.70	2.38	2.72		6.80	1.4 ～ 8.3	1470	320 ～ 2110			4.63	A	735	6.5	
	20 + 28 + 40	88	1.55	2.16	3.09		6.80	1.6 ～ 8.3	1400	320 ～ 2110			4.86	A	700	6.5	
	20 + 32 + 32	84	1.62	2.59	2.59		6.80	1.6 ～ 8.3	1410	320 ～ 2100			4.82	A	705	6.3	
	25 + 25 + 25	75	2.26	2.26	2.26		6.78	1.5 ～ 8.1	1510	320 ～ 2120			4.49	A	755	6.7	
	25 + 25 + 28	78	2.18	2.18	2.44		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	25 + 25 + 32	82	2.07	2.07	2.66		6.80	1.4 ～ 8.3	1470	320 ～ 2110			4.63	A	735	6.5	
	25 + 25 + 40	90	1.89	1.89	3.02		6.80	1.6 ～ 8.3	1400	320 ～ 2110			4.86	A	700	6.5	
	25 + 28 + 28	81	2.10	2.35	2.35		6.80	1.5 ～ 8.1	1510	320 ～ 2120			4.50	A	755	6.7	
	25 + 28 + 32	85	2.00	2.24	2.56		6.80	1.4 ～ 8.3	1470	320 ～ 2110			4.63	A	735	6.5	
	25 + 32 + 32	89	1.92	2.44	2.44		6.80	1.6 ～ 8.3	1410	320 ～ 2100			4.82	A	705	6.3	
	28 + 28 + 28	84	2.26	2.26	2.26		6.78	1.5 ～ 8.1	1510	320 ～ 2120			4.49	A	755	6.7	
	28 + 28 + 32	88	2.16	2.16	2.48		6.80	1.4 ～ 8.3	1470	320 ～ 2110			4.63	A	735	6.5	

• Outdoor Unit : CU-4E23LBE

	Indoor unit capacity Cooling	Total	Cooling Capacity (kW)							Input Power (W)				EER		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME 1/h
			Room A	Room B	Room C	Room D	Total	min ～ max		Rating	min ～ max			W/W	CLASS			
1 Room	20	20	2.00				2.00	1.8	～ 2.9	500	340	～ 810		4.00	A	250	2.5	1.3
	25	25	2.50				2.50	1.8	～ 2.9	630	340	～ 810		4.00	A	315	3.2	1.5
	28	28	2.80				2.80	1.8	～ 2.9	700	340	～ 810		4.00	A	350	3.5	1.6
	32	32	3.20				3.20	1.8	～ 3.8	800	340	～ 1360		4.00	A	400	3.9	1.8
	40	40	4.00				4.00	1.8	～ 4.3	1240	340	～ 1990		3.23	A	620	5.8	2.3
	50	50	5.00				5.00	1.9	～ 5.7	1550	340	～ 2130		3.23	A	775	7.2	2.7
	60	60	6.00				6.00	1.9	～ 6.2	2030	340	～ 2330		2.96	C	1015	9.2	3.3
2 Room	20 + 20	40	2.00	2.00			4.00	1.9	～ 6.4	1010	340	～ 2150		3.96	A	505	4.5	1.3 + 1.3
	20 + 25	45	2.00	2.50			4.50	1.9	～ 6.4	1270	340	～ 2150		3.55	A	635	5.7	1.3 + 1.5
	20 + 28	48	2.00	2.80			4.80	1.9	～ 6.4	1350	340	～ 2150		3.55	A	675	6.1	1.3 + 1.6
	20 + 32	52	2.00	3.20			5.20	1.9	～ 6.9	1510	340	～ 2410		3.44	A	755	6.8	1.3 + 1.8
	20 + 40	60	2.00	4.00			6.00	1.9	～ 6.9	1810	330	～ 2410		3.32	A	905	8.1	1.3 + 2.3
	20 + 50	70	1.94	4.86			6.80	2.0	～ 7.5	1800	320	～ 2440		3.78	A	900	8.1	1.3 + 2.6
	20 + 60	80	1.70	5.10			6.80	2.0	～ 7.5	1800	320	～ 2440		3.78	A	900	8.1	1.1 + 2.8
	25 + 25	50	2.50	2.50			5.00	1.9	～ 6.8	1380	340	～ 2400		3.61	A	690	6.2	1.5 + 1.5
	25 + 28	53	2.50	2.80			5.30	1.9	～ 6.8	1470	340	～ 2400		3.61	A	735	6.6	1.5 + 1.6
	25 + 32	57	2.50	3.20			5.70	1.9	～ 6.9	1660	340	～ 2410		3.43	A	830	7.4	1.5 + 1.8
	25 + 40	65	2.50	4.00			6.50	1.9	～ 6.9	2070	330	～ 2410		3.13	B	1035	9.2	1.5 + 2.3
	25 + 50	75	2.27	4.53			6.80	1.9	～ 7.5	1970	320	～ 2440		3.45	A	985	8.8	1.5 + 2.5
	25 + 60	85	2.00	4.80			6.80	1.9	～ 7.5	1970	320	～ 2440		3.45	A	985	8.8	1.3 + 2.6
	28 + 28	56	2.80	2.80			5.60	1.9	～ 6.8	1550	340	～ 2400		3.61	A	775	6.9	1.6 + 1.6
	28 + 32	60	2.80	3.20			6.00	1.9	～ 6.9	1750	340	～ 2410		3.43	A	875	7.8	1.6 + 1.8
	28 + 40	68	2.80	4.00			6.80	1.9	～ 6.9	2170	330	～ 2410		3.13	B	1085	9.7	1.6 + 2.3
	28 + 50	78	2.44	4.36			6.80	1.9	～ 7.5	1970	320	～ 2440		3.45	A	985	8.8	1.5 + 2.4
	28 + 60	88	2.16	4.64			6.80	1.9	～ 7.5	1970	320	～ 2440		3.45	A	985	8.8	1.4 + 2.5
	32 + 32	64	3.20	3.20			6.40	1.9	～ 7.0	1960	330	～ 2420		3.27	A	980	8.8	1.8 + 1.8
	32 + 40	72	3.02	3.78			6.80	1.9	～ 7.1	2070	330	～ 2420		3.29	A	1035	9.3	1.7 + 2.2
	32 + 50	82	2.65	4.15			6.80	2.0	～ 7.6	1890	320	～ 2450		3.60	A	945	8.5	1.6 + 2.4
	32 + 60	92	2.37	4.43			6.80	2.0	～ 7.6	1890	320	～ 2450		3.60	A	945	8.5	1.5 + 2.5
	40 + 40	80	3.40	3.40			6.80	1.9	～ 7.1	2270	330	～ 2420		3.00	C	1135	10.2	1.9 + 1.9
	40 + 50	90	3.02	3.78			6.80	2.0	～ 7.6	1890	320	～ 2450		3.60	A	945	8.5	1.7 + 2.2
	40 + 60	100	2.72	4.08			6.80	2.0	～ 7.6	1890	320	～ 2450		3.60	A	945	8.5	1.6 + 2.3
	50 + 50	100	3.40	3.40			6.80	2.1	～ 8.1	1780	310	～ 2460		3.82	A	890	8.0	1.9 + 1.9
	50 + 60	110	3.09	3.71			6.80	2.1	～ 8.1	1780	310	～ 2460		3.82	A	890	8.0	1.7 + 2.2
3 Room	20 + 20 + 20	60	2.00	2.00	2.00		6.00	1.9	～ 8.0	1650	340	～ 2460		3.63	A	825	7.4	1.3 + 1.3 + 1.3
	20 + 20 + 25	65	2.00	2.00	2.50		6.50	1.9	～ 8.0	1830	340	～ 2460		3.56	A	915	8.2	1.3 + 1.3 + 1.5
	20 + 20 + 28	68	2.00	2.00	2.80		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.3 + 1.3 + 1.6
	20 + 20 + 32	72	1.89	1.89	3.02		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.2 + 1.2 + 1.7
	20 + 20 + 40	80	1.70	1.70	3.40		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.1 + 1.1 + 1.9
	20 + 20 + 50	90	1.51	1.51	3.78		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.0 + 1.0 + 2.2
	20 + 20 + 60	100	1.36	1.36	4.08		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.9 + 0.9 + 2.3
	20 + 25 + 25	70	1.94	2.43	2.43		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.3 + 1.5 + 1.5
	20 + 25 + 28	73	1.86	2.33	2.61		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.2 + 1.5 + 1.6
	20 + 25 + 32	77	1.76	2.21	2.83		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.1 + 1.4 + 1.7
	20 + 25 + 40	85	1.60	2.00	3.20		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.0 + 1.3 + 1.8
	20 + 25 + 50	95	1.43	1.79	3.58		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.9 + 1.2 + 2.1
	20 + 25 + 60	105	1.29	1.62	3.89		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.8 + 1.0 + 2.3
	20 + 28 + 28	76	1.78	2.51	2.51		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.1 + 1.5 + 1.5
	20 + 28 + 32	80	1.70	2.38	2.72		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.1 + 1.5 + 1.6
	20 + 28 + 40	88	1.55	2.16	3.09		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.0 + 1.4 + 1.7
	20 + 28 + 50	98	1.39	1.94	3.47		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.9 + 1.3 + 2.0
	20 + 28 + 60	108	1.26	1.76	3.78		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.8 + 1.1 + 2.2
	20 + 32 + 32	84	1.62	2.59	2.59		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.0 + 1.6 + 1.6
	20 + 32 + 40	92	1.47	2.37	2.96		6.80	1.9	～ 8.2	1860	340	～ 2460		3.66	A	930	8.3	0.9 + 1.5 + 1.7
	20 + 32 + 50	102	1.33	2.13	3.34		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.8 + 1.4 + 1.9
	20 + 40 + 40	100	1.36	2.72	2.72		6.80	1.9	～ 8.2	1820	340	～ 2460		3.74	A	910	8.2	0.9 + 1.6 + 1.6
	20 + 40 + 50	110	1.24	2.47	3.09		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	0.8 + 1.5 + 1.7
	25 + 25 + 25	75	2.26	2.26	2.26		6.78	1.9	～ 8.0	1910	340	～ 2460		3.55	A	955	8.6	1.5 + 1.5 + 1.5
	25 + 25 + 28	78	2.18	2.18	2.44		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.4 + 1.4 + 1.5
	25 + 25 + 32	82	2.07	2.07	2.66		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.3 + 1.3 + 1.6
	25 + 25 + 40	90	1.89	1.89	3.02		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.2 + 1.2 + 1.7
	25 + 25 + 50	100	1.70	1.70	3.40		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.1 + 1.1 + 1.9
	25 + 25 + 60	110	1.55	1.55	3.70		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.0 + 1.0 + 2.2
	25 + 28 + 28	81	2.10	2.35	2.35		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.4 + 1.5 + 1.5
	25 + 28 + 32	85	2.00	2.24	2.56		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.3 + 1.5 + 1.6
	25 + 28 + 40	93	1.83	2.05	2.92		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.2 + 1.3 + 1.7
	25 + 28 + 50	103	1.65	1.85	3.30		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.1 + 1.2 + 1.9
	25 + 32 + 32	89	1.92	2.44	2.44		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.2 + 1.5 + 1.5
	25 + 32 + 40	97	1.75	2.24	2.81		6.80	1.9	～ 8.2	1860	340	～ 2460		3.66	A	930	8.3	1.1 + 1.5 + 1.6
	25 + 32 + 50	107	1.59	2.03	3.18		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.0 + 1.3 + 1.8
	25 + 40 + 40	105	1.62	2.59	2.59		6.80	1.9	～ 8.2	1820	340	～ 2460		3.74	A	910	8.2	1.0 + 1.6 + 1.6
	28 + 28 + 28	84	2.26	2.26	2.26		6.78	1.9	～ 8.0	1910	340	～ 2460		3.55	A	955	8.6	1.5 + 1.5 + 1.5
	28 + 28 + 32	88	2.16	2.16	2.48		6.80	1.9	～ 8.0	1910	340	～ 2460		3.56	A	955	8.6	1.4 + 1.4 + 1.5
	28 + 28 + 40	96	1.98	1.98	2.84		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.3 + 1.3 + 1.7
	28 + 28 + 50	106	1.80	1.80	3.20		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.2 + 1.2 + 1.8
	28 + 32 + 32	92	2.06	2.37	2.37		6.80	1.9	～ 8.1	1860	340	～ 2460		3.66	A	930	8.3	1.3 + 1.5 + 1.5
	28 + 32 + 40	100	1.90	2.18	2.72		6.80	1.9	～ 8.2	1860	340	～ 2460		3.66	A	930	8.3	1.2 + 1.4 + 1.6
	28 + 32 + 50	110	1.73	1.98	3.09		6.80	2.0	～ 8.5	1730	340	～ 2460		3.93	A	865	7.8	1.1 + 1.3 + 1.7
	28 + 40 + 40	108	1.76	2.52	2.52		6.80	1.9	～ 8.2	1820	340	～ 2460		3.74	A	910	8.2	1.1 + 1.5 + 1.5
	32 + 32 + 32	96	2.26	2.26	2.26		6.78	1.9	～ 8.2	1820	340	～ 2460		3.73	A	910	8.2	1.5 + 1.5 + 1.5
	32 + 32 + 40	104	2.09	2.09	2.62		6.80	1.9	～ 8.2	1820	340	～ 2460		3.74	A	910	8.2	1.4 + 1.4 + 1.6
4 Room	20 + 20 + 20 + 20	80	1.70	1.70	1.70	1.70	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.1 + 1.1 + 1.1 + 1.1
	20 + 20 + 20 + 25	85	1.60	1.60	1.60	2.00	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.0 + 1.0 + 1.0 + 1.3
	20 + 20 + 20 + 28	88	1.55	1.55	1.55	2.15	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.0 + 1.0 + 1.0 + 1.4
	20 + 20 + 20 + 32	92	1.48	1.48	1.48	2.36	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.9 + 0.9 + 0.9 + 1.5
	20 + 20 + 20 + 40	100	1.36	1.36	1.36	2.72	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.9 + 0.9 + 0.9 + 1.6
	20 + 20 + 20 + 50	110	1.24	1.24	1.24	3.08	6.80	1.9	～ 8.8	1680	340	～ 2470		4.05	A	840	7.5	0.8 + 0.8 + 0.8 + 1.7
	20 + 20 + 25 + 25	90	1.51	1.51	1.89	1.89	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.0 + 1.0 + 1.2 + 1.2
	20 + 20 + 25 + 28	93	1.46	1.46	1.83	2.05	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	0.9 + 0.9 + 1.2 + 1.3
	20 + 20 + 25 + 32	97	1.40	1.40	1.75	2.25	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.9 + 0.9 + 1.1 + 1.5
	20 + 20 + 25 + 40	105	1.30	1.30	1.61	2.59	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.8 + 0.8 + 1.0 + 1.6
	20 + 20 + 28 + 28	96	1.42	1.42	1.98	1.98	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	0.9 + 0.9 + 1.3 + 1.3
	20 + 20 + 28 + 32	100	1.36	1.36	1.90	2.18	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.9 + 0.9 + 1.2 + 1.4
	20 + 20 + 28 + 40	108	1.26	1.26	1.76	2.52	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.8 + 0.8 + 1.1 + 1.5
	20 + 20 + 32 + 32	104	1.31	1.31	2.09	2.09	6.80	1.9	～ 8.8	1650	340	～ 2430		4.12	A	825	7.4	0.8 + 0.8 + 1.4 + 1.4
	20 + 25 + 25 + 25	95	1.43	1.79	1.79	1.79	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	0.9 + 1.2 + 1.2 + 1.2
	20 + 25 + 25 + 28	98	1.39	1.73	1.73	1.95	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	0.9 + 1.1 + 1.1 + 1.3
	20 + 25 + 25 + 32	102	1.33	1.67	1.67	2.13	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.8 + 1.1 + 1.1 + 1.4
	20 + 25 + 25 + 40	110	1.23	1.55	1.55	2.47	6.80	1.9	～ 8.8	1680	340	～ 2470		4.05	A	840	7.5	0.8 + 1.0 + 1.0 + 1.5
	20 + 25 + 28 + 28	101	1.34	1.68	1.89	1.89	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	0.8 + 1.1 + 1.2 + 1.2
	20 + 25 + 28 + 32	105	1.30	1.62	1.81	2.07	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	0.8 + 1.0 + 1.2 + 1.3
	20 + 25 + 32 + 32	109	1.24	1.56	2.00	2.00	6.80	1.9	～ 8.8	1650	340	～ 2430		4.12	A	825	7.4	0.8 + 1.0 + 1.3 + 1.3
	20 + 28 + 28 + 28	104	1.31	1.83	1.83	1.83	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	0.8 + 1.2 + 1.2 + 1.2
	20 + 28 + 28 + 32	108	1.26	1.76	1.76	2.02	6.80	1.9	～ 8.8	1680	340	～ 2470		4.05	A	840	7.5	0.8 + 1.1 + 1.1 + 1.3
	25 + 25 + 25 + 25	100	1.70	1.70	1.70	1.70	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.1 + 1.1 + 1.1 + 1.1
	25 + 25 + 25 + 28	103	1.65	1.65	1.65	1.85	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.1 + 1.1 + 1.1 + 1.2
	25 + 25 + 25 + 32	107	1.59	1.59	1.59	2.03	6.80	1.9	～ 8.8	1650	340	～ 2470		4.12	A	825	7.4	1.0 + 1.0 + 1.0 + 1.3
	25 + 25 + 28 + 28	106	1.60	1.60	1.80	1.80	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.0 + 1.0 + 1.2 + 1.2
	25 + 25 + 28 + 32	110	1.55	1.55	1.72	1.98	6.80	1.9	～ 8.8	1680	340	～ 2470		4.05	A	840	7.5	1.0 + 1.0 + 1.1 + 1.3
	25 + 28 + 28 + 28	109	1.55	1.75	1.75	1.75	6.80	1.9	～ 8.7	1690	340	～ 2460		4.02	A	845	7.6	1.0 + 1.1 + 1.1 + 1.1

Indoor unit capacity Heating		Total	Heating Capacity(kW)							Input Power (W)				COP		ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME l/h
			Room A	Room B	Room C	Room D	Total	min ~ max		Rating	min ~ max			W/W	CLASS			
1 Room	20	20	3.20				3.20	1.2 ~ 4.1		740	300 ~ 1230			4.32	A	370	3.7	
	25	25	3.60				3.60	1.2 ~ 4.3		940	300 ~ 1230			3.83	A	470	4.7	
	28	28	4.00				4.00	1.2 ~ 4.3		1050	300 ~ 1230			3.81	A	525	5.2	
	32	32	4.50				4.50	1.2 ~ 5.8		1230	300 ~ 2100			3.66	A	615	6.0	
	40	40	5.60				5.60	1.2 ~ 6.8		1720	300 ~ 2930			3.26	C	860	8.0	
	50	50	6.80				6.80	1.2 ~ 6.9		2100	300 ~ 2520			3.24	C	1050	9.7	
	60	60	8.50				8.50	1.3 ~ 9.0		2400	620 ~ 2530			3.54	B	1200	11.1	
2 Room	20 + 20	40	2.90	2.90			5.80	2.7 ~ 9.8		1450	610 ~ 2800			4.00	A	725	6.7	
	20 + 25	45	2.71	3.39			6.10	2.7 ~ 9.8		1640	610 ~ 2800			3.72	A	820	7.6	
	20 + 28	48	2.67	3.73			6.40	2.7 ~ 9.8		1720	610 ~ 2800			3.72	A	860	8.0	
	20 + 32	52	2.69	4.31			7.00	2.7 ~ 9.9		1840	590 ~ 2800			3.80	A	920	8.5	
	20 + 40	60	2.73	5.47			8.20	2.7 ~ 9.9		2210	590 ~ 2800			3.71	A	1105	10.2	
	20 + 50	70	2.46	6.14			8.60	2.8 ~ 10.2		2140	530 ~ 2760			4.02	A	1070	9.9	
	20 + 60	80	2.15	6.45			8.60	2.8 ~ 10.2		2290	530 ~ 2760			3.76	A	1145	10.6	
	25 + 25	50	3.20	3.20			6.40	2.7 ~ 9.8		1700	610 ~ 2800			3.77	A	850	7.8	
	25 + 28	53	3.30	3.70			7.00	2.7 ~ 9.8		1860	610 ~ 2800			3.77	A	930	8.6	
	25 + 32	57	3.55	4.55			8.10	2.7 ~ 9.9		2170	590 ~ 2800			3.73	A	1085	10.0	
	25 + 40	65	3.31	5.29			8.60	2.7 ~ 9.9		2320	590 ~ 2800			3.71	A	1160	10.7	
	25 + 50	75	2.87	5.73			8.60	2.8 ~ 10.2		2140	530 ~ 2760			4.02	A	1070	9.9	
	25 + 60	85	2.53	6.07			8.60	2.8 ~ 10.2		2140	530 ~ 2760			4.02	A	1070	9.9	
	28 + 28	56	4.00	4.00			8.00	2.7 ~ 9.8		2120	610 ~ 2800			3.77	A	1060	9.8	
	28 + 32	60	3.97	4.53			8.50	2.7 ~ 9.9		2280	590 ~ 2800			3.73	A	1140	10.5	
	28 + 40	68	3.54	5.06			8.60	2.7 ~ 9.9		2320	590 ~ 2800			3.71	A	1160	10.7	
	28 + 50	78	3.09	5.51			8.60	2.8 ~ 10.2		2140	530 ~ 2760			4.02	A	1070	9.9	
	28 + 60	88	2.74	5.86			8.60	2.8 ~ 10.2		2140	530 ~ 2760			4.02	A	1070	9.9	
	32 + 32	64	4.30	4.30			8.60	2.8 ~ 10.0		2270	580 ~ 2800			3.79	A	1135	10.5	
	32 + 40	72	3.82	4.78			8.60	2.8 ~ 10.0		2270	570 ~ 2800			3.79	A	1135	10.5	
	32 + 50	82	3.36	5.24			8.60	2.8 ~ 10.3		2090	520 ~ 2740			4.11	A	1045	9.7	
	32 + 60	92	2.99	5.61			8.60	2.8 ~ 10.3		2090	520 ~ 2740			4.11	A	1045	9.7	
	40 + 40	80	4.30	4.30			8.60	2.8 ~ 10.0		2260	560 ~ 2800			3.81	A	1130	10.5	
	40 + 50	90	3.82	4.78			8.60	2.8 ~ 10.3		2080	510 ~ 2740			4.13	A	1040	9.6	
	40 + 60	100	3.44	5.16			8.60	2.8 ~ 10.3		2080	510 ~ 2740			4.13	A	1040	9.6	
	50 + 50	100	4.30	4.30			8.60	2.8 ~ 10.5		1960	480 ~ 2650			4.39	A	980	9.1	
	50 + 60	110	3.91	4.69			8.60	2.8 ~ 10.5		1960	480 ~ 2650			4.39	A	980	9.1	
3 Room	20 + 20 + 20	60	2.86	2.86	2.86		8.58	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	20 + 20 + 25	65	2.65	2.65	3.30		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	20 + 20 + 28	68	2.53	2.53	3.54		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	20 + 20 + 32	72	2.39	2.39	3.82		8.60	3.3 ~ 10.4		2070	590 ~ 2820			4.15	A	1035	9.6	
	20 + 20 + 40	80	2.15	2.15	4.30		8.60	3.3 ~ 10.5		2060	590 ~ 2810			4.17	A	1030	9.5	
	20 + 20 + 50	90	1.91	1.91	4.78		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	20 + 20 + 60	100	1.72	1.72	5.16		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	20 + 25 + 25	70	2.46	3.07	3.07		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	20 + 25 + 28	73	2.35	2.95	3.30		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	20 + 25 + 32	77	2.23	2.79	3.58		8.60	3.3 ~ 10.4		2070	590 ~ 2820			4.15	A	1035	9.6	
	20 + 25 + 40	85	2.02	2.53	4.05		8.60	3.3 ~ 10.5		2060	590 ~ 2810			4.17	A	1030	9.5	
	20 + 25 + 50	95	1.81	2.26	4.53		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	20 + 25 + 60	105	1.64	2.05	4.91		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	20 + 28 + 28	76	2.26	3.17	3.17		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	20 + 28 + 32	80	2.15	3.01	3.44		8.60	3.3 ~ 10.4		2070	590 ~ 2820			4.15	A	1035	9.6	
	20 + 28 + 40	88	1.95	2.74	3.91		8.60	3.3 ~ 10.5		2060	590 ~ 2810			4.17	A	1030	9.5	
	20 + 28 + 50	98	1.75	2.46	4.39		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	20 + 28 + 60	108	1.59	2.23	4.78		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	20 + 32 + 32	84	2.04	3.28	3.28		8.60	3.3 ~ 10.5		2050	590 ~ 2800			4.20	A	1025	9.5	
	20 + 32 + 40	92	1.87	2.99	3.74		8.60	3.3 ~ 10.5		2040	580 ~ 2790			4.22	A	1020	9.4	
	20 + 32 + 50	102	1.68	2.70	4.22		8.60	3.2 ~ 10.6		1910	570 ~ 2680			4.50	A	955	8.8	
	20 + 40 + 40	100	1.72	3.44	3.44		8.60	3.3 ~ 10.5		2030	580 ~ 2780			4.24	A	1015	9.4	
	20 + 40 + 50	110	1.56	3.13	3.91		8.60	3.2 ~ 10.6		1910	570 ~ 2680			4.50	A	955	8.8	
	25 + 25 + 25	75	2.86	2.86	2.86		8.58	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	25 + 25 + 28	78	2.76	2.76	3.08		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	25 + 25 + 32	82	2.62	2.62	3.36		8.60	3.3 ~ 10.4		2070	590 ~ 2820			4.15	A	1035	9.6	
	25 + 25 + 40	90	2.39	2.39	3.82		8.60	3.3 ~ 10.5		2060	590 ~ 2810			4.17	A	1030	9.5	
	25 + 25 + 50	100	2.15	2.15	4.30		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	25 + 25 + 60	110	1.95	1.95	4.70		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	25 + 28 + 28	81	2.66	2.97	2.97		8.60	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	25 + 28 + 32	85	2.53	2.83	3.24		8.60	3.3 ~ 10.4		2070	590 ~ 2820			4.15	A	1035	9.6	
	25 + 28 + 40	93	2.31	2.59	3.70		8.60	3.3 ~ 10.5		2060	590 ~ 2810			4.17	A	1030	9.5	
	25 + 28 + 50	103	2.09	2.34	4.17		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	25 + 32 + 32	89	2.42	3.09	3.09		8.60	3.3 ~ 10.5		2050	590 ~ 2800			4.20	A	1025	9.5	
	25 + 32 + 40	97	2.21	2.84	3.55		8.60	3.3 ~ 10.5		2040	580 ~ 2790			4.22	A	1020	9.4	
	25 + 32 + 50	107	2.01	2.57	4.02		8.60	3.2 ~ 10.6		1910	570 ~ 2680			4.50	A	955	8.8	
	25 + 40 + 40	105	2.04	3.28	3.28		8.60	3.3 ~ 10.5		2030	580 ~ 2780			4.24	A	1015	9.4	
	28 + 28 + 28	84	2.86	2.86	2.86		8.58	3.3 ~ 10.4		2090	600 ~ 2840			4.11	A	1045	9.7	
	28 + 28 + 32	88	2.74	2.74	3.12		8.60	3.3 ~ 10.4		2070	590 ~ 2820			4.15	A	1035	9.6	
	28 + 28 + 40	96	2.51	2.51	3.58		8.60	3.3 ~ 10.5		2060	590 ~ 2810			4.17	A	1030	9.5	
	28 + 28 + 50	106	2.27	2.27	4.06		8.60	3.2 ~ 10.6		1930	570 ~ 2710			4.46	A	965	8.9	
	28 + 32 + 32	92	2.62	2.99	2.99		8.60	3.3 ~ 10.5		2050	590 ~ 2800			4.20	A	1025	9.5	
	28 + 32 + 40	100	2.41	2.75	3.44		8.60	3.3 ~ 10.5		2040	580 ~ 2790			4.22	A	1020	9.4	
	28 + 32 + 50	110	2.19	2.50	3.91		8.60	3.2 ~ 10.6		1910	570 ~ 2680			4.50	A	955	8.8	
	28 + 40 + 40	108	2.22	3.19	3.19		8.60	3.3 ~ 10.5		2030	580 ~ 2780			4.24	A	1015	9.4	
	32 + 32 + 32	96	2.86	2.86	2.86		8.58	3.3 ~ 10.5		1990	580 ~ 2770			4.31	A	995	9.2	
	32 + 32 + 40	104	2.65	2.65	3.30		8.60	3.3 ~ 10.5		1980	580 ~ 2760			4.34	A	990	9.2	
4 Room	20 + 20 + 20 + 20	80	2.15	2.15	2.15	2.15	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 20 + 20 + 25	85	2.02	2.02	2.02	2.54	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 20 + 20 + 28	88	1.95	1.95	1.95	2.75	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 20 + 20 + 32	92	1.87	1.87	1.87	2.99	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	20 + 20 + 20 + 40	100	1.72	1.72	1.72	3.44	8.60	3.0 ~ 10.6		1840	590 ~ 2590			4.67	A	920	8.5	
	20 + 20 + 20 + 50	110	1.56	1.56	1.56	3.92	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	20 + 20 + 25 + 25	90	1.91	1.91	2.39	2.39	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 20 + 25 + 28	93	1.85	1.85	2.31	2.59	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 20 + 25 + 32	97	1.77	1.77	2.22	2.84	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	20 + 20 + 25 + 40	105	1.64	1.64	2.04	3.28	8.60	3.0 ~ 10.6		1840	590 ~ 2590			4.67	A	920	8.5	
	20 + 20 + 28 + 28	96	1.79	1.79	2.51	2.51	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 20 + 28 + 32	100	1.72	1.72	2.41	2.75	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	20 + 20 + 28 + 40	108	1.59	1.59	2.23	3.19	8.60	3.0 ~ 10.6		1840	590 ~ 2590			4.67	A	920	8.5	
	20 + 20 + 32 + 32	104	1.65	1.65	2.65	2.65	8.60	3.0 ~ 10.6		1830	590 ~ 2570			4.70	A	915	8.5	
	20 + 25 + 25 + 25	95	1.82	2.26	2.26	2.26	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 25 + 25 + 28	98	1.76	2.19	2.19	2.46	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 25 + 25 + 32	102	1.68	2.11	2.11	2.70	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	20 + 25 + 25 + 40	110	1.56	1.95	1.95	3.14	8.60	3.0 ~ 10.6		1850	590 ~ 2600			4.65	A	925	8.6	
	20 + 25 + 28 + 28	101	1.70	2.14	2.38	2.38	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 25 + 28 + 32	105	1.64	2.05	2.29	2.62	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	20 + 25 + 32 + 32	109	1.58	1.98	2.62	2.52	8.60	3.0 ~ 10.6		1830	590 ~ 2570			4.70	A	915	8.5	
	20 + 28 + 28 + 28	104	1.64	2.32	2.32	2.32	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	20 + 28 + 28 + 32	108	1.59	2.23	2.23	2.55	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	25 + 25 + 25 + 25	100	2.15	2.15	2.15	2.15	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	25 + 25 + 25 + 28	103	2.09	2.09	2.09	2.33	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	25 + 25 + 25 + 32	107	2.01	2.01	2.01	2.57	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	25 + 25 + 28 + 28	106	2.03	2.03	2.27	2.27	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	
	25 + 25 + 28 + 32	110	1.95	1.95	2.19	2.51	8.60	3.0 ~ 10.6		1850	580 ~ 2600			4.65	A	925	8.6	
	25 + 28 + 28 + 28	109	1.97	2.21	2.21	2.21	8.60	3.1 ~ 10.6		1870	580 ~ 2620			4.60	A	935	8.6	

• Outdoor Unit : CU-4E27CBPG

	Indoor unit capacity Cooling	Total	Cooling Capacity (kW) Room A	Room B	Room C	Room D	Total	min	max	Input Power (W) Rating	min	max	EER W/W	EER CLASS	ANNUAL ENERGY CONSUMPTION (kWh)	Current, 230V (A)	MOISTURE REMOVAL VOLUME l/h
1 Room	20	20	2.00				2.00	1.9	2.7	440	380	620	4.52	A	220	2.10	1.3
	25	25	2.50				2.50	2.0	3.4	550	380	900	4.52	A	275	2.60	1.5
	28	28	2.80				2.80	2.0	3.4	620	380	900	4.52	A	310	2.95	1.6
	32	32	3.20				3.20	2.0	3.9	720	380	1090	4.44	A	360	3.40	1.8
	40	40	4.00				4.00	2.0	4.4	1030	380	1390	3.88	A	515	4.60	2.3
	50	50	5.00				5.00	2.1	5.2	1610	400	1800	3.11	B	805	7.15	2.7
2 Room	20 + 20	40	2.00	2.00			4.00	2.1	5.0	890	400	1260	4.49	A	445	3.95	1.3 + 1.3
	20 + 25	45	2.00	2.50			4.50	2.1	6.1	1110	400	1880	4.07	A	555	4.90	1.3 + 1.5
	20 + 28	48	2.00	2.80			4.80	2.1	6.1	1180	400	1880	4.07	A	590	5.20	1.3 + 1.6
	20 + 32	52	2.00	3.20			5.20	2.2	7.0	1320	400	2790	3.94	A	660	5.80	1.3 + 1.8
	20 + 40	60	2.00	4.00			6.00	2.2	7.1	1760	400	2790	3.41	A	880	7.75	1.3 + 2.3
	20 + 50	70	2.00	5.00			7.00	2.5	7.2	2500	460	2800	2.80	D	1250	11.00	1.3 + 2.7
	25 + 25	50	2.50	2.50			5.00	2.2	6.9	1380	400	2780	3.61	A	690	6.10	1.5 + 1.5
	25 + 28	53	2.50	2.80			5.30	2.2	6.9	1470	400	2780	3.61	A	735	6.50	1.5 + 1.6
	25 + 32	57	2.50	3.20			5.70	2.2	7.0	1620	400	2790	3.53	A	810	7.15	1.5 + 1.8
	25 + 40	65	2.50	4.00			6.50	2.2	7.1	2180	400	2790	2.98	C	1090	9.60	1.5 + 2.3
	25 + 50	75	2.35	4.75			7.10	2.5	7.2	2610	460	2800	2.72	D	1305	11.50	1.5 + 2.6
	28 + 28	56	2.80	2.80			5.60	2.2	6.9	1550	400	2780	3.61	A	775	6.85	1.6 + 1.6
	28 + 32	60	2.80	3.20			6.00	2.2	7.0	1700	400	2790	3.53	A	850	7.55	1.6 + 1.8
	28 + 40	68	2.80	4.00			6.80	2.2	7.1	2280	400	2790	2.98	C	1140	10.00	1.6 + 2.3
	28 + 50	78	2.55	4.55			7.10	2.5	7.2	2610	460	2800	2.72	D	1305	11.50	1.6 + 2.5
	32 + 32	64	3.20	3.20			6.40	2.2	7.3	1860	400	2810	3.44	A	930	8.15	1.8 + 1.8
	32 + 40	72	3.10	3.90			7.00	2.5	7.3	2410	460	2810	2.90	C	1205	10.60	1.7 + 2.3
	32 + 50	82	2.90	4.50			7.40	2.6	7.4	2820	460	2880	2.62	D	1410	12.30	1.7 + 2.5
	40 + 40	80	3.60	3.60			7.20	2.5	7.3	2620	460	2810	2.75	D	1310	11.50	2.1 + 2.1
	40 + 50	90	3.25	4.05			7.30	2.7	7.4	2670	480	2820	2.73	D	1335	11.70	1.8 + 2.3
	50 + 50	100	3.75	3.75			7.50	2.8	7.6	2860	480	2870	2.62	D	1430	12.50	2.2 + 2.2
3 Room	20 + 20 + 20	60	2.00	2.00	2.00		6.00	2.2	7.8	1510	410	2490	3.98	A	755	6.65	1.3 + 1.3 + 1.3
	20 + 20 + 25	65	2.00	2.00	2.50		6.50	2.5	8.1	1760	460	2850	3.70	A	880	7.75	1.3 + 1.3 + 1.5
	20 + 20 + 28	68	2.00	2.00	2.80		6.80	2.5	8.1	1840	460	2850	3.70	A	920	8.10	1.3 + 1.3 + 1.6
	20 + 20 + 32	72	2.05	2.05	3.20		7.30	2.5	8.2	1980	460	2790	3.69	A	990	8.70	1.3 + 1.3 + 1.8
	20 + 20 + 40	80	1.95	1.95	3.90		7.80	2.6	8.2	2330	460	2830	3.35	A	1165	10.30	1.3 + 1.3 + 2.3
	20 + 20 + 50	90	1.80	1.80	4.40		8.00	2.8	8.3	2460	490	2820	3.25	A	1230	10.80	1.2 + 1.2 + 2.4
	20 + 25 + 25	70	2.10	2.65	2.65		7.40	2.5	8.1	2140	460	2790	3.46	A	1070	9.40	1.4 + 1.6 + 1.6
	20 + 25 + 28	73	2.00	2.55	2.85		7.40	2.5	8.1	2140	460	2790	3.46	A	1070	9.40	1.3 + 1.6 + 1.7
	20 + 25 + 32	77	1.95	2.45	3.20		7.60	2.6	8.2	2240	460	2840	3.39	A	1120	9.85	1.3 + 1.5 + 1.8
	20 + 25 + 40	85	1.90	2.35	3.75		8.00	2.7	8.2	2510	490	2800	3.19	B	1255	11.00	1.2 + 1.5 + 2.2
	20 + 25 + 50	95	1.70	2.10	4.20		8.00	2.8	8.3	2460	490	2800	3.25	A	1230	10.80	1.1 + 1.4 + 2.4
	20 + 28 + 28	76	1.90	2.75	2.75		7.40	2.5	8.1	2140	460	2790	3.46	A	1070	9.40	1.2 + 1.6 + 1.6
	20 + 28 + 32	80	1.90	2.65	3.05		7.60	2.6	8.2	2240	460	2840	3.39	A	1120	9.85	1.2 + 1.6 + 1.7
	20 + 28 + 40	88	1.80	2.55	3.65		8.00	2.7	8.2	2510	490	2800	3.19	B	1255	11.00	1.2 + 1.6 + 2.1
	20 + 28 + 50	98	1.60	2.30	4.10		8.00	2.8	8.3	2460	490	2800	3.25	A	1230	10.80	1.0 + 1.5 + 2.3
	20 + 32 + 32	84	1.90	3.00	3.00		7.90	2.7	8.3	2290	460	2810	3.45	A	1145	10.10	1.2 + 1.7 + 1.7
	20 + 32 + 40	92	1.70	2.80	3.50		8.00	2.8	8.4	2380	490	2840	3.36	A	1190	10.40	1.1 + 1.6 + 2.0
	20 + 32 + 50	102	1.55	2.50	3.95		8.00	2.8	8.3	2470	490	2840	3.24	A	1235	10.90	1.0 + 1.5 + 2.3
	20 + 40 + 40	100	1.60	3.20	3.20		8.00	2.8	8.4	2380	490	2810	3.36	A	1190	10.40	1.0 + 1.8 + 1.8
	20 + 40 + 50	110	1.45	2.90	3.65		8.00	2.8	8.3	2470	490	2810	3.24	A	1235	10.90	0.9 + 1.7 + 2.1
	20 + 50 + 50	120	1.30	3.35	3.35		8.00	2.9	8.4	2430	490	2830	3.29	A	1215	10.70	0.8 + 1.9 + 1.9
	25 + 25 + 25	75	2.60	2.60	2.60		7.80	2.6	8.1	2450	460	2820	3.18	B	1225	10.80	1.6 + 1.6 + 1.6
	25 + 25 + 28	78	2.50	2.50	2.80		7.80	2.6	8.1	2450	460	2820	3.18	B	1225	10.80	1.5 + 1.5 + 1.6
	25 + 25 + 32	82	2.45	2.45	3.10		8.00	2.7	8.2	2510	490	2810	3.19	B	1255	11.00	1.5 + 1.5 + 1.7
	25 + 25 + 40	90	2.20	2.20	3.60		8.00	2.8	8.2	2510	490	2790	3.19	B	1255	11.00	1.4 + 1.4 + 2.1
	25 + 25 + 50	100	2.00	2.00	4.00		8.00	2.8	8.3	2460	490	2790	3.25	A	1230	10.80	1.3 + 1.3 + 2.3
	25 + 28 + 28	81	2.40	2.70	2.70		7.80	2.6	8.1	2450	460	2820	3.18	B	1225	10.80	1.5 + 1.6 + 1.6
	25 + 28 + 32	85	2.35	2.65	3.00		8.00	2.7	8.2	2510	490	2810	3.19	B	1255	11.00	1.5 + 1.6 + 1.7
	25 + 28 + 40	93	2.15	2.40	3.45		8.00	2.8	8.2	2510	490	2790	3.19	B	1255	11.00	1.4 + 1.5 + 2.0
	25 + 28 + 50	103	1.95	2.15	3.90		8.00	2.8	8.3	2460	490	2790	3.25	A	1230	10.80	1.3 + 1.4 + 2.3
	25 + 32 + 32	89	2.20	2.90	2.90		8.00	2.7	8.4	2380	490	2850	3.36	A	1190	10.40	1.4 + 1.7 + 1.7
	25 + 32 + 40	97	2.05	2.65	3.30		8.00	2.8	8.4	2380	490	2820	3.36	A	1190	10.40	1.3 + 1.6 + 1.9
	25 + 32 + 50	107	1.85	2.40	3.75		8.00	2.8	8.4	2340	490	2830	3.42	A	1170	10.30	1.2 + 1.5 + 2.2
	25 + 40 + 40	105	1.90	3.05	3.05		8.00	2.8	8.4	2380	490	2800	3.36	A	1190	10.40	1.2 + 1.7 + 1.7
	25 + 40 + 50	115	1.70	2.80	3.50		8.00	2.8	8.4	2340	490	2800	3.42	A	1170	10.30	1.1 + 1.6 + 2.0
	25 + 50 + 50	125	1.60	3.20	3.20		8.00	2.9	8.5	2340	520	2800	3.42	A	1170	10.30	1.0 + 1.8 + 1.8
	28 + 28 + 28	84	2.60	2.60	2.60		7.80	2.6	8.1	2450	460	2820	3.18	B	1225	10.80	1.6 + 1.6 + 1.6
	28 + 28 + 32	88	2.55	2.55	2.90		8.00	2.7	8.2	2510	490	2810	3.19	B	1255	11.00	1.6 + 1.6 + 1.7
	28 + 28 + 40	96	2.35	2.35	3.30		8.00	2.8	8.2	2510	490	2790	3.19	B	1255	11.00	1.5 + 1.5 + 1.9
	28 + 28 + 50	106	2.10	2.10	3.80		8.00	2.8	8.3	2460	490	2790	3.25	A	1230	10.80	1.4 + 1.4 + 2.2
	28 + 32 + 32	92	2.40	2.80	2.80		8.00	2.7	8.4	2380	490	2850	3.36	A	1190	10.40	1.5 + 1.6 + 1.6
	28 + 32 + 40	100	2.25	2.55	3.20		8.00	2.8	8.4	2380	490	2820	3.36	A	1190	10.40	1.5 + 1.6 + 1.8
	28 + 32 + 50	110	2.00	2.35	3.65		8.00	2.8	8.4	2340	490	2830	3.42	A	1170	10.30	1.3 + 1.5 + 2.1
	28 + 40 + 40	108	2.10	2.95	2.95		8.00	2.8	8.4	2380	490	2800	3.36	A	1190	10.40	1.4 + 1.7 + 1.7
	28 + 40 + 50	118	1.90	2.70	3.40		8.00	2.8	8.4	2340	490	2800	3.42	A	1170	10.30	1.2 + 1.6 + 1.9
	28 + 50 + 50	128	1.70	3.15	3.15		8.00	2.9	8.5	2340	520	2800	3.42	A	1170	10.30	1.1 + 1.8 + 1.8
	32 + 32 + 32	96	2.66	2.66	2.66		7.98	2.8	8.5	2300	490	2830	3.47	A	1150	10.10	1.6 + 1.6 + 1.6
	32 + 32 + 40	104	2.45	2.45	3.10		8.00	2.8	8.4	2390	490	2800	3.35	A	1195	10.50	1.5 + 1.5 + 1.7
	32 + 32 + 50	114	2.25	2.25	3.50		8.00	2.8	8.4	2390	490	2830	3.35	A	1195	10.50	1.5 + 1.5 + 2.0
	32 + 40 + 40	112	2.30	2.85	2.85		8.00	2.8	8.4	2390	490	2820	3.35	A	1195	10.50	1.5 + 1.7 + 1.7
	32 + 40 + 50	122	2.10	2.60	3.30		8.00	2.9	8.4	2350	490	2820	3.40	A	1175	10.30	1.4 + 1.6 + 1.9
	32 + 50 + 50	132	1.90	3.05	3.05		8.00	2.9	8.5	2350	520	2810	3.40	A	1175	10.30	1.2 + 1.7 + 1.7
	40 + 40 + 40	120	2.66	2.66	2.66		7.98	2.9	8.4	2390	490	2840	3.34	A	1195	10.50	1.6 + 1.6 + 1.6
	40 + 40 + 50	130	2.45	2.45	3.10		8.00	2.9	8.4	2390	520	2810	3.35	A	1195	10.50	1.5 + 1.5 + 1.7
4 Room	20 + 20 + 20 + 20	80	2.00	2.00	2.00	2.00	8.00	2.7	8.8	2150	490	2840	3.72	A	1075	9.50	1.3 + 1.3 + 1.3 + 1.3
	20 + 20 + 20 + 25	85	1.90	1.90	1.90	2.30	8.00	2.8	8.8	2140	490	2880	3.74	A	1070	9.40	1.2 + 1.2 + 1.2 + 1.5
	20 + 20 + 20 + 28	88	1.80	1.80	1.80	2.60	8.00	2.8	8.8	2140	490	2880	3.74	A	1070	9.40	1.2 + 1.2 + 1.2 + 1.6
	20 + 20 + 20 + 32	92	1.75	1.75	1.75	2.75	8.00	2.8	8.9	2130	490	2880	3.76	A	1065	9.40	1.1 + 1.1 + 1.1 + 1.6
	20 + 20 + 20 + 40	100	1.60	1.60	1.60	3.20	8.00	2.8	8.9	2110	490	2870	3.79	A	1055	9.30	1.0 + 1.0 + 1.0 + 1.8
	20 + 20 + 20 + 50	110	1.45	1.45	1.45	3.65	8.00	2.8	8.9	2110	490	2840	3.79	A	1055	9.30	0.9 + 0.9 + 0.9 + 2.1
	20 + 20 + 25 + 25	90	1.80	1.80	2.20	2.20	8.00	2.8	8.8	2130	490	2870	3.76	A	1065	9.40	1.2 + 1.2 + 1.4 + 1.4
	20 + 20 + 25 + 28	93	1.70	1.70	2.15	2.45	8.00	2.8	8.8	2130	490	2870	3.76	A	1065	9.40	1.1 + 1.1 + 1.4 + 1.5
	20 + 20 + 25 + 32	97	1.65	1.65	2.05	2.65	8.00	2.8	8.9	2120	490	2870	3.77	A	1060	9.30	1.1 + 1.1 + 1.3 + 1.6
	20 + 20 + 25 + 40	105	1.50	1.50	1.90	3.10	8.00	2.8	8.9	2090	490	2840	3.83	A	1045	9.20	1.0 + 1.0 + 1.2 + 1.7
	20 + 20 + 25 + 50	115	1.40	1.40	1.70	3.50	8.00	2.9	8.9	2110	520	2880	3.79	A	1055	9.30	0.9 + 0.9 + 1.1 + 2.0
	20 + 20 + 28 + 28	96	1.65	1.65	2.35	2.35	8.00	2.8	8.8	2130	490	2870	3.76	A	1065	9.40	1.1 + 1.1 + 1.5 + 1.5
	20 + 20 + 28 + 32	100	1.60	1.60	2.25	2.55	8.00	2.8	8.9	2120	490	2870	3.77	A	1060	9.30	1.0 + 1.0 + 1.5 + 1.6
	20 + 20 + 28 + 40	108	1.50	1.50	2.05	2.95	8.00	2.8	8.9	2090	490	2840	3.83	A	1045	9.20	1.0 + 1.0 + 1.3 + 1.7
	20 + 20 + 28 + 50	118	1.35	1.35	1.90	3.40	8.00	2.9	8.9	2110	520	2880	3.79	A	1055	9.30	0.9 + 0.9 + 1.2 + 1.9
	20 + 20 + 32 + 32	104	1.55	1.55	2.45	2.45	8.00	2.8	8.9	2090	500	2870	3.83	A	1045	9.20	1.0 + 1.0 + 1.5 + 1.5
	20 + 20 + 32 + 40	112	1.45	1.45	2.25	2.85	8.00	2.8	8.9	2080	500	2840	3.85	A	1040	9.15	0.9 + 0.9 + 1.5 + 1.7
	20 + 20 + 32 + 50	122	1.30	1.30	2.10	3.30	8.00	2.9	9.0	2040	520	2860	3.92	A	1020	8.95	0.8 + 0.8 + 1.4 + 1.9
	20 + 20 + 40 + 40	120	1.35	1.35	2.65	2.65	8.00	2.9	9.0	2060	520	2850	3.88	A	1030	9.05	0.9 + 0.9 + 1.6 + 1.6
	20 + 20 + 40 + 50	130	1.25	1.25	2.40	3.10	8.00	2.9	9.0	2020	520	2880	3.96	A	1010	8.85	0.8 + 0.8 + 1.5 + 1.7
	20 + 25 + 25 + 25	95	1.70	2.10	2.10	2.10	8.00	2.8	8.8	2120	490	2850	3.77	A	1060	9.30	1.1 + 1.4 + 1.4 + 1.4
	20 + 25 + 25 + 28	98	1.60	2.05	2.05	2.30	8.00	2.8	8.8	2120	490	2850	3.77	A	1060	9.30	1.0 + 1.3 + 1.3 + 1.5
	20 + 25 + 25 + 32	102	1.55	1.95	1.95	2.55	8.00	2.8	8.9	2100	490	2850	3.81	A	1050	9.20	1.0 + 1.3 + 1.3 + 1.6
	20 + 25 + 25 + 40	110	1.45	1.80	1.80	2.95	8.00	2.8	8.9	2130	490	2860	3.76	A	1065	9.40	0.9 + 1.2 + 1.2 + 1.7
	20 + 25 + 25 + 50	120	1.35	1.65	1.65	3.35	8.00	2.9	8.9	2110	520	2860	3.79	A	1055	9.30	0.9 + 1.1 + 1.1 + 1.9
	20 + 25 + 28 + 28	101	1.60	2.00	2.20	2.20	8.00	2.8	8.8	2120	490	2850	3.77	A	1060	9.30	1.0 + 1.3 + 1.4 + 1.4
	20 + 25 + 28 + 32	105	1.50	1.90	2.15	2.45	8.00	2.8	8.9	2100	490	2850	3.81	A	1050	9.20	1.0 + 1.2 + 1.4 + 1.5
	20 + 25 + 28 + 40	113	1.40	1.75	2.00	2.85	8.00	2.8	8.9	2130	490	2860	3.76	A	1065	9.40	0.9 + 1.1 + 1.3 + 1.7
	20 + 25 + 28 + 50	123	1.30	1.65	1.80	3.25	8.00	2.9	8.9	2110	520	2860	3.79	A	1055	9.30	0.8 + 1.1 + 1.2 + 1.8
	20 + 25 + 32 + 32	109	1.45	1.85	2.35	2.35	8.00	2.8	8.9	2130	500	2850	3.76	A	1065	9.40	0.9 + 1.2 + 1.5 + 1.5
	20 + 25 + 32 + 40	117	1.35	1.70	2.20	2.75	8.00	2.9	9.0	2070	520	2860	3.86	A	1035	9.15	0.9 + 1.1 + 1.4 + 1.6
	20 + 25 + 32 + 50	127	1.25	1.55	2.00	3.20	8.00	2.9	9.0	2030	520	2840	3.94	A	1015	8.95	0.8 + 1.0 + 1.3 + 1.8
	20 + 25 + 40 + 40	125	1.30	1.60	2.55	2.55	8.00	2.9	9.0	2040	520	2870	3.92	A	1020	8.95	0.8 + 1.0 + 1.6 + 1.6
	20 + 25 + 40 + 50	135	1.20	1.50	2.35	2.95	8.00	2.9	9.0	2020	520	2880	3.96	A	1010	8.85	0.7 + 1.0 + 1.5 + 1.7
	20 + 28 + 28 + 28	104	1.55	2.15	2.15	2.15	8.00	2.8	8.8	2120	490	2850	3.77	A	1060	9.30	1.0 + 1.4 + 1.4 + 1.4
	20 + 28 + 28 + 32	108	1.50	2.05	2.05	2.40	8.00	2.8	8.9	2100	490	2850	3.81	A	1050	9.20	1.0 + 1.3 + 1.3 + 1.5
	20 + 28 + 28 + 40	116	1.35	1.95	1.95	2.75	8.00	2.8	8.9	2130	490	2860	3.76	A	1065	9.40	0.9 + 1.3 + 1.3 + 1.6
	20 + 28 + 28 + 50	126	1.25	1.80	1.80	3.15	8.00	2.9	8.9	2110	520	2860	3.79	A	1055	9.30	0.8 + 1.2 + 1.2 + 1.8
	20 + 28 + 32 + 32	112	1.40	2.00	2.30	2.30	8.00	2.8	8.9	2130	500	2850	3.76	A	1065	9.40	0.9 + 1.3 + 1.5 + 1.5
	20 + 28 + 32 + 40	120	1.35	1.85	2.15	2.65	8.00	2.9	9.0	2070	520	2860	3.86	A	1035	9.15	0.9 + 1.2 + 1.4 + 1.6
	20 + 28 + 32 + 50	130	1.25	1.70	1.95	3.10	8.00	2.9	9.0	2030	520	2840	3.94	A	1015	8.95	0.8 + 1.1 + 1.3 + 1.7
	20 + 28 + 40 + 40	128	1.25	1.75	2.50	2.50	8.00	2.9	9.0	2040	520	2870	3.92	A	1020	8.95	0.8 + 1.1 + 1.5 + 1.5
	20 + 32 + 32 + 32	116	1.40	2.20	2.20	2.20	8.00	2.8	9.1	2040	500	2870	3.92	A	1020	8.95	0.9 + 1.4 + 1.4 + 1.4
	20 + 32 + 32 + 40	124	1.30	2.05	2.05	2.60	8.00	2.9	9.1	2020	520	2840	3.96	A	1010	8.85	0.8 + 1.3 + 1.3 + 1.6
	20 + 32 + 32 + 50	134	1.20	1.90	1.90	3.00	8.00	3.0	9.2	2000	530	2870	4.00	A	1000	8.80	0.7 + 1.2 + 1.2 + 1.7
	20 + 32 + 40 + 40	132	1.20	2.00	2.40	2.40	8.00	2.9	9.1	2090	520	2860	3.83	A	1045	9.20	0.7 + 1.3 + 1.5 + 1.5
	25 + 25 + 25 + 25	100	2.00	2.00	2.00	2.00	8.00	2.8	8.8	2110	490	2840	3.79	A	1055	9.30	1.3 + 1.3 + 1.3 + 1.3
	25 + 25 + 25 + 28	103	1.95	1.95	1.95	2.15	8.00	2.8	8.8	2110	490	2840	3.79	A	1055	9.30	1.3 + 1.3 + 1.3 + 1.4
	25 + 25 + 25 + 32	107	1.85	1.85	1.85	2.45	8.00	2.8	8.9	2090	490	2870	3.83	A	1045	9.20	1.2 + 1.2 + 1.2 + 1.5
	25 + 25 + 25 + 40	115	1.75	1.75	1.75	2.75	8.00	2.9	8.9	2120	520	2850	3.77	A	1060	9.30	1.1 + 1.1 + 1.1 + 1.6
	25 + 25 + 25 + 50	125	1.60	1.60	1.60	3.20	8.00	2.9	8.9	2110	520	2850	3.79	A	1055	9.30	1.0 + 1.0 + 1.0 + 1.8
	25 + 25 + 28 + 28	106	1.90	1.90	2.10	2.10	8.00	2.8	8.8	2110	490	2840	3.79	A	1055	9.30	1.2 + 1.2 + 1.4 + 1.4
	25 + 25 + 28 + 32	110	1.80	1.80	2.05	2.35	8.00	2.8	8.9	2090	490	2870	3.83	A	1045	9.20	1.2 + 1.2 + 1.3 + 1.5
	25 + 25 + 28 + 40	118	1.70	1.70	1.90	2.70	8.00	2.9	8.9	2120	520	2850	3.77	A	1060	9.30	1.1 + 1.1 + 1.2 + 1.6
	25 + 25 + 28 + 50	128	1.55	1.55	1.75	3.15	8.00	2.9	8.9	2110	520	2850	3.79	A	1055	9.30	1.0 + 1.0 + 1.1 + 1.8
	25 + 25 + 32 + 32	114	1.75	1.75	2.25	2.25	8.00	2.9	9.0	2080	500	2870	3.85	A	1040	9.15	1.1 + 1.1 + 1.5 + 1.5
	25 + 25 + 32 + 40	122	1.65	1.65	2.10	2.60	8.00	2.9	9.0	2050	520	2880	3.90	A	1025	9.05	1.1 + 1.1 + 1.4 + 1.6
	25 + 25 + 32 + 50	132	1.50	1.50	1.95	3.05	8.00	2.9	9.0	2030	520	2840	3.94	A	1015	8.95	1.0 + 1.0 + 1.3 + 1.7
	25 + 25 + 40 + 40	130	1.55	1.55	2.45	2.45	8.00	3.0	9.0	2040	520	2860	3.92	A	1020	8.95	1.0 + 1.0 + 1.5 + 1.5
	25 + 28 + 28 + 28	109	1.85	2.05	2.05	2.05	8.00	2.8	8.8	2110	490	2840	3.79	A	1055	9.30	1.2 + 1.3 + 1.3 + 1.3
	25 + 28 + 28 + 32	113	1.75	2.00	2.00	2.25	8.00	2.8	8.9	2090	490	2870	3.83	A	1045	9.20	1.1 + 1.3 + 1.3 + 1.5
	25 + 28 + 28 + 40	121	1.65	1.85	1.85	2.65	8.00	2.9	8.9	2120	520	2850	3.77	A	1060	9.30	1.1 + 1.2 + 1.2 + 1.6
	25 + 28 + 28 + 50	131	1.55	1.70	1.70	3.05	8.00	2.9	8.9	2110	520	2850	3.79	A	1055	9.30	1.0 + 1.1 + 1.1 + 1.7
	25 + 28 + 32 + 32	117	1.70	1.90	2.20	2.20	8.00	2.8	8.9	2130	500	2850	3.76	A	1065	9.40	1.1 + 1.2 + 1.4 + 1.4
	25 + 28 + 32 + 40	125	1.60	1.80	2.05	2.55	8.00	2.9	9.0	2070	520	2860	3.86	A	1035	9.15	1.0 + 1.2 + 1.3 + 1.6
	25 + 28 + 32 + 50	135	1.50	1.65	1.90	2.95	8.00	2.9	9.0	2030	520	2840	3.94	A	1015	8.95	1.0 + 1.1 + 1.2 + 1.7
	25 + 28 + 40 + 40	133	1.50	1.70	2.40	2.40	8.00	2.9	9.0	2040	520	2870	3.92	A	1020	8.95	1.0 + 1.1 + 1.5 + 1.5
	25 + 32 + 32 + 32	121	1.70	2.10	2.10	2.10	8.00	2.9	9.1	2030	520	2860	3.94	A	1015	8.95	1.1 + 1.4 + 1.4 + 1.4
	25 + 32 + 32 + 40	129	1.50	2.00	2.00	2.50	8.00	2.9	9.1	2020	520	2840	3.96	A	1010	8.85	1.0 + 1.3 + 1.3 + 1.5
	28 + 28 + 28 + 28	112	2.00	2.00	2.00	2.00	8.00	2.8	8.8	2110	490	2840	3.79	A	1055	9.30	1.3 + 1.3 + 1.3 + 1.3
	28 + 28 + 28 + 32	116	1.95	1.95	1.95	2.15	8.00	2.8	8.9	2090	490	2870	3.83	A	1045	9.20	1.3 + 1.3 + 1.3 + 1.4
	28 + 28 + 28 + 40	124	1.80	1.80	1.80	2.60	8.00	2.9	8.9	2120	520	2850	3.77	A	1060	9.30	1.2 + 1.2 + 1.2 + 1.6
	28 + 28 + 28 + 50	134	1.65	1.65	1.65	3.05	8.00	2.9	8.9	2110	520	2850	3.79	A	1055	9.30	1.1 + 1.1 + 1.1 + 1.7
	28 + 28 + 32 + 32	120	1.85	1.85	2.15	2.15	8.00	2.9	9.0	2080	500	2870	3.85	A	1040	9.15	1.2 + 1.2 + 1.4 + 1.4
	28 + 28 + 32 + 40	128	1.75	1.75	2.00	2.50	8.00	2.9	9.0	2050	520	2880	3.90	A	1025	9.05	1.1 + 1.1 + 1.3 + 1.5
	28 + 28 + 40 + 40	136	1.65	1.65	2.35	2.35	8.00	3.0	9.0	2040	520	2860	3.92	A	1020	8.95	1.1 + 1.1 + 1.5 + 1.5
	28 + 32 + 32 + 32	124	1.85	2.05	2.05	2.05	8.00	2.9	9.1	2030	520	2860	3.94	A	1015	8.95	1.2 + 1.3 + 1.3 + 1.3
	28 + 32 + 32 + 40	132	1.70	1.95	1.95	2.40	8.00	2.9	9.1	2010	520	2880	3.98	A	1005	8.85	1.1 + 1.3 + 1.3 + 1.5
	32 + 32 + 32 + 32	128	2.00	2.00	2.00	2.00	8.00	2.9	9.2	2000	530	2850	4.00	A	1000	8.80	1.3 + 1.3 + 1.3 + 1.3
	32 + 32 + 32 + 40	136	1.90	1.90	1.90	2.30	8.00	3.0	9.2	1980	530	2870	4.04	A	990	8.70	1.2 + 1.2 + 1.2 + 1.5

Indoor unit capacity	Heating	Total	Heating Capacity(kW)						Input Power (W)				COP		ANNUAL ENERGY	Current,	MOISTURE REMOVAL VOLUME
			Room A	Room B	Room C	Room D	Total	min ~ max	Rating	min ~ max		W/W	CLASS	CONSUMPTION (kWh)	230V (A)	l/h
1 Room	20	20	3.20				3.20	1.7 ~ 4.7	840	370 ~ 1830		3.81	A	420	3.85	
	25	25	3.60				3.60	1.7 ~ 4.8	1090	370 ~ 1900		3.31	C	545	4.85	
	28	28	4.00				4.00	1.7 ~ 4.8	1210	370 ~ 1900		3.31	C	605	5.40	
	32	32	4.50				4.50	1.7 ~ 5.8	1310	370 ~ 2290		3.44	B	655	5.85	
	40	40	5.60				5.60	1.8 ~ 7.2	1900	370 ~ 3560		2.95	D	950	8.35	
	50	50	7.10				7.10	2.1 ~ 7.3	2840	430 ~ 3560		2.50	F	1420	12.40	
2 Room	20 + 20	40	3.20	3.20			6.40	1.8 ~ 9.4	1480	400 ~ 3550		4.32	A	740	6.50	
	20 + 25	45	3.15	3.95			7.10	2.1 ~ 9.4	1700	420 ~ 3510		4.18	A	850	7.55	
	20 + 28	48	2.95	4.15			7.10	2.1 ~ 9.4	1700	420 ~ 3510		4.18	A	850	7.55	
	20 + 32	52	2.90	4.60			7.50	2.2 ~ 9.8	1740	420 ~ 3490		4.31	A	870	7.65	
	20 + 40	60	2.75	5.55			8.30	2.4 ~ 9.8	2060	440 ~ 3440		4.03	A	1030	9.05	
	20 + 50	70	2.60	6.30			8.80	3.2 ~ 9.9	2260	530 ~ 3400		3.89	A	1130	9.90	
	25 + 25	50	3.55	3.55			7.10	2.3 ~ 9.4	1860	440 ~ 3480		3.81	A	930	8.15	
	25 + 28	53	3.55	3.95			7.50	2.3 ~ 9.4	1970	440 ~ 3480		3.81	A	985	8.65	
	25 + 32	57	3.55	4.55			8.10	2.4 ~ 9.8	1980	440 ~ 3460		4.09	A	990	8.70	
	25 + 40	65	3.30	5.30			8.60	2.1 ~ 9.8	2175	530 ~ 3390		3.95	A	1088	9.65	
	25 + 50	75	3.00	6.00			9.00	3.2 ~ 9.9	2390	530 ~ 3370		3.77	A	1195	10.50	
	28 + 28	56	3.85	3.85			7.70	2.3 ~ 9.4	2020	440 ~ 3480		3.81	A	1010	8.85	
	28 + 32	60	3.80	4.30			8.10	2.4 ~ 9.8	1980	440 ~ 3460		4.09	A	990	8.70	
	28 + 40	68	3.55	5.05			8.60	2.1 ~ 9.8	2175	530 ~ 3390		3.95	A	1088	9.65	
	28 + 50	78	3.25	5.75			9.00	3.2 ~ 9.9	2390	530 ~ 3370		3.77	A	1195	10.50	
	32 + 32	64	4.25	4.25			8.50	2.5 ~ 10.1	2110	470 ~ 3390		4.03	A	1055	9.30	
	32 + 40	72	3.90	4.90			8.80	3.2 ~ 10.1	2230	530 ~ 3340		3.95	A	1115	9.85	
	32 + 50	82	3.60	5.60			9.20	3.2 ~ 10.1	2390	530 ~ 3300		3.85	A	1195	10.50	
	40 + 40	80	4.55	4.55			9.10	3.2 ~ 10.1	2360	530 ~ 3320		3.86	A	1180	10.30	
	40 + 50	90	4.20	5.20			9.40	3.2 ~ 10.2	2480	530 ~ 3300		3.79	A	1240	10.90	
	50 + 50	100	4.70	4.70			9.40	3.5 ~ 10.2	2470	590 ~ 3290		3.81	A	1235	10.90	
3 Room	20 + 20 + 20	60	2.87	2.87	2.87		8.61	3.1 ~ 10.4	1990	500 ~ 3250		4.33	A	995	8.80	
	20 + 20 + 25	65	2.70	2.70	3.40		8.80	3.2 ~ 10.4	2010	510 ~ 3220		4.38	A	1005	8.85	
	20 + 20 + 28	68	2.60	2.60	3.60		8.80	3.2 ~ 10.4	2010	510 ~ 3220		4.38	A	1005	8.85	
	20 + 20 + 32	72	2.45	2.45	4.00		8.90	3.2 ~ 10.4	2030	510 ~ 3220		4.38	A	1015	8.95	
	20 + 20 + 40	80	2.30	2.30	4.60		9.20	3.2 ~ 10.4	2150	510 ~ 3180		4.28	A	1075	9.50	
	20 + 20 + 50	90	2.10	2.10	5.20		9.40	3.2 ~ 10.4	2120	510 ~ 3180		4.43	A	1060	9.30	
	20 + 25 + 25	70	2.60	3.20	3.20		9.00	3.2 ~ 10.4	2090	510 ~ 3190		4.31	A	1045	9.20	
	20 + 25 + 28	73	2.45	3.10	3.45		9.00	3.2 ~ 10.4	2090	510 ~ 3190		4.31	A	1045	9.20	
	20 + 25 + 32	77	2.40	3.00	3.80		9.20	3.2 ~ 10.4	2110	510 ~ 3180		4.36	A	1055	9.30	
	20 + 25 + 40	85	2.20	2.75	4.45		9.40	3.2 ~ 10.4	2160	510 ~ 3140		4.35	A	1080	9.50	
	20 + 25 + 50	95	2.00	2.45	4.95		9.40	3.5 ~ 10.4	2080	560 ~ 3150		4.52	A	1040	9.15	
	20 + 28 + 28	76	2.40	3.30	3.30		9.00	3.2 ~ 10.4	2090	510 ~ 3190		4.31	A	1045	9.20	
	20 + 28 + 32	80	2.30	3.20	3.70		9.20	3.2 ~ 10.4	2110	510 ~ 3180		4.36	A	1055	9.30	
	20 + 28 + 40	88	2.15	3.00	4.25		9.40	3.2 ~ 10.4	2160	510 ~ 3140		4.35	A	1080	9.50	
	20 + 28 + 50	98	1.90	2.70	4.80		9.40	3.5 ~ 10.4	2080	560 ~ 3150		4.52	A	1040	9.15	
	20 + 32 + 32	84	2.20	3.55	3.55		9.30	3.2 ~ 10.5	2130	500 ~ 3180		4.37	A	1065	9.40	
	20 + 32 + 40	92	2.05	3.25	4.10		9.40	3.2 ~ 10.5	2150	500 ~ 3140		4.37	A	1075	9.50	
	20 + 32 + 50	102	1.85	2.95	4.60		9.40	3.7 ~ 10.5	2170	620 ~ 3140		4.33	A	1085	9.55	
	20 + 40 + 40	100	1.90	3.75	3.75		9.40	3.6 ~ 10.5	2110	620 ~ 3110		4.45	A	1055	9.30	
	20 + 40 + 50	110	1.70	3.40	4.30		9.40	3.9 ~ 10.5	2120	660 ~ 3110		4.43	A	1060	9.30	
	20 + 50 + 50	120	1.60	3.90	3.90		9.40	4.1 ~ 10.5	2170	700 ~ 3120		4.33	A	1085	9.55	
	25 + 25 + 25	75	3.08	3.08	3.08		9.24	3.2 ~ 10.4	2170	510 ~ 3160		4.26	A	1085	9.55	
	25 + 25 + 28	78	2.96	2.96	3.32		9.24	3.2 ~ 10.4	2170	510 ~ 3160		4.26	A	1085	9.55	
	25 + 25 + 32	82	2.85	2.85	3.70		9.40	3.2 ~ 10.4	2190	510 ~ 3150		4.29	A	1095	9.65	
	25 + 25 + 40	90	2.60	2.60	4.20		9.40	3.3 ~ 10.4	2140	530 ~ 3130		4.39	A	1070	9.40	
	25 + 25 + 50	100	2.35	2.35	4.70		9.40	3.8 ~ 10.4	2100	640 ~ 3120		4.48	A	1050	9.20	
	25 + 28 + 28	81	2.84	3.20	3.20		9.24	3.2 ~ 10.4	2170	510 ~ 3160		4.26	A	1085	9.55	
	25 + 28 + 32	85	2.75	3.10	3.55		9.40	3.2 ~ 10.4	2190	510 ~ 3150		4.29	A	1095	9.65	
	25 + 28 + 40	93	2.50	2.85	4.05		9.40	3.3 ~ 10.4	2140	530 ~ 3130		4.39	A	1070	9.40	
	25 + 28 + 50	103	2.30	2.55	4.55		9.40	3.8 ~ 10.4	2100	640 ~ 3120		4.48	A	1050	9.20	
	25 + 32 + 32	89	2.60	3.40	3.40		9.40	3.2 ~ 10.5	2170	500 ~ 3150		4.33	A	1085	9.55	
	25 + 32 + 40	97	2.40	3.10	3.90		9.40	3.5 ~ 10.5	2130	560 ~ 3120		4.41	A	1065	9.40	
	25 + 32 + 50	107	2.20	2.80	4.40		9.40	3.9 ~ 10.5	2150	660 ~ 3120		4.37	A	1075	9.50	
	25 + 40 + 40	105	2.20	3.60	3.60		9.40	3.8 ~ 10.5	2060	640 ~ 3080		4.56	A	1030	9.05	
	25 + 40 + 50	115	2.05	3.25	4.10		9.40	4.0 ~ 10.5	2100	680 ~ 3080		4.48	A	1050	9.20	
	25 + 50 + 50	125	1.90	3.75	3.75		9.40	4.2 ~ 10.5	2140	700 ~ 3080		4.39	A	1070	9.40	
	28 + 28 + 28	84	3.08	3.08	3.08		9.24	3.2 ~ 10.4	2170	510 ~ 3160		4.26	A	1085	9.55	
	28 + 28 + 32	88	3.00	3.00	3.40		9.40	3.2 ~ 10.4	2190	510 ~ 3150		4.29	A	1095	9.65	
	28 + 28 + 40	96	2.75	2.75	3.90		9.40	3.3 ~ 10.4	2140	530 ~ 3130		4.39	A	1070	9.40	
	28 + 28 + 50	106	2.50	2.50	4.40		9.40	3.8 ~ 10.4	2100	640 ~ 3120		4.48	A	1050	9.20	
	28 + 32 + 32	92	2.90	3.25	3.25		9.40	3.2 ~ 10.5	2170	500 ~ 3150		4.33	A	1085	9.55	
	28 + 32 + 40	100	2.65	3.00	3.75		9.40	3.5 ~ 10.5	2130	560 ~ 3120		4.41	A	1065	9.40	
	28 + 32 + 50	110	2.40	2.75	4.25		9.40	3.9 ~ 10.5	2150	660 ~ 3120		4.37	A	1075	9.50	
	28 + 40 + 40	108	2.40	3.50	3.50		9.40	3.8 ~ 10.5	2060	640 ~ 3080		4.56	A	1030	9.05	
	28 + 40 + 50	118	2.20	3.20	4.00		9.40	4.0 ~ 10.5	2100	680 ~ 3080		4.48	A	1050	9.20	
	28 + 50 + 50	128	2.10	3.65	3.65		9.40	4.2 ~ 10.5	2140	700 ~ 3080		4.39	A	1070	9.40	
	32 + 32 + 32	96	3.13	3.13	3.13		9.39	3.3 ~ 10.5	2160	520 ~ 3180		4.35	A	1080	9.50	
	32 + 32 + 40	104	2.90	2.90	3.60		9.40	3.7 ~ 10.5	2140	620 ~ 3150		4.39	A	1070	9.40	
	32 + 32 + 50	114	2.65	2.65	4.10		9.40	4.0 ~ 10.5	2130	680 ~ 3120		4.41	A	1065	9.40	
	32 + 40 + 40	112	2.70	3.35	3.35		9.40	3.9 ~ 10.5	2120	660 ~ 3120		4.43	A	1060	9.30	
	32 + 40 + 50	122	2.45	3.10	3.85		9.40	4.1 ~ 10.5	2100	700 ~ 3100		4.48	A	1050	9.20	
	32 + 50 + 50	132	2.30	3.55	3.55		9.40	4.2 ~ 10.5	2060	700 ~ 3080		4.56	A	1030	9.05	
	40 + 40 + 40	120	3.13	3.13	3.13		9.39	4.0 ~ 10.5	2100	680 ~ 3080		4.47	A	1050	9.20	
	40 + 40 + 50	130	2.90	2.90	3.60		9.40	4.2 ~ 10.5	2080	700 ~ 3080		4.52	A	1040	9.15	
4 Room	20 + 20 + 20 + 20	80	2.35	2.35	2.35	2.35	9.40	3.2 ~ 10.5	2080	550 ~ 3140		4.52	A	1040	9.15	
	20 + 20 + 20 + 25	85	2.20	2.20	2.20	2.80	9.40	3.2 ~ 10.5	2060	550 ~ 3120		4.56	A	1030	9.05	
	20 + 20 + 20 + 28	88	2.15	2.15	2.15	2.95	9.40	3.2 ~ 10.5	2060	550 ~ 3120		4.56	A	1030	9.05	
	20 + 20 + 20 + 32	92	2.05	2.05	2.05	3.25	9.40	3.4 ~ 10.5	2120	590 ~ 3180		4.43	A	1060	9.30	
	20 + 20 + 20 + 40	100	1.90	1.90	1.90	3.70	9.40	3.8 ~ 10.5	2090	640 ~ 3140		4.50	A	1045	9.20	
	20 + 20 + 20 + 50	110	1.70	1.70	1.70	4.30	9.40	4.0 ~ 10.5	2120	680 ~ 3110		4.43	A	1060	9.30	
	20 + 20 + 25 + 25	90	2.10	2.10	2.60	2.60	9.40	3.5 ~ 10.5	2050	610 ~ 3110		4.59	A	1025	9.05	
	20 + 20 + 25 + 28	93	2.00	2.00	2.55	2.85	9.40	3.5 ~ 10.5	2050	610 ~ 3110		4.59	A	1025	9.05	
	20 + 20 + 25 + 32	97	1.95	1.95	2.40	3.10	9.40	3.7 ~ 10.5	2100	620 ~ 3160		4.48	A	1050	9.20	
	20 + 20 + 25 + 40	105	1.80	1.80	2.20	3.60	9.40	3.9 ~ 10.5	2070	660 ~ 3110		4.54	A	1035	9.10	
	20 + 20 + 25 + 50	115	1.65	1.65	2.00	4.10	9.40	4.1 ~ 10.5	2090	700 ~ 3100		4.50	A	1045	9.20	
	20 + 20 + 28 + 28	96	1.95	1.95	2.75	2.75	9.40	3.5 ~ 10.5	2050	610 ~ 3110		4.59	A	1025	9.05	
	20 + 20 + 28 + 32	100	1.90	1.90	2.60	3.00	9.40	3.7 ~ 10.5	2100	620 ~ 3160		4.48	A	1050	9.20	
	20 + 20 + 28 + 40	108	1.75	1.75	2.40	3.50	9.40	3.9 ~ 10.5	2070	660 ~ 3110		4.54	A	1035	9.10	
	20 + 20 + 28 + 50	118	1.60	1.60	2.20	4.00	9.40	4.1 ~ 10.5	2090	700 ~ 3100		4.50	A	1045	9.20	
	20 + 20 + 32 + 32	104	1.80	1.80	2.40	2.90	9.40	3.8 ~ 10.5	2110	640 ~ 3190		4.45	A	1055	9.30	
	20 + 20 + 32 + 40	112	1.70	1.70	2.65	3.35	9.40	4.0 ~ 10.5	2080	680 ~ 3150		4.52	A	1040	9.15	
	20 + 20 + 32 + 50	122	1.55	1.55	2.45	3.85	9.40	4.1 ~ 10.5	2110	700 ~ 3080		4.45	A	1055	9.30	
	20 + 20 + 40 + 40	120	1.55	1.55	2.15	3.15	9.40	4.1 ~ 10.5	2050	700 ~ 3110		4.59	A	1025	9.05	
	20 + 20 + 40 + 50	130	1.45	1.45	2.90	3.60	9.40	4.2 ~ 10.5	2080	700 ~ 3060		4.52	A	1040	9.15	
	20 + 25 + 25 + 25	95	2.05	2.45	2.45	2.45	9.40	3.8 ~ 10.5	2040	640 ~ 3080		4.61	A	1020	8.95	
	20 + 25 + 25 + 28	98	1.90	2.40	2.40	2.70	9.40	3.8 ~ 10.5	2040	640 ~ 3080		4.61	A	1020	8.95	
	20 + 25 + 25 + 32	102	1.85	2.30	2.30	2.95	9.40	3.9 ~ 10.5	2080	660 ~ 3130		4.52	A	1040	9.15	
	20 + 25 + 25 + 40	110	1.70	2.15	2.15	3.40	9.40	4.0 ~ 10.5	2050	680 ~ 3080		4.59	A	1025	9.05	
	20 + 25 + 25 + 50	120	1.55	1.95	1.95	3.95	9.40	4.2 ~ 10.5	2080	700 ~ 3080		4.52	A	1040	9.15	
	20 + 25 + 28 + 28	101	1.85	2.35	2.60	2.60	9.40	3.8 ~ 10.5	2040	640 ~ 3080		4.61	A	1020	8.95	
	20 + 25 + 28 + 32	105	1.80	2.25	2.50	2.85	9.40	3.9 ~ 10.5	2080	660 ~ 3130		4.52	A	1040	9.15	
	20 + 25 + 28 + 40	113	1.60	2.10	2.35	3.35	9.40	4.0 ~ 10.5	2050	680 ~ 3080		4.59	A	1025	9.05	
	20 + 25 + 28 + 50	123	1.55	1.90	2.15	3.80	9.40	4.2 ~ 10.5	2080	700 ~ 3080		4.52	A	1040	9.15	
	20 + 25 + 32 + 32	109	1.70	2.20	2.75	2.75	9.40	4.0 ~ 10.5	2090	680 ~ 3180		4.50	A	1045	9.20	
	20 + 25 + 32 + 40	117	1.60	2.00	2.55	3.25	9.40	4.1 ~ 10.5	2060	700 ~ 3120		4.56	A	1030	9.05	
	20 + 25 + 32 + 50	127	1.50	1.85	2.35	3.70	9.40	4.2 ~ 10.5	2090	700 ~ 3080		4.50	A	1045	9.20	
	20 + 25 + 40 + 40	125	1.50	1.90	2.30	3.00	9.40	4.2 ~ 10.5	2030	700 ~ 3080		4.63	A	1015	8.95	
	20 + 25 + 40 + 50	135	1.35	1.75	2.80	3.50	9.40	4.2 ~ 10.5	2080	700 ~ 3060		4.52	A	1040	9.15	
	20 + 28 + 28 + 28	104	1.75	2.55	2.55	2.55	9.40	3.8 ~ 10.5	2040	640 ~ 3080		4.61	A	1020	8.95	
	20 + 28 + 28 + 32	108	1.70	2.45	2.45	2.80	9.40	3.9 ~ 10.5	2080	660 ~ 3130		4.52	A	1040	9.15	
	20 + 28 + 28 + 40	116	1.60	2.25	2.25	3.30	9.40	4.0 ~ 10.5	2050	680 ~ 3080		4.59	A	1025	9.05	
	20 + 28 + 28 + 50	126	1.45	2.10	2.10	3.75	9.40	4.2 ~ 10.5	2080	700 ~ 3080		4.52	A	1040	9.15	
	20 + 28 + 32 + 32	112	1.65	2.35	2.70	2.70	9.40	4.0 ~ 10.5	2090	680 ~ 3180		4.50	A	1045	9.20	
	20 + 28 + 32 + 40	120	1.55	2.20	2.50	3.15	9.40	4.1 ~ 10.5	2060	700 ~ 3120		4.56	A	1030	9.05	
	20 + 28 + 32 + 50	130	1.45	2.00	2.30	3.65	9.40	4.2 ~ 10.5	2090	700 ~ 3080		4.50	A	1045	9.20	
	20 + 28 + 40 + 40	128	1.45	2.05	2.95	2.95	9.40	4.2 ~ 10.5	2030	700 ~ 3080		4.63	A	1015	8.95	
	20 + 32 + 32 + 32	116	1.60	2.60	2.60	2.60	9.40	4.0 ~ 10.6	2110	680 ~ 3120		4.45	A	1055	9.30	
	20 + 32 + 32 + 40	124	1.45	2.40	2.45	3.05	9.40	4.1 ~ 10.6	2080	700 ~ 3080		4.52	A	1040	9.15	
	20 + 32 + 32 + 50	134	1.40	2.25	2.25	3.50	9.40	4.2 ~ 10.6	2110	700 ~ 3060		4.45	A	1055	9.30	
	20 + 32 + 40 + 40	132	1.40	2.30	2.85	2.85	9.40	4.2 ~ 10.6	2060	700 ~ 3060		4.56	A	1030	9.05	
	25 + 25 + 25 + 25	100	2.35	2.35	2.35	2.35	9.40	3.9 ~ 10.5	2030	660 ~ 3080		4.63	A	1015	8.95	
	25 + 25 + 25 + 28	103	2.30	2.30	2.30	2.50	9.40	3.9 ~ 10.5	2030	660 ~ 3080		4.63	A	1015	8.95	
	25 + 25 + 25 + 32	107	2.20	2.20	2.20	2.80	9.40	4.0 ~ 10.5	2060	680 ~ 3100		4.56	A	1030	9.05	
	25 + 25 + 25 + 40	115	2.05	2.05	2.05	3.25	9.40	4.1 ~ 10.5	2040	700 ~ 3070		4.61	A	1020	8.95	
	25 + 25 + 25 + 50	125	1.90	1.90	1.90	3.70	9.40	4.2 ~ 10.5	2070	700 ~ 3070		4.54	A	1035	9.15	
	25 + 25 + 28 + 28	106	2.20	2.20	2.50	2.50	9.40	3.9 ~ 10.5	2030	660 ~ 3080		4.63	A	1015	8.95	
	25 + 25 + 28 + 32	110	2.15	2.15	2.35	2.75	9.40	4.0 ~ 10.5	2060	680 ~ 3100		4.56	A	1030	9.05	
	25 + 25 + 28 + 40	118	2.00	2.00	2.20	3.20	9.40	4.1 ~ 10.5	2040	700 ~ 3070		4.61	A	1020	8.95	
	25 + 25 + 28 + 50	128	1.85	1.85	2.05	3.65	9.40	4.2 ~ 10.5	2070	700 ~ 3070		4.54	A	1035	9.15	
	25 + 25 + 32 + 32	114	2.05	2.05	2.65	2.65	9.40	4.0 ~ 10.5	2070	680 ~ 3140		4.54	A	1035	9.15	
	25 + 25 + 32 + 40	122	1.95	1.95	2.40	3.10	9.40	4.2 ~ 10.5	2040	700 ~ 3080		4.61	A	1020	8.95	
	25 + 25 + 32 + 50	132	1.80	1.80	2.25	3.55	9.40	4.2 ~ 10.5	2090	700 ~ 3080		4.50	A	1045	9.20	
	25 + 25 + 40 + 40	130	1.80	1.80	2.90	2.90	9.40	4.2 ~ 10.5	2020	700 ~ 3070		4.65	A	1010	8.85	
	25 + 28 + 28 + 28	109	2.20	2.40	2.40	2.40	9.40	3.9 ~ 10.5	2030	660 ~ 3080		4.63	A	1015	8.95	
	25 + 28 + 28 + 32	113	2.05	2.30	2.35	2.65	9.40	4.0 ~ 10.5	2060	680 ~ 3100		4.56	A	1030	9.05	
	25 + 28 + 28 + 40	121	1.90	2.20	2.20	3.10	9.40	4.1 ~ 10.5	2040	700 ~ 3070		4.61	A	1020	8.95	
	25 + 28 + 28 + 50	131	1.80	2.00	2.00	3.60	9.40	4.2 ~ 10.5	2070	700 ~ 3070		4.54	A	1035	9.15	
	25 + 28 + 32 + 32	117	2.00	2.30	2.55	2.55	9.40	4.0 ~ 10.5	2090	680 ~ 3180		4.50	A	1045	9.20	
	25 + 28 + 32 + 40	125	1.90	2.10	2.40	3.00	9.40	4.1 ~ 10.5	2060	700 ~ 3120		4.56	A	1030	9.05	
	25 + 28 + 32 + 50	135	1.70	1.95	2.25	3.50	9.40	4.2 ~ 10.5	2090	700 ~ 3080		4.50	A	1045	9.20	
	25 + 28 + 40 + 40	133	1.70	2.00	2.85	2.85	9.40	4.2 ~ 10.5	2030	700 ~ 3080		4.63	A	1015	8.95	
	25 + 32 + 32 + 32	121	1.90	2.50	2.50	2.50	9.40	4.1 ~ 10.6	2090	700 ~ 3100		4.50	A	1045	9.20	
	25 + 32 + 32 + 40	129	1.80	2.35	2.35	2.90	9.40	4.1 ~ 10.6	2080	700 ~ 3080		4.52	A	1040	9.15	
	28 + 28 + 28 + 28	112	2.35	2.35	2.35	2.35	9.40	3.9 ~ 10.5	2030	660 ~ 3080		4.63	A	1015	8.95	
	28 + 28 + 28 + 32	116	2.25	2.25	2.25	2.65	9.40	4.0 ~ 10.5	2060	680 ~ 3100		4.56	A	1030	9.05	
	28 + 28 + 28 + 40	124	2.10	2.10	2.10	3.10	9.40	4.1 ~ 10.5	2040	700 ~ 3070		4.61	A	1020	8.95	
	28 + 28 + 28 + 50	134	1.95	1.95	1.95	3.55	9.40	4.2 ~ 10.5	2070	700 ~ 3070		4.54	A	1035	9.15	
	28 + 28 + 32 + 32	120	2.20	2.20	2.50	2.50	9.40	4.0 ~ 10.5	2070	680 ~ 3140		4.54	A	1035	9.15	
	28 + 28 + 32 + 40	128	2.05	2.05	2.35	2.95	9.40	4.2 ~ 10.5	2040	700 ~ 3080		4.61	A	1020	8.95	
	28 + 28 + 40 + 40	136	1.95	1.95	2.75	2.75	9.40	4.2 ~ 10.5	2020	700 ~ 3070		4.65	A	1010	8.85	
	28 + 32 + 32 + 32	124	2.05	2.45	2.45	2.45	9.40	4.1 ~ 10.6	2090	700 ~ 3100		4.50	A	1045	9.20	
	28 + 32 + 32 + 40	132	1.95	2.30	2.30	2.85	9.40	4.2 ~ 10.6	2070	700 ~ 3080		4.54	A	1035	9.15	
	32 + 32 + 32 + 32	128	2.35	2.35	2.35	2.35	9.40	4.2 ~ 10.6	2110	700 ~ 3080		4.45	A	1055	9.30	
	32 + 32 + 32 + 40	136	2.20	2.20	2.20	2.80	9.40	4.2 ~ 10.6	2080	700 ~ 3060		4.52	A	1040	9.10	

3 Features

- **Inverter Technology**
  - Wider output power range
  - Energy saving
  - Quick Cooling
  - Quick Heating
  - More precise temperature control

- **Environment Protection**
  - Non-ozone depletion substances refrigerant (R410A)

- **Long Installation Piping**
  - Long piping up to 20 meter (E10HBEA)

- **Easy to use remote control**

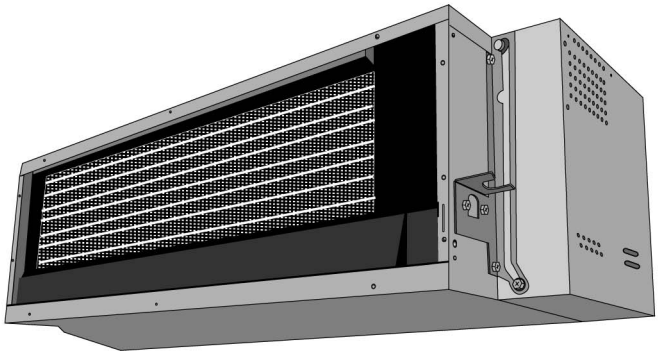
- **Quality Improvement**
  - Random auto restart after power failure for safety restart operation
  - Gas leakage protection
  - Prevent compressor reverse cycle
  - Inner protector to protect compressor
  - Noise prevention during soft dry operation

- **Operation Improvement**
  - Quiet mode to reduce the indoor unit operating sound
  - Powerful mode to reach the desired room temperature quickly
  - 24-hour timer setting

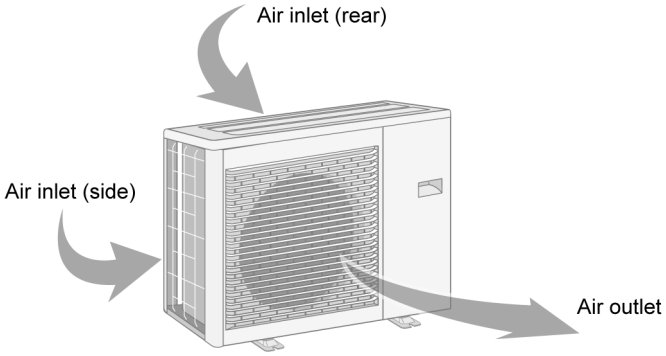
- **Serviceability Improvement**
  - Breakdown Self Diagnosis function

4 Location of Controls and Components

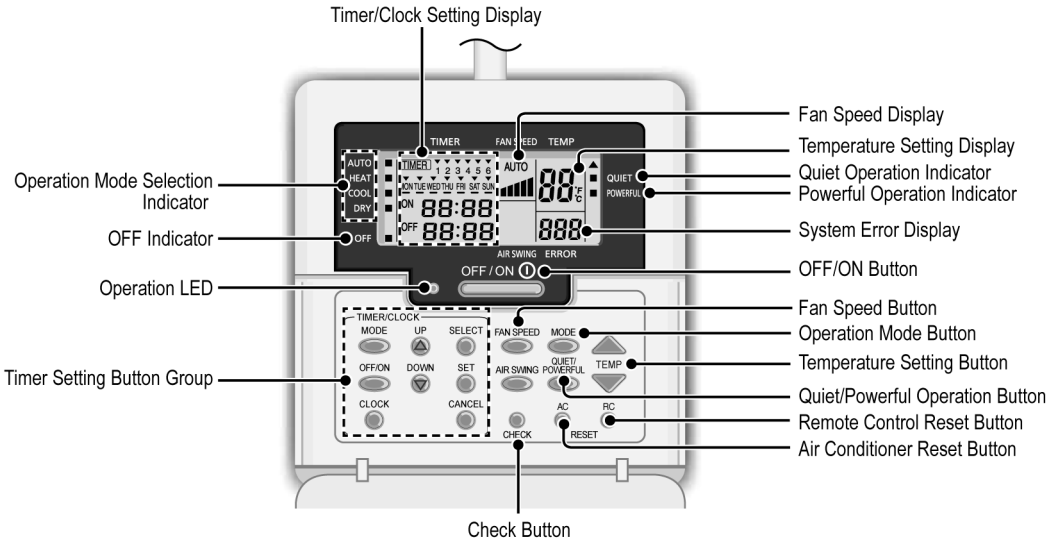
4.1. Indoor Unit



4.2. Outdoor Unit



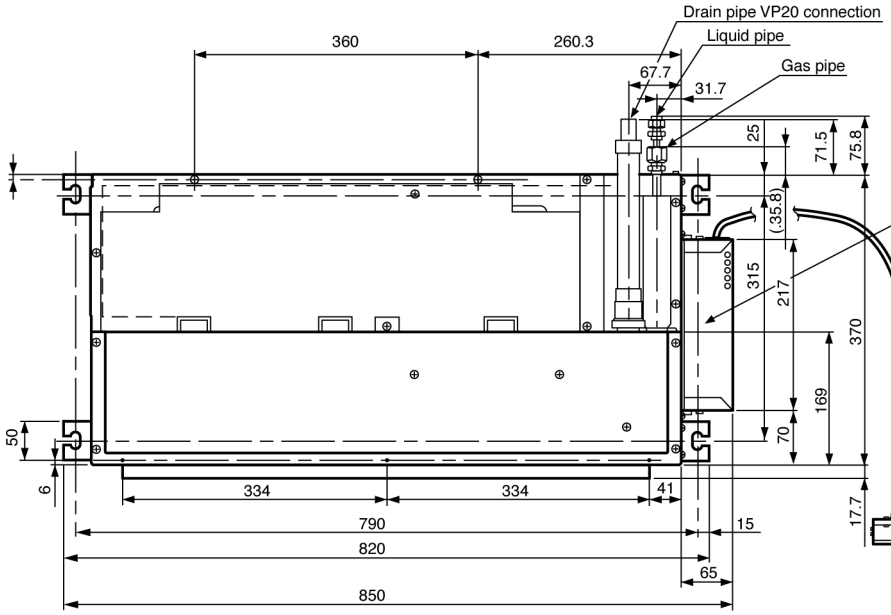
4.3. Remote Control



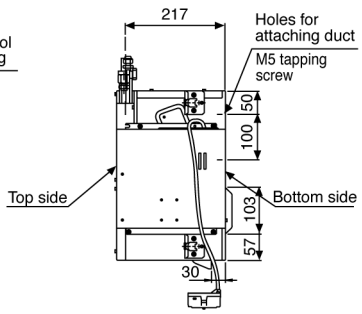
5 Dimensions

5.1. Indoor Unit & Remote Control

<Top View>

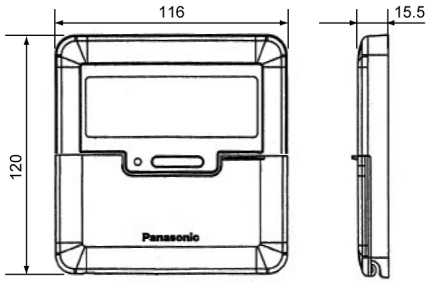


<Side View>

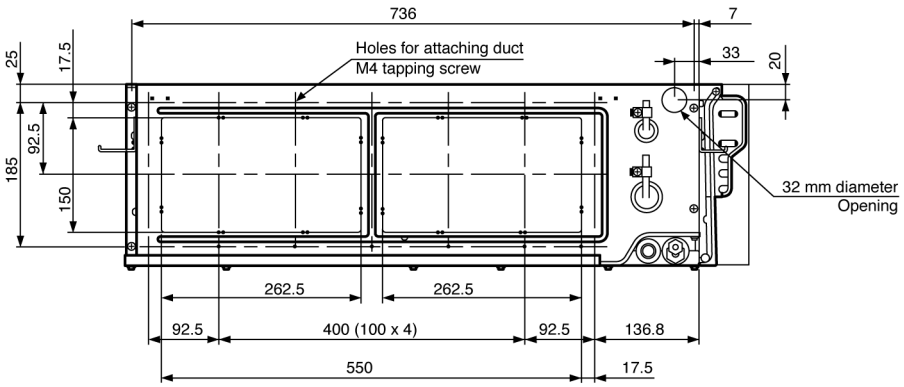


<Remote Control>

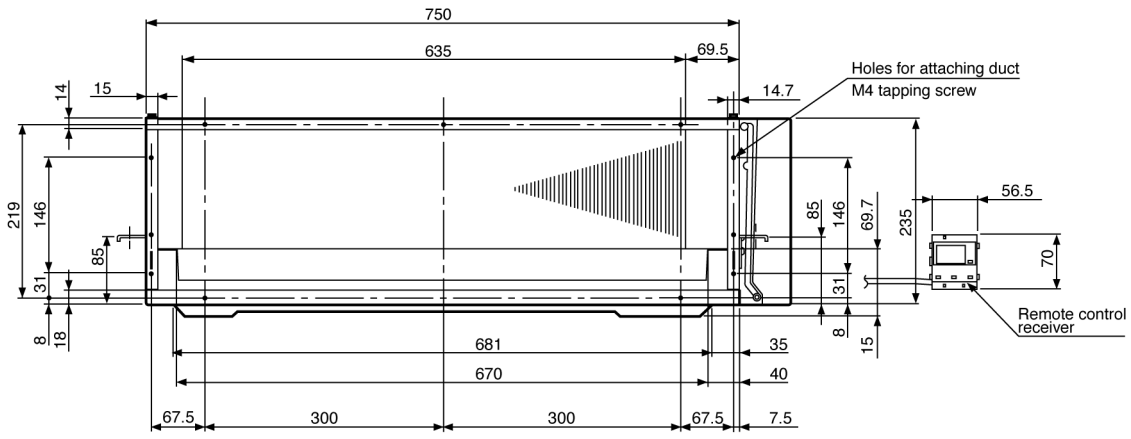
Remote control transmitter



<Back View>

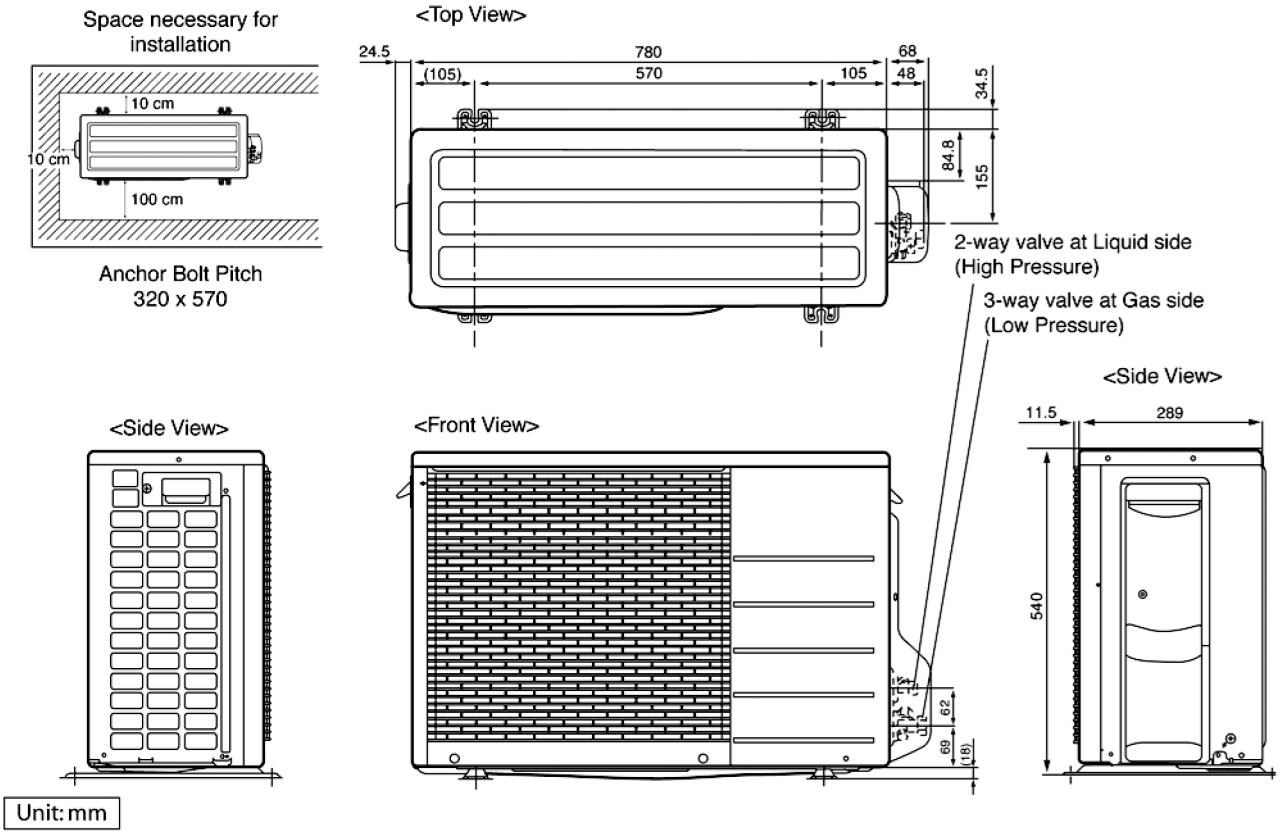


<Front View>

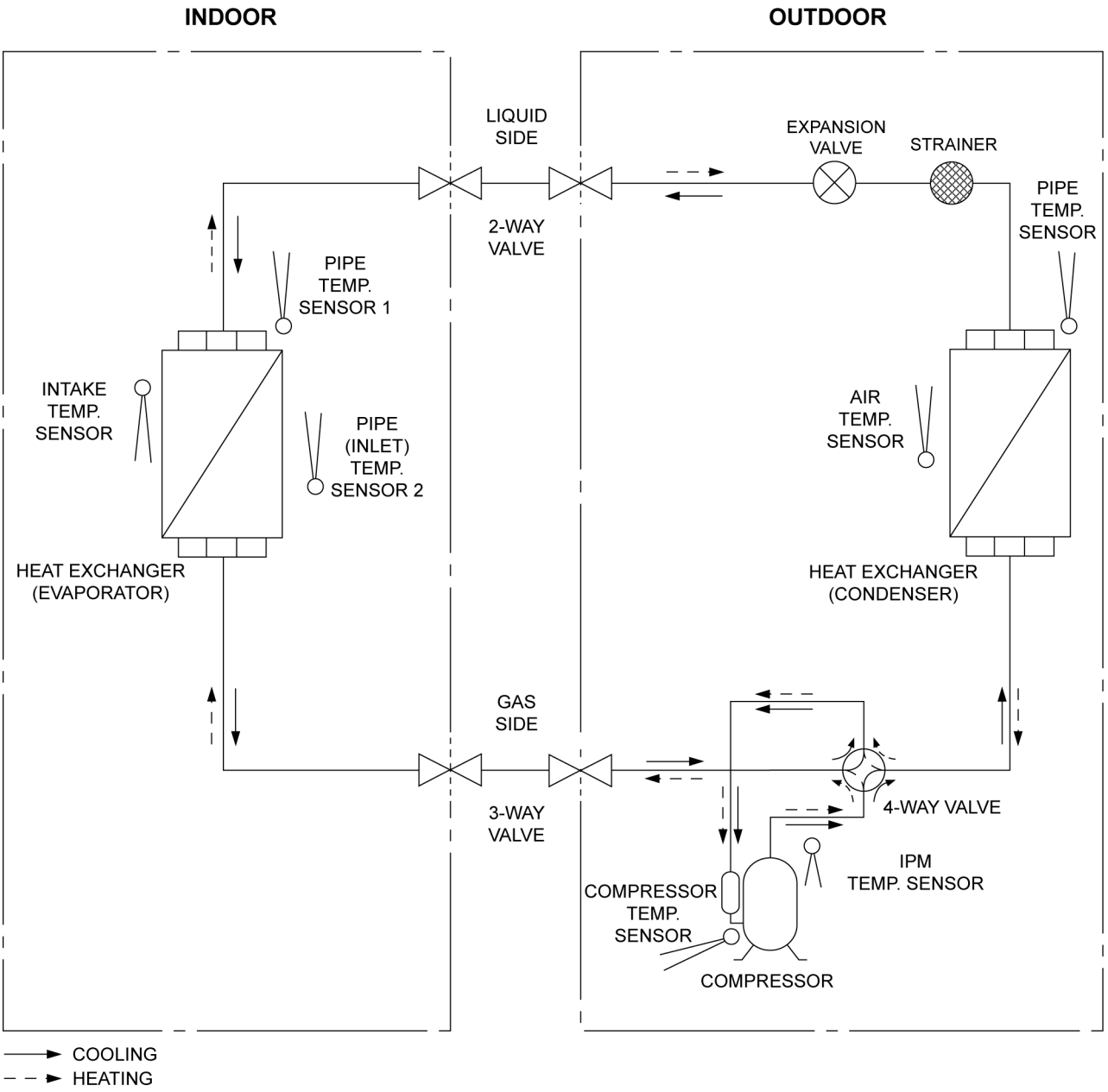


Unit : mm

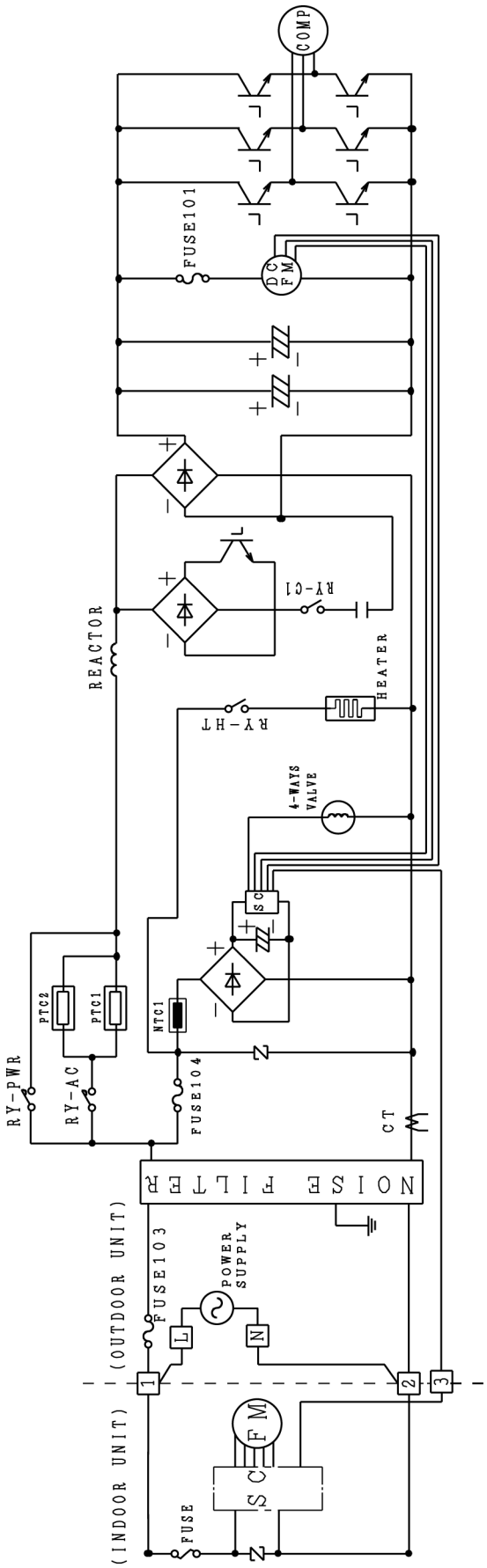
5.2. Outdoor Unit



6 Refrigeration Cycle Diagram

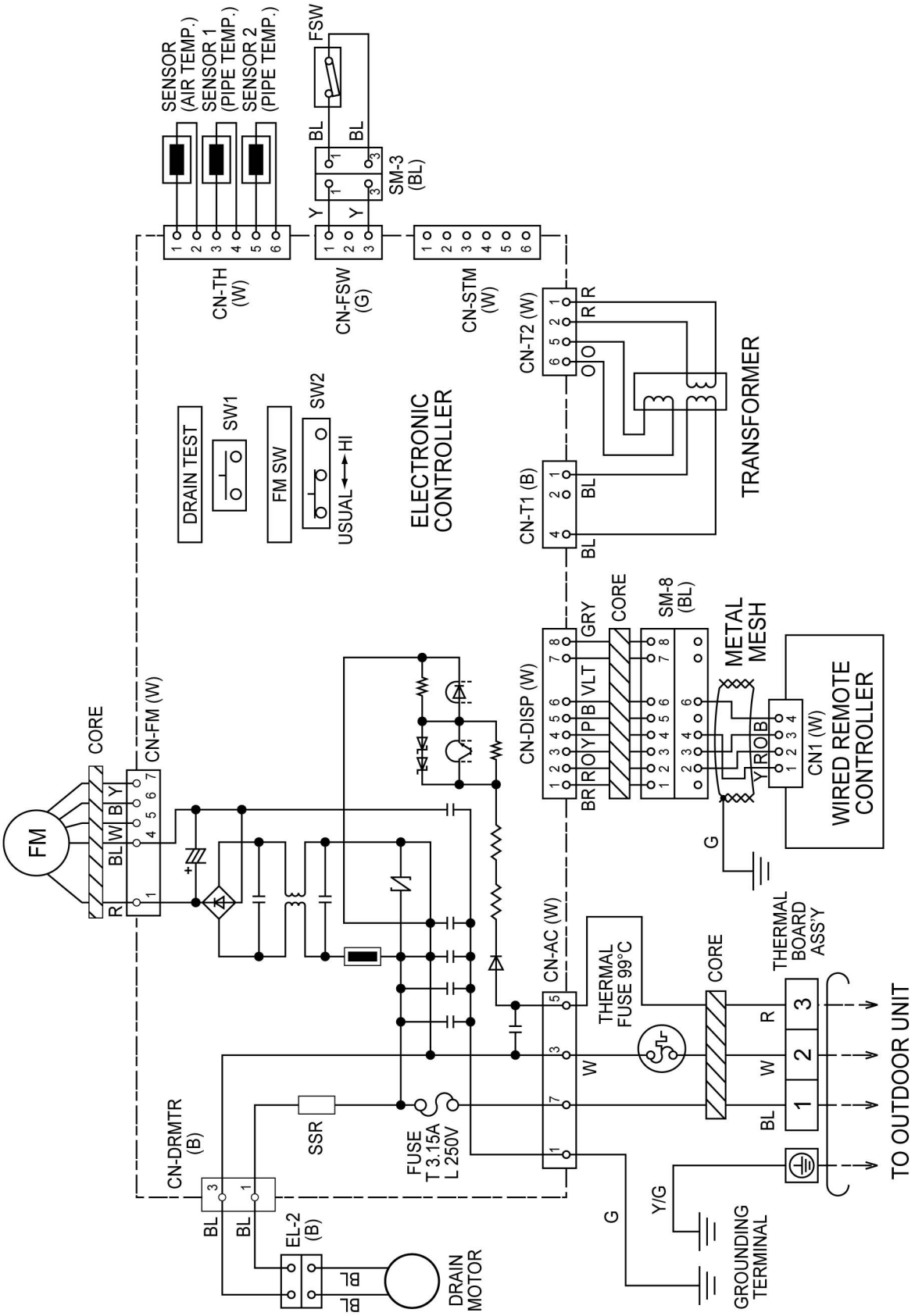


7 Block Diagram



8 Wiring Connection Diagram

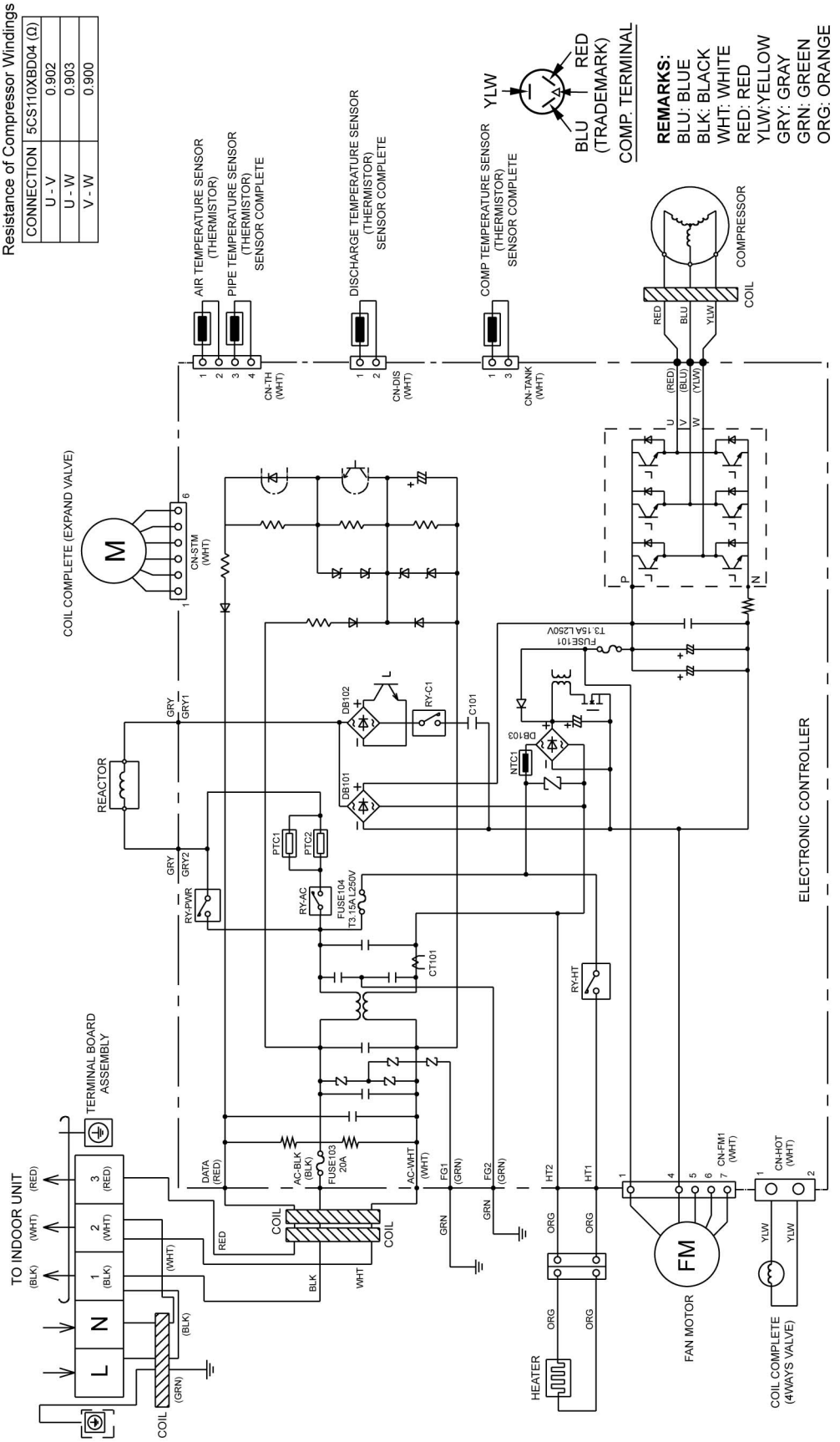
8.1. Indoor Unit



8.2. Outdoor Unit

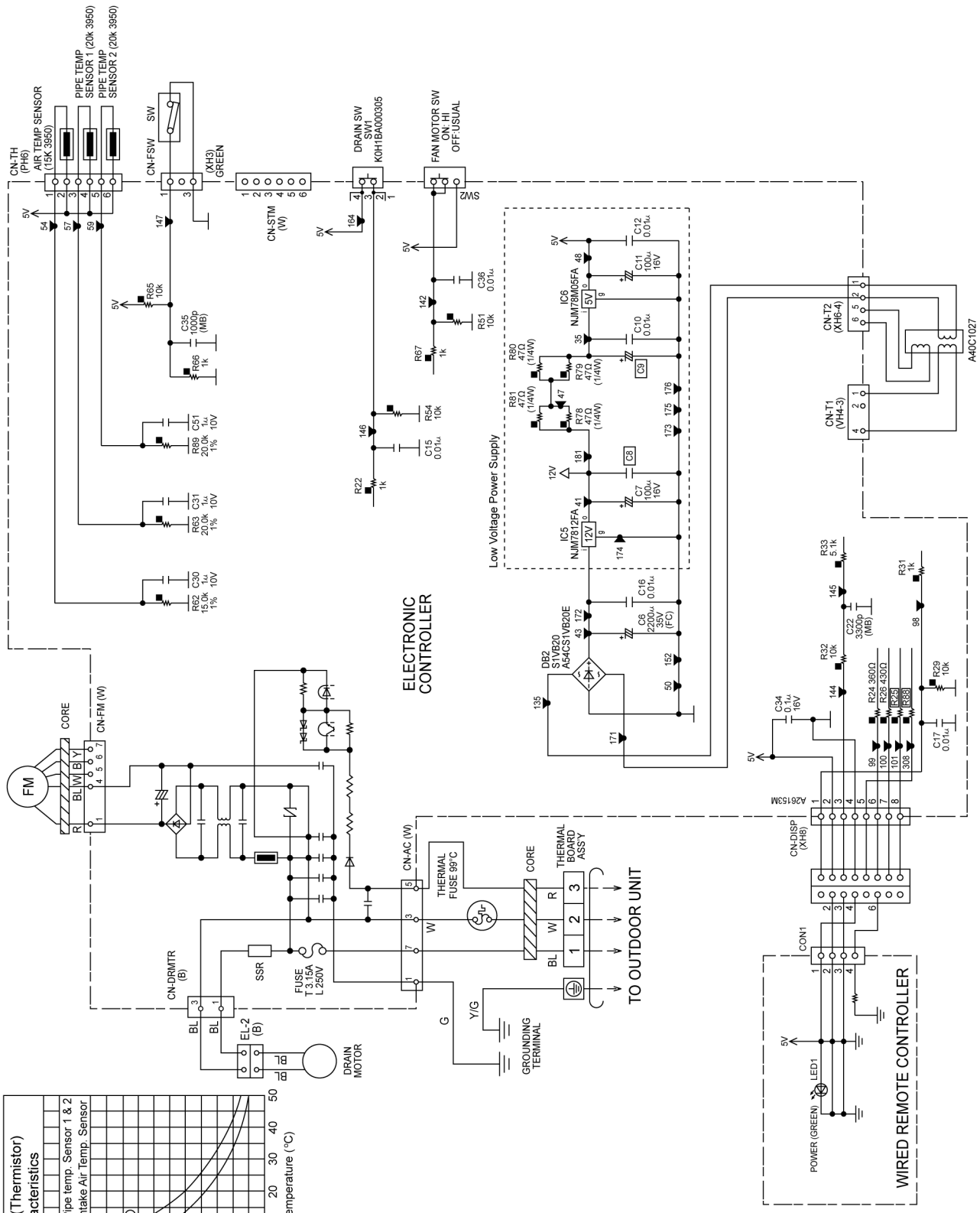
Resistance of Compressor Windings

CONNECTION	5CS110XBD04 (Ω)
U - V	0.902
U - W	0.903
V - W	0.900

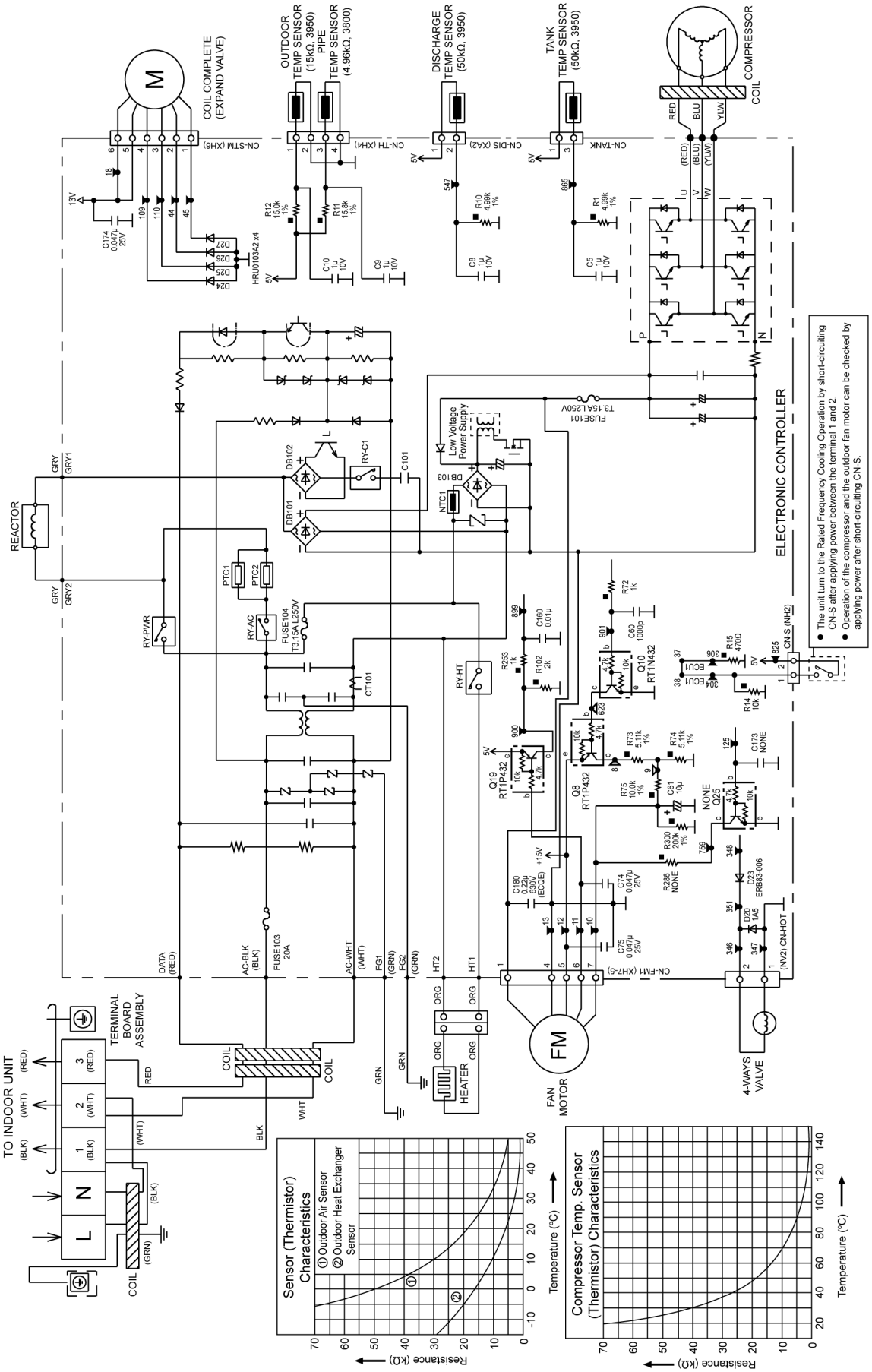


9 Electronic Circuit Diagram

9.1. Indoor Unit



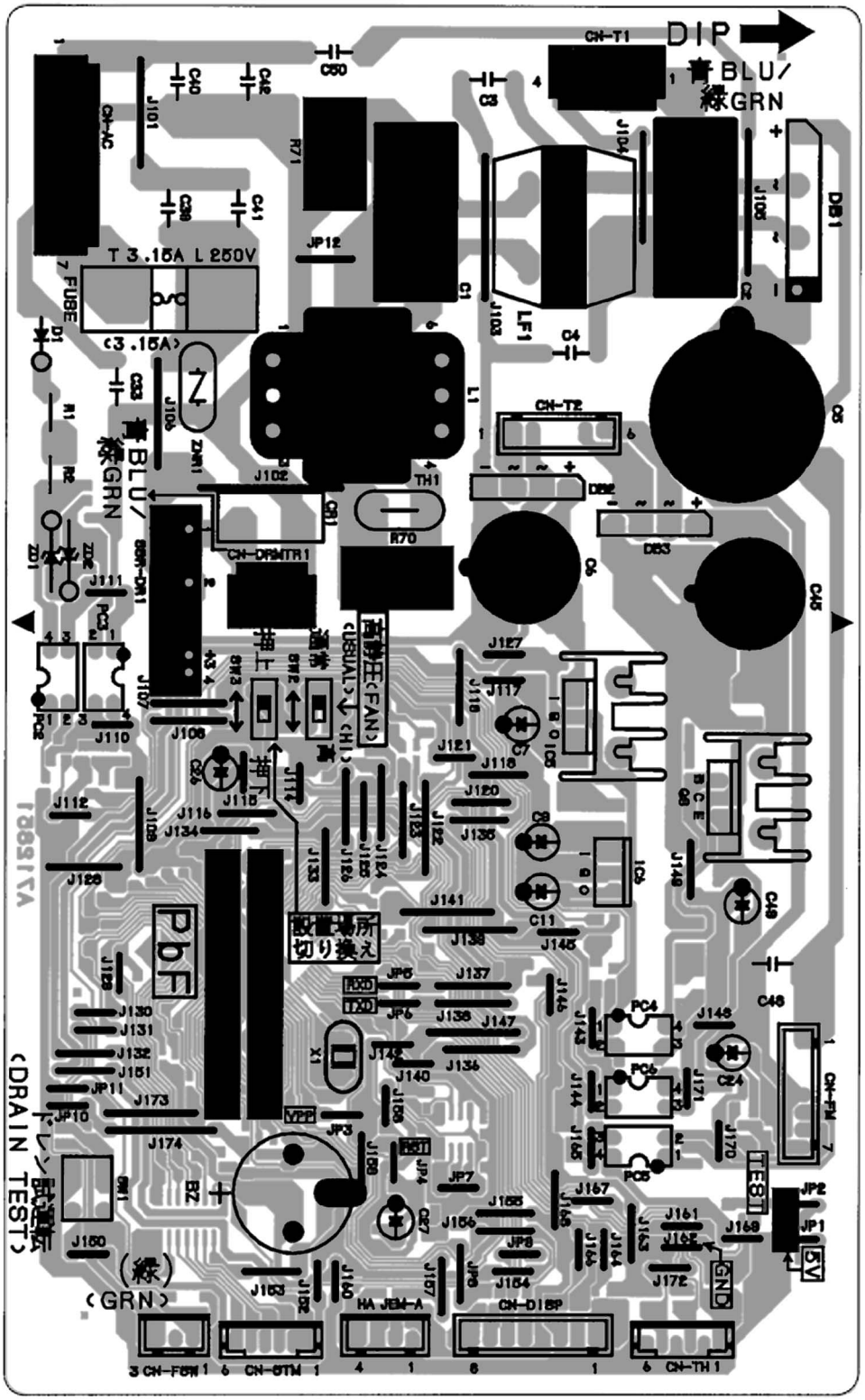
9.2. Outdoor Unit



10 Printed Circuit Board

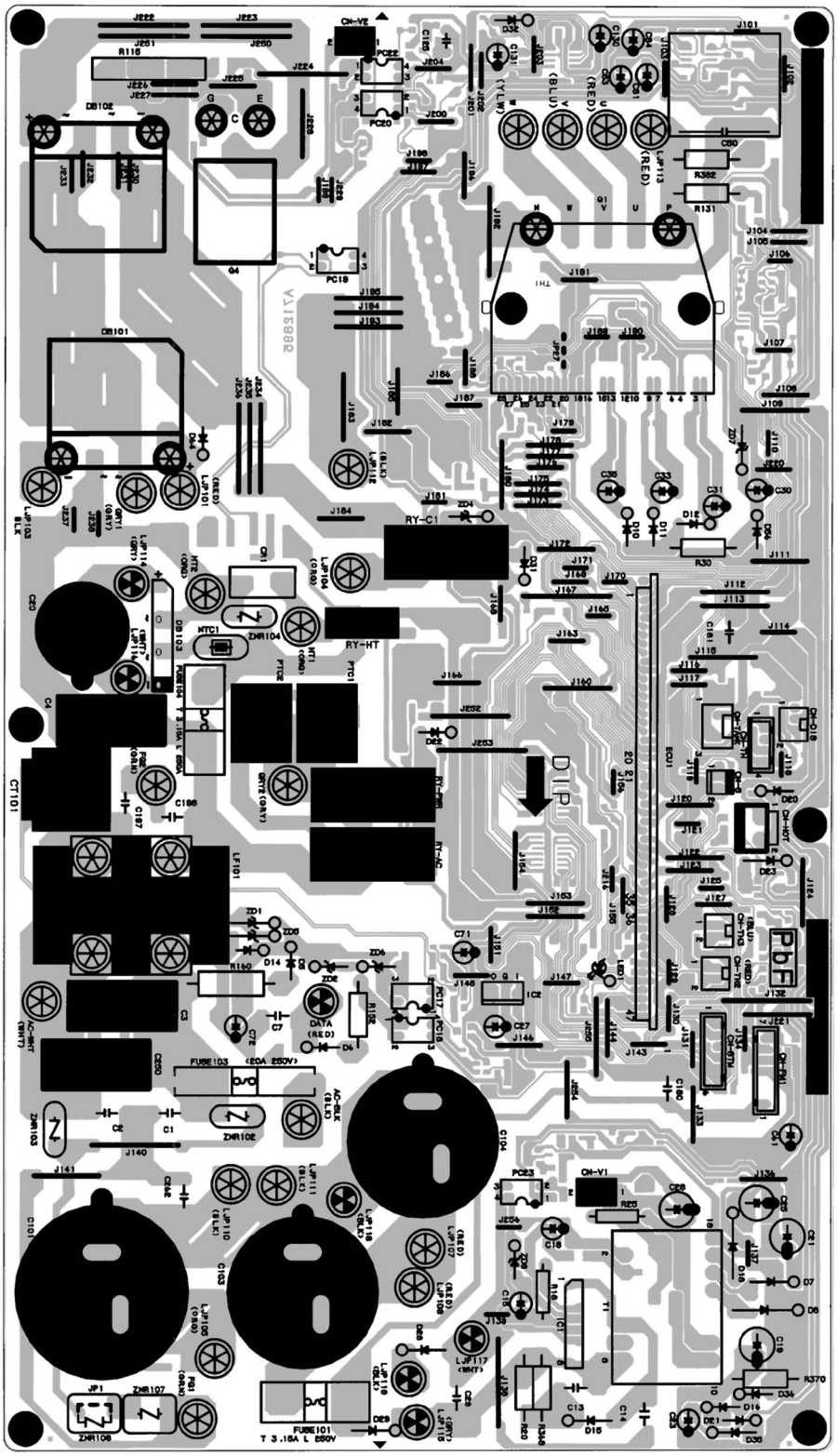
10.1. Indoor Unit

10.1.1. Main Printed Circuit Board

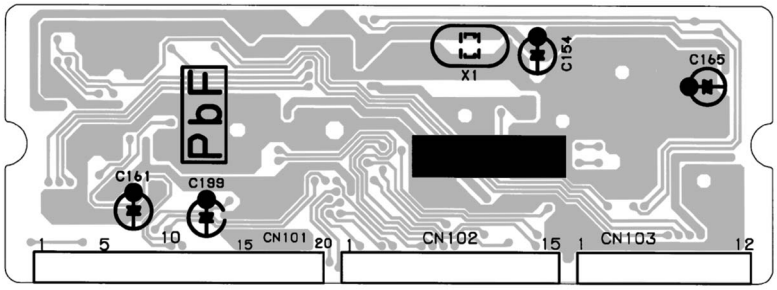


10.2. Outdoor Unit

10.2.1. Main Printed Circuit Board



10.2.2. CPU Printed Circuit Board



11 Installation Instruction

Attached accessories

No.	Accessory part	Qty.
1	Piping insulation	1
2	Band	2
3	Remote controller	1

No.	Accessory part	Qty.
4	Remote controller cable	1
5	Screw (M4 machine pitched - 30 mm)	3
6	Screw (M4 self tapping - 14 mm)	3

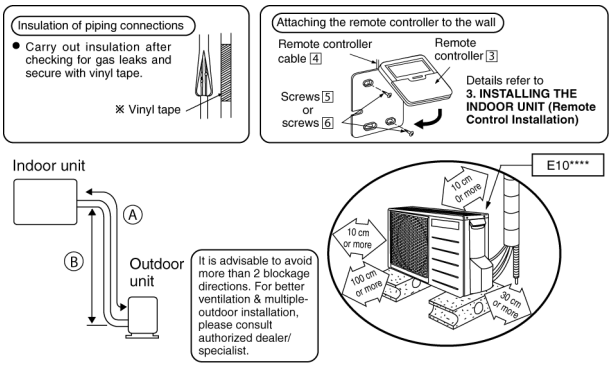
No.	Accessory part	Qty.
7	Drain hose insulation	1
8	Drain elbow	1

■Required Materials

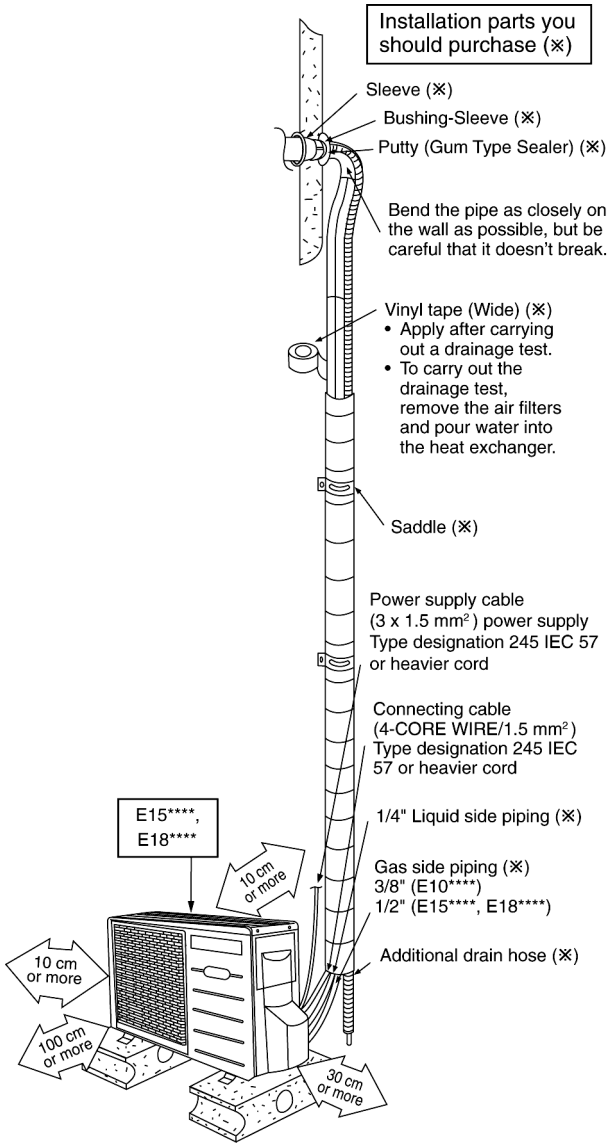
- Read the catalog and other technical materials and prepare the required materials.
- Applicable piping kit
  CZ-3F5, 7BP (E10****),
  CZ-4F5, 7, 10BP (E15****, E18****)

■Other Items to be Prepared (Locally Purchased)

Product name	Remarks
Rigid PVC pipe	VP20 (outer diameter ø26); also sockets, elbows and other parts as necessary
Adhesive	PVC adhesive
Insulation	For refrigerant piping insulation: foamed polyethylene with a thickness of 8 mm or more. For drain piping insulation: foamed polyethylene with a thickness of 10 mm or more.
Indoor/outdoor connecting cable	4 x 1.5 mm^2 flexible cord, designation type 245 IEC 57 (H05RN-F)
Hanging bolt related parts	Hanging bolts (M10) (4) and nuts (12), Flat washers (8) (when hanging the indoor unit)



IMPORTANT
Begin the installation job from the “Indoor Unit” installation.



• This illustration is for explanation purposes only.
The indoor unit will actually face a different way.

11.1. Indoor Unit

11.1.1. SELECTING THE INSTALLATION LOCATION

Take into consideration the following contents when creating the blueprint.

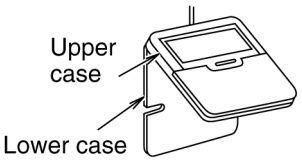
■Indoor unit installation location

- Do not install the unit in excessive oil fume area such as kitchen, workshop and etc.
- The location should be strong enough to support the main unit without vibration.
- There should not be any heat or steam source nearby.
- Drainage should be easy. Avoid locating the drain port close to ditches (domestic wastewater).
- Avoid locations above entrances and exits.
- Do not block the air intake and discharge passages.
- Select the location that enables the cool and warm air to spread out to the entire room.
- Locate the indoor unit at least 1 m or more away from a TV, radio, wireless appliance, antenna cable and fluorescent light, and 2 m or more away from a telephone.

⚠ CAUTION

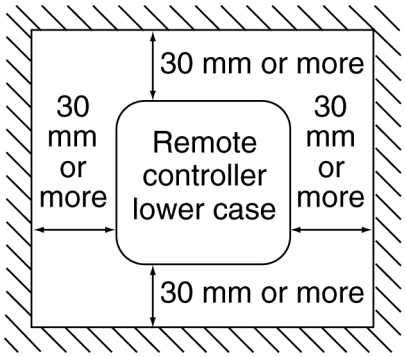
Install the remote controller cable at least 5 cm away from electric wires of other appliances to avoid miss-operation (electromagnectic noise).

Remote controller 3



■Remote control mounting location

- Allow sufficient space around the remote controller 3 as shown in the illustration at right.
- Install in a place which is away from direct sunlight and high humidity.
- Install in a flat surface to avoid warping of the remote controller. If installed to a wall with an uneven surface, damage to the LCD case or operation problems may result.
- Install in a place where the LCD can be easily seen for operation.
  (Standard height from the floor is 1.2 to 1.5 meters.)
- Avoid installing the remote controller cable near refrigerant pipes or drain pipes, else it will cause electrical shock or fire.



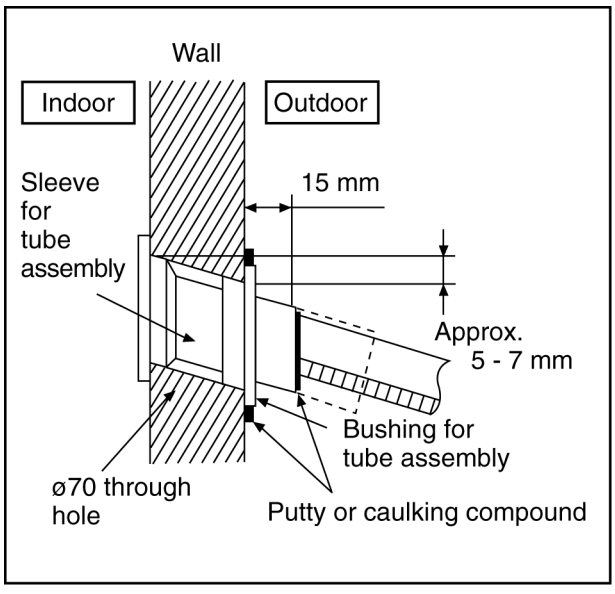
11.1.2. TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

1. Insert the piping sleeve to the hole.
2. Fix the bushing to the sleeve.
3. Cut the sleeve until it extrudes about 15 mm from the wall.

⚠ CAUTION

When the wall is hollow, be sure to use the sleeve for tube assembly to prevent pests from damaging the cables, e.g. mice biting the connecting cable.

4. Finish by sealing the sleeve with putty or caulking compound at the final stage.



11.1.3. INSTALLING THE INDOOR UNIT (INSTALLATION EMBEDDED IN THE CEILING)

- Always provide sufficient entry and exit space to allow installation work, inspection and unit replacement.
- Waterproof the rear surface of the ceiling below the unit in consideration of water droplets forming and dropping.

⚠ CAUTION

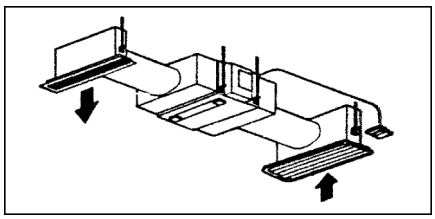
When cooling operation is performed for an extended period under the following conditions, water droplets may form and drop. Attach locally purchased insulation (foamed polyethylene with a thickness of 5 mm or more) to the outside of the indoor unit before installing into the ceiling to improve heat insulation.

- Locations with a dew point inside the ceiling of 23°C or more.
- Kitchens and other locations that produce large amounts of heat and steam.
- Locations where the inside of the ceiling serves as an outside air intake passage.

- **When installing into a ceiling, select the unit position and airflow direction that enable the cool and warm air to spread out to the whole room.**
- Do not place objects that might obstruct the airflow within 1 m below the intake grill.

CEILING OPENING AND HANGING BOLT LOCATIONS

- The relative positions of the ceiling opening and hanging bolts are shown in the illustrations below. When making an inspection opening below the unit, make a 960 mm x 480 mm opening at the ceiling surface. Also, lead the drain piping, refrigerant piping and indoor/outdoor connecting cables up to the respective piping and cable connection positions.



- Secure the hanging bolts (M10, locally purchased) firmly in a manner capable of supporting the unit weight.
- Consult your construction or interior contractor for details on finishing the ceiling opening.

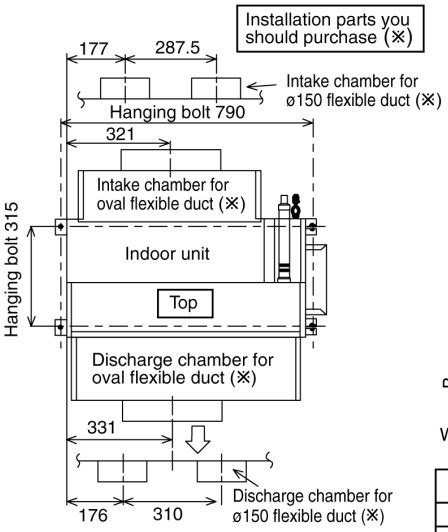
Installing an Intake and Discharge Duct Type

	Allowable duct length	Duct bends
Discharge side duct	5 m or less including the intake side	90° or less in one location
Intake side duct	1 m or less	45° or less in one location

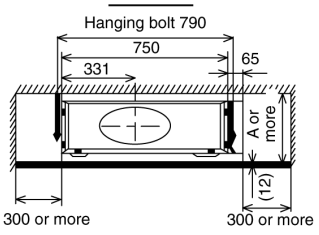
Installation Diagram These diagrams show the unit together with the purchased components.

(This shows an installation example.)

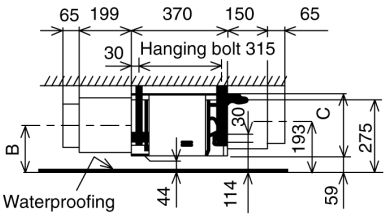
Top view (from above the ceiling)



Front view



Right view

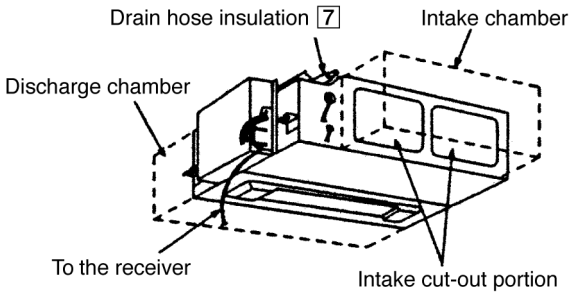


	CS-E10*****, CS-E15*****	CS-E18*****
A	330	350
B	180	205
C	235	285

PREPARING TO INSTALL THE INDDOR UNIT

- Fit the drain hose insulation [7] around the drain hose as shown in the diagram beside.
- Attach the discharge chamber. (※) (10 screws)
- Cut out the intake cut-out portions at the unit rear panel using a cutter or other tools to make openings.
- Remove the two screws at the rear edge of the unit top panel and attach the intake chamber. (※) (8 screws)

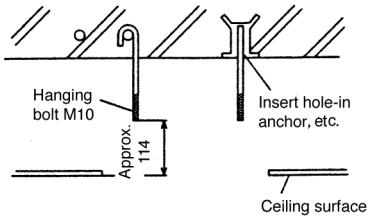
View from below and behind the unit



Securing the Hanging Bolts

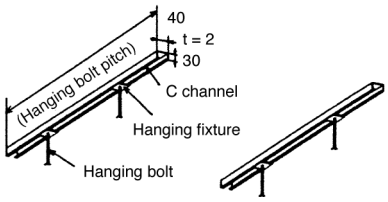
Reinforced concrete

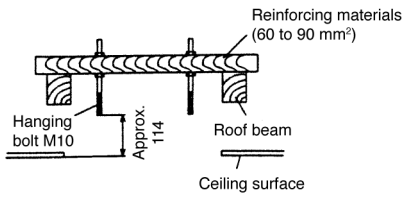
(Unit: mm)



Wooden of other structure

(Unit: mm)



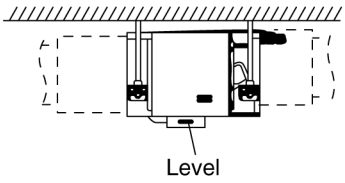


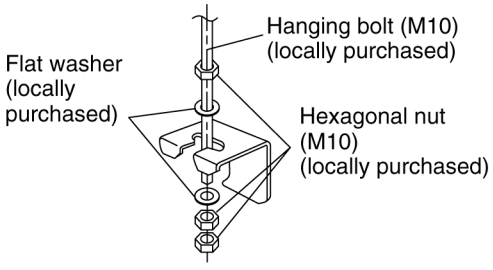
Switching the High State Switch (SW2)

- To increase the air volume, open the control box and on the control board, switch the FAN switch (SW2) to “HI”.
- See the diagram for “Connecting the Indoor/Outdoor Connecting Cable”.

Installation into the Ceiling

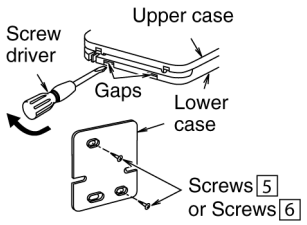
- Attach the nuts and washers to the hanging bolts, then lift up and hook the main unit onto the hanging fixtures.
- Check if the unit is leveled using a level or a vinyl hose filled partially with water.



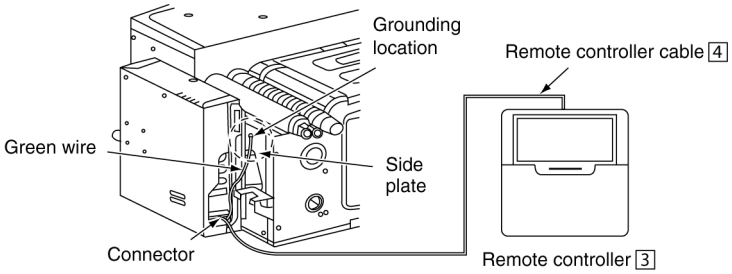


Remote Controller Installation

1. Remove the remote controller [3] lower case.
   (Insert a flat-tipped screw driver or similar tool 2 to 3 mm into one of the gaps at the bottom of the case, and twist to open. Refer to the illustration at right.)
   Be careful not to damage the lower case.
2. Do not remove the protective tape which is affixed to the upper case circuit board when remove the remote controller lower case.
3. Secure the lower case to an outlet box or wall. Refer to (A) or (B) instructions below depending on your choice of cable installation.
4. Be sure to use only the screws provided.
5. Do not over tighten the screws, as it may result in damage to the lower case.



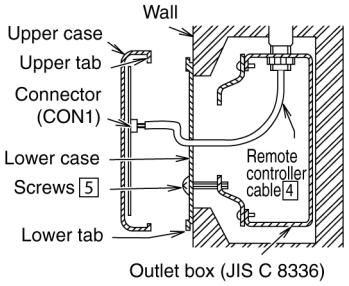
6. Connect the indoor unit and the remote controller [3] as shown in the illustration at below.
7. Insert firmly the connector of remote controller cable [4] to connector at control box of indoor unit.
8. Fix the green wire from remote controller cable [4] to the grounding location provided.

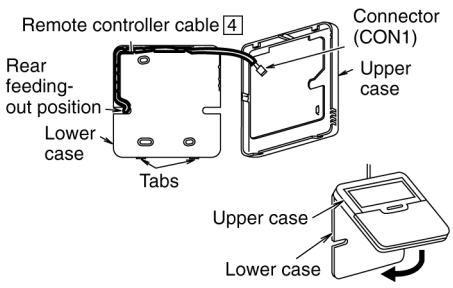


A. IF REMOTE CONTROLLER CABLE IS EMBEDDED

1. Embed an outlet box (JIS C 8336) into the wall. Outlet box maybe purchased separately. Medium size square outlet box (obtain locally) Part No. DS3744 (Panasonic Co., Ltd.) or equivalent.
2. Secure the remote controller lower case to the outlet box with the two accessory screws [5]. Make sure that the lower case is flat againts the wall at this time, with no bending.
3. Pass the remote controller cable [4] into the box.
4. Route the remote controller cable [4] inside the lower case through rear feeding-out direction.
5. Insert firmly the connector of remote controller cable [4] to connector (CON1) in the upper case circuit board. (Refer to the illustration at below.)
6. Secure the remote controller upper case to the lower case with the tabs provided.

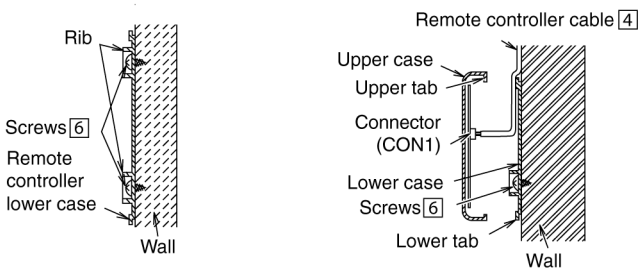
⚠ CAUTION
When the wall is hollow, please be sure to use the sleeve for remote controller cable to prevent dangers caused by mice biting the cable.



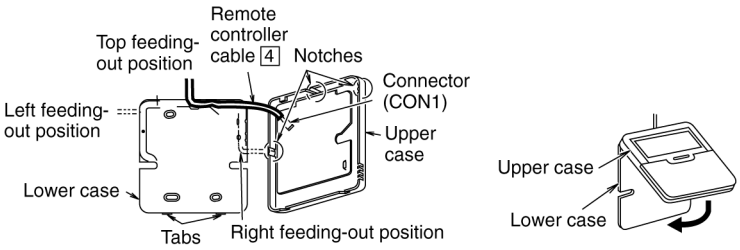


B. IF REMOTE CONTROLLER CABLE IS EXPOSED

1. Install the remote controller lower case to the wall with the two accessory screws [6].
2. Fasten the screws properly until screw head is lower than the rib and reach the base of remote controller lower case to ensure they do not damage the PCB inside the remote controller [3].



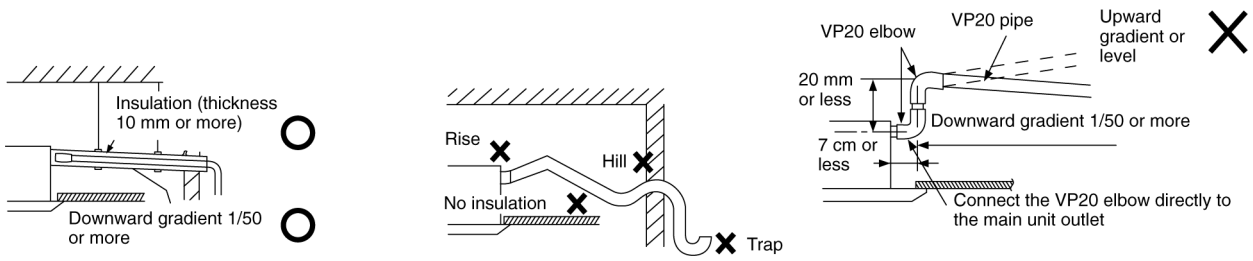
3. The feeding-out direction for the remote controller cable can be either via top, left or right side.
4. Use nipper to cut a notch at the upper case. (Select the intended feeding-out position)
5. Route the remote controller cable [4] inside the lower case in accordance with the intended feeding-out direction. (Refer to the illustration at below).
6. Insert firmly the connector of remote controller cable [4] to connector (CON1) in the upper case circuit board. (Refer to the illustration at below)
7. Secure the remote controller upper case to the lower case with the tabs provided.



11.1.4. CONNECTING THE DRAIN PIPING

- Lay the drain piping so as to ensure drainage.
- Use a locally purchased VP20 general rigid PVC pipe (outer diameter ø26) for the drain piping **and firmly connect the indoor unit and the drain piping using PVC adhesive to ensure that no leakage occurs**.
- Drain piping located indoor should always be insulated by wrapping with locally purchased insulation (foamed polyethylene with a thickness of 10 mm or more).
- The drain piping should have a downward gradient (1/50 or more) and should be secured by using pipe hanging equipment to avoid creating hills or traps partway.
- Should there be any obstacle preventing the drain piping from being extended smoothly, the drain piping can be raised outside of the main unit as shown in the illustration below.

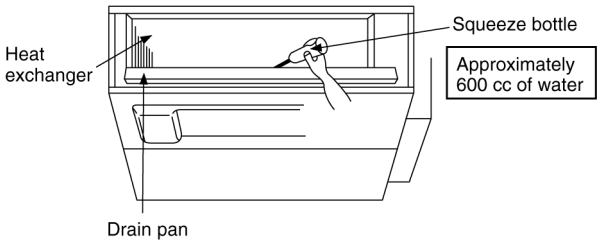
⚠ CAUTION
Strictly do not install and extend the drain piping from the main unit drain water outlet horizontally or upward or raised it 20 cm or more. Doing so may result in poor drainage or drain motor failure.



CHECK THE DRAINAGE

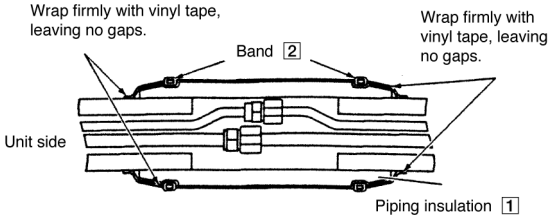
Check after connecting the power supply.

- Pour approximately 600 cc of water into the drain pan of the main unit using a squeeze bottle, etc.
- Press the drain test run switch on the control board in the control box to start the drain motor and check whether the water drains normally. (The drain motor operates for approximately 5 minutes and then stops automatically.) (See the diagram for "Connecting the Indoor/Outdoor Connecting Cable".)



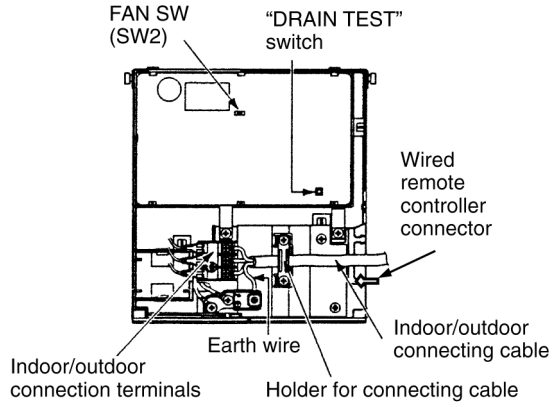
11.1.5. INSULATING THE REFRIGERANT PIPING

- After the piping is connected, insulate as shown in the illustration.



11.1.6. CONNECTING THE INDOOR/OUTDOOR CONNECTING CABLE

- Remove the control box cover and lead the connecting cable into the control box.
- Check the color of the wires on the terminal board and secure them with screws.
- Secure the outer sheath of the connecting cable with the cord clamp.
- Reattach the control box cover to its original position.



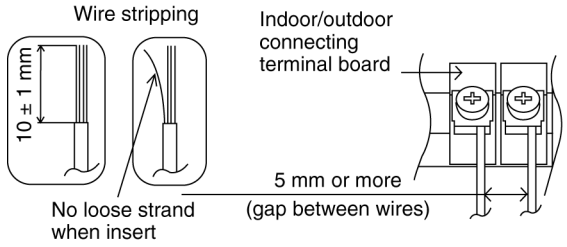
Terminals on the indoor unit	1	2	3	⏚
Colour of wires				
Terminals on the outdoor unit	1	2	3	⏚

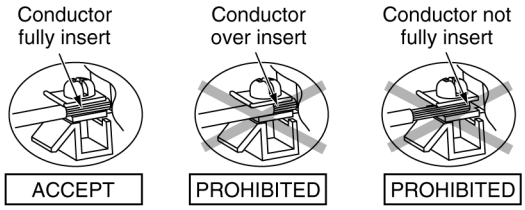
⚠ CAUTION

When the wall is hollow, please be sure to use the sleeve for tube ass'y to prevent dangers caused by mice biting the connecting cable.

- Connecting cable between indoor unit and outdoor unit should be approved polychloroprene sheathed 4 x 1.5 mm^2 flexible cord, designation type 245 IEC 57 (H05RN-F) or heavier cord.
  - Ensure that the terminal numbers on the indoor unit are connected to the same terminal numbers on the outdoor unit by the right coloured wires as shown in the diagram.
  - Earth lead wire should be longer than the other lead wires as shown in the diagram for electrical safety purpose in case the cord slips out from the anchorage.
- Secure the cable onto the control board with the holder (clamper).

11.1.6.1. WIRE STRIPPING AND CONNECTING REQUIREMENT





11.2. Outdoor Unit

11.2.1. SELECTING THE INSTALLATION LOCATION

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant which could be affected by hot air discharged.
- Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.
- If piping length is over 10m, additional refrigerant should be added as shown in the table.

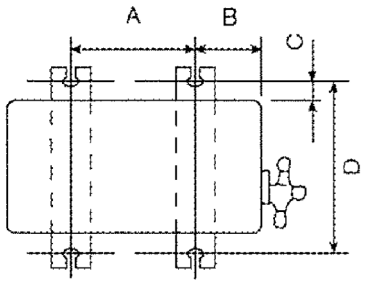
Model	Piping size		Rated length (m)	Max. Elevation (m)	Min. Piping Length Ⓐ(m)	Max. Piping Length Ⓐ(m)	Additional Refrigerant (g/m)
	Gas	Liquid					
E10****	3/8”	1/4”	7.5	15	3	20	20
E15****	1/2”	1/4”	7.5	15	3	20	20
E18****	1/2”	1/4”	5	20	3	30	20

Example:
If the unit is installed at a 12m distance, the quantity of additional refrigerant should be 40 g...(12-10) m × 20 g/m = 40 g

11.2.2. INSTALL THE OUTDOOR UNIT

At the best location, start installation according to Indoor-Outdoor Unit Installation Diagram.

1. Fix the unit on concrete or rigid frame firmly and horizontally by bolt nut. (ø10 mm).
2. When installing at roof, please consider strong wind. Please fasten the installation stand firmly with bolt or nails.



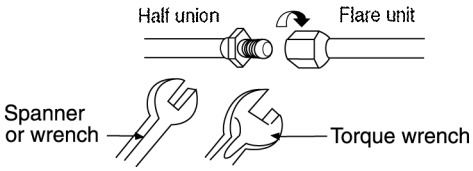
Model	A	B	C	D
E10****	570 mm	105 mm	18.5 mm	320 mm
E15****, E18****	612.5 mm	131 mm	19 mm	383 mm

11.2.3. CONNECTING THE PIPING

Connecting The Piping To Indoor Unit

Please make flare after inserting flare nut (locate at joint portion of indoor piping) onto the copper pipe.
(In case of using long piping)
Connect the piping

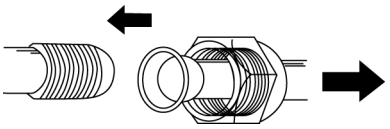
- Align the center of piping and sufficiently tighten the flare nut with fingers.
- Further tighten the flare nut with torque wrench in specified torque as stated in the table.



⚠ CAUTION		
Do not over tighten, over tightening cause gas leakage.		
Model	Piping size (Torque)	
	Gas	Liquid
E10****	3/8" (42 N•m)	1/4" (18 N•m)
E15****, E18****	1/2" (55 N•m)	1/4" (18 N•m)

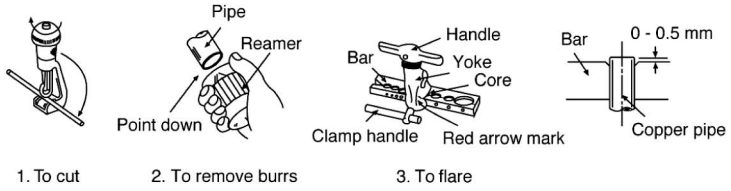
Connecting The Piping To Outdoor Unit

1. Align the center of the pipings and sufficiently tighten the flare nut with fingers.
2. Finally, tighten the flare nut with torque wrench until the wrench clicks.
   - When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.



CUTTING AND FLARING THE PIPING

1. Please cut using pipe cutter and then remove the burrs.
2. Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused. Turn the piping end down to avoid the metal powder entering the pipe.
3. Please make flare after inserting the flare nut onto the copper pipes.



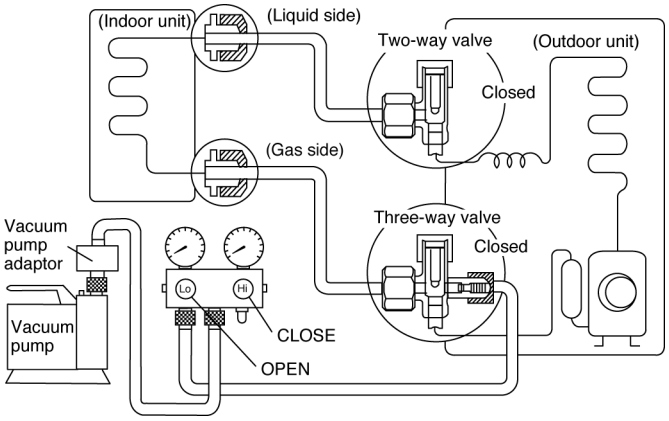
1. To cut 2. To remove burrs 3. To flare

■ Improper flaring ■

When properly flared, the internal surface of the flare will evenly shine and be of even thickness. Since the flare part comes into contact with the connections, carefully check the flare finish.

11.2.4. EVACUATION OF THE EQUIPMENT (FOR EUROPE & OCEANIA DESTINATION)

WHEN INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE AIR INSIDE THE INDOOR UNIT AND PIPES in the following procedure.

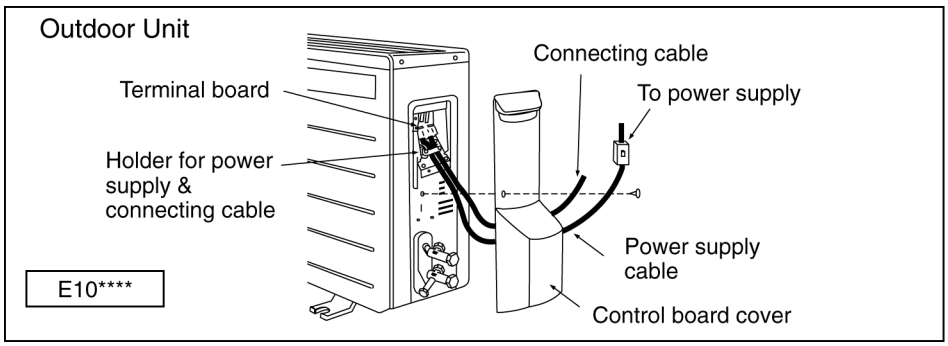


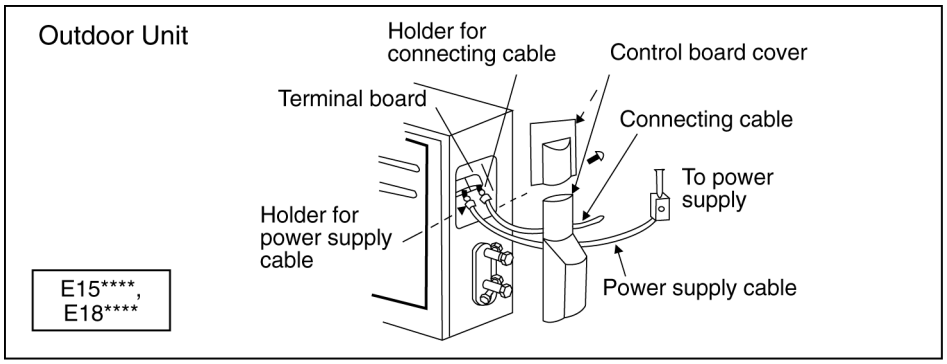
1. Connect a charging hose with a push pin to the Low and High side of a charging set and the service port of the 3-way valve.
   • Be sure to connect the end of the charging hose with the push pin to the service port.
2. Connect the center hose of the charging set to a vacuum pump with check valve, or vacuum pump and vacuum pump adaptor.
3. Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa). Then evacuate the air approximately ten minutes.
4. Close the valve of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately five minutes.
   Note: BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.
5. Disconnect the charging hose from the vacuum pump and from the service port of the 3-way valve.
6. Tighten the service port caps of both of the 3-way valve at a torque of 18 N•m with a torque wrench.
7. Remove the valve caps of both of the 2-way valve and 3-way valve. Position both of the valves to “OPEN” using a hexagonal wrench (4 mm).
8. Mount valve caps onto the 2-way valve and the 3-way valve.
   • Be sure to check for gas leakage.

⚠ CAUTION

- If gauge needle does not move from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa), in step ③ above take the following measure:
- If the leak stops when the piping connections are tightened further, continue working from step ③ .
- If the leak does not stop when the connections are retightened, repair the location of leak.
- Do not release refrigerant during piping work for installation and reinstallation. Take care of the liquid refrigerant, it may cause frostbite.

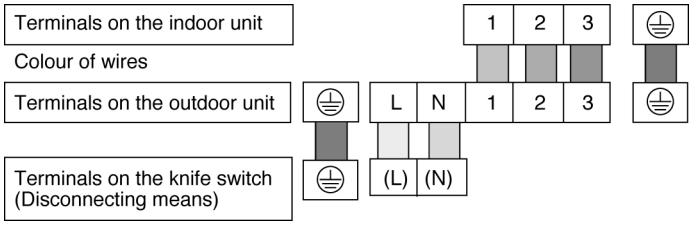
11.2.5. CONNECT THE CABLE TO THE OUTDOOR UNIT





(FOR DETAIL REFER TO WIRING DIAGRAM AT UNIT)

1. Remove the control board cover from the unit by loosening the screw.
2. Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 4 × 1.5 mm^2 flexible cord, type designation 245 IEC 57 or heavier cord.



3. Secure the cable onto the control board with the holder (clamper).
4. Cable connection to the power supply (230 - 240V, 50Hz) through knife switch (Disconnecting means).
   • Connect the approved polychloroprene sheathed power supply cable (3 x 1.5 mm^2), type designation 245 IEC 57 or heavier cord to the terminal board, and connect the other end of the cable to knife switch (Disconnecting means).

Note: Knife switch (Disconnecting means) should have minimum 3.5 mm contact gap.

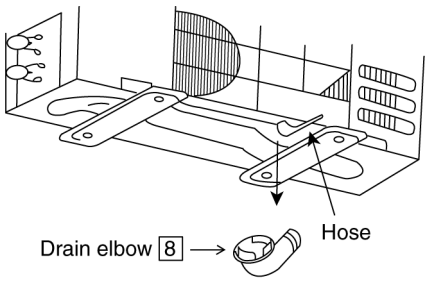
- Secure the cable onto the control board with the holder (clamper).

11.2.6. PIPE INSULATION

1. Please carry out insulation at pipe connection portion as mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping.
2. If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 8 mm or above.

DISPOSAL OF OUTDOOR UNIT DRAIN WATER

- If a drain elbow is used, the unit should be placed on a stand which is taller than 3 cm.
- If the unit is used in an area where temperature falls below 0°C for 2 or 3 days in succession, it is recommended not to use a drain elbow, for the drain water freezes and the fan will not rotate.



Install the hose at an angle so that the water smoothly flows out.

CHECK ITEMS

- ☐ Is there any gas leakage at flare nut connections?
- ☐ Has the heat insulation been carried out at flare nut connections?
- ☐ Is the connecting cable being fixed firmly to the terminal board?
- ☐ Is the connecting cable being clamped firmly?
- ☐ Is the drainage OK? (Refer to the “Check the Drainage” section)
- ☐ Is the Earth wire connection done properly?
- ☐ Is the power supply voltage complied with the rated value?
- ☐ Is there any abnormal sound emitted?
- ☐ Is the cooling / heating operation normal?
- ☐ Is the thermostat operation normal?
- ☐ Is the Remote Control’s LCD operation normal?

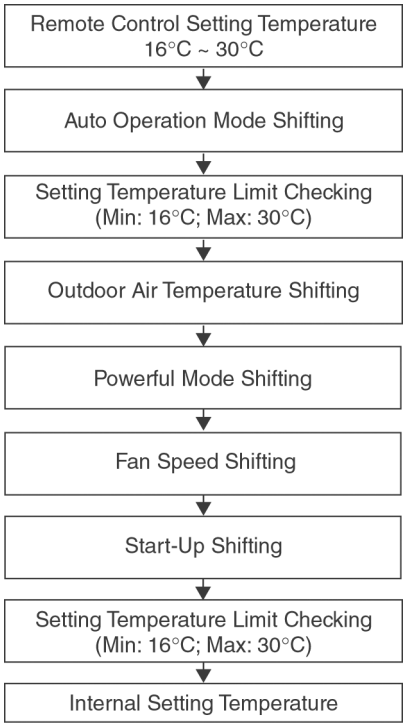
12 Operation and Control

12.1. Basic Function

Inverter control, which equipped with a microcomputer in determining the most suitable operating mode as time passes, automatically adjusts output power for maximum comfort always. In order to achieve the suitable operating mode, the microcomputer maintains the set temperature by measuring the temperature of the environment and performing temperature shifting. The compressor at outdoor unit is operating following the frequency instructed by the microcomputer at indoor unit that judging the condition according to internal setting temperature and intake air temperature.

12.1.1. Internal Setting Temperature

Once the operation starts, remote control setting temperature will be taken as base value for temperature shifting processes. These shifting processes are depending on the air conditioner settings and the operation environment. The final shifted value will be used as internal setting temperature and it is updated continuously whenever the electrical power is supplied to the unit.



12.1.2. Cooling Operation

12.1.2.1. Thermostat control

- Compressor is OFF when Intake Air Temperature - Internal Setting Temperature < -1.5°C.
- Compressor is ON after waiting for 3 minutes, if the Intake Air Temperature - Internal Setting Temperature > Compressor OFF point.

12.1.3. Soft Dry Operation

12.1.3.1. Thermostat control

- Compressor is OFF when Intake Air Temperature - Internal Setting Temperate < -2.0°C.
- Compressor is ON after waiting for 3 minutes, if the Intake Air Temperature - Internal Setting Temperature > Compressor OFF point.

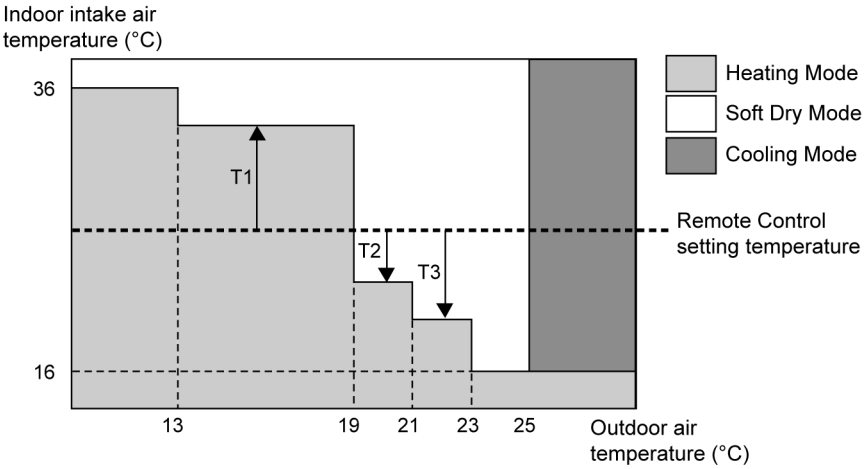
12.1.4. Heating Operation

12.1.4.1. Thermostat control

- Compressor is OFF when Intake Air Temperature - Internal Setting Temperate > +2.0°C.
- Compressor is ON after waiting for 3 minutes, if the Intake Air Temperature - Internal Setting Temperature < Compressor OFF point.

12.1.5. Automatic Operation

- This mode can be set using remote control and the operation is decided by remote control setting temperature, remote control operation mode, indoor intake air temperature and outdoor air temperature.
- During operation mode judgment, indoor fan motor (with speed of Lo-) and outdoor fan motor are running for 30 seconds to detect the indoor intake and outdoor air temperature. The operation mode is decided based on below chart.



Every 30 minutes, the indoor and outdoor temperature is judged. Based on remote control setting temperature, the value of T1 will increase up to 10°C, T2 will decreased by 3°C and T3 will decreased up to 8°C.
The Auto Operation Mode shifting will take place whenever operation mode changed from Cooling/Soft Dry to Heating or vice versa.

12.1.6. Indoor Fan Motor Operation

A. Basic Rotation Speed (rpm)

i. Manual Fan Speed

[Cooling, Dry]

- Fan motor's number of rotation is determined according to remote control setting.

Remote Control	O	O	O	O	O
Tab (rpm)	Hi	Me+	Me	Me-	Lo

[Heating]

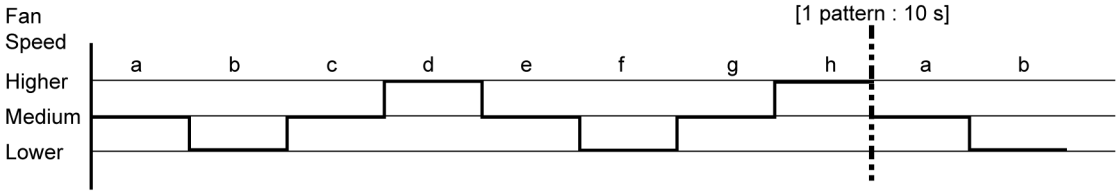
- Fan motor's number of rotation is determined according to remote control setting.

Remote Control	O	O	O	O	O
Tab (rpm)	Shi	Me+	Me	Me-	Lo

ii. Auto Fan Speed

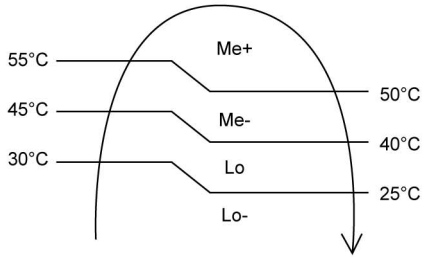
[Cooling, Dry]

- According to room temperature and setting temperature, indoor fan speed is determined automatically.
- The indoor fan will operate according to pattern below.



[Heating]

- According to indoor pipe temperature, automatic heating fan speed is determined as follows.

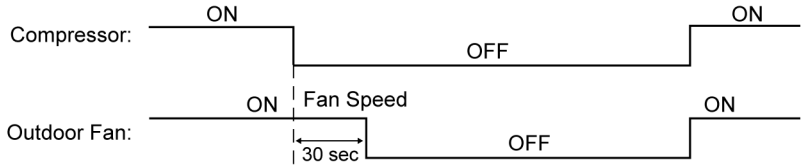


B. Feedback control

- Immediately after the fan motor started, feedback control is performed once every second.
- During fan motor on, if fan motor feedback ≥ 2550 rpm or < 50 rpm continue for 10 seconds, then fan motor error counter increase, fan motor is then stop and restart. If the fan motor counter becomes 7 times, then H19 - fan motor error is detected. Operation stops and cannot on back.

12.1.7. Outdoor Fan Motor Operation

Outdoor fan motor is operated with 15 fan speed. It starts when compressor starts operation and it stops 30 seconds after compressor stops operation.



12.2. Quiet operation (Cooling Mode/Cooling area of Soft Dry Mode)

A. Purpose

To provide quiet cooling operation compare to normal operation.

B. Control condition

a. Quiet operation start condition

- When “quiet” button at remote control is pressed.
  Quiet LED illuminates.

b. Quiet operation stop condition

1. When one of the following conditions is satisfied, quiet operation stops:
   a. Powerful button is pressed.
   b. Stop by OFF/ON switch.
   c. Timer “off” activates.
   d. Quiet button is pressed again.
2. When quiet operation is stopped, operation is shifted to normal operation with previous setting.
3. When fan speed is changed, quiet operation is shifted to quiet operation of the new fan speed.
4. When operation mode is changed, quiet operation is shifted to quiet operation of the new mode.
5. During quiet operation, if timer “on” activates, quiet operation maintains.
6. After off, when on back, quiet operation is not memorised.

C. Control contents

1. Auto fan speed is changed from normal setting to quiet setting of respective fan speed.
   This is to reduce sound of Hi, Me, Lo for 3dB.
2. Manual fan speed for quiet operation is 1 step from setting fan speed.
3. Outdoor fan speed is changed to Q-Lo
4. Compressor frequency reduced.

12.2.1. Quiet operation (Heating)

A. Purpose

To provide quiet heating operation compare to normal operation.

B. Control condition

a. Quiet operation start condition

- When “quiet” button at remote control is pressed.
  Quiet LED illuminates.

b. Quiet operation stop condition

1. When one of the following conditions is satisfied, quiet operation stops:
   a. Powerful button is pressed.
   b. Stop by OFF/ON switch.
   c. Timer “off” activates.
   d. Quiet button is pressed again.
2. When quiet operation is stopped, operation is shifted to normal operation with previous setting.
3. When fan speed is changed, quiet operation is shifted to quiet operation of the new fan speed.
4. When operation mode is changed, quiet operation is shifted to quiet operation of the new mode, except fan only mode.
5. During quiet operation, if timer “on” activates, quiet operation maintains.
6. After off, when on back, quiet operation is not memorised.

C. Control contents

a. Fan Speed Auto

- Indoor FM RPM depends on pipe temperature sensor of indoor heat exchanger.
  Auto fan speed is changed from normal setting to quiet setting of respective fan speed.
  This is to reduce sound of Hi, Me, Lo for 3dB.

b. Fan Speed Manual

- Manual fan speed for quiet operation is - 1 step from setting fan speed.

c. Compressor frequency reduced.

12.3. Powerful Mode Operation

When the powerful mode is selected, the internal setting temperature will shift higher up to 3.5°C (for Heating) or lower up to 2°C (for Cooling/Soft Dry) than remote control setting temperature for 20 minutes to achieve the setting temperature quickly.

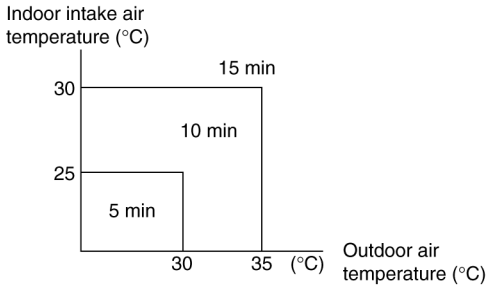
12.4. Timer Control

12.4.1. ON Timer Control

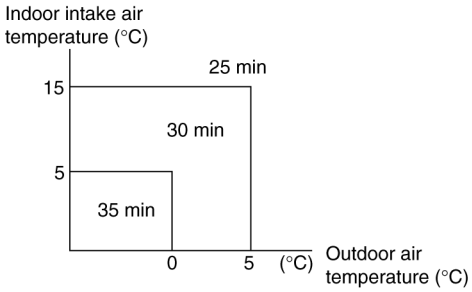
ON timer can be set using remote control, the unit with timer set will start operate earlier than the setting time. This is to provide a comfortable environment when reaching the set ON time.

60 minutes before the set time, indoor (at fan speed of Lo-) and outdoor fan motor start operate for 30 seconds to determine the indoor intake air temperature and outdoor air temperature in order to judge the operation starting time.

From the above judgment, the decided operation will start operate earlier than the set time as shown below.



Cooling/Soft Dry



Heating

12.4.2. OFF Timer Control

OFF timer can be set using remote control, the unit with timer set will stop operate at set time.

12.5. Auto Restart Control

1. When the power supply is cut off during the operation of air conditioner, the compressor will re-operate within three to four minutes (there are 10 patterns between 2 minutes 58 seconds and 3 minutes 52 seconds to be selected randomly) after power supply resumes.
2. This type of control is not applicable during ON/OFF Timer setting.

12.6. Indication Panel

LED	OFF/ON Operation
Color	Green
Light ON	Operation ON
Light OFF	Operation OFF

Note:

- If OFF/ON operation LED is OFF and OFF indicator does not shown on remote control display, there is an abnormality operation occurs.

13 Protection Control

13.1. Protection Control For All Operations

13.1.1. Restart Control (Time Delay Safety Control)

- The Compressor will not turn on within 3 minutes from the moment operation stops, although the unit is turned on again by pressing OFF/ON button at remote control within this period.
- This control is not applicable if the power supply is cut off and on again.
- This phenomenon is to balance the pressure inside the refrigerant cycle.

13.1.2. 30 Seconds Forced Operation

- Once the air conditioner is turned on, the compressor will not stop within 30 seconds in a normal operation although the intake air temperature has reached the thermo-off temperature. However, force stop by pressing the OFF/ON button at the remote control is permitted or the Auto OFF/ON button at indoor unit.
- The reason for the compressor to force operation for minimum 30 seconds is to allow the refrigerant oil run in a full cycle and return back to the outdoor unit.

13.1.3. Total Running Current Control

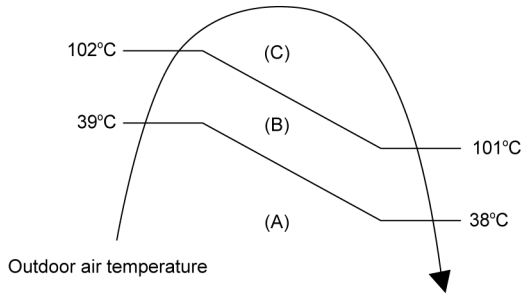
1. When the outdoor unit total running current (AC) exceeds X value, the frequency instructed for compressor operation will be decreased.

2. If the running current does not exceed X value for five seconds, the frequency instructed will be increased.

3. However, if total outdoor unit running current exceeds Y value, compressor will be stopped immediately for 3 minutes.

	E10HB	
Operation Mode	X (A)	Y (A)
Cooling/Soft Dry (A) & (C)	4.95	15.06
Cooling/Soft Dry (B)	4.43	15.06
Heating	6.21	15.06

4. The first 30 minutes of cooling operation, (A) will be applied.



13.1.4. IPM (Power transistor) Prevention Control

A. Overheating Prevention Control

1. When the IPM temperature rises to 110°C, compressor operation will stop immediately.

2. Compressor operation restarts after three minutes the temperature decreases to 95°C.

B. DC Peak Current Control

1. When electric current to IPM exceeds set value of 22.33 ± 5.0 A, the compressor will stop operate. Then, operation will restart after three minutes.

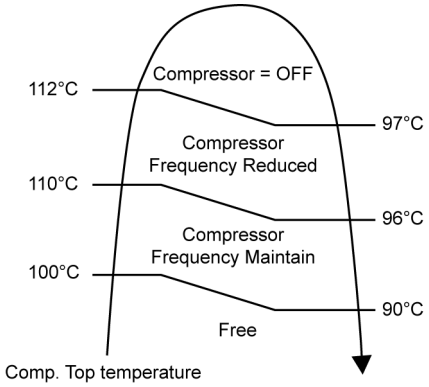
2. If the set value is exceeded again more than 30 seconds after the compressor starts, the operation will restart after two minutes.

3. If the set value is exceeded again within 30 seconds after the compressor starts, the operation will restart after one minute. If this condition repeats continuously for seven times, all indoor and outdoor relays will be cut off.

13.1.5. Compressor Overheating Prevention Control

Instructed frequency for compressor operation will be regulated by compressor discharge temperature. The changes of frequency are as below figure.

If compressor discharge temperature exceeds 112°C, compressor will be stop, occurs 4 times per 20 minutes, timer LED will be blinking (“F97” is to be confirmed).



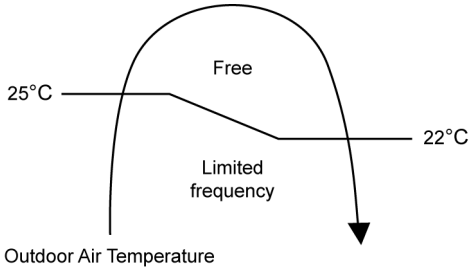
13.2. Protection Control For Cooling & Soft Dry Operation

13.2.1. Outdoor Air Temperature Control

The compressor operating frequency is regulated in accordance to the outdoor air temperature as shown in the diagram below.

This control will begin 1 minute after the compressor starts.

Compressor frequency will adjust base on Outdoor Air Temperature.



13.2.2. Cooling Overload Control

i. Pipe temperature limitation/restriction

- Detects the Outdoor pipe temperature and carry out below restriction/limitation (Limit the compressor Operation frequency)
- The compressor stop if outdoor pipe temperature exceeds 63°C.
- If the compressor stops 4 times in 20 minutes, Timer LED blinking (F95: outdoor high pressure rise protection)

13.2.3. Dew Prevention Control 1

1. To prevent dew formation at indoor unit discharge area.
2. This control activated if:
   - Outdoor air temperature and Indoor pipe temperature judgment by microcontroller if fulfilled.
   - When Cooling or Dry mode is operated more than 20 minutes or more.
3. This control stopped if:
   - Compressor stopped.
   - Remote control setting changed. (fan speed / temperature)
   - Outdoor air temperature and indoor intake temperature changed.

13.2.4. Dew Prevention Control 2

1. To prevent dew formation at indoor unit discharge area.
2. This control starts if all conditions continue for 20 minutes:
   - Operated with Cooling or Soft Dry Mode.
   - Indoor intake temperature is between 25°C and 29°C.
   - Outdoor air temperature is less than 30°C.
   - Quiet Lo fan speed.
3. This control stopped if:
   - When receive air swing change signal from Remote Control.

13.2.5. Freeze Prevention Control

1. When indoor heat exchanger temperature is lower than 7°C continuously for six minutes, compressor will stop operating.
2. Compressor will resume its operation 3 minutes after the indoor heat exchanger is higher than 13°C.
3. At the same time, indoor fan speed will be higher than during its normal operation.
4. If indoor heat exchanger temperature is higher than 13°C for 5 minutes, the fan speed will return to its normal operation.

13.3. Protection Control For Heating Operation

13.3.1. Intake Air Temperature Control

Compressor will operate at maximum frequency if below conditions occur:

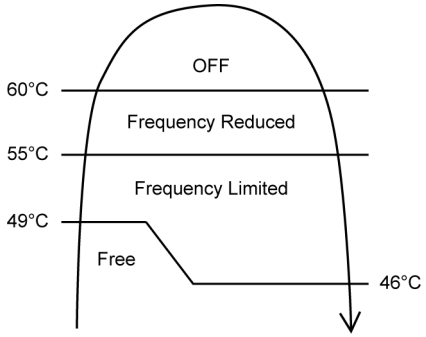
1. When the indoor intake air temperature is 30°C or above.

13.3.2. Outdoor Air Temperature Control

The maximum current value is regulated when the outdoor air temperature rises above 14°C in order to avoid compressor overloading.

13.3.3. Overload Protection Control

The compressor operating frequency is regulated in accordance to indoor heat exchanger temperature as shown in below figures. If the heat exchanger temperature exceeds 60°C, compressor will stop.



13.3.4. Cold Draught Operation

When indoor pipe temperature is low, cold draught operation start where indoor fan speed will be reduced.

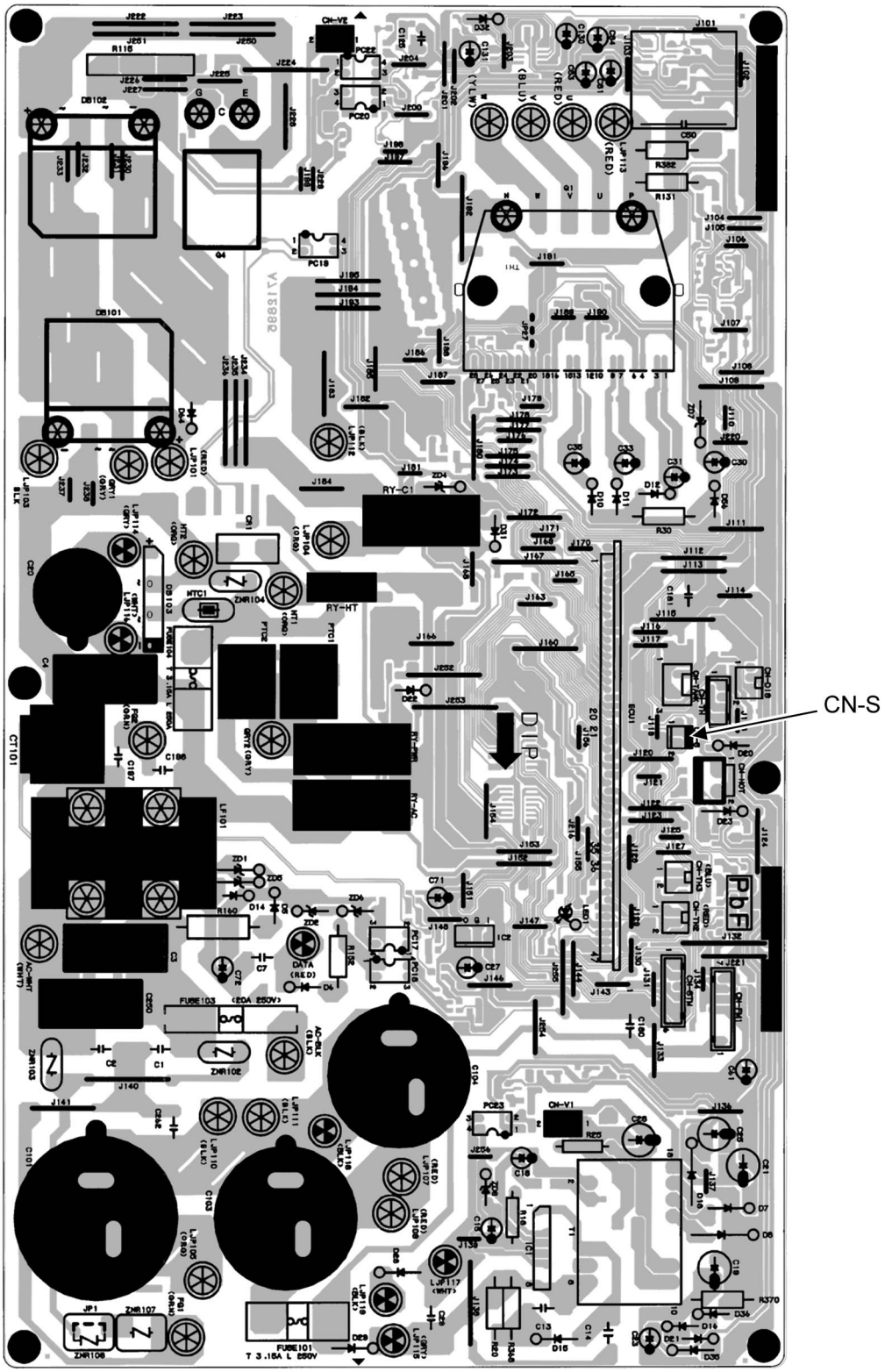
13.3.5. Deice Operation

When outdoor pipe temperature and outdoor temperature is low, deice operation start where indoor fan motor and outdoor fan motor stop and operation LED blinks.

14 Servicing Mode

14.1. TEST RUN OPERATION (FOR PUMP DOWN/SERVICING PURPOSE)

- The Test Run operation will be activated by short-circuiting CN-S at outdoor unit PCB after applying power between the terminal 1 and 2. The unit forced to run rated frequency cooling operation mode.



15 Troubleshooting Guide

15.1. Refrigeration Cycle System

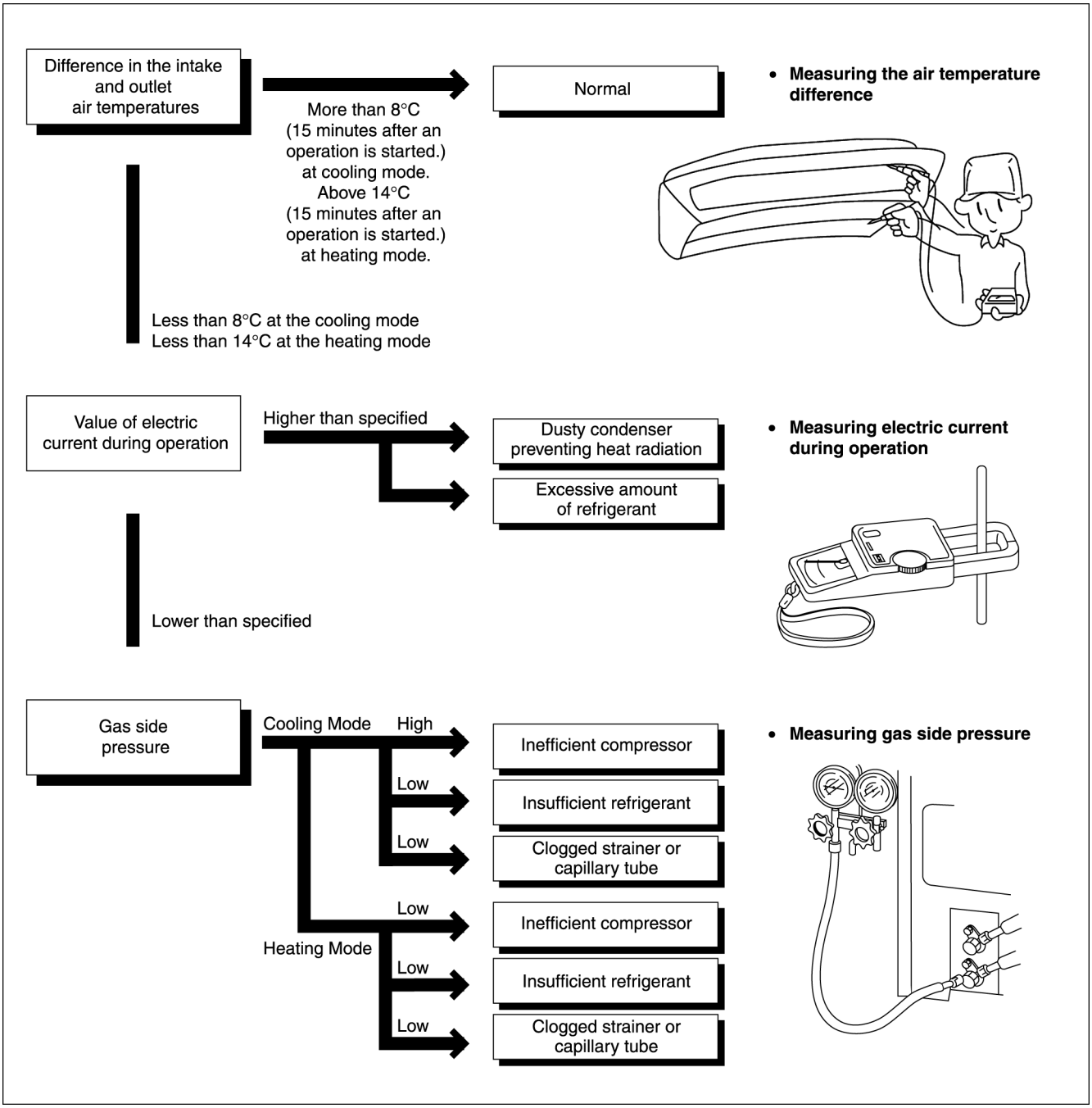
In order to diagnose malfunctions, make sure that there are no electrical problems before inspecting the refrigeration cycle. Such problems include insufficient insulation, problem with the power source, malfunction of a compressor and a fan.

The normal outlet air temperature and pressure of the refrigeration cycle depends on various conditions, the standard values for them are shown in the table on the right.

Normal Pressure and Outlet Air Temperature (Standard)

	Gas pressure MPa (kg/cm²G)	Outlet air temperature (°C)
Cooling Mode	0.9 ~ 1.2 (9 ~ 12)	12 ~ 16
Heating Mode	2.3 ~ 2.9 (23 ~ 29)	36 ~ 45

★ Condition:
- Indoor fan speed; High
- Outdoor temperature 35°C at cooling mode and 7°C at heating mode.
- Compressor operates at rated frequency



15.2. Relationship Between The Condition Of The Air Conditioner And Pressure And Electric Current

Condition of the air conditioner	Cooling Mode			Heating Mode		
	Low Pressure	High Pressure	Electric current during operation	Low Pressure	High Pressure	Electric current during operation
Insufficient refrigerant (gas leakage)						
Clogged capillary tube or Strainer						
Short circuit in the indoor unit						
Heat radiation deficiency of the outdoor unit						
Inefficient compression						

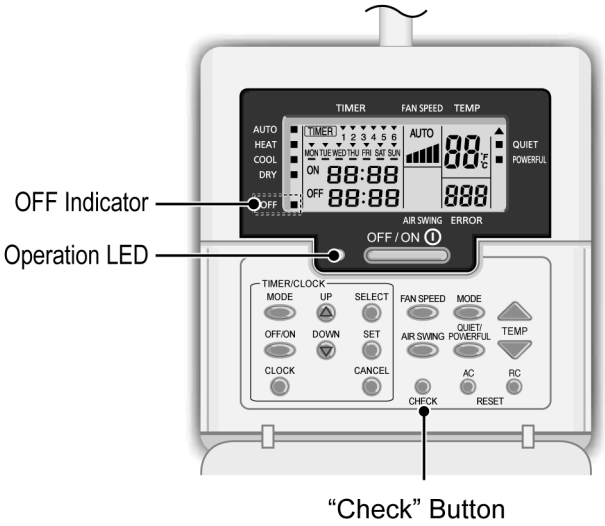
• Carry out the measurements of pressure, electric current, and temperature fifteen minutes after an operation is started.

15.3. Breakdown Self Diagnosis Function

15.3.1. Self Diagnosis Function (Three Digits Alphanumeric Code)

- Once abnormality has occurred during operation, the unit will stop its operation, and OFF/ON operation LED OFF.
- OFF indicator does not shown on remote control display.
- In operation after breakdown repair, the last error code abnormality will be stored in EEPROM.
- **To make a diagnosis**
  1. OFF/ON operation LED OFF and the unit automatically stops the operation, but the OFF indicator does not shown.
  2. Press CHECK button continuously for 5 seconds.
  3. "- -" will be displayed on the remote controller display.
  4. Press timer ▲ or ▼ button on the remote control. The error code "H00" (no abnormality) will be displayed.
  5. Every press of the button (▲ or ▼) will increase the error code number.
  6. When the displayed error code matches the unit's error code, OFF/ON operation LED will be ON continuously.
  7. The breakdown diagnosis mode will be cancelled by pressing CHECK button continuously for 5 seconds or wait for 30 seconds.

- **AC Reset button**
  When AC Reset button is pressed, the error code will be reset so that the unit will be able to operate and recheck if any error occurred.



- **To display memorized error status:**
  1. Turn ON the power supply.
  2. Press CHECK button continuously for 5 seconds.
  3. "- -" will be displayed on the remote controller display.
  4. Press timer ▲ or ▼ button on the remote control. The error code "H00" (no abnormality) will be displayed.
  5. Every press of the button (▲ or ▼) will increase the error code number.
  6. When the displayed error code matches the unit's error code, OFF/ON operation LED will be ON continuously.
  7. The breakdown diagnosis mode will be cancelled by pressing CHECK button continuously for 5 seconds or wait for 30 seconds.

15.4. Error Codes Table

Diagnosis display	Abnormality / Protection control	Abnormality Judgement	Emergency operation	Primary location to verify
H00	No abnormality detected	—	Normal operation	—
H11	Indoor / outdoor abnormal communication	> 1 min. after starting operation	Indoor fan operation only	• Internal / external cable connections • Indoor / Outdoor PCB
H12	Connection capability rank abnormal	—	—	—
H14	Indoor intake air temperature sensor abnormality	Continue for 5 sec.	—	• Intake air temperature sensor (defective or disconnected)
H15	Outdoor compressor temperature sensor abnormality	Continue for 5 sec.	—	• Compressor temperature sensor (defective or disconnected)
H16	Outdoor Current Transformer open circuit	—	—	• Outdoor PCB • IPM (Power transistor) module
H19	Indoor fan motor merchanism lock	—	—	• Indoor PCB • Fan motor
H21	Indoor float switch operation abnormal	—	—	—
H23	Indoor heat exchanger temperature sensor 1 abnormality	Continue for 5 sec.	O (Cooling only)	• Heat exchanger temperature sensor 1 (defective or disconnected)
H24	Indoor heat exchanger temperature sensor 2 abnormality	Continue for 5 sec.	—	• Heat exchanger temperature sensor 2 (defective or disconnected)
H27	Outdoor air temperature sensor abnormality	Continue for 5 sec.	O	• Outdoor temperature sensor (defective or disconnected)
H28	Outdoor heat exchanger temperature sensor abnormality	Continue for 5 sec.	O	• Outdoor heat exchanger temperature sensor (defective or disconnected)
H30	Discharge temperature sensor abnormality	Continue for 5 sec.	—	• Discharge temperature sensor
H35	Indoor drain water adverse current abnormal	—	—	—
H97	Outdoor Fan Motor lock abnormality	2 times occurrence within 30 minutes	—	• Outdoor PCB • Outdoor Fan Motor
H98	Indoor high pressure protection	—	—	• Air filter dirty • Air circulation short circuit
H99	Indoor heat exchanger anti-freezing protection	—	—	• Insufficient refrigerant • Air filter dirty
F11	Cooling / Heating cycle changeover abnormality	4 times occurrence within 30 minutes	—	• 4-way valve • V-coil
F90	PFC control	4 times occurrence within 10 minutes	—	• Voltage at PFC
F91	Refrigeration cycle abnormality	2 times occurrence within 20 minutes	—	• No refrigerant (3-way valve is closed)
F93	Outdoor compressor abnormal revolution	4 times occurrence within 20 minutes	—	• Outdoor compressor
F95	Cool high pressure protection	4 times occurrence within 20 minutes	—	• Outdoor refrigerant circuit
F96	IPM (power transistor) overheating protection	—	—	• Excess refrigerant • Improper heat radiation • IPM (Power transistor)
F97	Outdoor compressor overheating protection	4 times occurrence within 20 minutes	—	• Insufficient refrigerant • Compressor
F98	Total running current protection	3 times occurrence within 20 minutes	—	• Excess refrigerant • Improper heat radiation
F99	Outdoor Direct Current (DC) peak detection	7 times occurrence continuously	—	• Outdoor PCB • IPM (Power transistor) • Compressor

Note:
“O” - Frequency measured and fan speed fixed.

The memory data of error code is erased when the power supply is cut off, or press the Auto Switch until “beep” sound heard following by pressing the “CHECK” button at Remote Control.
Although operation forced to stop when abnormality detected, emergency operation is possible for certain errors (refer to Error Codes Table) by using Remote Control or Auto Switch at indoor unit. However, the Remote Control signal receiving sound is changed from one “beep” to four “beep” sounds.

15.5. Self-diagnosis Method

15.5.1. H11 (Indoor/Outdoor Abnormal Communication)

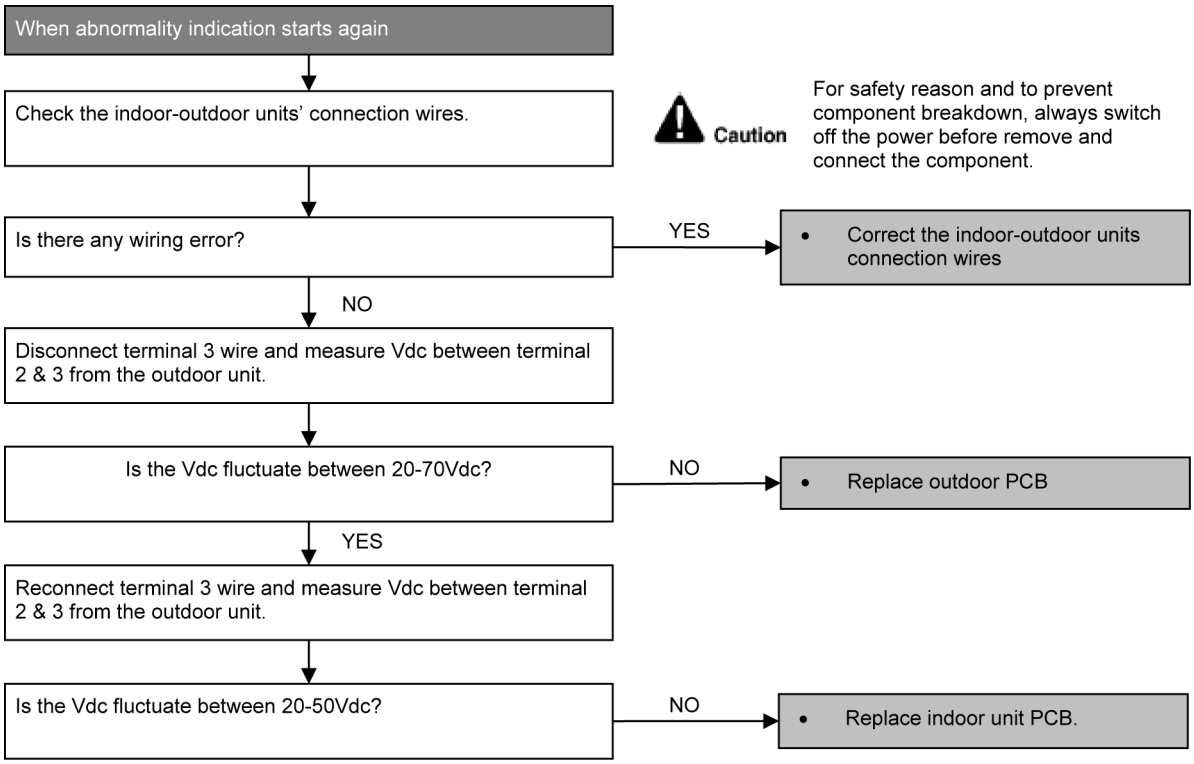
Malfunction Decision Conditions

- During startup and operation of cooling and heating, the data received from outdoor unit in indoor unit signal transmission is checked whether it is normal.

Malfunction Caused

- Faulty indoor unit PCB.
- Faulty outdoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wrong wiring.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units.
- Indoor unit-outdoor unit signal transmission error due to disturbed power supply waveform.

Troubleshooting



15.5.2. H12 (Indoor/Outdoor Capacity Rank Mismatched)

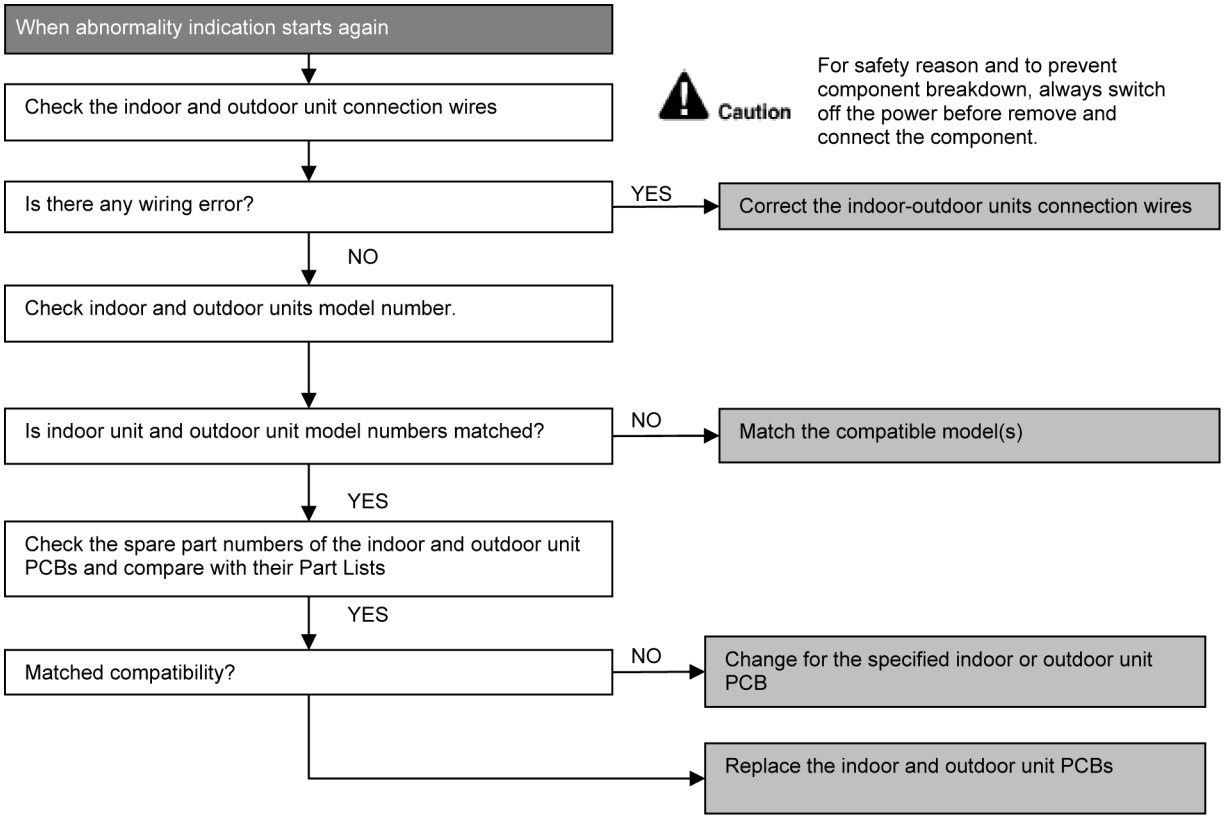
Malfunction Decision Conditions

- During startup, error code appears when different types of indoor and outdoor units are interconnected.

Malfunction Caused

- Wrong models interconnected.
- Wrong indoor unit or outdoor unit PCBs mounted.
- Indoor unit or outdoor unit PCBs defective.
- Indoor-outdoor unit signal transmission error due to wrong wiring.
- Indoor-outdoor unit signal transmission error due to breaking of wire 3 in the connection wires between the indoor and outdoor units.

Troubleshooting



15.5.3. H14 (Indoor Intake Air Temperature Sensor Abnormality)

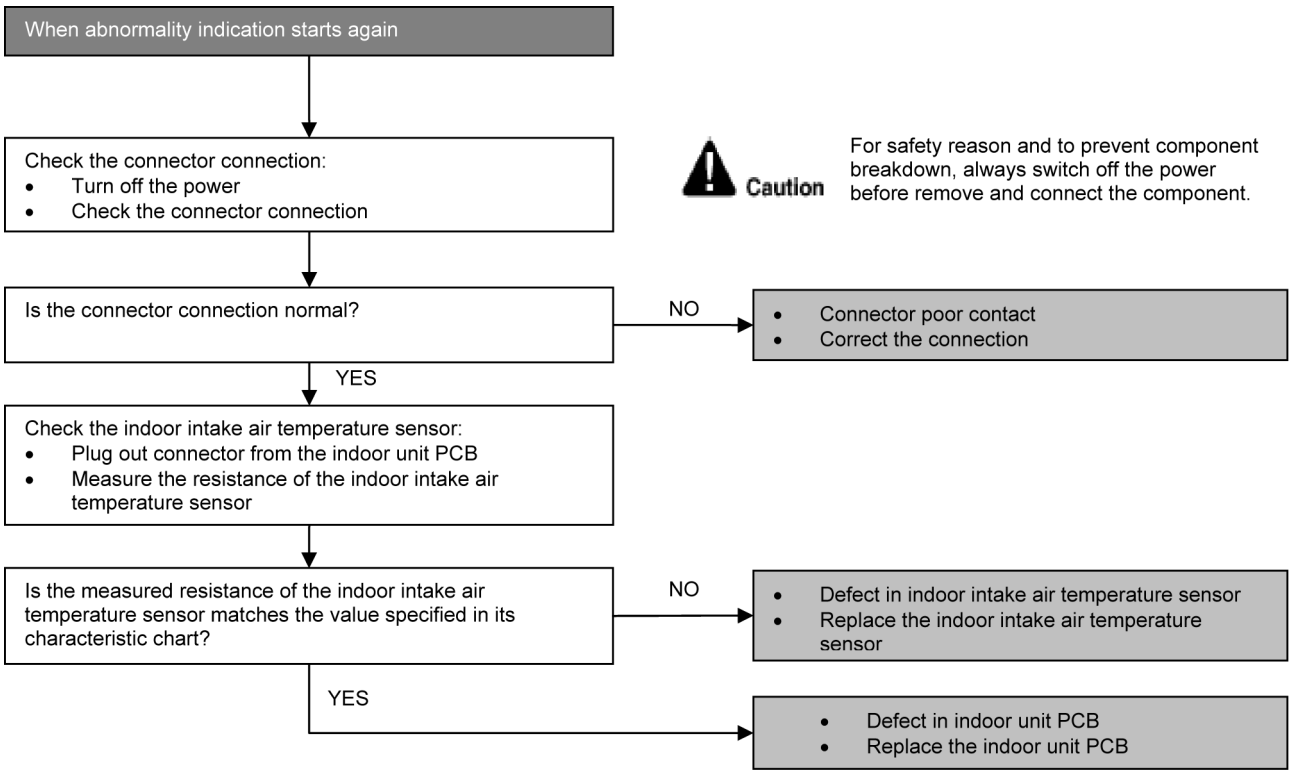
Malfunction Decision Conditions

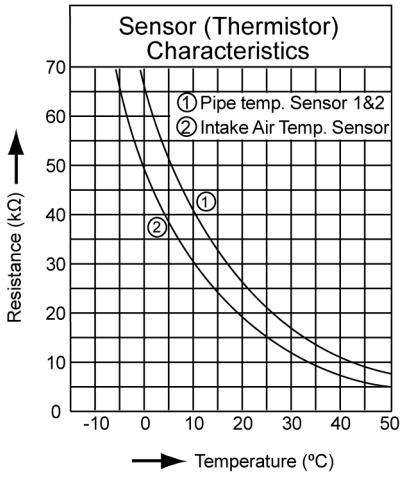
- During startup and operation of cooling and heating, the temperatures detected by the indoor intake air temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting





15.5.4. H15 (Compressor Temperature Sensor Abnormality)

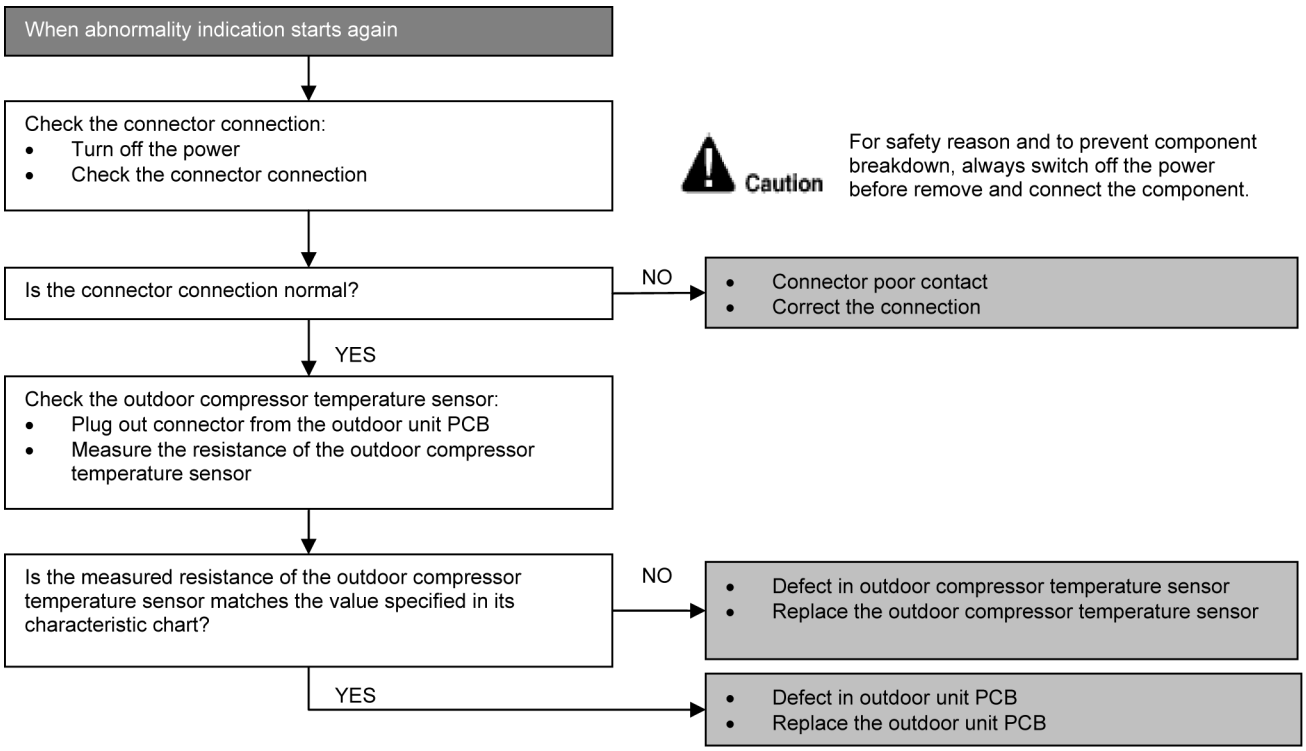
Malfunction Decision Conditions

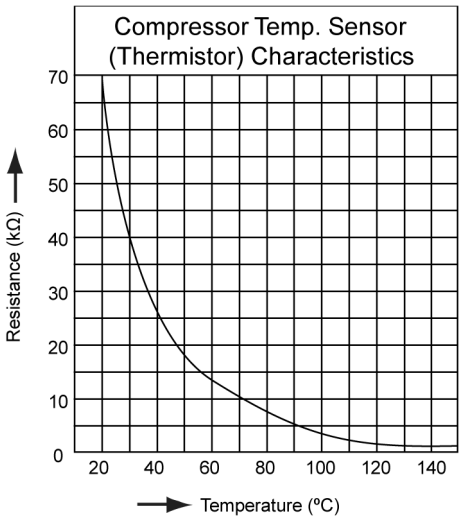
- During startup and operation of cooling and heating, the temperatures detected by the outdoor compressor temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting





15.5.5. H16 (Outdoor Current Transformer Open Circuit)

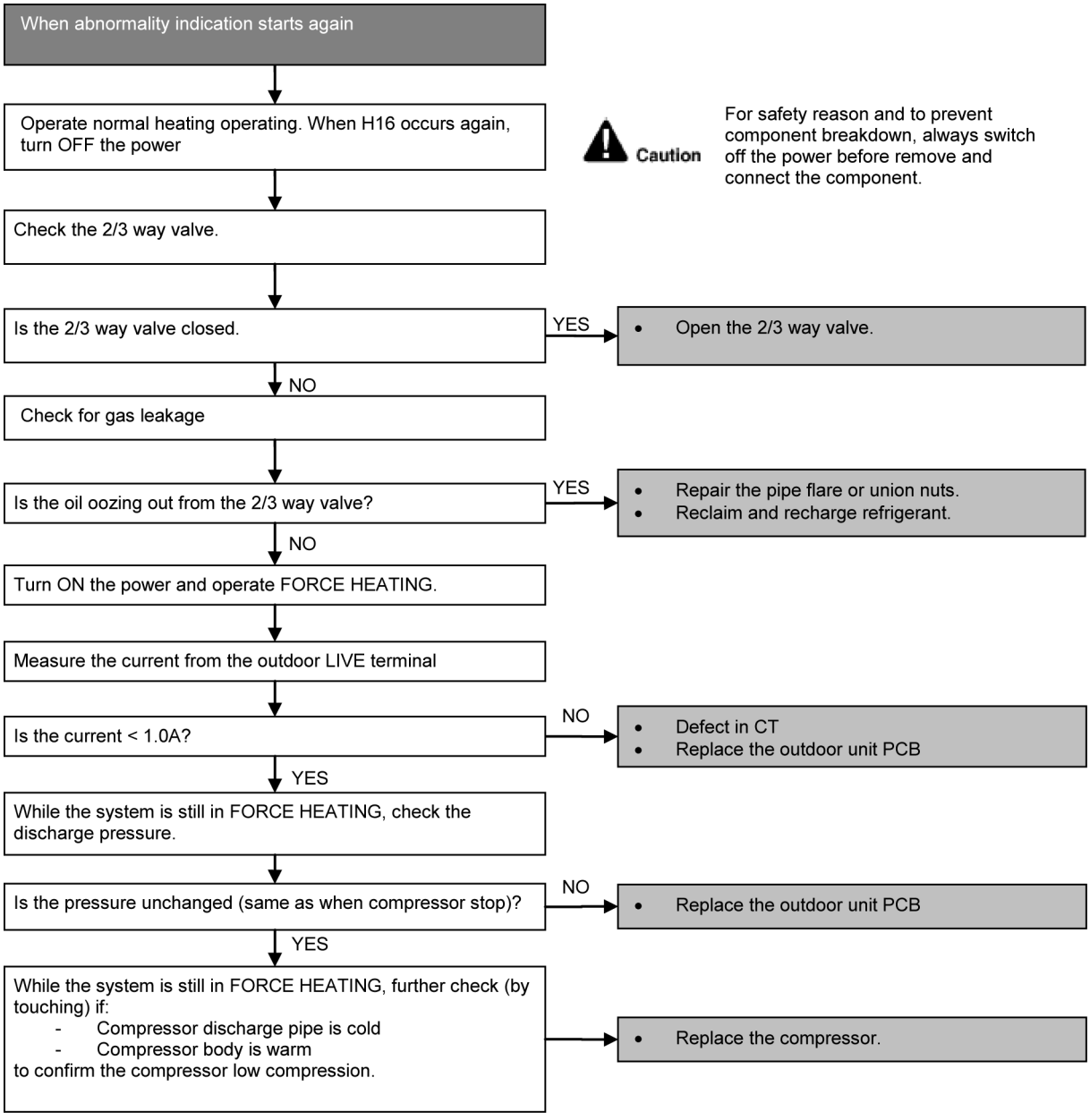
Malfunction Decision Conditions

- A current transformer (CT) is detected by checking the compressor running frequency (≥ rated frequency) and CT detected input current (less than 0.65A) for continuously 20 seconds.

Malfunction Caused

- CT defective.
- Outdoor PCB defective.
- Compressor defective (low compression).

Troubleshooting



15.5.6. H19 (Indoor Fan Motor – DC Motor Mechanism Locked)

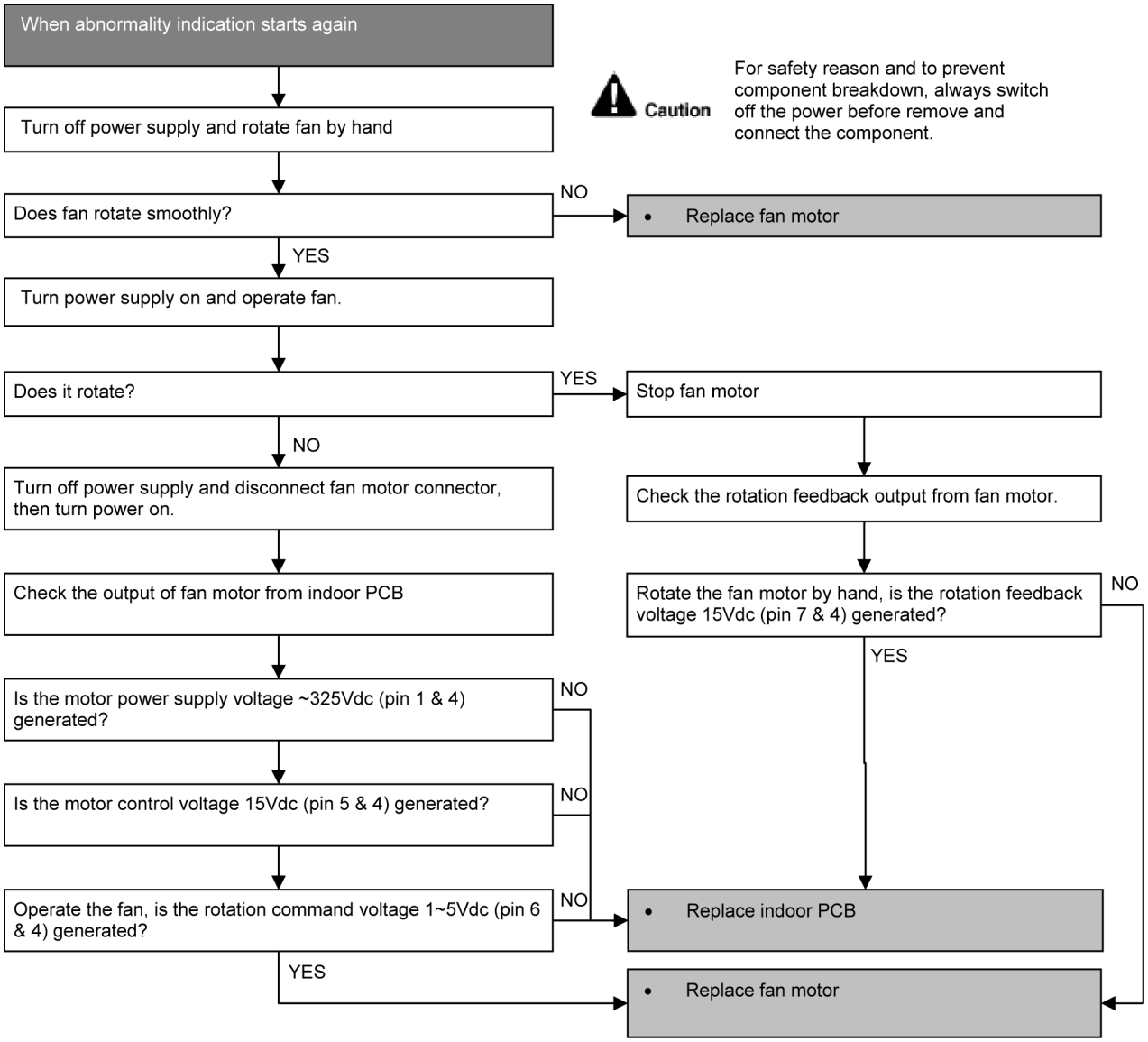
Malfunction Decision Conditions

- The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor (feedback of rotation > 2550rpm or < 50rpm).

Malfunction Caused

- Operation stops due to short circuit inside the fan motor winding.
- Operation stops due to breaking of wire inside the fan motor.
- Operation stops due to breaking of fan motor lead wires.
- Operation stops due to Hall IC malfunction.
- Operation error due to faulty indoor unit PCB.

Troubleshooting



15.5.7. H23 (Indoor Pipe Temperature Sensor Abnormality)

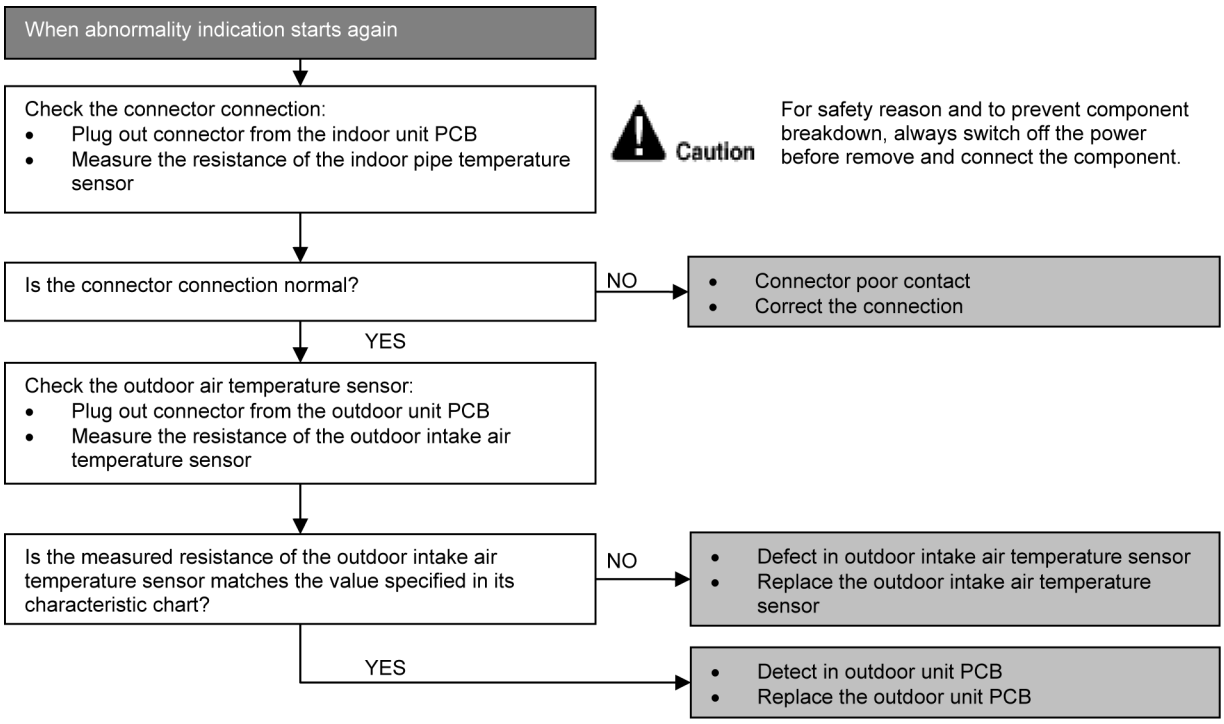
Malfunction Decision Conditions

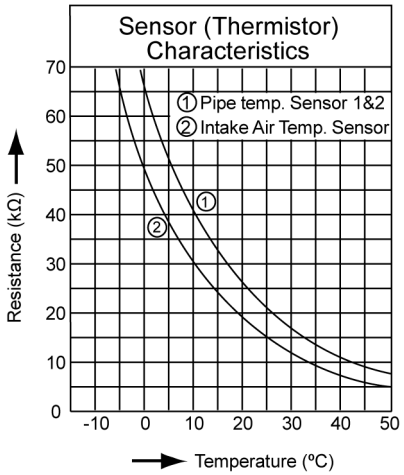
- During startup and operation of cooling and heating, the temperatures detected by the indoor heat exchanger temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting





15.5.8. H24 (Indoor Pipe Temperature Sensor 2 Abnormality)

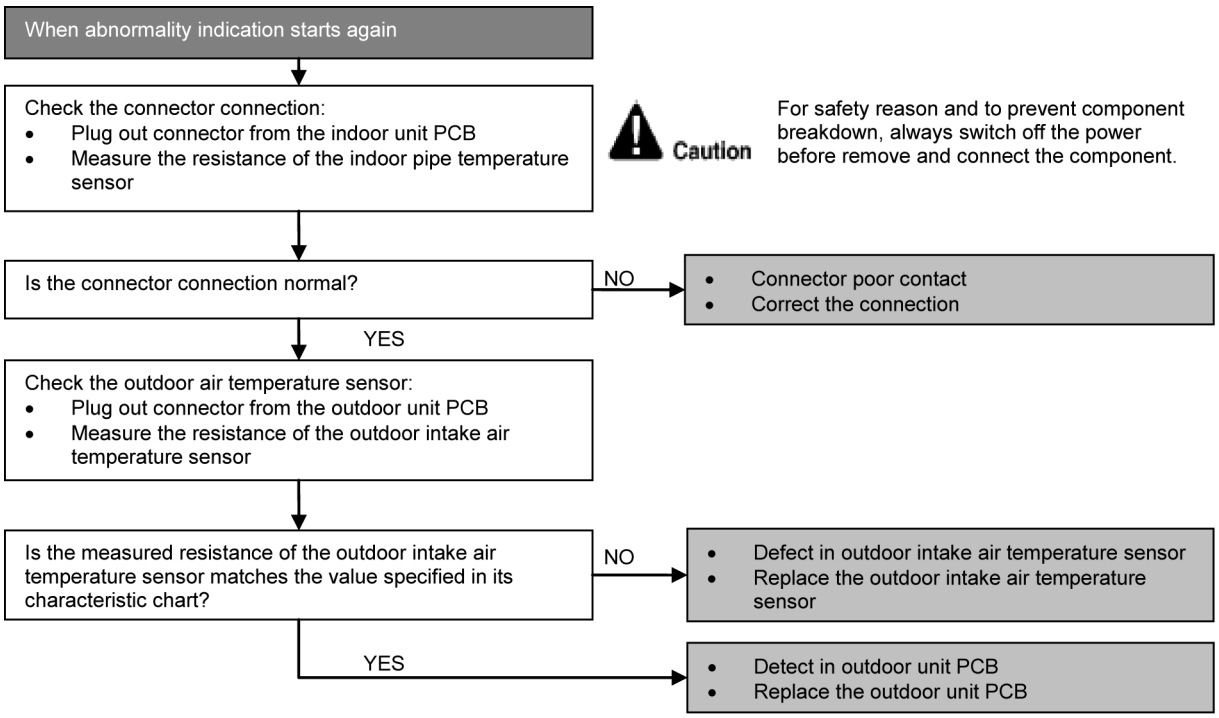
Malfunction Decision Conditions

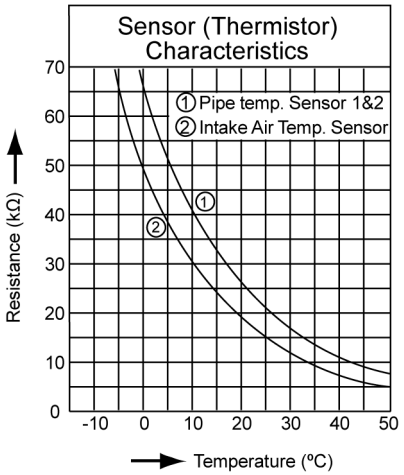
- During startup and operation of cooling and heating, the temperatures detected by the indoor heat exchanger temperature sensor 2 are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting





15.5.9. H27 (Outdoor Air Temperature Sensor Abnormality)

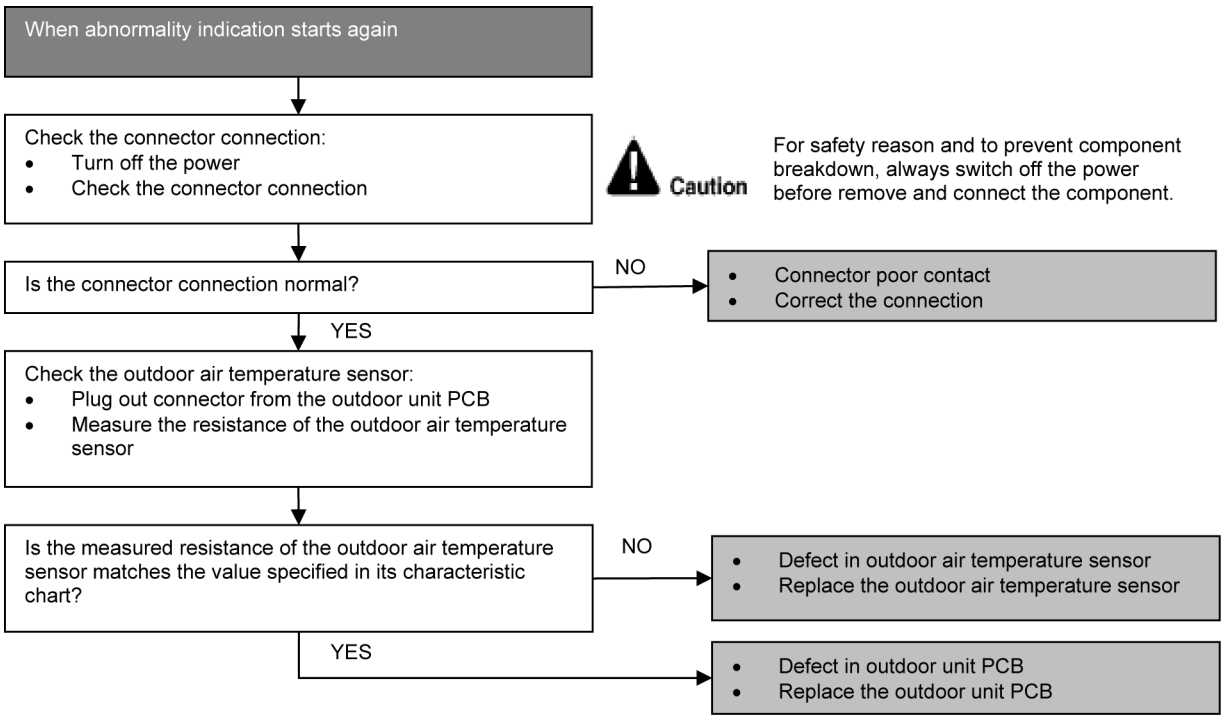
Malfunction Decision Conditions

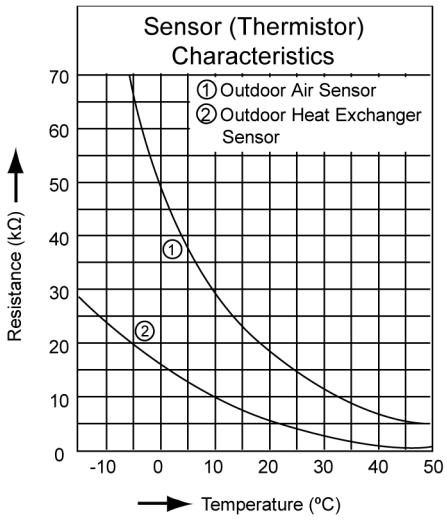
- During startup and operation of cooling and heating, the temperatures detected by the outdoor air temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting





15.5.10. H28 (Outdoor Pipe Temperature Sensor Abnormality)

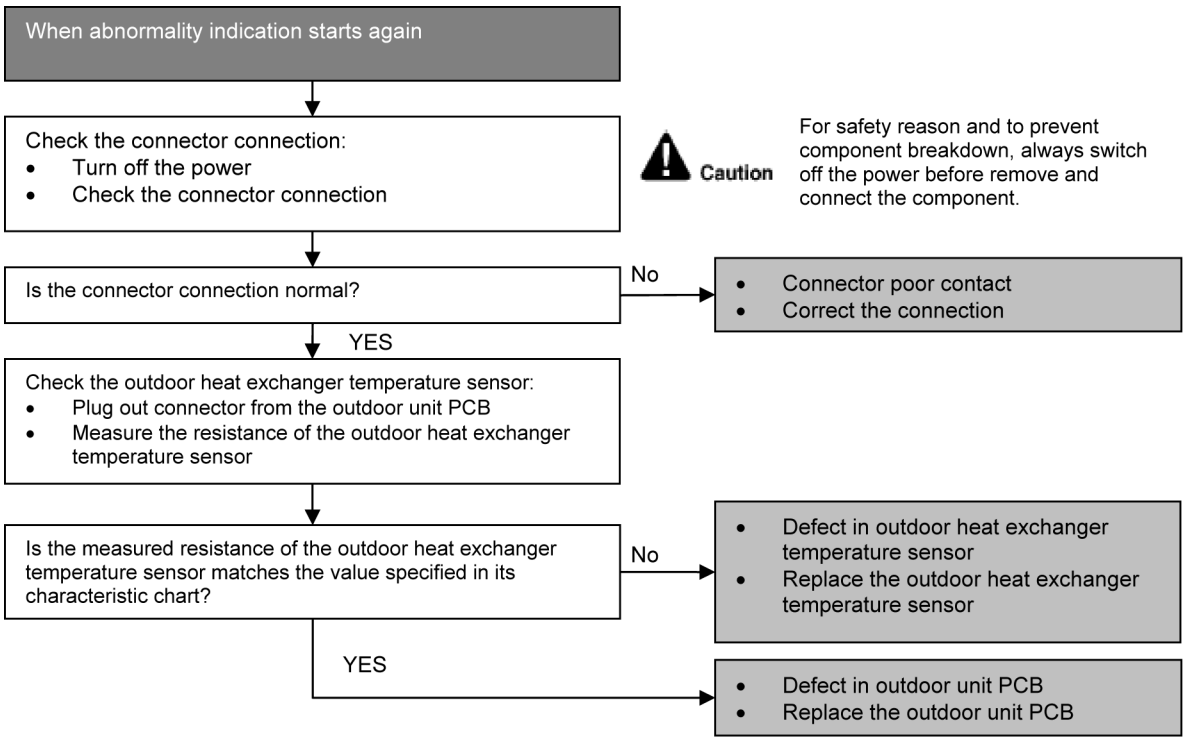
Malfunction Decision Conditions

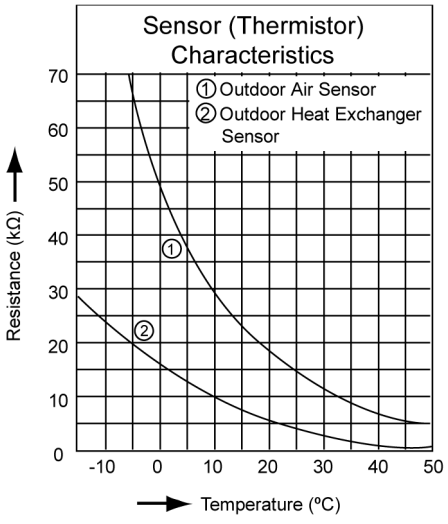
- During startup and operation of cooling and heating, the temperatures detected by the outdoor pipe temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting





15.5.11. H30 (Compressor Discharge Temperature Sensor Abnormality)

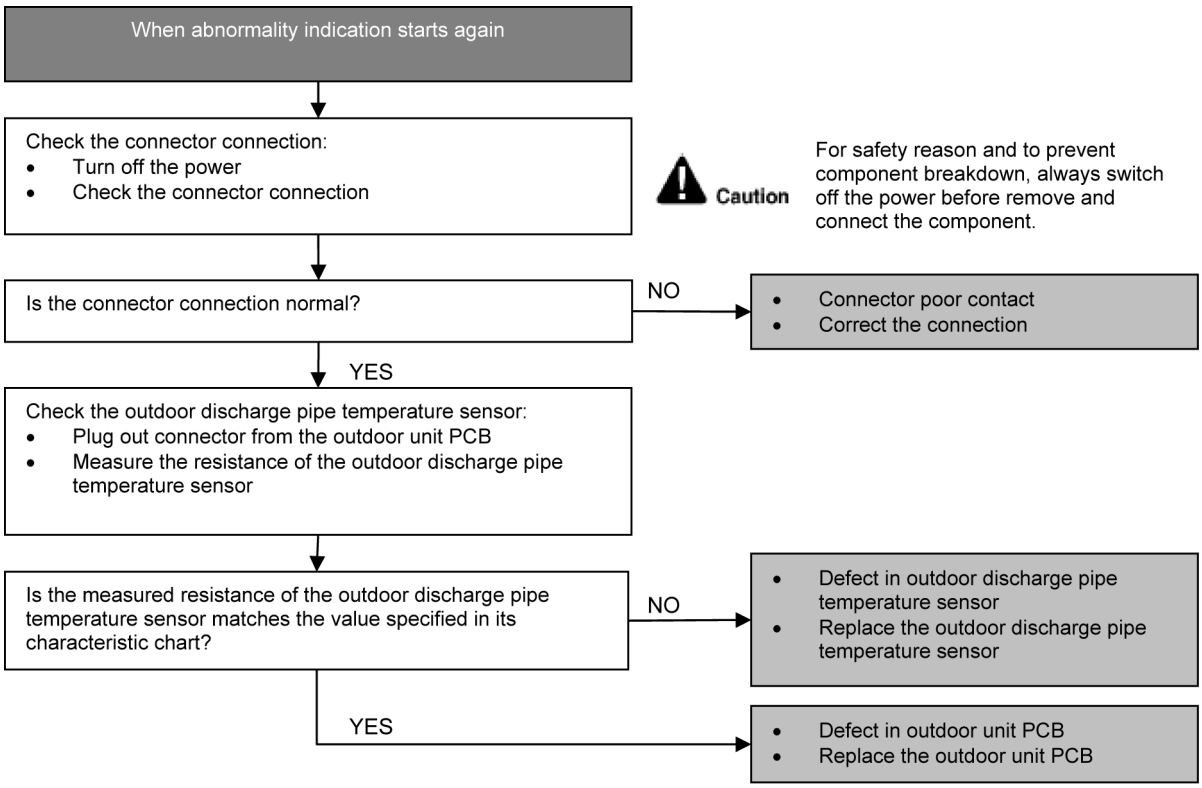
Malfunction Decision Conditions

- During startup and operation of cooling and heating, the temperatures detected by the outdoor discharge pipe temperature sensor are used to determine sensor errors.

Malfunction Caused

- Faulty connector connection.
- Faulty sensor.
- Faulty PCB.

Troubleshooting



15.5.12. H97 (Outdoor Fan Motor – DC Motor Mechanism Locked)

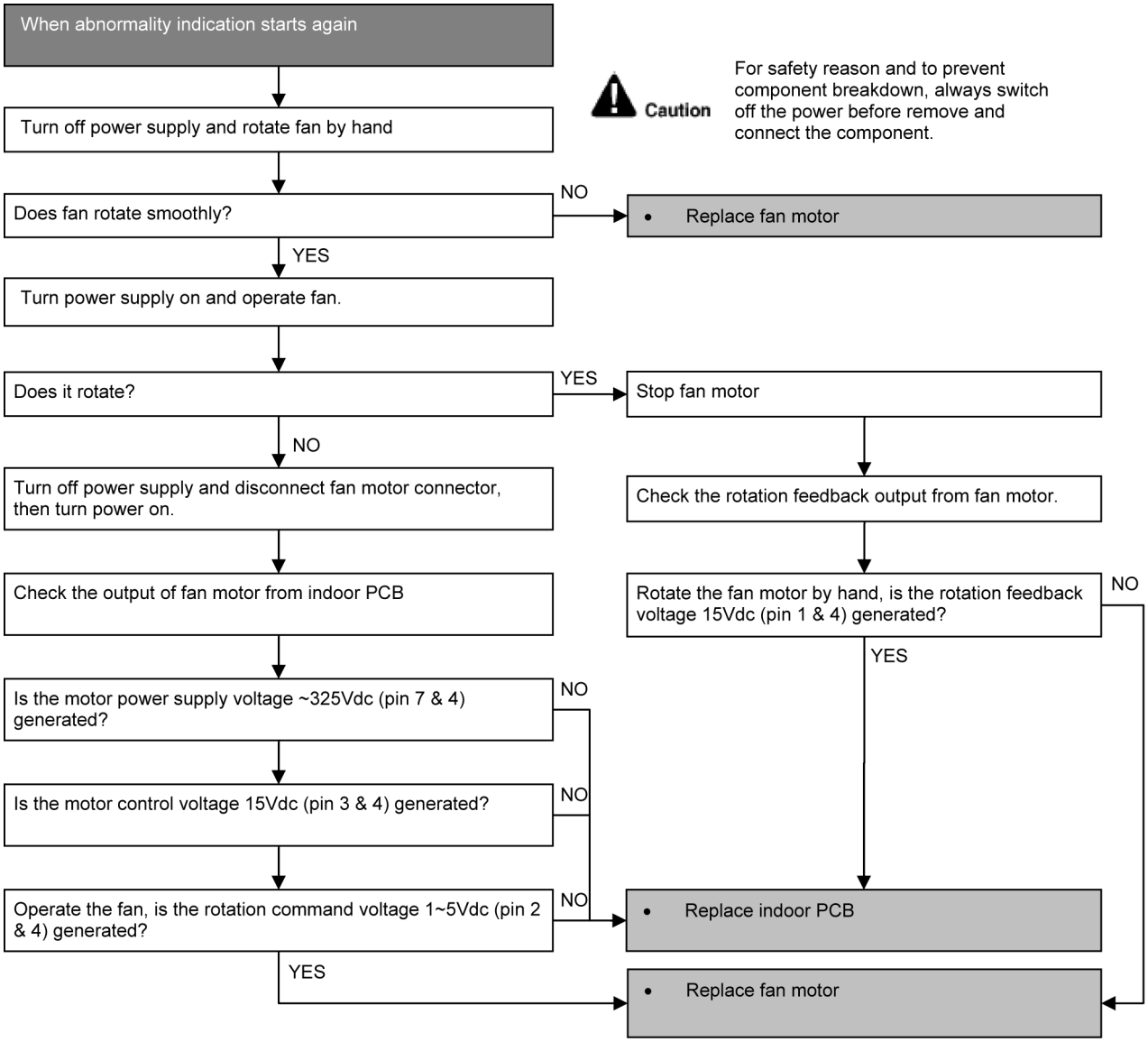
Malfunction Decision Conditions

- The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor.

Malfunction Caused

- Operation stops due to short circuit inside the fan motor winding.
- Operation stops due to breaking of wire inside the fan motor.
- Operation stops due to breaking of fan motor lead wires.
- Operation stops due to Hall IC malfunction.
- Operation error due to faulty outdoor unit PCB.

Troubleshooting



15.5.13. H98 (Indoor High Pressure Protection)

Error Code will not display (no Timer LED blinking) but store in EEPROM

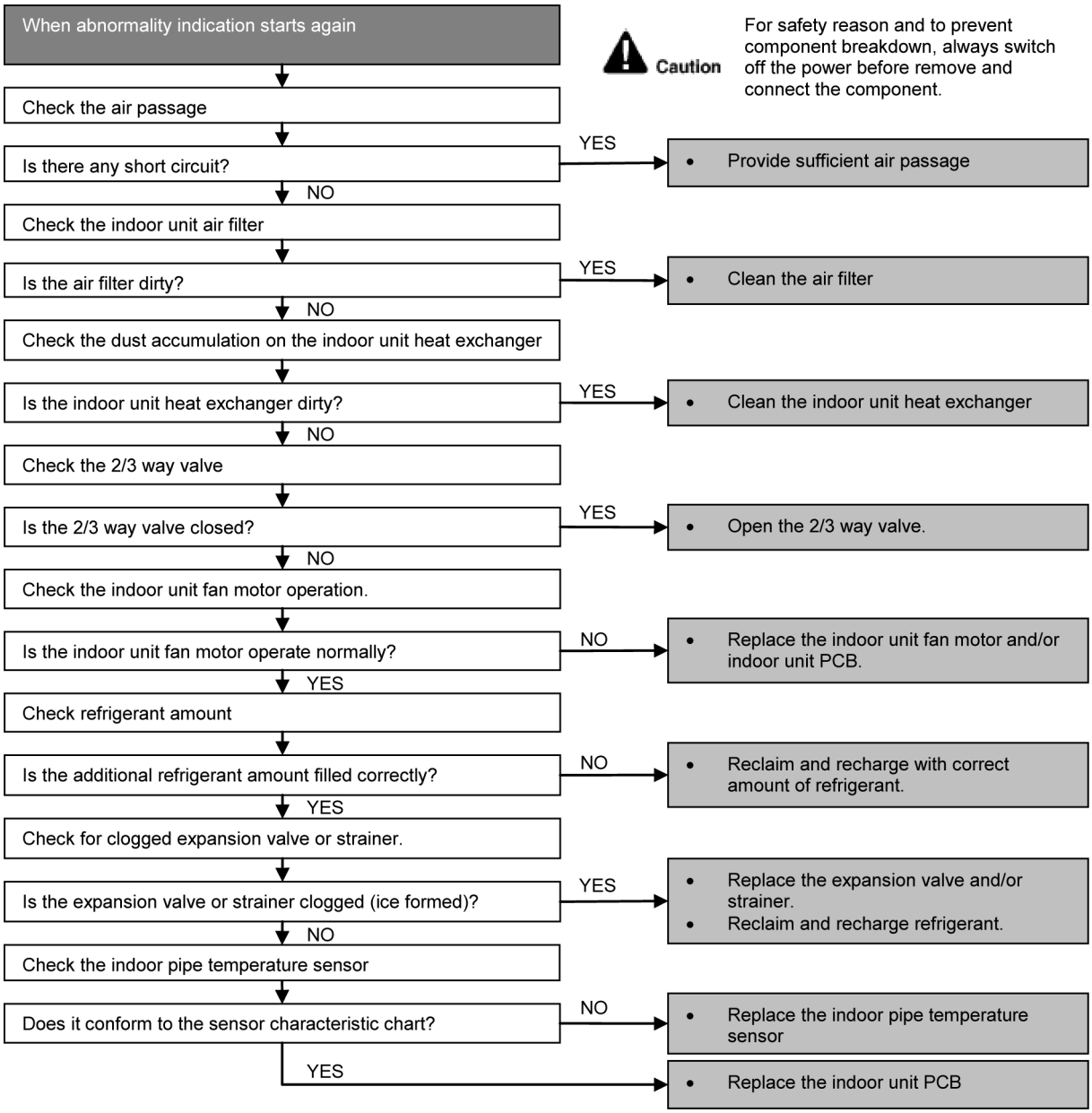
Malfunction Decision Conditions

- During heating operation, the temperature detected by the indoor pipe temperature sensor is above 60°C.

Malfunction Caused

- Air short circuit.
- Clogged air filter of the indoor unit.
- Dust accumulation on the indoor unit heat exchanger.
- 2/3 way valve closed.
- Detection error due to faulty indoor fan motor.
- Excessive refrigerant.
- Clogged expansion valve or strainer.
- Detection error due to faulty indoor pipe temperature sensor.
- Detection error due to faulty indoor unit PCB.

Troubleshooting



15.5.14. H99 (Indoor Freeze Prevention Protection: Cooling or Soft Dry)

Error code will not display (no TIMER LED blinking) but store in EEPROM

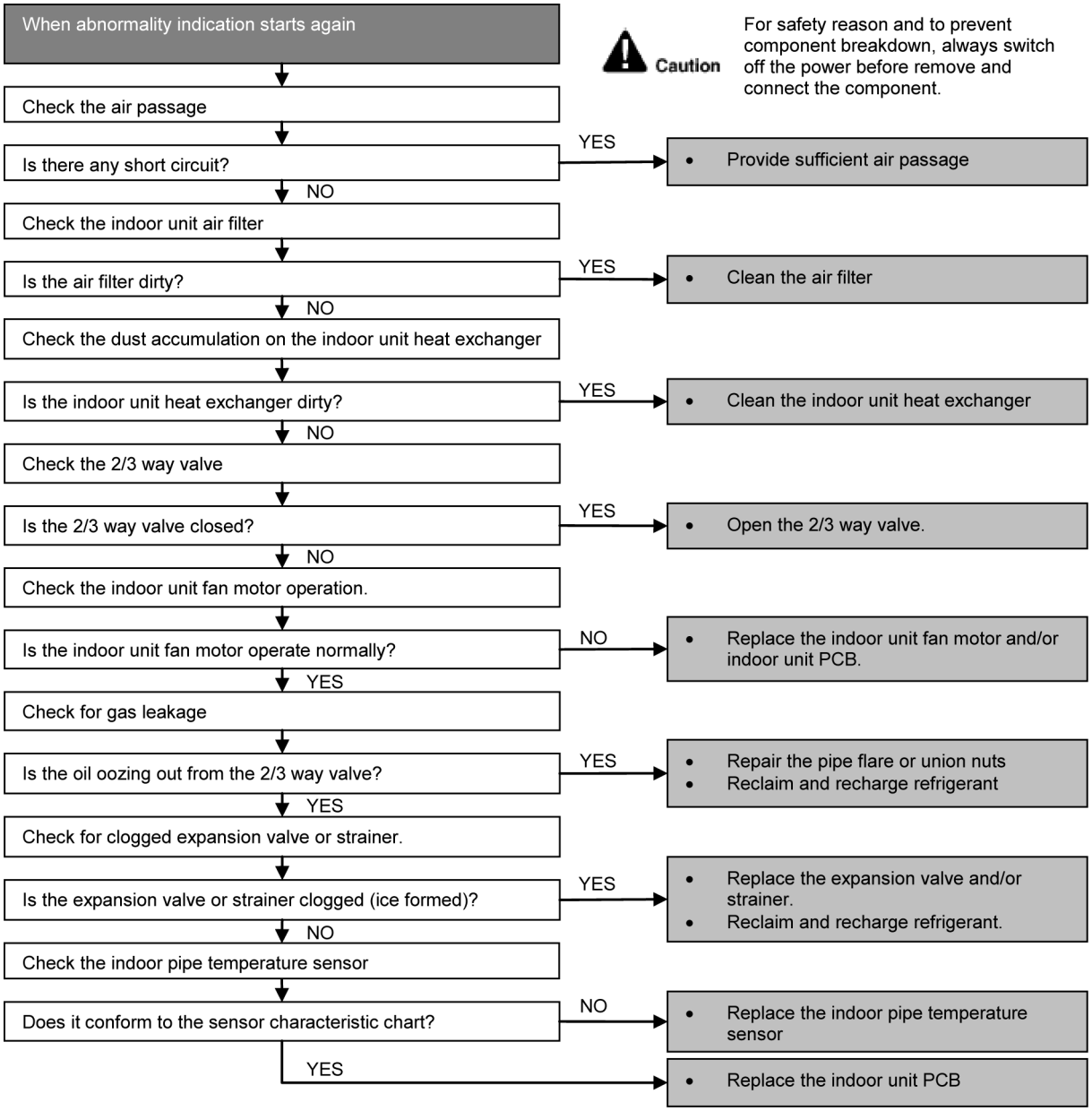
Malfunction Decision Conditions

- Freeze prevention control takes place (when indoor pipe temperature is lower than 2°C).

Malfunction Caused

- Air short circuit.
- Clogged air filter of the indoor unit.
- Dust accumulation on the indoor unit heat exchanger.
- 2/3 way valve closed.
- Faulty indoor fan motor.
- Refrigerant shortage (refrigerant leakage).
- Detection error due to faulty indoor pipe temperature sensor.
- Detection error due to faulty indoor unit PCB.

Troubleshooting



15.5.15. F11 (4-way valve Abnormality)

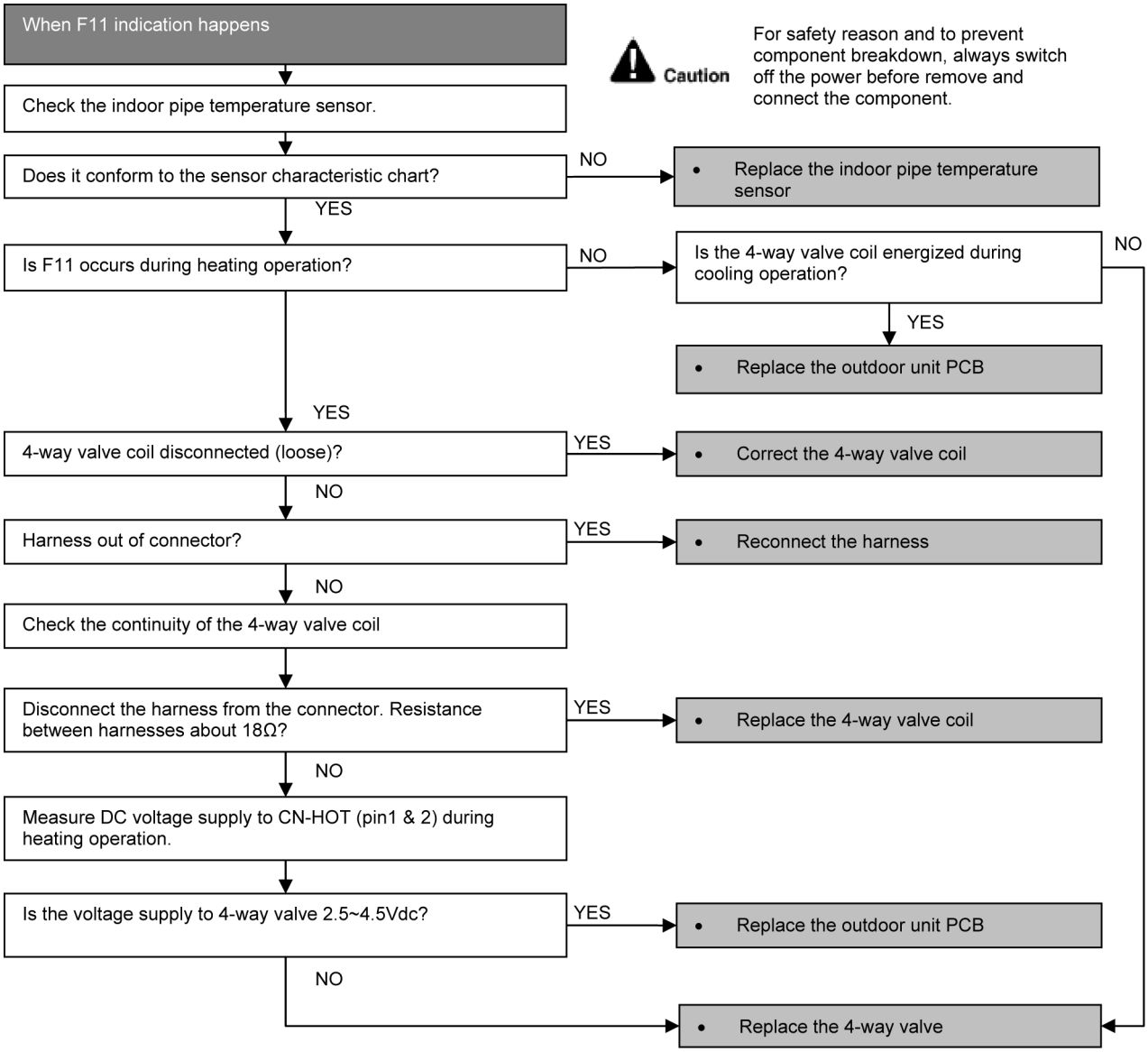
Malfunction Decision Conditions

- When heating operation, when indoor pipe temperature is below 10°C.
- When cooling operation, when indoor pipe temperature is above 45°C.

Malfunction Caused

- Connector in poor contact.
- Faulty sensor.
- Faulty outdoor unit PCB.
- 4-way valve defective.

Troubleshooting



15.5.16. F90 (Power Factor Correction Protection)

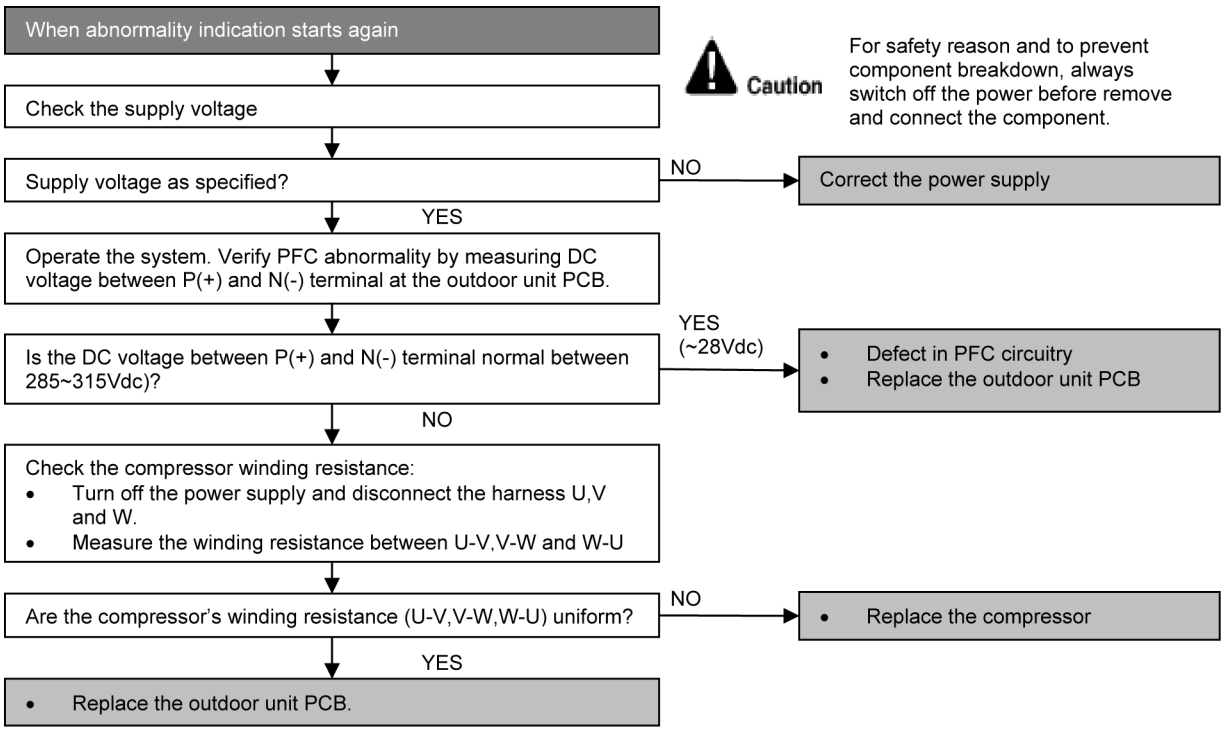
Malfunction Decision Conditions

- During startup and operation of cooling and heating, when Power Factor Correction (PFC) protection circuitry at the outdoor unit main PCB senses abnormal high DC voltage level.

Malfunction Caused

- DC voltage peak due to power supply surge.
- DC voltage peak due to compressor windings not uniform.
- Faulty outdoor PCB.

Troubleshooting



15.5.17. F91 (Refrigeration Cycle Abnormality)

Malfunction Decision Conditions

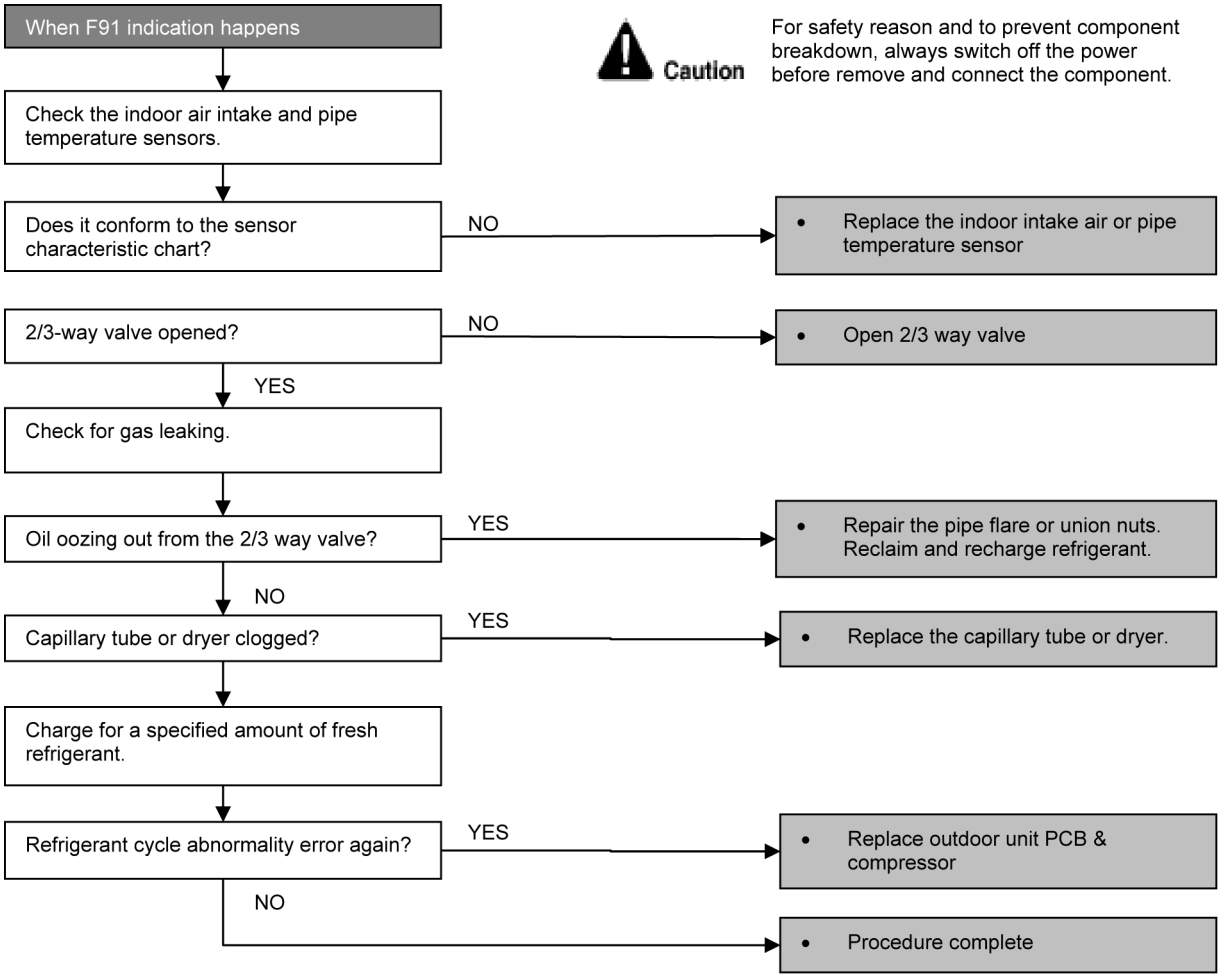
- During cooling, compressor frequency = Fcmax.
- During heating, compressor frequency > Fhrated.
- During cooling and heating operation, running current: 0.65A < I < 1.65A.
- During cooling, indoor intake - indoor pipe < 4°C.
- During heating, indoor pipe - indoor intake < 5°C.

  Multi Models Only
  - Gas shortage detection 1: A gas shortage is detected by checking the CT-detected input current value and the compressor running frequency. During startup and operating of cooling and heating, input current < 8.78/256 (A/Hz) × compressor running frequency + 0.25.
  - Gas shortage detection 2: A gas shortage is detected by checking the difference between indoor pipe temperature and indoor intake air temperature during cooling and heating.

Malfunction Caused

- Refrigerant shortage (refrigerant leakage).
- Poor compression performance of compressor.
- 2/3 way valve closed.
- Detection error due to faulty indoor intake air or indoor pipe temperature sensors.

Troubleshooting



15.5.18. F93 (Compressor Rotation Failure)

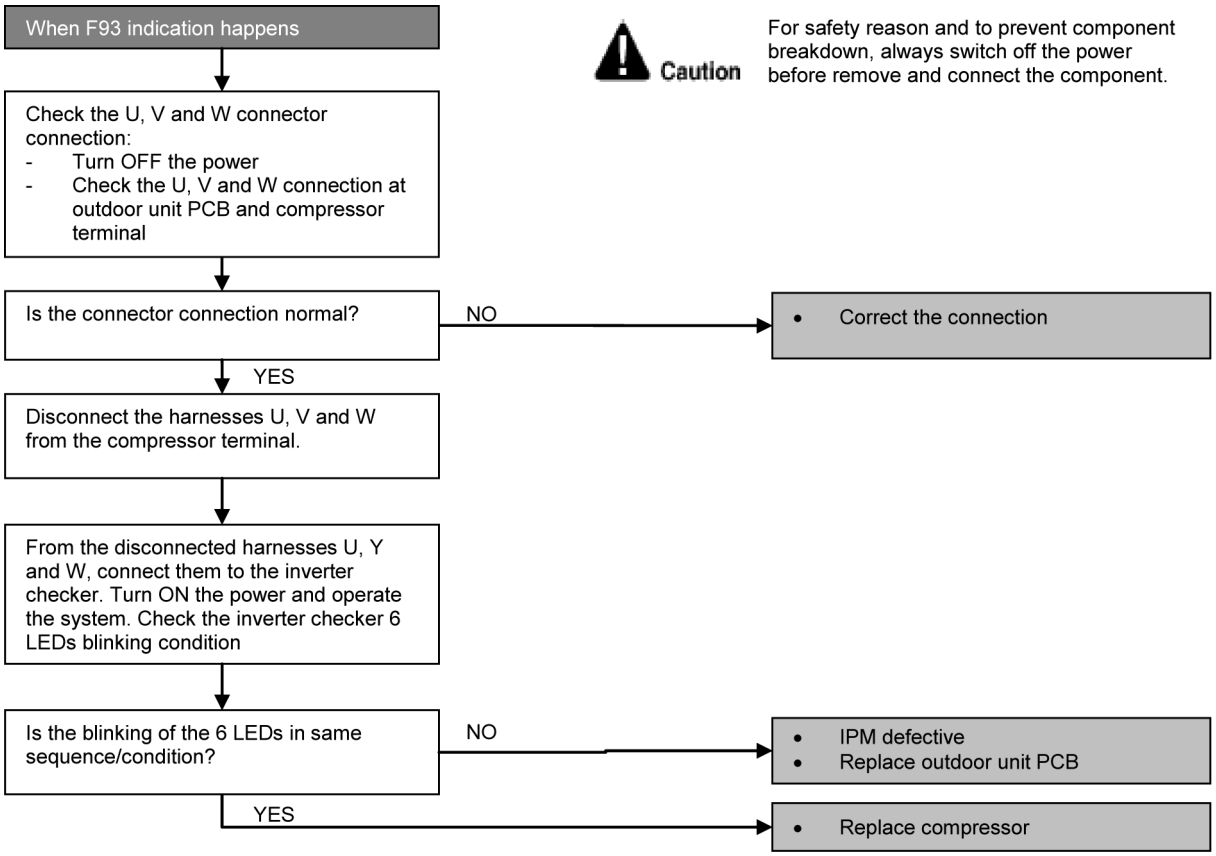
Malfunction Decision Conditions

A compressor rotation failure is detected by checking the compressor running condition through the position detection circuit.

Malfunction Caused

- Compressor terminal disconnect.
- Outdoor PCB malfunction.
- Compressor malfunction.

Troubleshooting



15.5.19. F95 (Cooling High Pressure Abnormality)

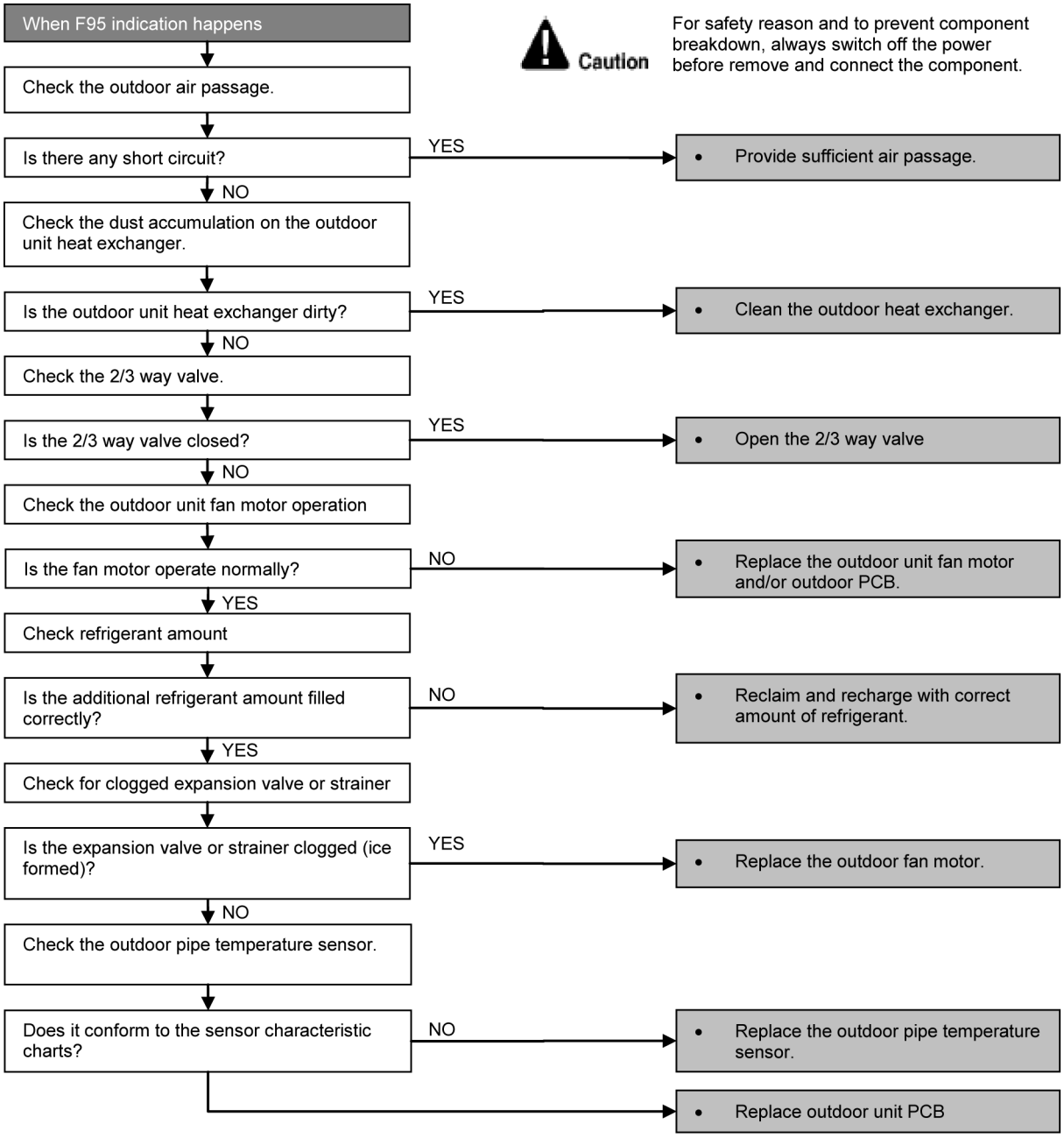
Malfunction Decision Conditions

During operation of cooling, when outdoor unit heat exchanger high temperature data (61°C) is detected by the outdoor pipe temperature sensor.

Malfunction Caused

- Air short circuit at outdoor unit.
- Dust accumulation on the outdoor unit heat exchanger.
- 2/3 way valve closed.
- Faulty outdoor unit fan motor.
- Excessive refrigerant.
- Clogged expansion valve or strainer.
- Faulty outdoor pipe temperature sensor.
- Faulty outdoor unit PCB.

Troubleshooting



15.5.20. F96 (IPM Overheating)

Malfunction Decision Conditions

During operating of cooling and heating, when IPM temperature data (100°C) is detected by the IPM temperature sensor.

Multi Models Only

- Compressor Overheating: During operation of cooling and heating, when the compressor OL is activated.
- Heat Sink Overheating: During operation of cooling and heating, when heat sink temperature data (90°C) is detected by the heat sink temperature sensor.

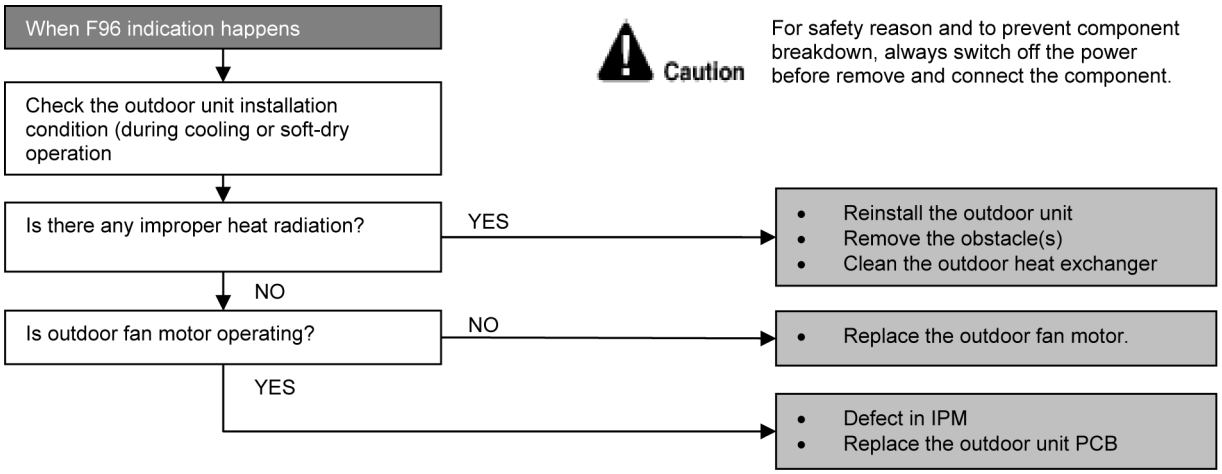
Malfunction Caused

- IPM overheats due to short circuit of hot discharge air flow.
- IPM overheats due to defective of outdoor fan motor.
- IPM overheats due to defective of internal circuitry of IPM.
- IPM overheats due to defective IPM temperature sensor.

Multi Models Only

- Compressor OL connector poor contact.
- Compressor OL faulty.

Troubleshooting



15.5.21. F97 (Compressor Overheating)

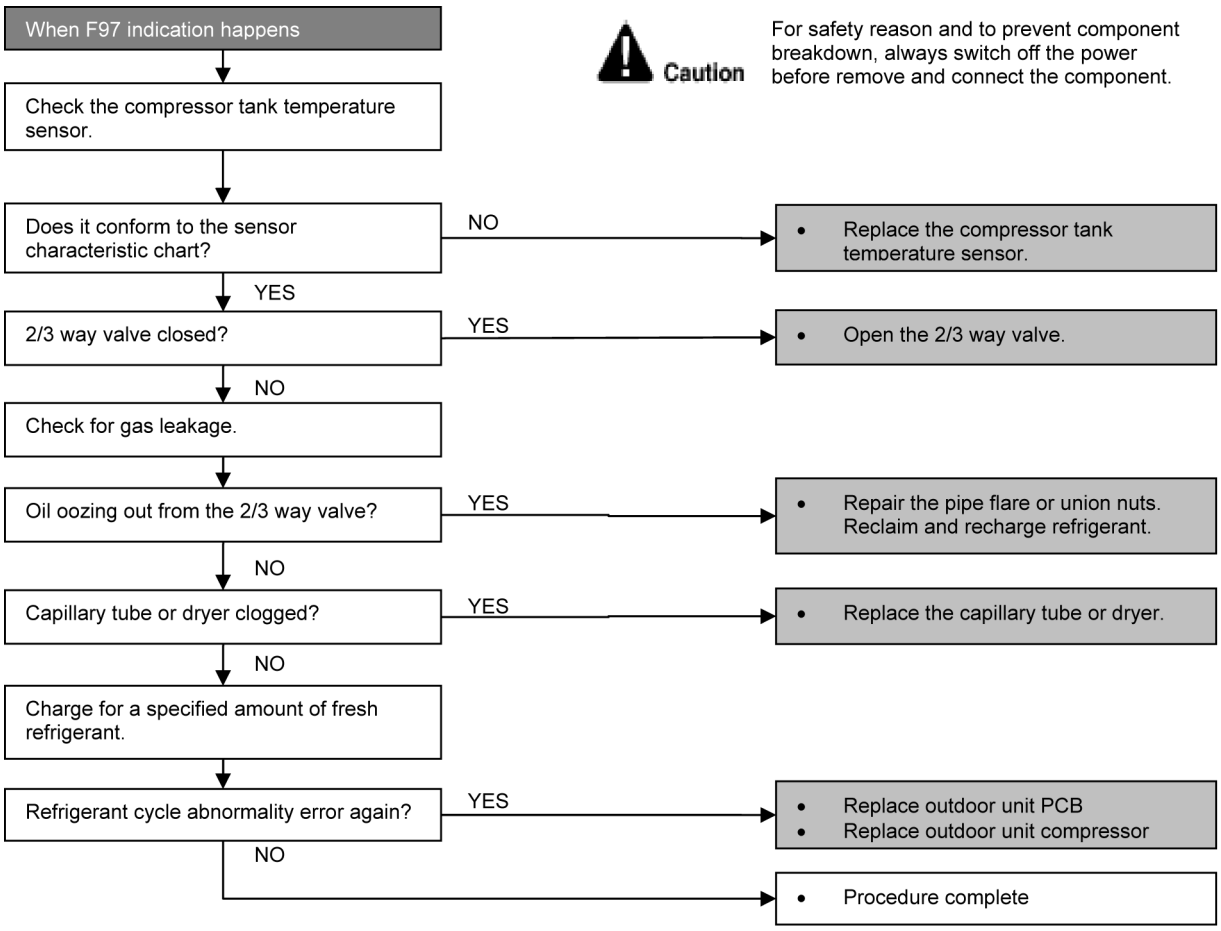
Malfunction Decision Conditions

During operation of cooling and heating, when compressor tank temperature data (112°C) is detected by the compressor tank temperature sensor.

Malfunction Caused

- Refrigerant shortage (refrigerant leakage).
- 2/3 way valve closed.
- Detection error due to faulty compressor tank temperature sensor.

Troubleshooting



15.5.22. F98 (Input Over Current Detection)

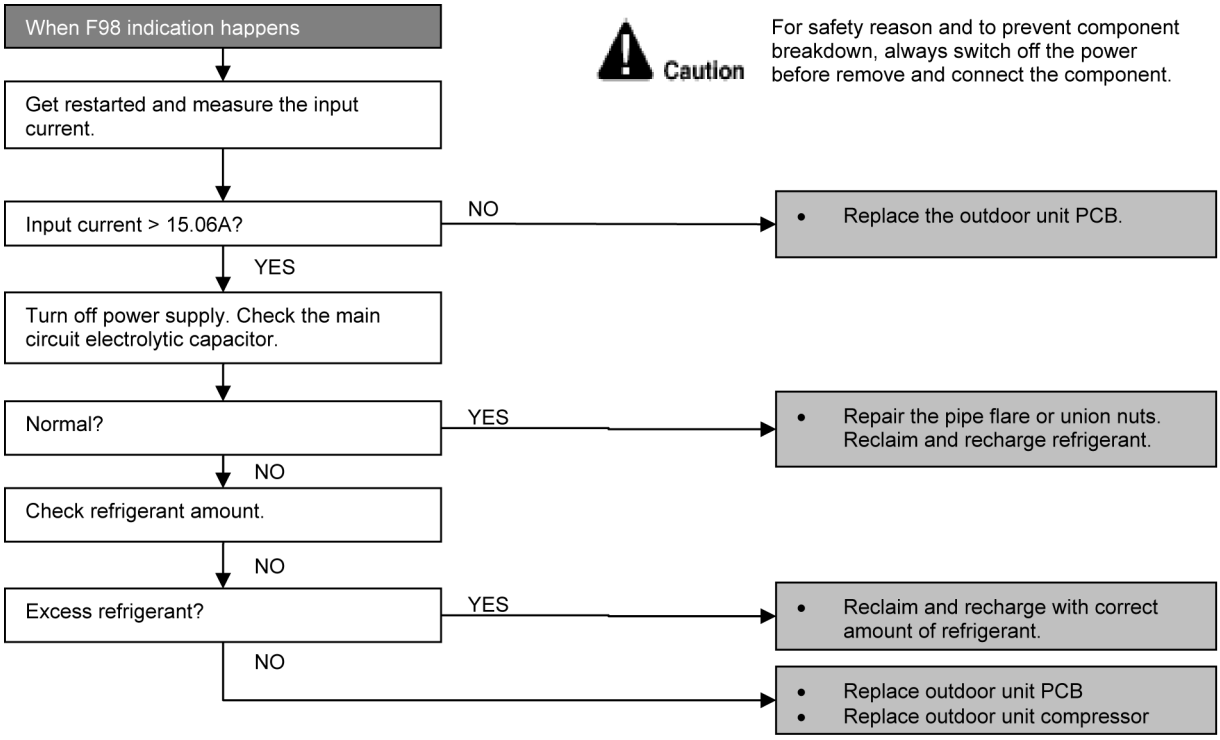
Malfunction Decision Conditions

During operation of cooling and heating, when an input over-current (15.06A) is detected by checking the input current value being detected by current transformer (CT) with the compressor running.

Malfunction Caused

- Over-current due to compressor failure.
- Over-current due to defective outdoor unit PCB.
- Over-current due to defective inverter main circuit electrolytic capacitor.
- Over-current due to excessive refrigerant.

Troubleshooting



15.5.23. F99 (Output Over Current Detection)

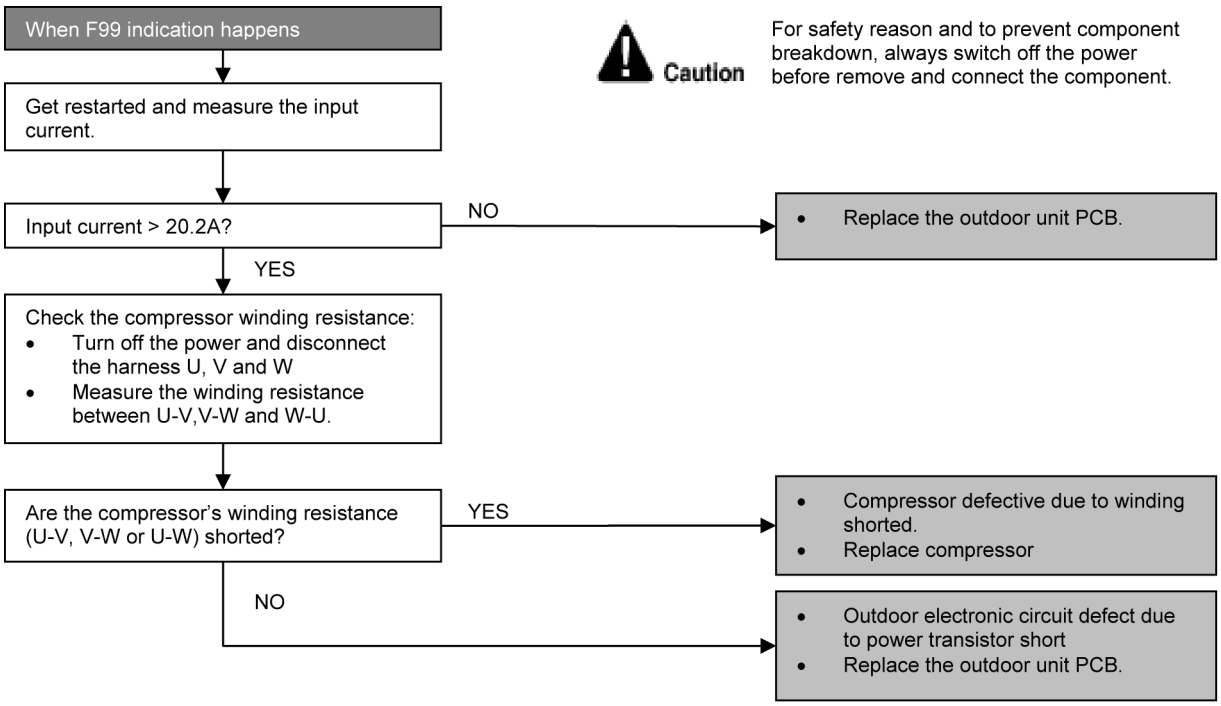
Malfunction Decision Conditions

During operation of cooling and heating, when an output over-current (20.2A) is detected by checking the current that flows in the inverter DC peak sensing circuitry.

Malfunction Caused

- DC peak due to compressor failure.
- DC peak due to defective power transistor(s).
- DC peak due to defective outdoor unit PCB.

Troubleshooting



- Checking the power transistor.
- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If unavoidable necessary to touch a live part, make sure the power transistor's supply voltage is below 50V using the tester.
- For the UVW, make measurement at the Faston terminal on the board of the relay connector.

Tester's negative terminal	Power transistor (+)	UVW	Power transistor (-)	UVW
Tester's positive terminal	UVW	Power transistor (+)	UVW	Power transistor (-)
Normal resistance	Several kΩ to several MΩ			
Abnormal resistance	0 or ∞			

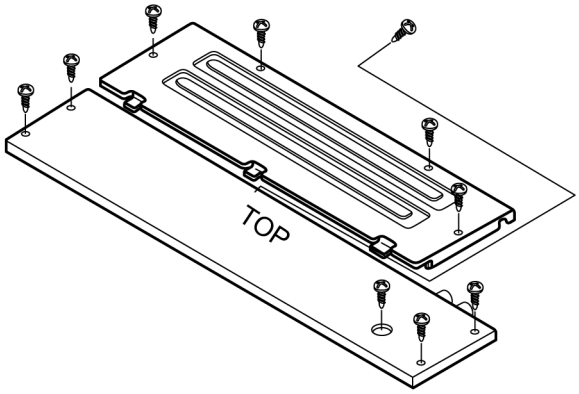
16 Disassembly and Assembly Instructions

⚠ WARNING

High Voltage are generated in the electrical parts area by the capacitor. Ensure that the capacitor has discharged sufficiently before proceeding with repair work. Failure to heed tis caution may result in electric shocks.

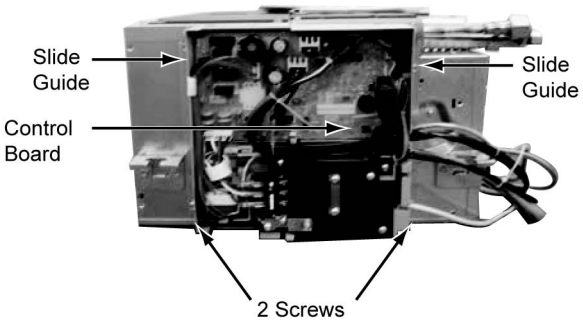
16.1. Disassembly of Parts

16.1.1. Detaching the Upper and Inner Casing



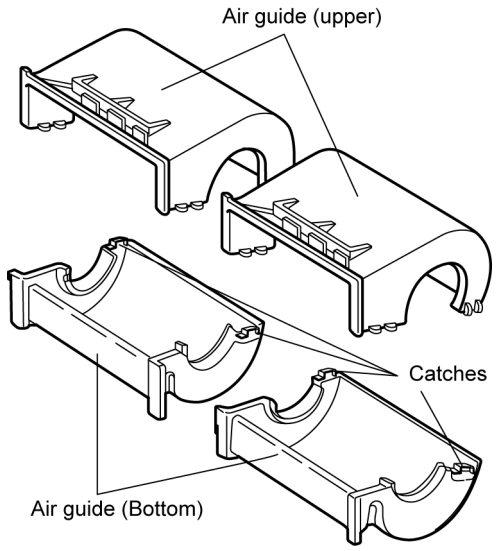
1. Unscrew the 10 screws on the Upper and Inner Casing and detach them

16.1.2. Detaching the Control Board



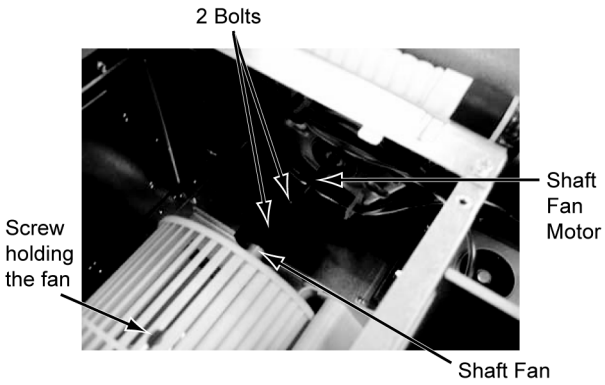
1. Unscrew the 2 screws on the Control Board and open the Control Board Cover.
2. Pull the Control Board down following the Slide Guide.
3. Lift the Control Board up from the bottom, disengage the Catch holding the Board.

16.1.3. Detaching the Fan



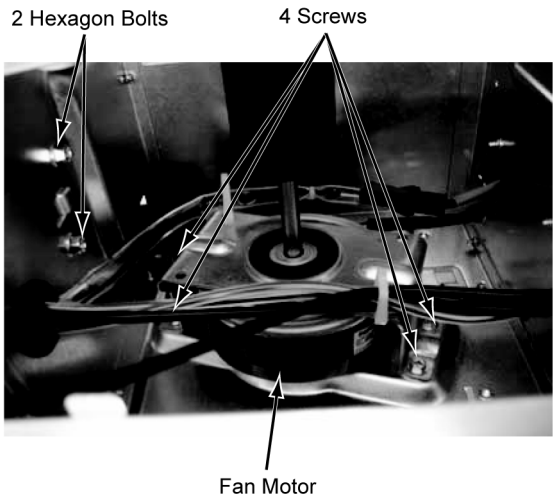
1. First detach the Upper and Inner Casing (16.1.1)

2. Disengage the 4 catches (2 each on the left and right) on the Air Guide.



3. Use a 2.5 mm hexagonal wrench to loosen the 2 bolts connecting the Fan Motor and Fan, detach the shaft connecting the Fan Motor and Fan, loosen the screw holding the Fan and detach the Fan.

16.1.4. Detaching the Fan Motor and Drain Motor



Fan Motor

1. First detach the Upper and Inner Casing (16.1.1) and the Fan (16.1.3).

2. Unscrew the 4 screws holding the Fan Motor and detach it.

Drain Motor

1. First detach the Upper and Inner Casing (16.1.1) and the Fan (16.1.3).

2. From the Fan Motor side, undo the 2 hexagon bolts and detach the Drain Motor.

16.1.5. Outdoor Electronic Controller Removal Procedure

1. Remove the top panel and front panel

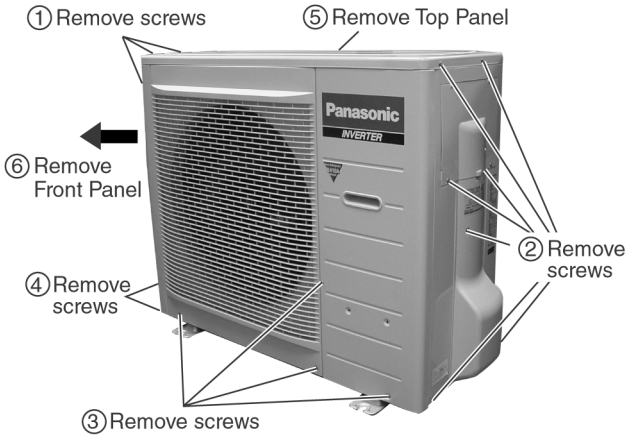


Fig. 8

⚠ WARNING

- Be save to return the wiring to its original position
- There are many high voltage components within the heat sink cover so never touch the interior during operation. Wait at least two minutes after power has been turned off.

2. Remove the Outdoor Electronic Controller

Fig. 9

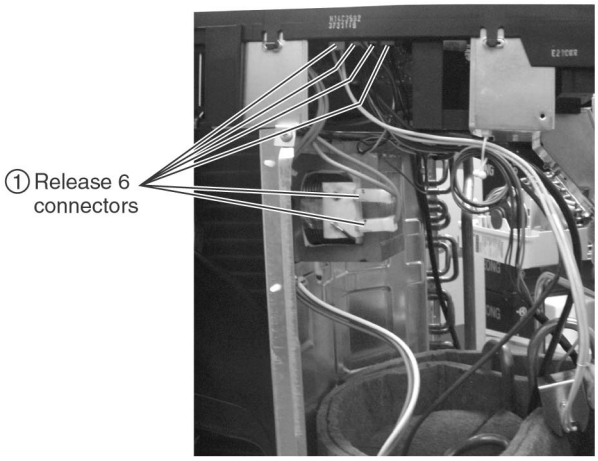
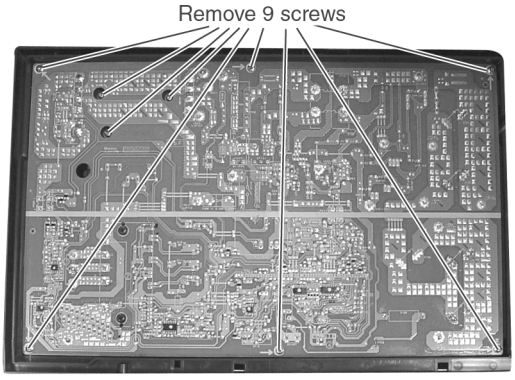


Fig. 10

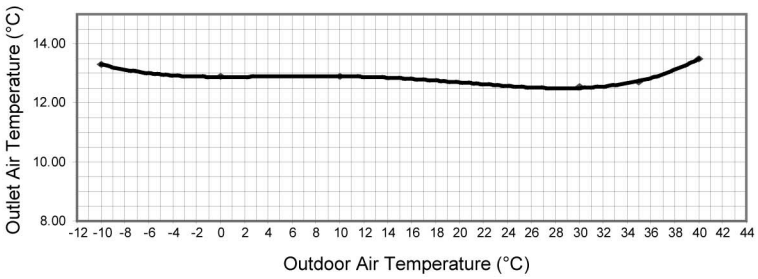


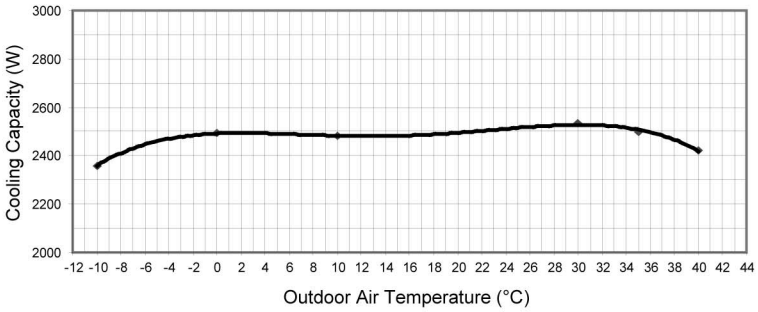
⚠ Caution! When handling electronic controller, be careful of electrostatic discharge.

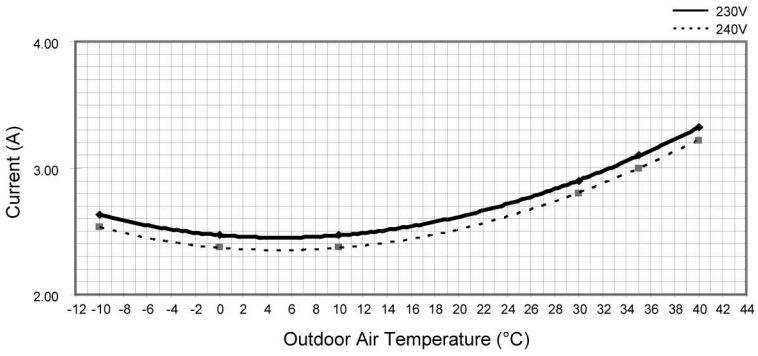
17 Technical Data

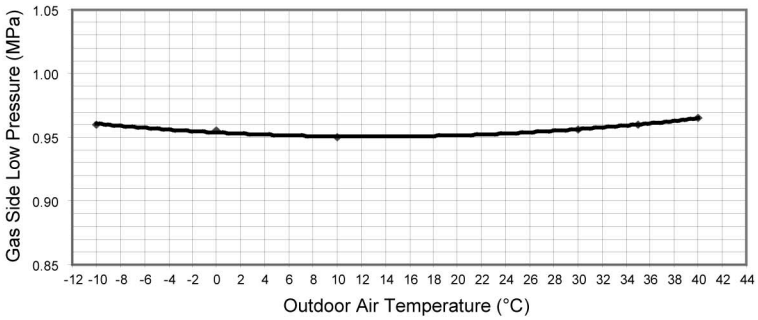
17.1. Operation Characteristics

A. COOL : OUTDOOR TEMPERATURE CHANGE
INDOOR TEMP. : 27/19°C
REMOTE CON. : HI FAN , COOL 16°C
COMP.Hz : F_C
VOLTAGE : 230V - 240V

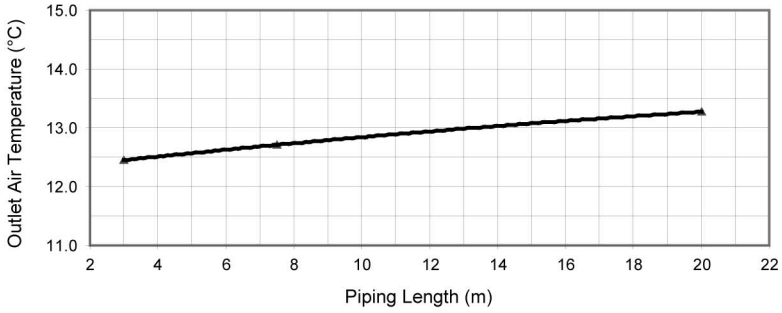


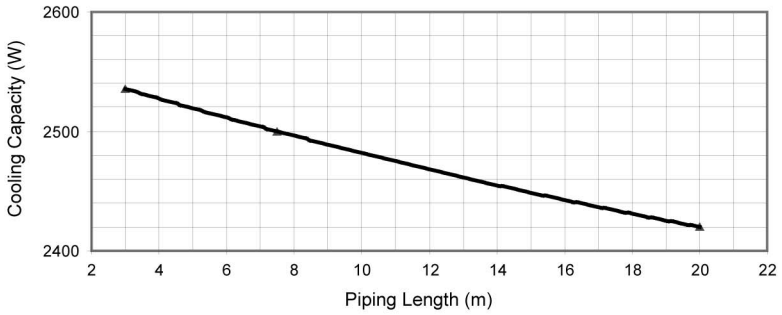


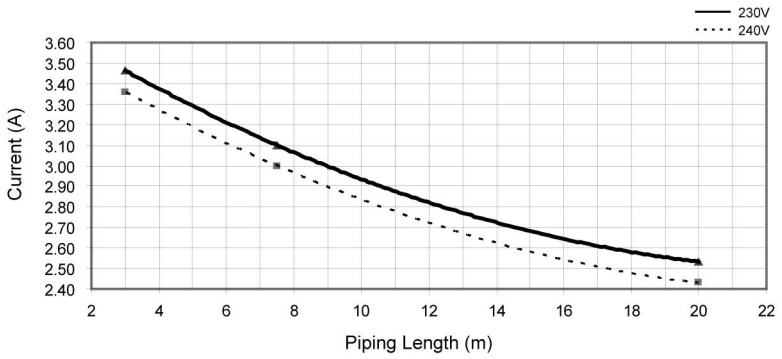


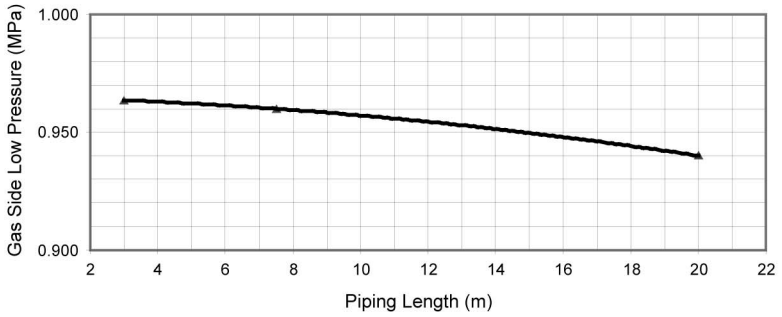


B. COOL : PIPE LENGTH CHANGE
INDOOR TEMP. : 27/19°C, 35/-°C
REMOTE CON. : HI FAN , COOL 16°C
COMP.Hz : F_C
VOLTAGE : 230V - 240V

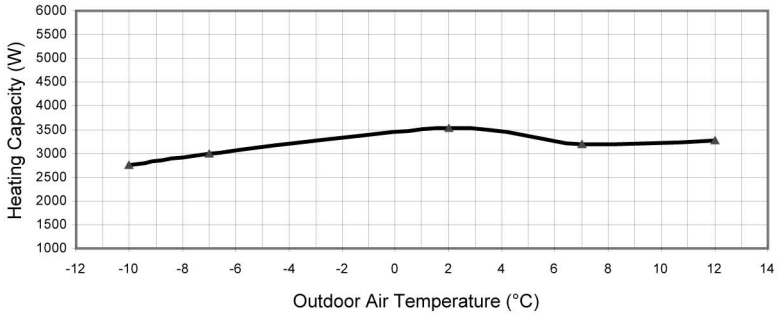


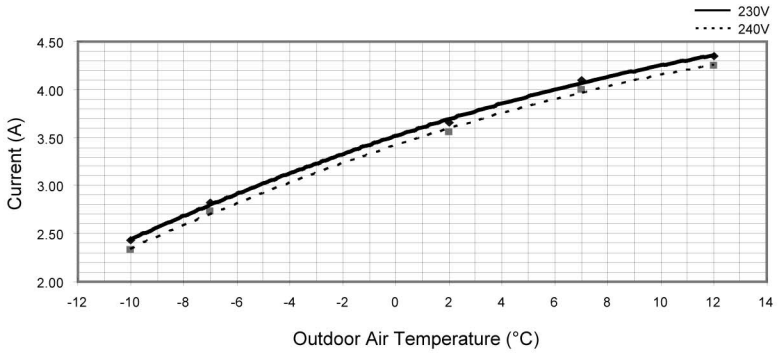


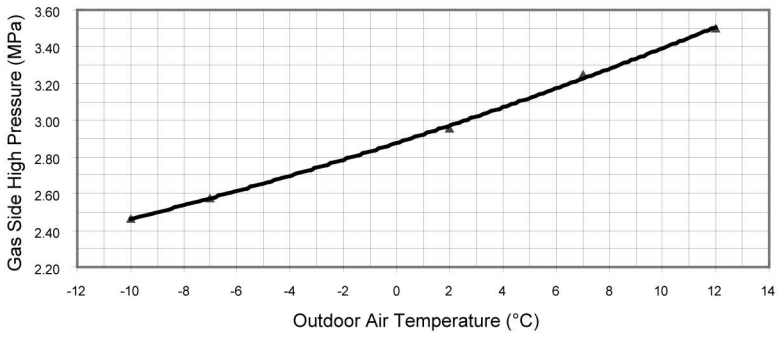


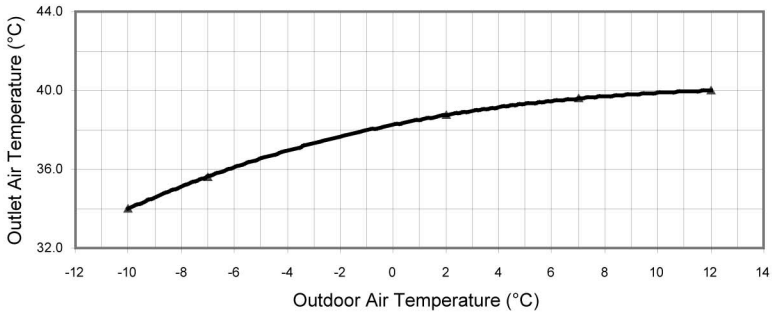


C. HEAT : OUTDOOR TEMPERATURE CHANGE
INDOOR TEMP. : 20/-°C
REMOTE CON. : HI FAN , HEAT 30°C
COMP.Hz : Fh
VOLTAGE : 230V - 240V

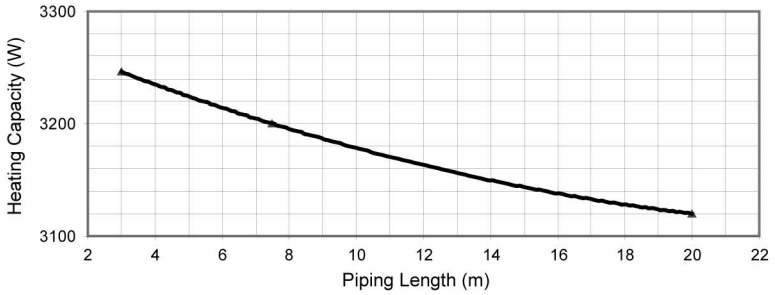


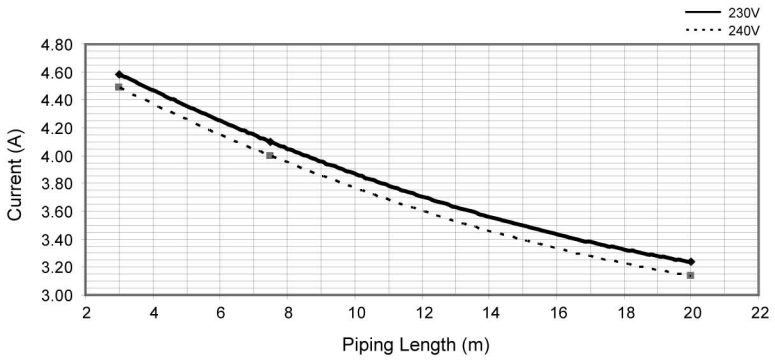


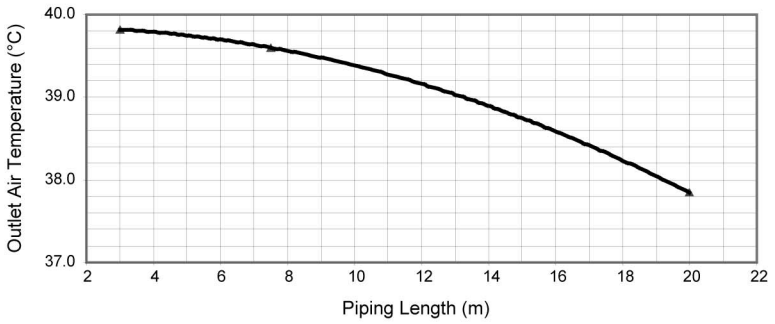


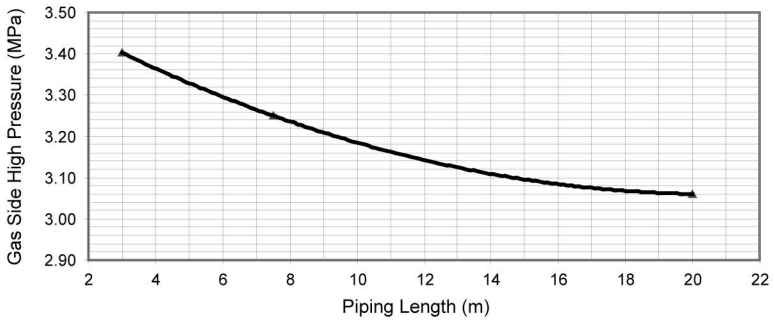


D. HEAT : PIPE LENGTH CHANGE
INDOOR TEMP. : 20/-°C, 7/6°C
REMOTE CON. : HI FAN , HEAT 30°C
COMP.Hz : F_h
VOLTAGE : 230V - 240V









17.2. Sensible Capacity Chart

● **CS-E10KD3EA CU-E10HBEA**

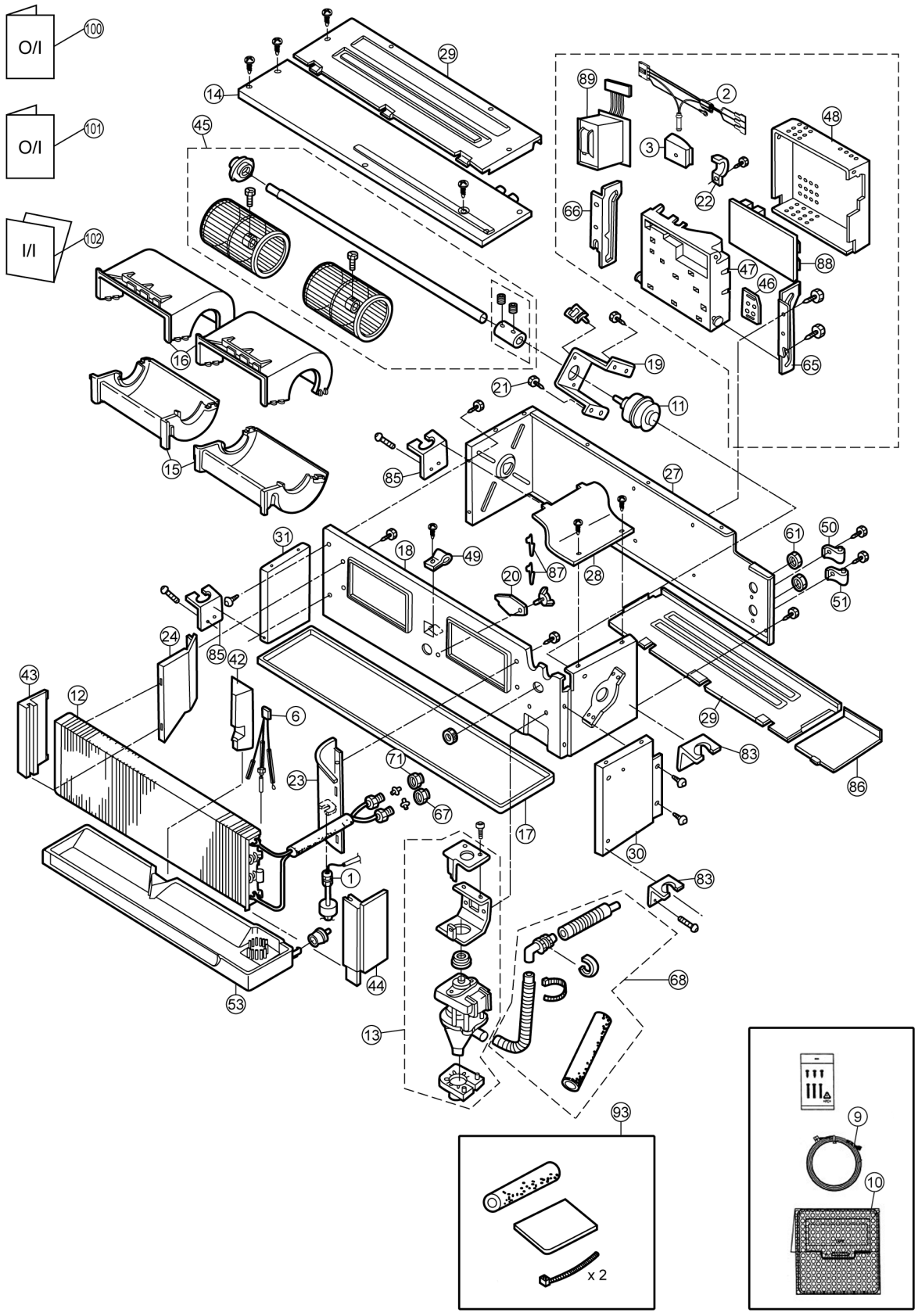
Indoor wet bulb temp.	Outdoor Temp. (°C)											
	30			35			40			46		
	TC	**SHC**	**IP**	**TC**	**SHC**	**IP**	**TC**	**SHC**	**IP**	**TC**	**SHC**	**IP**
17.0°C	2.48	1.88	0.62	2.32	1.80	0.67	2.16	1.73	0.72	1.96	1.65	0.77
19.0°C				2.50		0.68						
19.5°C	2.72	1.97	0.63	2.55	1.89	0.68	2.37	1.82	0.73	2.15	1.73	0.79
22.0°C	2.97	2.04	0.65	2.77	1.96	0.69	2.58	1.89	0.74	2.35	1.81	0.80

TC - Total Cooling Capacity (kW)
SHC - Sensible Heat Capacity (kW)
IP - Input Power (kW)

Indoor 27°C/19°C
Outdoor 35°C/24°C

18 Exploded View and Replacement Parts List

18.1. Indoor Unit



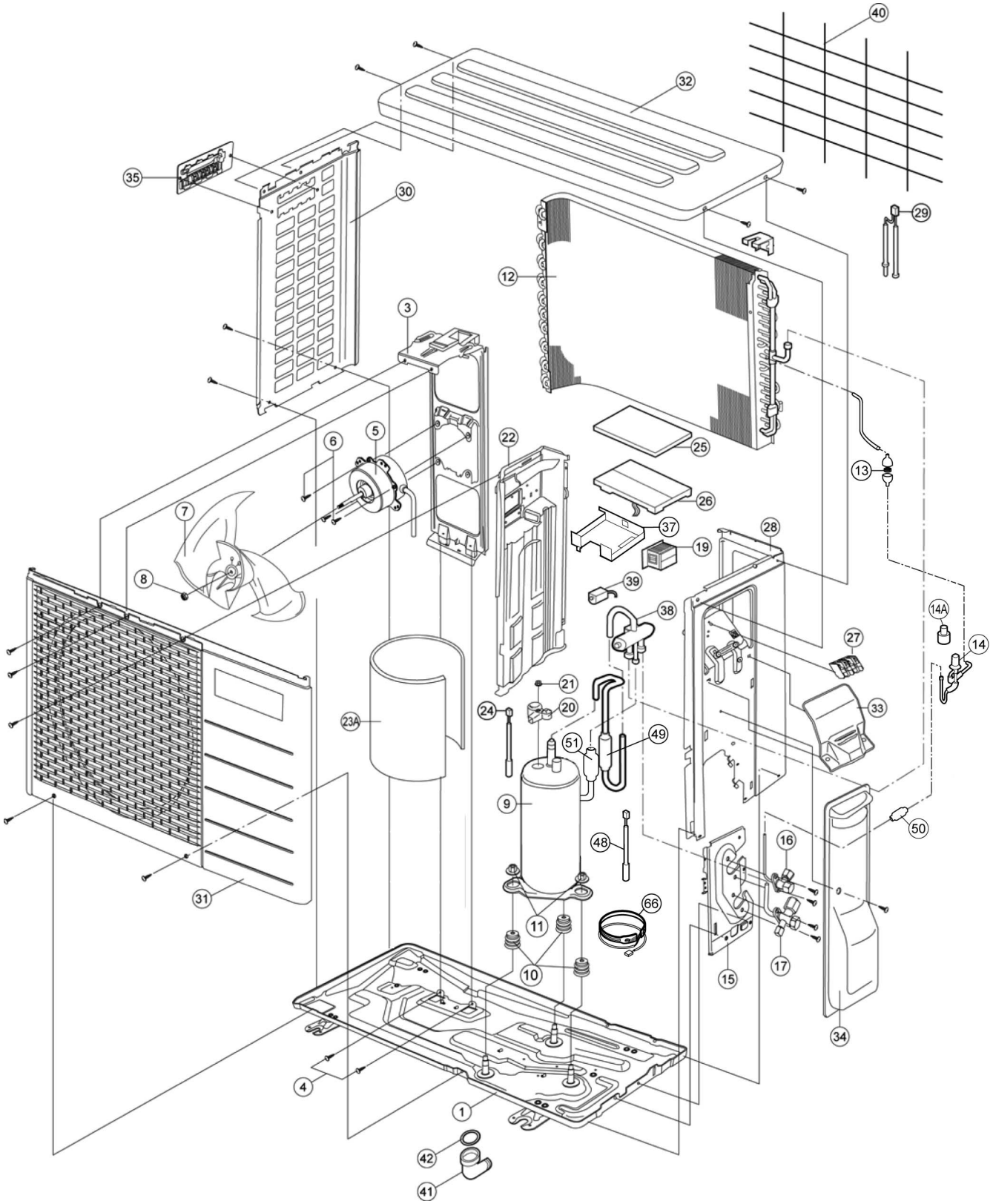
Note:
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

REF NO.	DESCRIPTION & NAME	QTY.	CS-E10KD3EA	REMARKS
1	OVER LOAD PROTECTOR	1	CWA12161	
2	FUSE-COMPLETE	1	CWA16C1038	
3	TERMINAL BOARD ASS'Y	1	CWA28K1045J	
6	SENSOR-COMPLETE	1	CWA50C2556	
9	WIRED REMOTE CONTROL COMPLETE (WITH CABLE)	1	CWA75C3408	
10	WIRED REMOTE CONTROL	1	CWA75C3375	
11	FAN MOTOR DC 30W 3PH	1	ARW41G8P30AC	
12	FIN & TUBE EVAPORATER-COMPLETE	1	CWB30C2570	
13	PUMP-COMPLETE	1	CWB53C1010	
14	CABINET TOP PLATE (FRONT)	1	CWD11024	
15	AIR GUIDER B.W. (BOTTOM)	2	CWD32091	
16	AIR GUIDER B.W. (UPPER)	2	CWD32092	
17	BASE PAN	1	CWD52259	
18	BULKHEAD	1	CWD531019	
19	FAN MOTOR BRACKET	1	CWD541036	
20	FLAT PIECE	1	CWD74100	
21	SCREW - FAN MOTOR BRACKET	4	CWH55315J	
22	HOLDER-P.S. CORD	1	CWH31044	
23	PARTICULAR PLATE-A'SSY	1	CWD90K080	
24	PARTICULAR PLATE	1	CWD90616	
27	CABINET REAR PLATE	1	CWE02079	
28	CABINET TOP PLATE	1	CWE03034	
29	CABINET TOP PLATE	2	CWE03035	
30	CABINET SIDE PLATE (RIGHT)	1	CWE04071	
31	CABINET SIDE PLATE (LEFT)	1	CWE04072	
42	FOAMED POLYSTYRENE	1	CWG07165	
43	FOAMED POLYSTYRENE	1	CWG07166	
44	FOAMED POLYSTYRENE	1	CWG07167	
45	BLOWER WHEEL-COMPLETE	1	CWH01C005	
46	CONTROL BOARD	1	CWH102208	
47	CONTROL BOARD (BOTTOM PCB)	1	CWH10527	
48	CONTROL BOARD (FRONT PCB)	1	CWH131144	
49	HOLDER-P.S. CORD	1	CWH31103	
50	HOLDER-P.S. CORD	1	CWH31030	
51	A-PIECE	1	CWD77013	
53	DRAIN PAN-COMPLETE	1	CWH40C061	
61	BUSHING	1	CWH51134	
65	RAIL (LEFT)	1	CWH691004	
66	RAIL (RIGHT)	1	CWH69025	
67	UNION NUT	1	CWT251030	
68	FLEXIBLE PIPE-COMPLETE	1	CWH85C008	
71	UNION NUT	1	CWT251031	
83	PARTICULAR PIECE	2	CWD93435	
85	PARTICULAR PIECE	2	CWD93436	
86	CABINET BOTTOM PLATE	1	CWE05012	
87	HOLDER-SENSOR	2	CWH32137	
88	ELECTRONIC CONTROLLER	1	CWA73C4649	
89	TRANSFORMER-COMPLETE	1	CWA40C1027	
93	ACCESSORY-COMPLETE	1	CWH82C1649	
100	OPERATING INSTRUCTION	1	CWF567379	
101	OPERATING INSTRUCTION	1	CWF567380	
102	INSTALLATION INSTRUCTION	1	CWF613908	

(Note)

- All parts are supplied from PHAAM, Malaysia (Vendor Code: 00029488).
- “O” marked parts are recommended to be kept in stock.

18.2. Outdoor Unit



Note:
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

REF. NO.	DESCRIPTION & NAME	QTY.	CU-E10HBEA	REMARKS
1	CHASSY ASS'Y	1	CWD50K2176	
3	FAN MOTOR BRACKET	1	CWD541089	
4	SCREW - FAN MOTOR BRACKET	3	CWH551217	
5	FAN MOTOR	1	ARW44W8P40AC	O
6	SCREW - FAN MOTOR MOUNT	4	CWH55252J	
7	PROPELLER FAN ASSY	1	CWH03K1014	
8	NUT - PROPELLER FAN	1	CWH56053J	
9	COMPRESSOR	1	5CS110XBD04	O
10	ANTI-VIBRATION BUSHING	3	CWH50077	
11	NUT-COMPRESSOR MOUNT	3	CWH56000J	
12	CONDENSER	1	CWB32C2456	
13	STRAINER	1	CWB11094	
14	TUBE ASS'Y (EXP. VALVE)	1	CWT01C3643	
14A	V-COIL COMPLETE (EXP. VALVE)	1	CWA43C2058J	
15	HOLDER - COUPLING	1	CWH351025	
16	2 WAYS VALVE (LIQUID)	1	CWB021333	O
17	3 WAYS VALVE (GAS)	1	CWB011434	O
19	REACTOR	1	G0C193J00003	O
20	TERMINAL COVER	1	CWH171039A	
21	NUT-TERMINAL COVER	1	CWH7080300J	
22	SOUND PROOF BOARD	1	CWH151188	
23A	SOUND PROOF MATERIAL	1	CWG302466	
24	SENSOR COMPLETE (DISCHARGE TEMP.)	1	CWA50C2281	O
25	CONTROL BOARD COVER	1	CWH131264	
26	ELECTRONIC CONTROLLER - MAIN	1	CWA73C3342R	O
27	TERMINAL BOARD ASSY	1	CWA28K1110J	O
28	CABINET SIDE PLATE CO.	1	CWE04C1116	
29	SENSOR COMPLETE (AIR TEMP. & PIPE TEMP.)	1	CWA50C2402	O
30	CABINET SIDE PLATE	1	CWE041248A	
31	CABINET FRONT PLATE CO.	1	CWE06C1136	
32	CABINET TOP PLATE	1	CWE031014A	
33	PLATE - C.B.COVER	1	CWH131301	
34	CONTROL BOARD COVER CO.	1	CWH13C1064	
35	HANDLE	1	CWE161010	
37	CONTROL BOARD CASING (BOTTOM)	1	CWH102371	
38	4 WAYS VALVE	1	CWB001037J	O
39	V-COIL COMPLETE (4-WAYS VALVE)	1	CWA43C2144J	O
40	WIRE NET	1	CWD041111A	
41	L - TUBE	1	CWH5850080	
42	PACKING - L.TUBE	1	CWB81012	
48	SENSOR COMPLETE (COMP. TEMP.)	1	CWA50C2205	
49	RECEIVER	1	CWB14011	
50	DISCHARGE MUFFLER	1	CWB121021	
51	STRAINER	1	CWB111004	
66	CRANKCASE HEATER	1	CWA341050	

(Note)

- All parts are supplied from PHAAM, Malaysia (Vendor Code: 00029488).
- "O" marked parts are recommended to be kept in stock.