Order No. MAC0603020C3

Service Manual

Air Conditioner

CS-D34DB4Q CU-D34DBQ7
CS-D43DB4Q CU-D43DBQ7
CS-D50DB4Q CU-D50DBQ7

⚠ 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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Panasonic®

1 Service Information

Notice of Address setting for NEW Cassette / NEW Outdoor Unit.

The new Cassette / New Outdoor models are possible to have address setting for twin control or group control by automatic when main power supply is switched on.

(Manual address setting is also possible by using Dip switch on Indoor unit P.C. board.) However, **this address setting is only possible when made proper wiring connection and also Indoor unit should be original virgin unit**.

1.1. Example of trouble at test operation

If found out as following phenomenon at test operation on site, it may have possibility of wrong address setting.
Therefore, please ensure of the address setting.

1. LCD display of wired remote control had not illuminate although the main power supply switch is 'on'.
2. LCD display had indicated as normal illumination when power supply switch is 'on', however outdoor unit cannot be operated. (But, it is necessary to take 3 to 5 minutes for outdoor unit to start from the timing of remote control ON/OFF switch is 'on'.)
3. P.C. board had memorized wrong setting information.
   a. If main power supply is switched 'on' with the wrong connection.
   b. When changing the connection or combination of units due to re-installation etc.
      • When changing the system from group control to normal one to one system.
      • When making the replacement of units as master and slave etc.

1.2. Caution of test operation

Do not touch the remote control switch and do not change any wirings for one minute when the main power supply switch is 'on'. (Because the unit is having automatic address setting during the first one minute.)

1.3. Caution during automatic address setting

When main power supply switch is 'on', the P.C. board will automatically memorize the connecting system.
Consequently, when initial power supply is 'on', there will not be interchangeability of units even of the same type and same capacity unit. Therefore unable to connect the unit to another system.

1.4. Operation range

1.4.1. Power Supply

The applicable voltage range for each unit is given in the following table. The working voltage among the three phases must be balanced within a 3% deviation from each voltage at the compressor terminals. The starting voltage must be higher than 85% of the rated voltage.

MODEL	Unit Main Power		Applicable Voltage	
CU-	Phase, Volts	Hz	Max.	Min.
D34DBQ7	3N ~ 220	50/60	242	198
D43DBQ7	3N ~ 220	50/60	242	198
D50DBQ7	3N ~ 220	50/60	242	198

1.4.2. Indoor and Outdoor Temperature

• Model 50Hz / 60Hz CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7

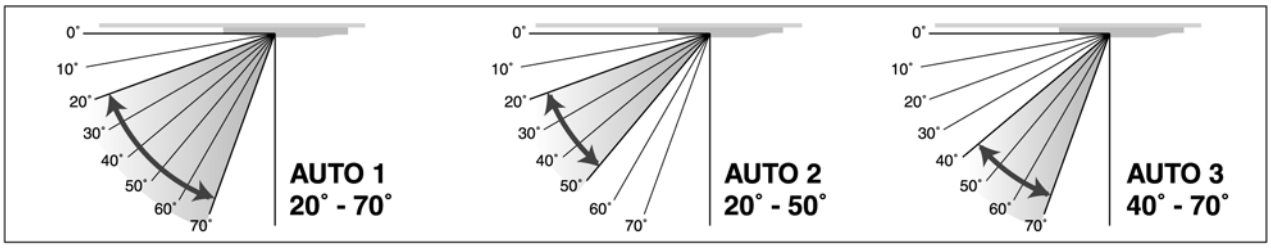
Operating	Hz	Indoor Temp. (D.B./W.B.) (°C)		Outdoor Temp. (D.B./W.B.) (°C)	
		Max.	Min.	Max.	Min.
Cooling	50/60	32/23	21/15	43/-	5/-

2 Features

2.1. Cassette Type features

2.1.1. Three Airflow Patterns for Extra Comfort

• Multi-comfort air control.

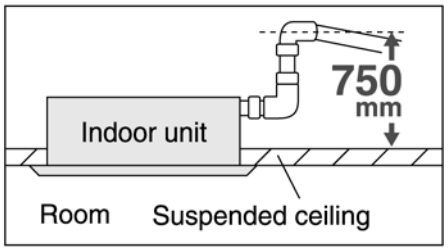


2.1.2. Low Noise and High Air Flow Rate

• The cassette indoor unit is equipped with newly-develop turbo fan; the new shape produces low noise and high air flow rate.

2.1.3. Fast, Flexible Installation

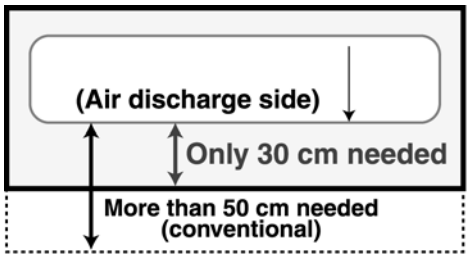
• Drain hose can be elevated 750 mm from the base of the unit simply by connecting an elbow. This adds to ease of drain piping work, and flexibility in locating the indoor unit.
It automatically adjusts the fan speed according to the indoor temperature.



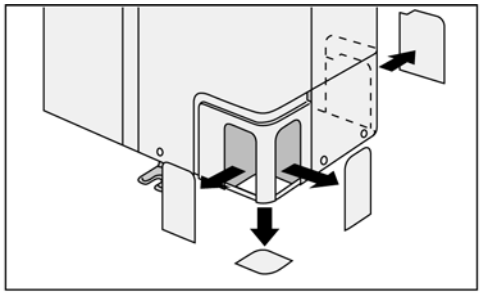
2.2. Outdoor Unit

2.2.1. Flexible Installation in Smaller Spaces

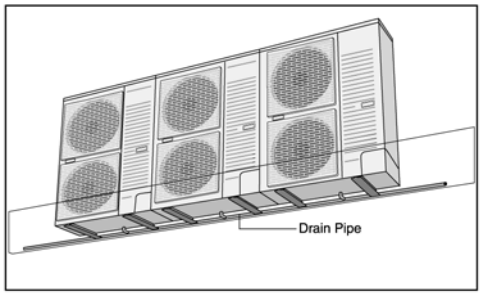
• Spacing-saving outdoor unit with the improvement of the outdoor unit fan makes it possible to install the outdoor unit into a smaller space where the conventional model cannot be installed.



• Long Pipe design with maximum piping length of 40m (50Hz), 50m (60Hz).
• Flexible 4-way piping.



• Centralized Drain Method gathered multiple outdoor unit's drain pipes into a single drain pipe to make installation easier and also improve appearance.



• Side-by-Side Continuous Installation is possible even outdoor units with different capacities.

2.2.2. Quiet, Efficient Design

• A host of silencing technologies achieves super-quiet operation.
• The Noise-Suppressing Winglet Fan is a result of new research into vane design theory. The unique curved shaped suppressed the generation of vortexes, thus reduces air flows noise.

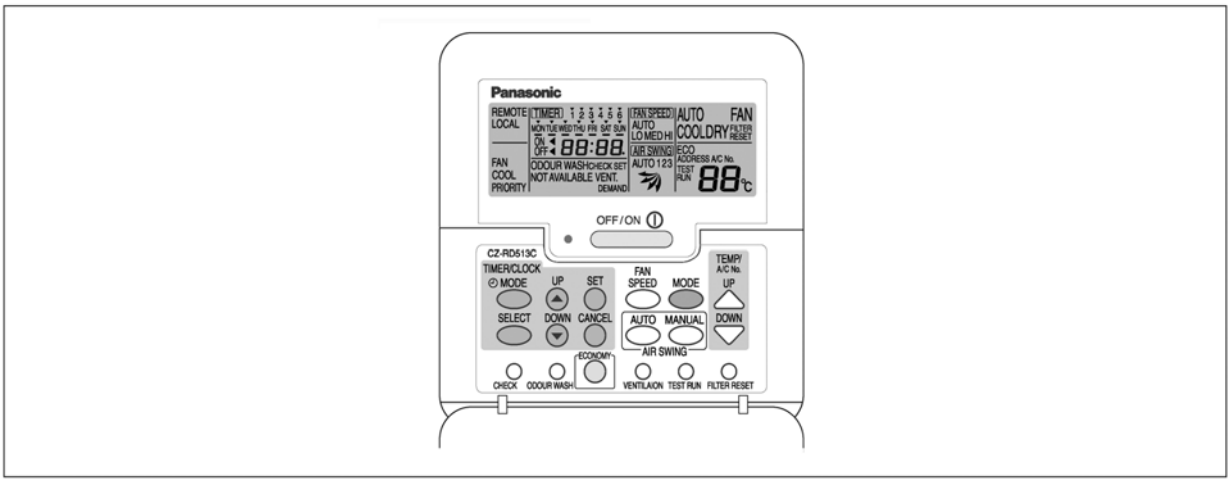
• Operating efficiency is improved and energy consumption reduced.

2.2.3. Low Ambient Cooling Operation

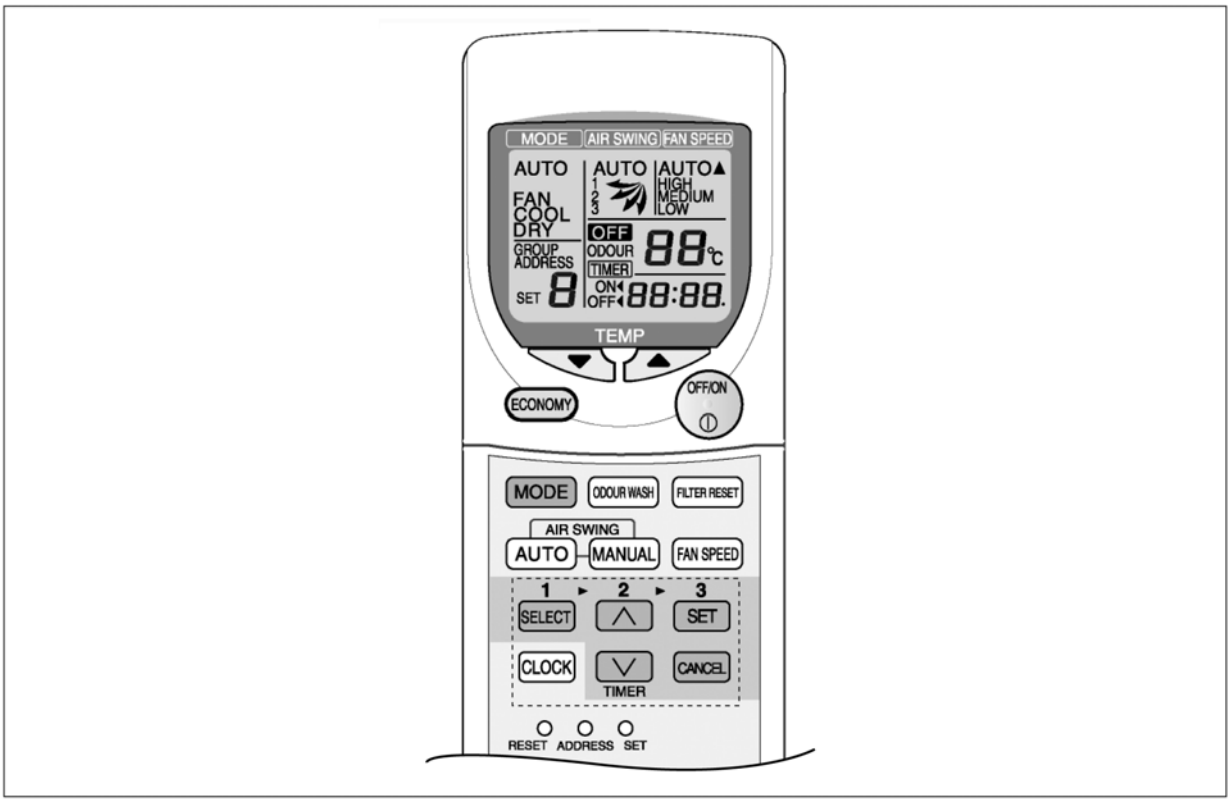
• The unit can set for cooling even when the outdoor temperature drops to 5°C. This is ideal for locations that require cooling even in winter.

2.3. Wired Remote Control

1. The new design includes an easily-visible red pilot lamp. The power can be turned on and off at a single touch, without opening the cover.
2. Has a build-in thermistor, allowing indoor temperature detection in accordance with indoor conditions by switching with main unit thermistor.
3. Twin non-polar wires make installation work easy. (10 m cable supplied as accessory.)



2.4. Wireless Remote Control

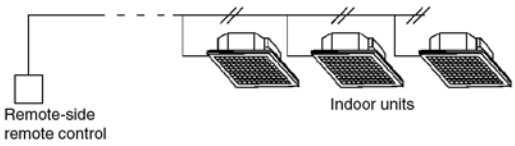


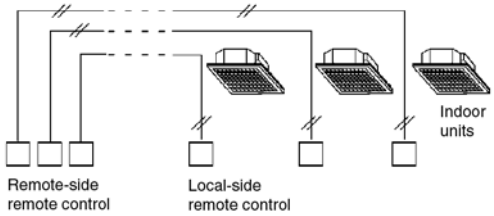
1. New design with compact size. (Operation range within approximately 8 m.)
2. Built-in timer with OFF/ON timer setting (within 24 hours)

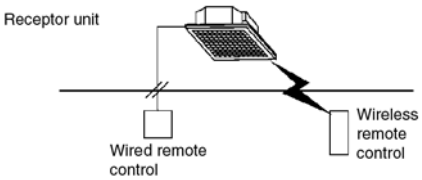
Wired	Wireless
CZ-RD513C	CZ-RL013B

NOTE: Both of the above remote control is packed separately from the indoor unit.

2.5. Group Control Equipment

<table>
<tr>
<td rowspan="2">Wired Remote Control</td>
<td>Group control by one remote control
• All air conditioner units are controlled as a whole by remote control.
• All indoor units operate in the same mode.
• A maximum of 16 units can be connected together (sequential starting)</td>
<td> 
</td>
<td>[Remote side]
• Optional wired remote control CZ-RD513C

[Local side]
Not needed</td>
</tr>
<tr>
<td>Twin remote control separate control
• Each indoor unit can be operated by either one of the two remote control.
• Apart from timer setting time, displays for two remote control are identical.
• Last button pressed has priority (main or slave is set at remote control unit).</td>
<td> 
</td>
<td>[Remote side]
• Optional wired remote control

[Local side]
• Optional wired remote control CZ-RD513C</td>
</tr>
<tr>
<td>Common Control</td>
<td>Common control / group
• Operation is possible using either wired or wireless remote control unit.
• Last button pressed has priority.</td>
<td> 
</td>
<td>• Optional wired remote control and wireless remote control
Wired CZ-RD513C
Wireless CZ-RL013B</td>
</tr>
</table>

3 Product Specification

3.1. CS-D34DB4Q CU-D34DBQ7 (50Hz)

ITEM / MODEL				Indoor Unit			Outdoor Unit
			Main Body	CS-D34DB4Q			CU-D34DBQ7
			Panel	CZ-BT03P			
			Remote Control	CZ-RD513C (Wired)			
				CZ-RL013B (Wireless)			
Cooling Capacity			kW	10.0			
			BTU/h	34,100			
Refrigerant Charge-less			m	20			
Standard Air Volume for High,			m^3/min	Hi 22.0	Me 21.2	Lo 19.4	100.0
Medium and Low Speed			cfm	776	749	658	3531
Outside Dimension (H × W × D)			mm	246 × 840 × 840			1170 × 900 × 320
			inch	9-11/16 × 33-1/24 × 33-1/24			46-1/16 × 35-7/16 × 12-19/32
Net Weight			kg (lbs)	25 (55)			83 (182)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 19.05 (3/4) Flared Type			
		Liquid	mm (inch)	O.D Ø 9.52 (3/8) Flared Type			
	Drain			O.D Ø 20			I.D Ø 20
Compressor	Type, Number of Set			—			Hermetic, 1
	Starting Method			—			Permanent Split Capacitor
	Motor	Type		—			2-pole 1 phase brushless motor
		Rated Output	kW	—			3.0
Fan	Type, Number of Set			Turbo fan-1			Propeller fan-1
	Motor	Type		6-pole AC motor			6-pole single phase induction motor
		Rated Output	kW	0.026			0.07 × 2
Air-heat Exchanger (Row × Stage × FPI)				Louver-fin type (1 × 10 × 22)			Corrugate-fin type (1 × 44 × 21)
Refrigerant Control				—			Expansion Valve
Refrigerant Oil (Charged)			cm^3	—			1400
Refrigerant (Charged) R410A			kg (oz)	—			1.90 (67.0)
Running Adjustment	Control Switch			Wireless or Wired Remote Control			—
	Room Temperature			Thermostat			—
Safety Devices				Internal protector for compressor			
Noise Level			dB (A)	Hi 42, Lo 38			53/-
			Power level dB	57/53			67/-
Moisture Removal			L/h (Pt/h)	6.0 (12.5)			
EER			W/W	2.56			

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL		Condition by ISO5151
Volts	V	220
Phase		Three
Running Current	A	12.8
Starting Current	A	115
Power Factor	%	80
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.		
Panasonic	Power Source	AC, 3 ~ 220V 50Hz

3.2. CS-D34DB4Q CU-D34DBQ7 (60Hz)

ITEM / MODEL				Indoor Unit			Outdoor Unit
			Main Body	CS-D34DB4Q			CU-D34DBQ7
			Panel	CZ-BT03P			
			Remote Control	CZ-RD513C (Wired)			
				CZ-RL013B (Wireless)			
Cooling Capacity			kW	10.8			
			BTU/h	36,800			
Refrigerant Charge-less			m	30			
Standard Air Volume for High, Medium and Low Speed			m^3/min	Hi 24.0	Me 22.7	Lo 20.9	103.0
			cfm	847	802	738	3637
Outside Dimension (H × W × D)			mm	246 × 840 × 840			1170 × 900 × 320
			inch	9-11/16 × 33-1/24 × 33-1/24			46-1/16 × 35-7/16 × 12-19/32
Net Weight			kg (lbs)	25 (55)			83 (182)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 19.05 (3/4) Flared Type			
		Liquid	mm (inch)	O.D Ø 9.52 (3/8) Flared Type			
	Drain			O.D Ø 20			I.D Ø 20
Compressor	Type, Number of Set			—			Hermetic, 1
	Starting Method			—			Permanent Split Capacitor
	Motor	Type		—			2-pole 1 phase brushless motor
		Rated Output	kW	—			3.0
Fan	Type, Number of Set			Turbo fan-1			Propeller fan-1
	Motor	Type		6-pole AC motor			6-pole single phase induction motor
		Rated Output	kW	0.026			0.07 × 2
Air-heat Exchanger (Row × Stage × FPI)				Louver-fin type (1 × 10 × 22)			Corrugate-fin type (1 × 44 × 21)
Refrigerant Control				—			Expansion Valve
Refrigerant Oil (Charged)			cm^3	—			1400
Refrigerant (Charged) R410A			kg (oz)	—			1.90 (67.0)
Running Adjustment	Control Switch			Wireless or Wired Remote Control			—
	Room Temperature			Thermostat			—
Safety Devices				Internal protector for compressor			
Noise Level			dB (A)	Hi 42, Lo 38			54/-
			Power level dB	57/53			68/-
Moisture Removal			L/h (Pt/h)	6.6 (13.8)			
EER			W/W	2.45			

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)

ELECTRICAL DATA (60 Hz)

ITEM / MODEL		Condition by ISO5151	
Volts	V	220	
Phase		Three	
Running Current	A	12.8	
Starting Current	A	105	
Power Factor	%	90	
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.			
Panasonic	Power Source		AC, 3 ~ 220V 60Hz

3.3. CS-D43DB4Q CU-D43DBQ7 (50Hz)

ITEM / MODEL				Indoor Unit			Outdoor Unit
			Main Body	CS-D43DB4Q			CU-D43DBQ7
			Panel	CZ-BT03P			
			Remote Control	CZ-RD513C (Wired)			
				CZ-RL013B (Wireless)			
Cooling Capacity			kW	12.5			
			BTU/h	42,700			
Refrigerant Charge-less			m	20			
Standard Air Volume for High,			m^3/min	Hi 31.0	Me 28.4	Lo 26.9	100.0
Medium and Low Speed			cfm	1094	1003	948	3531
Outside Dimension (H × W × D)			mm	288 × 840 × 840			1170 × 900 × 320
			inch	11-5/16 × 33-1/24 × 33-1/24			46-1/16 × 35-7/16 × 12-19/32
Net Weight			kg (lbs)	30 (66)			83 (182)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 19.05 (3/4) Flared Type			
		Liquid	mm (inch)	O.D Ø 9.52 (3/8) Flared Type			
	Drain			O.D Ø 20			I.D Ø 20
Compressor	Type, Number of Set			—			Hermetic, 1
	Starting Method			—			Permanent Split Capacitor
	Motor	Type		—			2-pole 1 phase brushless motor
		Rated Output	kW	—			3.75
Fan	Type, Number of Set			Turbo fan-1			Propeller fan-1
	Motor	Type		6-pole AC motor			6-pole single phase induction motor
		Rated Output	kW	0.067			0.07 × 2
Air-heat Exchanger (Row × Stage × FPI)				Louver-fin type (2 × 12 × 21)			Corrugate-fin type (1 × 44 × 21)
Refrigerant Control				—			Expansion Valve
Refrigerant Oil (Charged)			cm^3	—			1400
Refrigerant (Charged) R410A			kg (oz)	—			2.20 (81.1)
Running Adjustment	Control Switch			Wireless or Wired Remote Control			—
	Room Temperature			Thermostat			—
Safety Devices				Internal protector for compressor			
Noise Level			dB (A)	Hi 46, Lo 42			54/-
			Power level dB	61/57			68/-
Moisture Removal			L/h (Pt/h)	7.9 (16.6)			
EER			W/W	2.45			

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL		Condition by ISO5151	
Volts	V	220	
Phase		Three	
Running Current	A	16.7	
Starting Current	A	130	
Power Factor	%	80	
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.			
Panasonic	Power Source		AC, 3 ~ 220V 50Hz

3.4. CS-D43DB4Q CU-D43DBQ7 (60Hz)

ITEM / MODEL				Indoor Unit			Outdoor Unit
			Main Body	CS-D43DB4Q			CU-D43DBQ7
			Panel	CZ-BT03P			
			Remote Control	CZ-RD513C (Wired)			
				CZ-RL013B (Wireless)			
Cooling Capacity			kW	13.5			
			BTU/h	46,100			
Refrigerant Charge-less			m	30			
Standard Air Volume for High, Medium and Low Speed			m^3/min	Hi 31.0	Me 28.4	Lo 26.8	103.0
			cfm	1094	1002	947	3637
Outside Dimension (H × W × D)			mm	288 × 840 × 840			1170 × 900 × 320
			inch	11-1/16 × 33-1/24 × 33-1/24			46-1/16 × 35-7/16 × 12-19/32
Net Weight			kg (lbs)	24 (53)			61 (134)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 19.05 (3/4) Flared Type			
		Liquid	mm (inch)	O.D Ø 9.52 (3/8) Flared Type			
	Drain			O.D Ø 20			I.D Ø 20
Compressor	Type, Number of Set			—			Hermetic, 1
	Starting Method			—			Permanent Split Capacitor
	Motor	Type		—			2-pole 1 phase brushless motor
		Rated Output	kW	—			3.75
Fan	Type, Number of Set			Turbo fan-1			Propeller fan-1
	Motor	Type		6-pole AC motor			6-pole single phase induction motor
		Rated Output	kW	0.067			0.07 × 2
Air-heat Exchanger (Row × Stage × FPI)				Louver-fin type (2 × 12 × 21)			Corrugate-fin type (1 × 44 × 21)
Refrigerant Control				—			Expansion Valve
Refrigerant Oil (Charged)			cm^3	—			1400
Refrigerant (Charged) R410A			kg (oz)	—			2.20 (81.1)
Running Adjustment	Control Switch			Wireless or Wired Remote Control			—
	Room Temperature			Thermostat			—
Safety Devices				Internal protector for compressor			
Noise Level			dB (A)	Hi 46, Lo 42			55/-
			Power level dB	61/57			69/-
Moisture Removal			L/h (Pt/h)	8.6 (18.1)			
EER			W/W	2.39			

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)

ELECTRICAL DATA (60 Hz)

ITEM / MODEL		Condition by ISO5151	
Volts	V	220	
Phase		Three	
Running Current	A	16.7	
Starting Current	A	120	
Power Factor	%	89	
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.			
Panasonic	Power Source		AC, 3 ~ 220V 60Hz

3.5. CS-D50DB4Q CU-D50DBQ7 (50Hz)

ITEM / MODEL				Indoor Unit			Outdoor Unit
			Main Body	CS-D50DB4Q			CU-D50DBQ7
			Panel	CZ-BT03P			
			Remote Control	CZ-RD513C (Wired)			
				CZ-RL013B (Wireless)			
Cooling Capacity			kW	13.5			
			BTU/h	46,100			
Refrigerant Charge-less			m	20			
Standard Air Volume for High, Medium and Low Speed			m^3/min	Hi 34.0	Me 31.9	Lo 30.3	100.0
			cfm	1200	1126	1070	3531
Outside Dimension (H × W × D)			mm	288 × 840 × 840			1170 × 900 × 320
			inch	11-5/16 × 33-1/24 × 33-1/24			46-1/16 × 35-7/16 × 12-19/32
Net Weight			kg (lbs)	30 (66)			83 (182)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 19.05 (3/4) Flared Type			
		Liquid	mm (inch)	O.D Ø 9.52 (3/8) Flared Type			
	Drain			O.D Ø 20			I.D Ø 20
Compressor	Type, Number of Set			—			Hermetic, 1
	Starting Method			—			Permanent Split Capacitor
	Motor	Type		—			2-pole 1 phase brushless motor
		Rated Output	kW	—			4.5
Fan	Type, Number of Set			Turbo fan-1			Propeller fan-1
	Motor	Type		6-pole AC motor			6-pole single phase induction motor
		Rated Output	kW	0.067			0.07 × 2
Air-heat Exchanger (Row × Stage × FPI)				Louver-fin type (2 × 12 × 21)			Corrugate-fin type (1 × 44 × 21)
Refrigerant Control				—			Expansion Valve
Refrigerant Oil (Charged)			cm^3	—			1400
Refrigerant (Charged) R410A			kg (oz)	—			2.25 (81.1)
Running Adjustment	Control Switch			Wireless or Wired Remote Control			—
	Room Temperature			Thermostat			—
Safety Devices				Internal protector for compressor			
Noise Level			dB (A)	Hi 47, Lo 44			55/-
			Power level dB	62/59			69/-
Moisture Removal			L/h (Pt/h)	8.6 (18.1)			
EER			W/W	2.45			

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL		Condition by ISO5151	
Volts	V	220	
Phase		Three	
Running Current	A	18.0	
Starting Current	A	135	
Power Factor	%	80	
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.			
Panasonic	Power Source		AC, 3 ~ 220V 50Hz

3.6. CS-D50DB4Q CU-D50DBQ7 (60Hz)

ITEM / MODEL				Indoor Unit			Outdoor Unit
			Main Body	CS-D50DB4Q			CU-D50DBQ7
			Panel	CZ-BT03P			
			Remote Control	CZ-RD513C (Wired)			
				CZ-RL013B (Wireless)			
Cooling Capacity			kW	14.5			
			BTU/h	49,500			
Refrigerant Charge-less			m	30			
Standard Air Volume for High,			m^3/min	Hi 34.0	Me 31.3	Lo 29.5	103.0
Medium and Low Speed			cfm	1200	1106	1041	3637
Outside Dimension (H × W × D)			mm	288 × 840 × 840			1170 × 900 × 320
			inch	11-5/16 × 33-1/24 × 33-1/24			46-1/16 × 35-7/16 × 12-19/32
Net Weight			kg (lbs)	30 (66)			83 (182)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 19.05 (3/4) Flared Type			
		Liquid	mm (inch)	O.D Ø 9.52 (3/8) Flared Type			
	Drain			O.D Ø 20			I.D Ø 20
Compressor	Type, Number of Set			—			Hermetic, 1
	Starting Method			—			Permanent Split Capacitor
	Motor	Type		—			2-pole 1 phase brushless motor
		Rated Output	kW	—			4.5
Fan	Type, Number of Set			Turbo fan-1			Propeller fan-1
	Motor	Type		6-pole AC motor			6-pole single phase induction motor
		Rated Output	kW	0.067			0.07 × 2
Air-heat Exchanger (Row × Stage × FPI)				Louver-fin type (2 × 12 × 21)			Corrugate-fin type (1 × 44 × 21)
Refrigerant Control				—			Expansion Valve
Refrigerant Oil (Charged)			cm^3	—			1400
Refrigerant (Charged) R410A			kg (oz)	—			2.25 (81.1)
Running Adjustment	Control Switch			Wireless or Wired Remote Control			—
	Room Temperature			Thermostat			—
Safety Devices				Internal protector for compressor			
Noise Level			dB (A)	Hi 47, Lo 43			56/-
			Power level dB	62/58			70/-
Moisture Removal			L/h (Pt/h)	9.4 (19.7)			
EER			W/W	2.34			

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)

ELECTRICAL DATA (60 Hz)

ITEM / MODEL		Condition by ISO5151	
Volts	V	220	
Phase		Three	
Running Current	A	18.0	
Starting Current	A	125	
Power Factor	%	90	
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.			
Panasonic	Power Source		AC, 3 ~ 220V 60Hz

3.7. Safety Devices

INDOOR UNIT

Indoor Unit	Cooling Only Model		CS-D34DB4Q	CS-D43DB4Q	CS-D50DB4Q
For fan motor protection					
Internal	OFF	°C	135	135	135
Protector (49F)	ON	°C	86	86	86
For condesation temperature					
protection control	OFF	°C	58	58	58
Heater exchanger thermistor	RESET	°C	54	54	54
For control protection					
Fuse	CUT	A	3.15	3.15	3.15

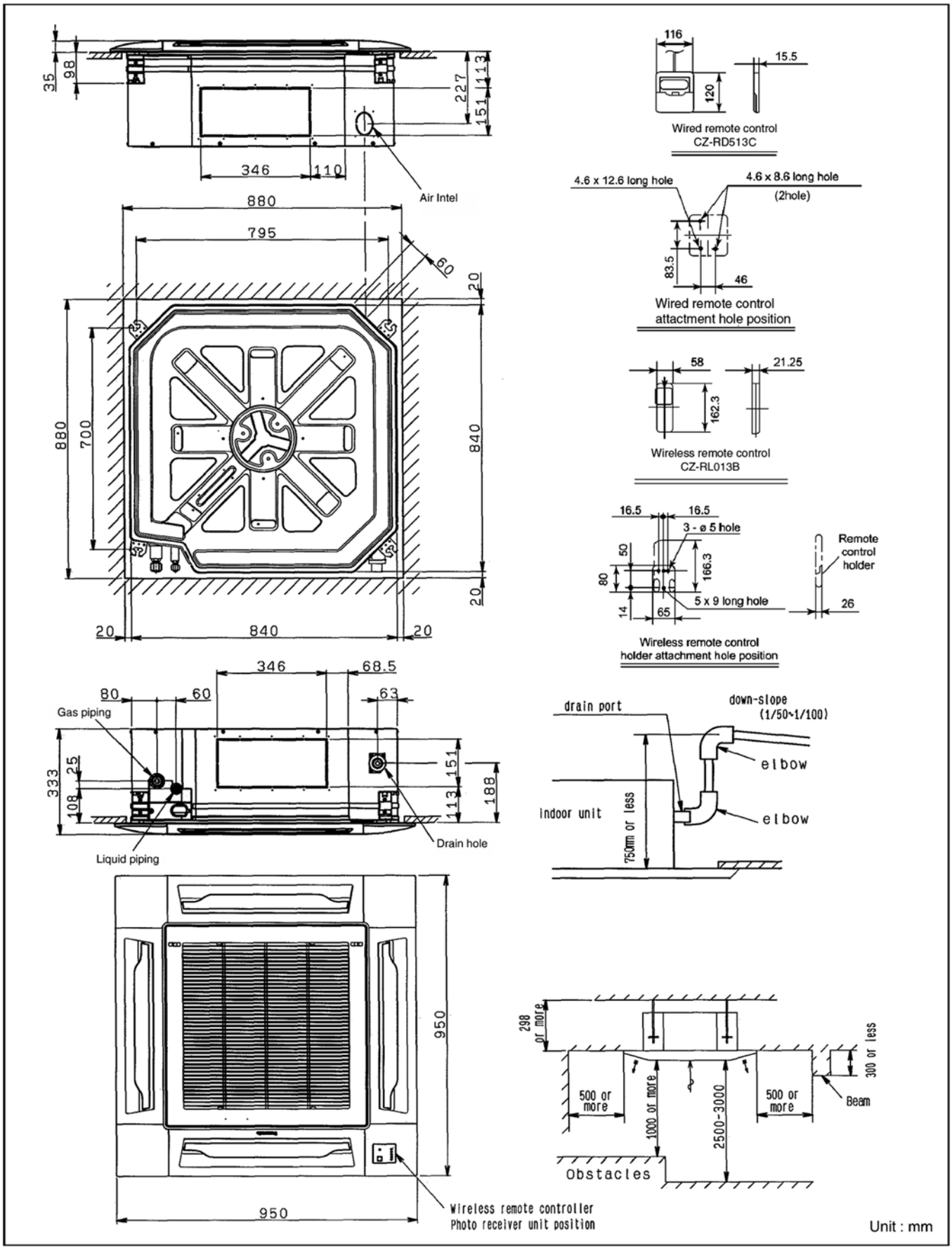
OUTDOOR UNIT

Outdoor Unit	Cooling Only Model	50Hz / 60Hz	CU-D34DBQ7	CU-D43DBQ7	CU-D50DBQ7
For refrigerant cycle					
High pressure	OFF	※ MPa	2.94	2.94	2.94
Switch (63H1)	ON	※ MPa	2.45	2.45	2.45
For compressor					
Over current protection					
Cooling Only Model	OFF	A	29	11	14
	RESET	—	Automatic	Automatic	Automatic
Discharge temp protection					
Discharge temperature thermistor (Th1)	Compressor OFF	°C	120	120	120
Liquid compress protection					
Crankcase heater	Input Power	W	NL	NL	NL
Compressor protection					
Internal protector	OFF	°C 50Hz	160	160	160
		°C 60Hz			
	ON	°C 50Hz	90	90	90
		°C 60Hz			
	Trip Time	50Hz	—	—	—
		60Hz	—	—	—
For fan motor protection					
Internal	OFF	°C	135	135	135
Protector (49F)	ON	°C	86	86	86
Heating control (Heat pump only)					
Pressure switch	OFF	※ MPa	—	—	—
(Fan speed) (63H2)	ON	※ MPa	—	—	—
Cooling control					
Heat exchanger temperature thermistor (Th2)	Control Method	Th ≥ 40°C ——— High speed Th < 40°C ——— 5 speed step control			
For control protection					
Fuse	CUT	A	6.3	6.3	6.3

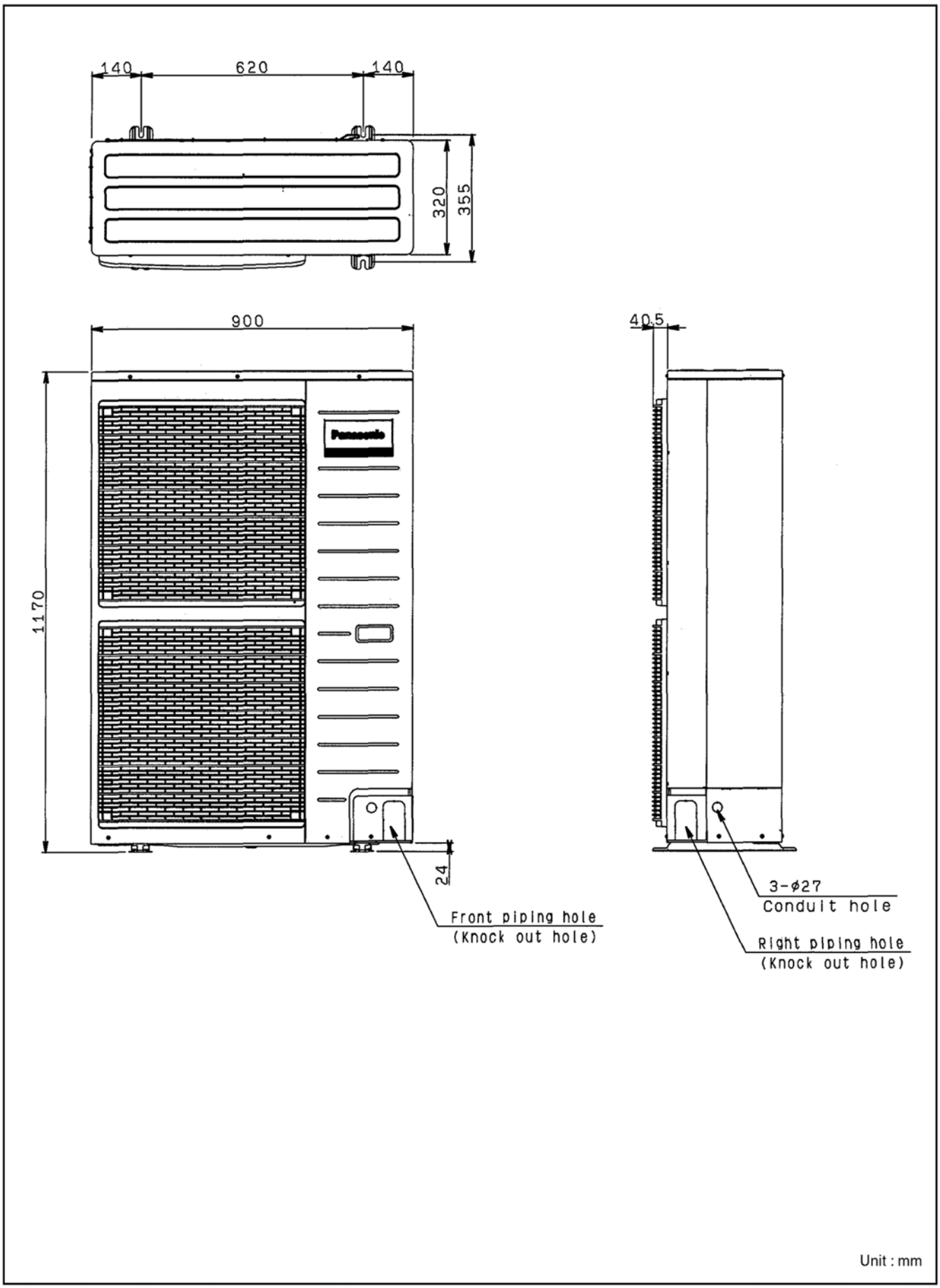
(※1) **1MPa=10.2kgf/cm^2**

4 Dimensions

4.1. Indoor Unit

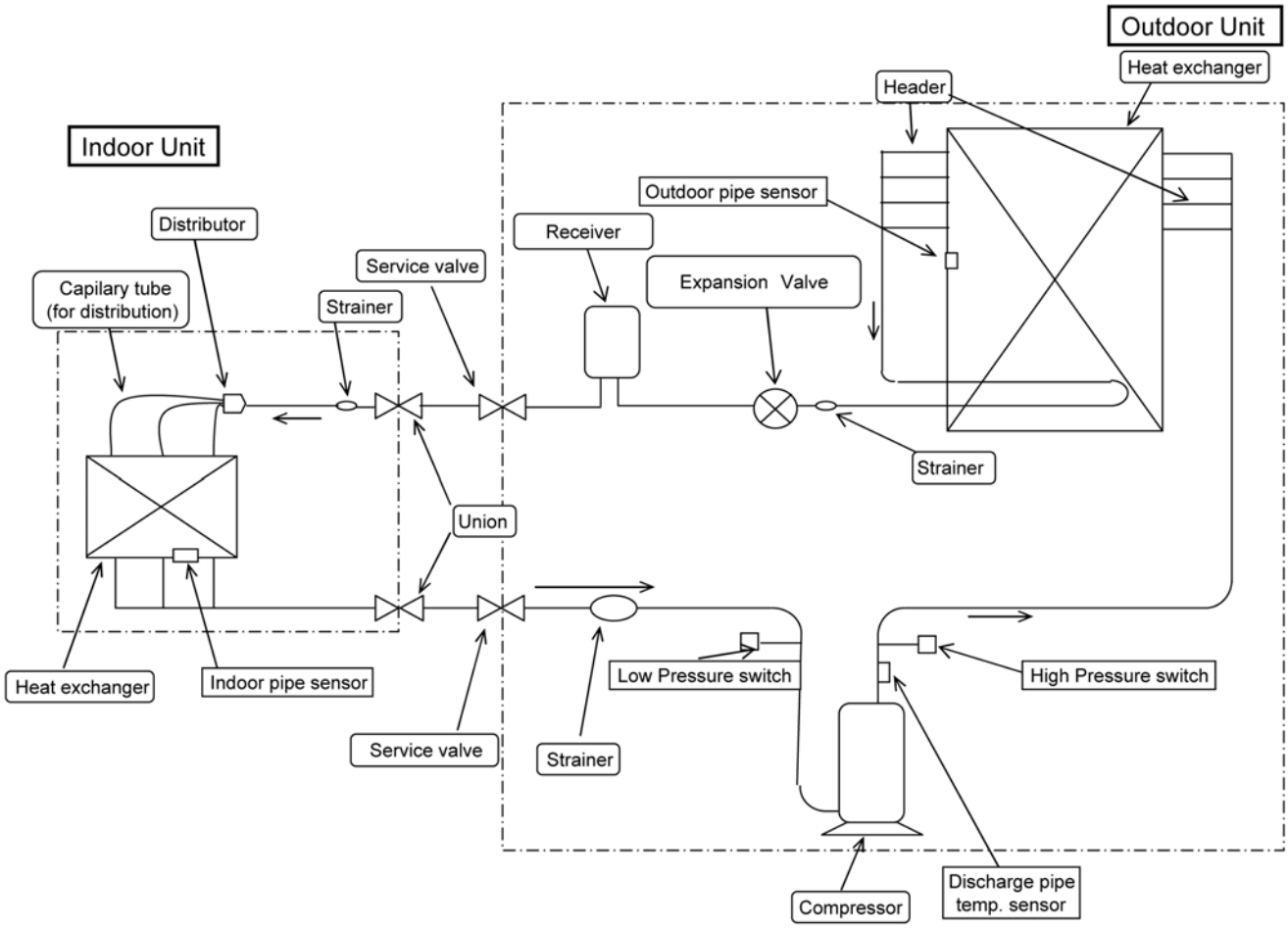


4.2. Outdoor Unit

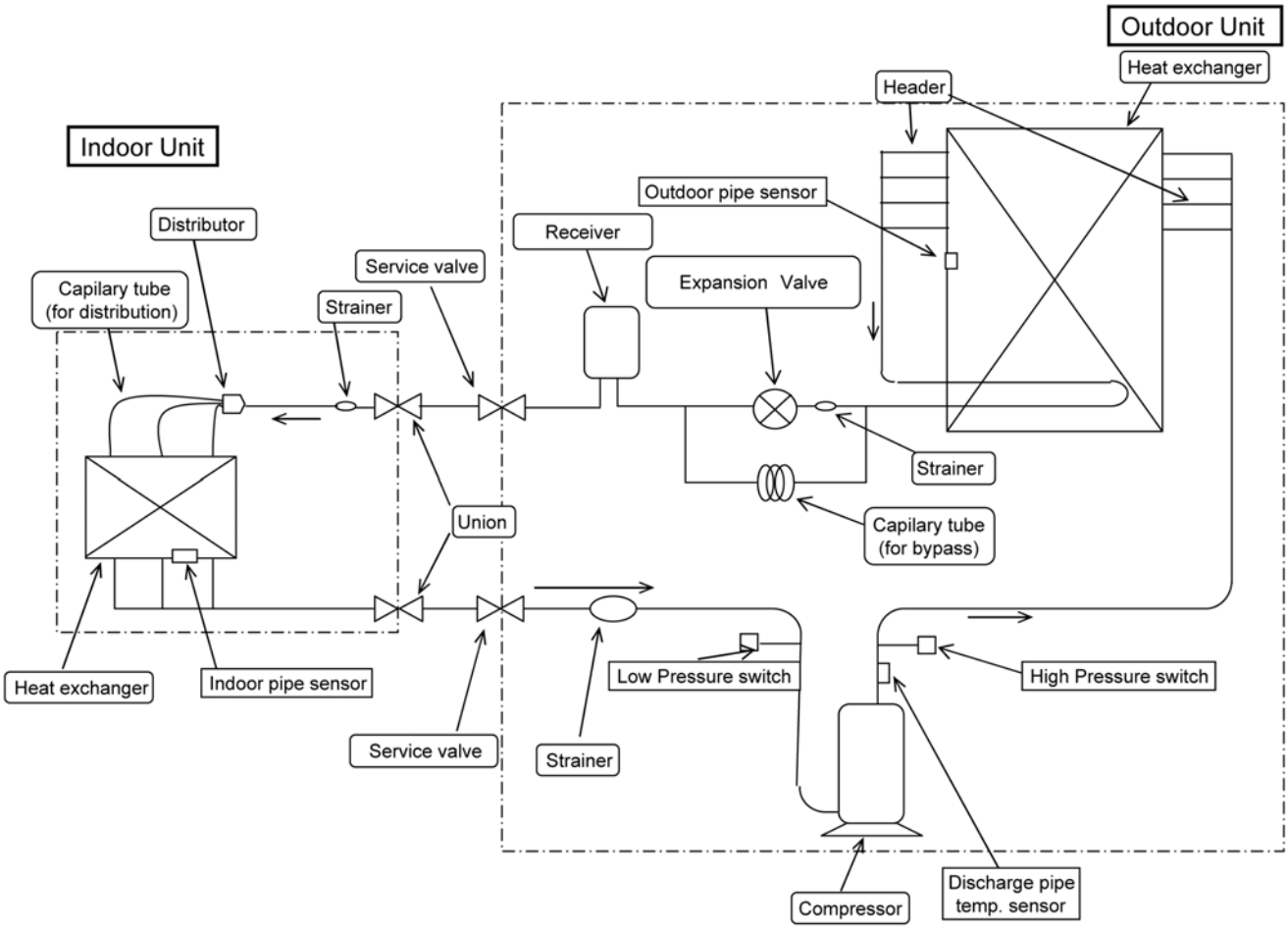


5 Refrigeration Cycle

5.1. CS-D34DB4Q CU-D34DBQ7

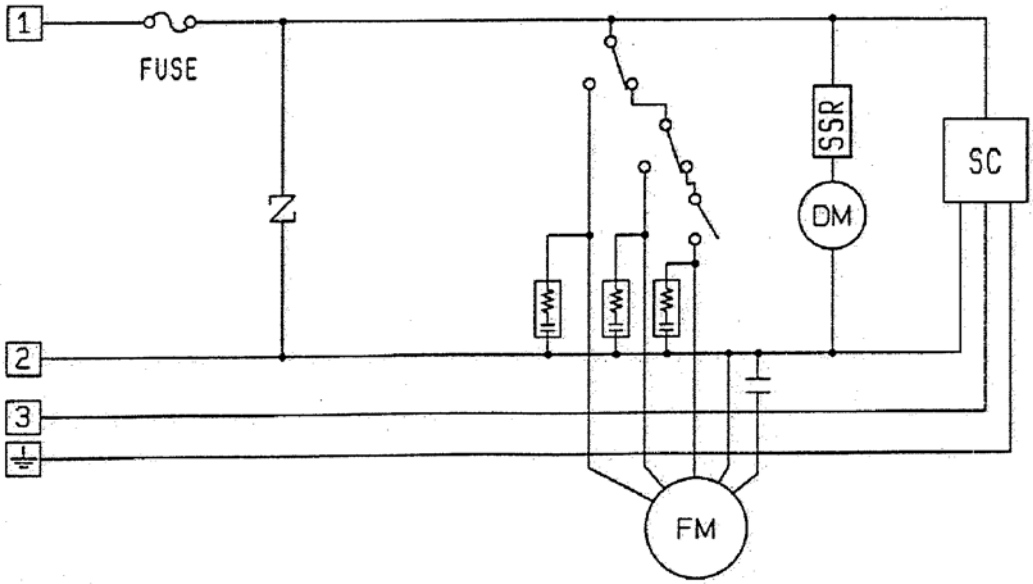


5.2. CS-D43DB4Q CU-D43DBQ7 CS-D50DB4Q CU-D50DBQ7

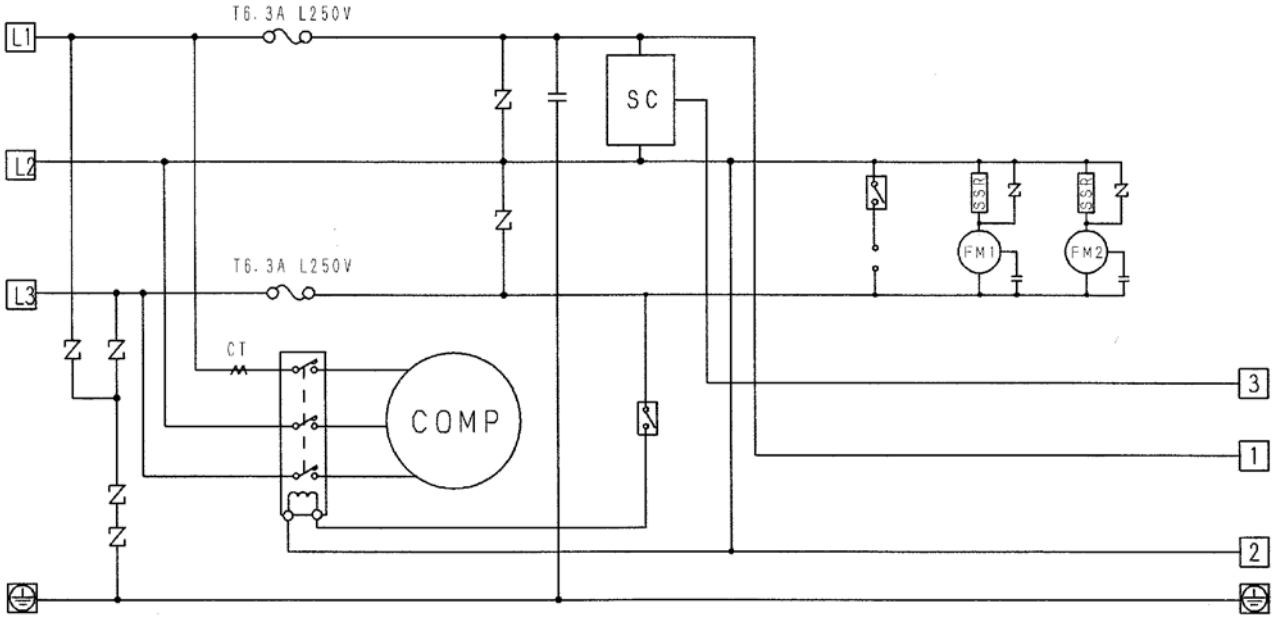


6 Block Diagram

6.1. CS-D34DB4Q CS-D43DB4Q CS-D50DB4Q

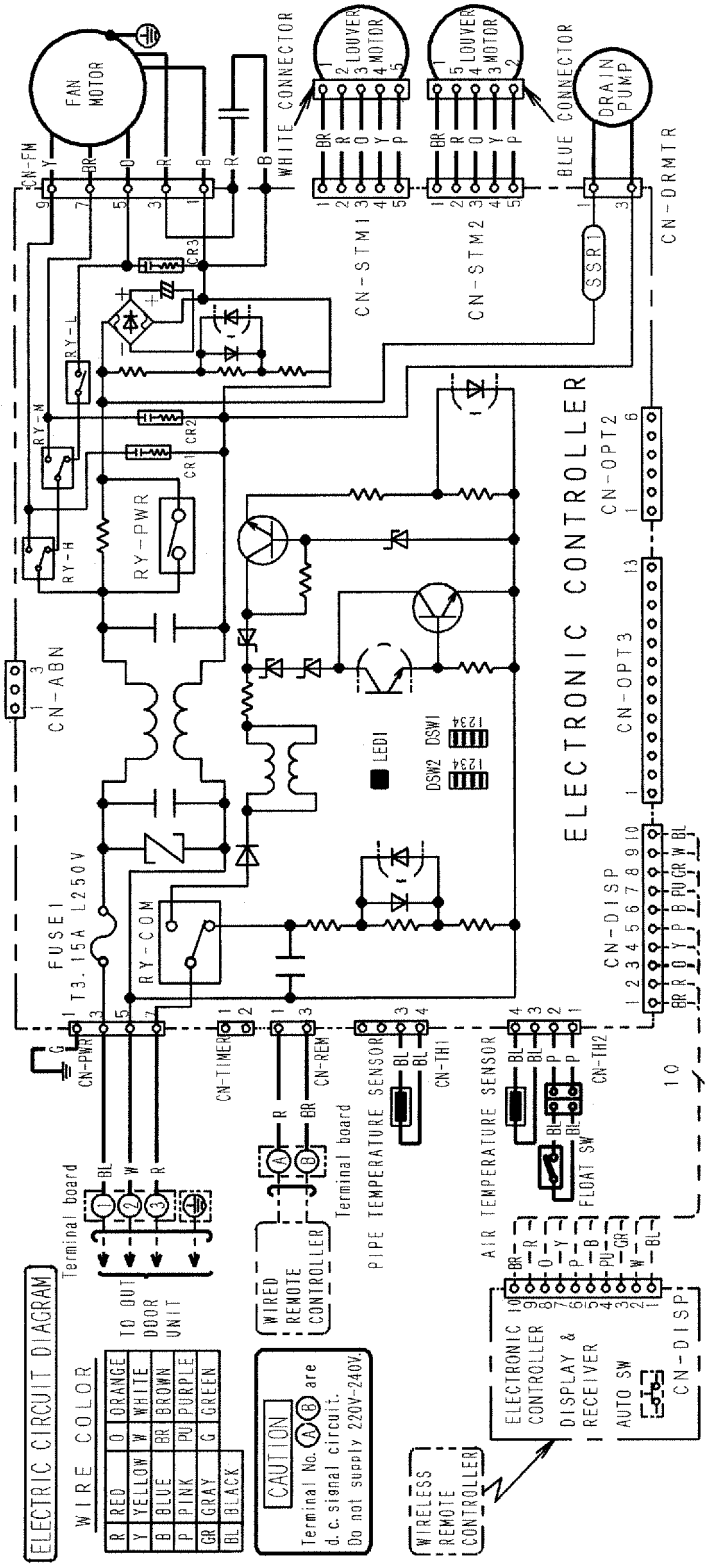


6.2. CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7

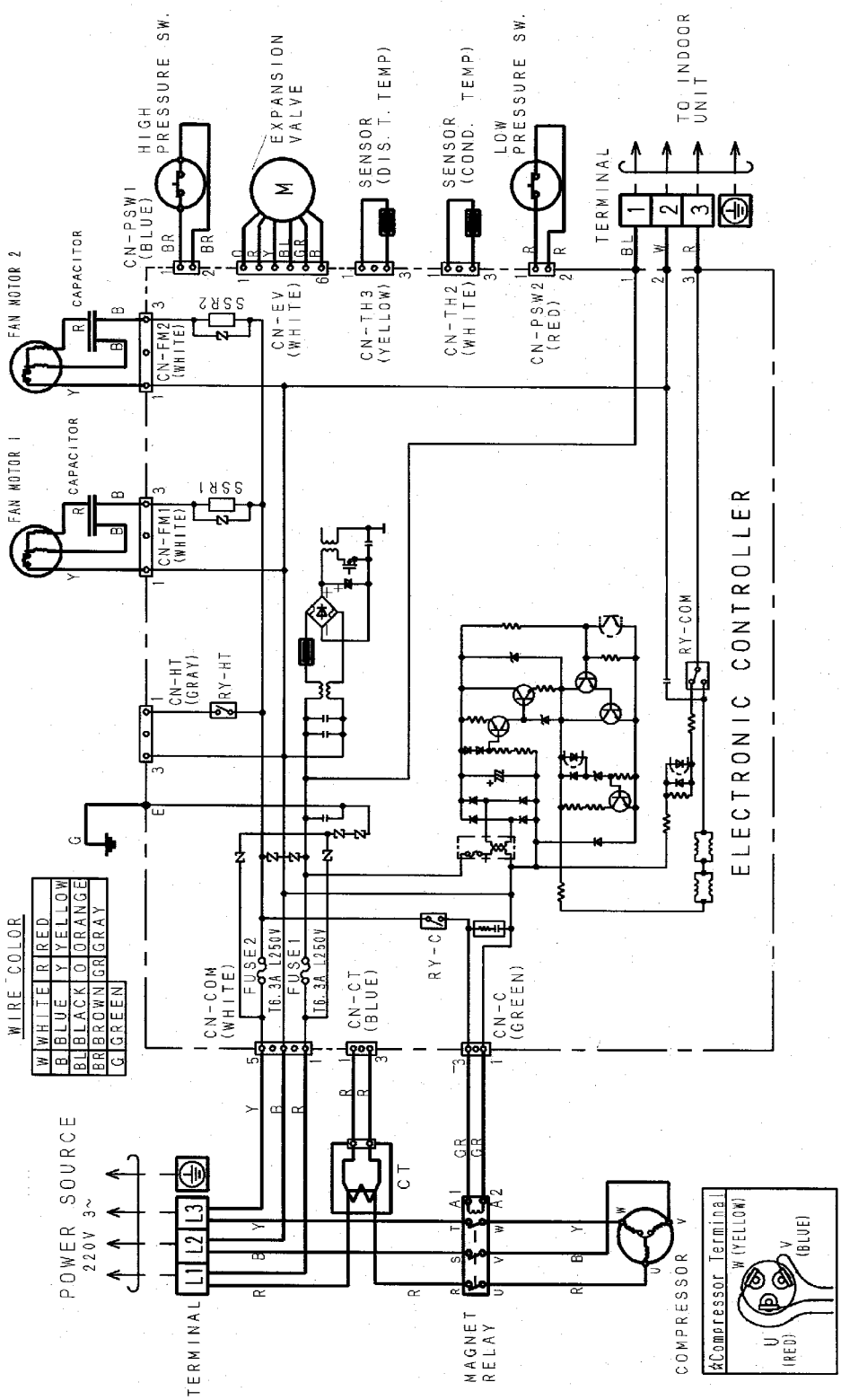


7 Wiring Diagram

7.1. CS-D34DB4Q CS-D43DB4Q CS-D50DB4Q



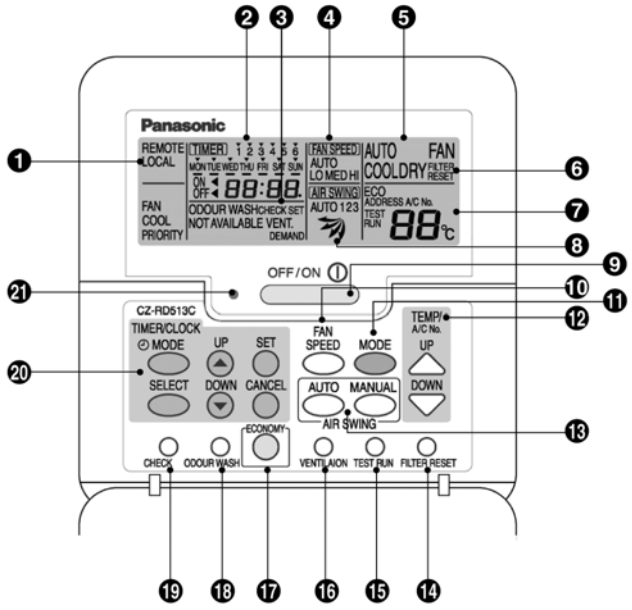
7.2. CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7



8 Operation Instructions

8.1. Wired Remote Control (Optional part)

Name and function of each part



1 REMOTE
The OFF/ON button cannot be used.
LOCAL
All wired remote control buttons can be used.

2 Time/time setting display

3 Check display

4 Fan speed display

5 Operation mode selection display

6 FILTER RESET display
(Appears after the cumulative running time reaches approximately 1,000 hours of operation.)

7 Temperature setting display (16°C - 31°C)

8 Airflow direction setting display

9 OFF/ON button
Used to start and stop the operation.

10 FAN SPEED button
Used to select the fan speed of high (HI), medium (MED), low (LO) or auto (AUTO).

11 MODE button
Used to select the operation of AUTO, FAN, COOL, or DRY.

12 TEMP (UP/DOWN) buttons
Used to select the desired temperature.

13 AIR SWING (AUTO/MANUAL) buttons
Used to determined the air swing condition, either auto or manual.

14 FILTER RESET button
Press to reset the “FILTER RESET” display after washing the filter.

15 TEST RUN button*

16 VENTILATION button*

17 ECONOMY operation button
Provides Energy saving function

18 ODOUR WASH button
Provides deodorizing function.

19 CHECK button
Press this button if the check display is flashing.

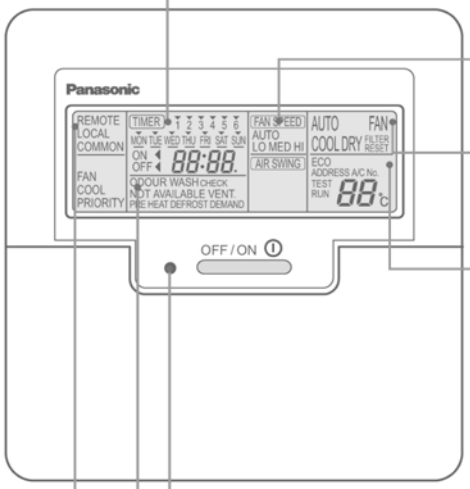
20 TIMER/CLOCK SET buttons
Used to set the timer operation and the current time.

21 Operation indicator
Lights up when the unit in operation.

NOTES

- Ensure that the correct button is pressed as simultaneous pressing of the multiple buttons will not make the setting correct.
- The illustration above is for explanatory purposes only. The appearance will be different during actual operation.
- Do not operate the remote control with wet hands. Otherwise, electric shock or malfunction may occur.
- Do not press the remote control buttons with sharp object as this may damage the remote control.
- Buttons marked with * are not needed for normal operation. If one of these buttons is pressed by mistake, press the same button once more to cancel the operation.
- When the power resumed after power failure, the unit will restart automatically with all the previous settings preserved by the memory function. (Auto restart function)

8.2. Remote Control - Display



Timer/Time Setting Display

This display shows the timer operation setting time or the current time. Timer can be selected from daily timer and weekly timer.

Fan Speed Display

This display shows the fan speed setting of Auto, Low, Medium and High.

Operation Selection Display

This display shows operation setting of Auto, Fan, Cool and Dry. Filter indication is also displayed here.

Temperature Setting Display

This display shows the temperature setting for the indoor unit. The temperature can be set within the range of 16°C ~ 31°C (for cooling operation). Settings of economy mode and test run are also displayed here.

OFF/ON Indicator LED

This indicator lights up when the air conditioner is running.

Message Display

ODOUR WASH	- Lights up during odour wash (odour removing) operation and flashes while odour wash (odour clear) is being set.
CHECK	- Flashes in case of abnormality.
SET	- Lights up when carrying out local setting.
NOT AVAILABLE	- Lights up when the function is not available for operation.
VENT.	- Indicates the operation of ventilating equipment (optional).
DEMAND	- Lights up when a demand request is made from outside.

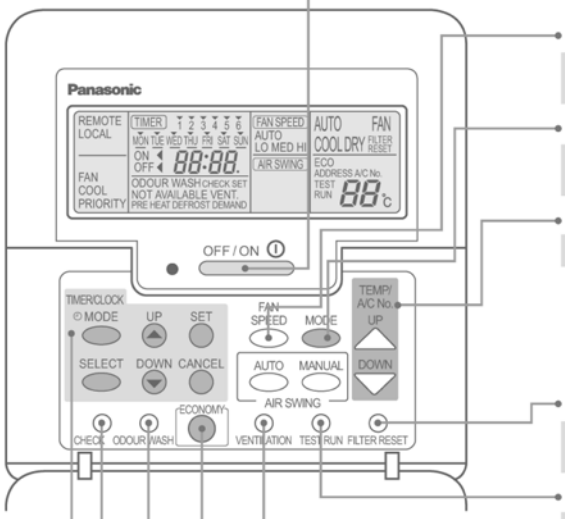
Operating Location and Priority Display

REMOTE, LOCAL, COMMON	- This display changes when a remote control device is connected.
REMOTE	- The RUN and STOP functions on the remote control unit cannot be used.
LOCAL	- Air conditioner can be operated with the remote control unit.
COMMON	- Air conditioner can be operated with both the remote control unit and a remote controlling device.

FAN PRIORITY	- Operation other than air circulation operation is not available.
COOL PRIORITY	- Operation other than cooling is not available.

Change the operation mode with a device other than the remote control unit.

8.3. Remote Control - Panel



OFF/ON button

This button is used to run or stop the air conditioner.

Fan Speed button

This button is used to change fan speed to Auto, Low, Medium and High.

Operation Mode button

This button is used to change operation mode to "FAN", "COOL", "DRY" and "AUTO".

Temperature Setting button

This button is used to set the room temperature.

Filter Reset button

After the filter has been cleaned, press this button to clear the "FILTER RESET" display.

Test Run button

This button is used during test run.

Ventilation button

When a ventilating device (optional) is attached, this button is used to run and stop the ventilating device.

Economy button

This button is used to run and stop the economy operation.

Odour Wash button

This button is used to run and stop the odour wash (odour removing) operation. Long pressing of this button starts odour wash (odour clear) operation.

Check button

Press this button if the check display is flashing. An error code from F15-F46 will be displayed. Immediatelly call your nearest service center.

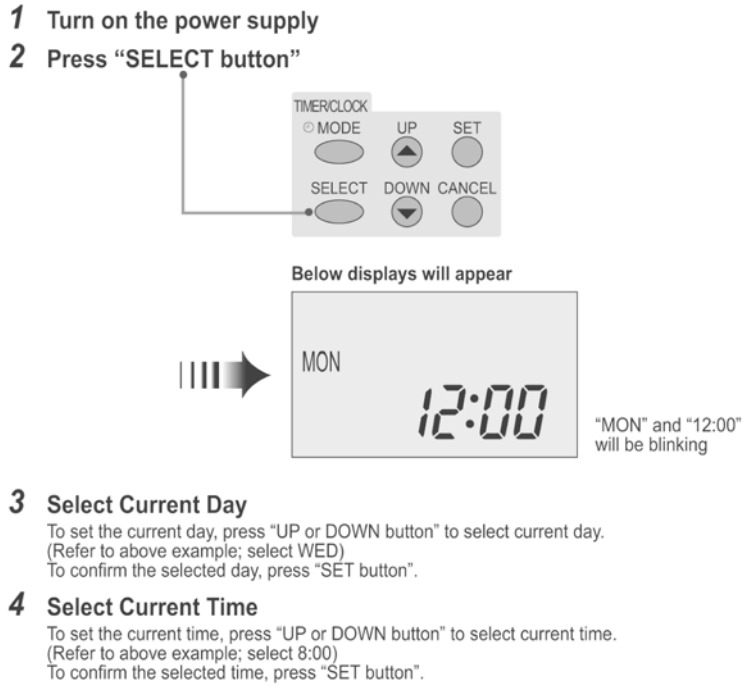
Timer Setting button Group

This button group is used for timer setting. For details, please refer to the descriptions on subsequent pages. Basic functions of each button are as follows:

MODE - Changes clock and timer display or goes back to the previous display
SELECT - Starts timer setting mode
UP - Increases the time
DOWN - Decreases the time
SET - Confirms general settings and timer setting. Resumes all timer settings collectively.
CANCEL - Cancels settings. Cancels all the timer settings collectively.

8.4. How to set remote control day and time

- The day and time needs to be set when you turn on the power for the first time or after a long time has elapsed since the power was last turned on.
- The day and time becomes the standard time for all the Timer operations.
- Set the day and time accurately.
- Example : Current Day is Wednesday and Current Time is 8:00.



Note:

- Press “UP button” to increase or “DOWN button” to decrease (interval 1 minute) or hold the button to change the time faster.
- If the “UP or DOWN button” is not pressed for 30 seconds during the day or time setting or if the “SELECT button” is pressed, the setting at that moment is confirmed and setting will end.

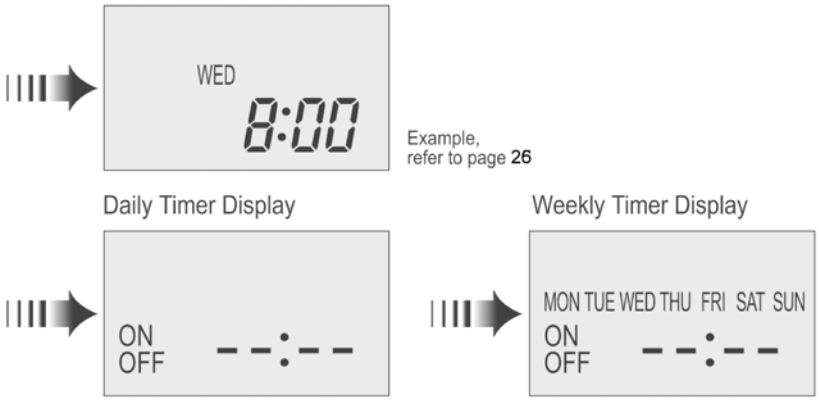
8.5. How To Select The Timer

- 2 types of Timer mode can be selected on the remote control.
  - Daily Timer
  - Weekly Timer
- These timers cannot be operated simultaneously.
- Select one of these Timers for your convenience.

How to Change the Display

- Press once to change the display from CLOCK to Timer or vice-versa.
- Press more than 3 seconds to change the display from Daily Timer to Weekly Timer or vice-versa.

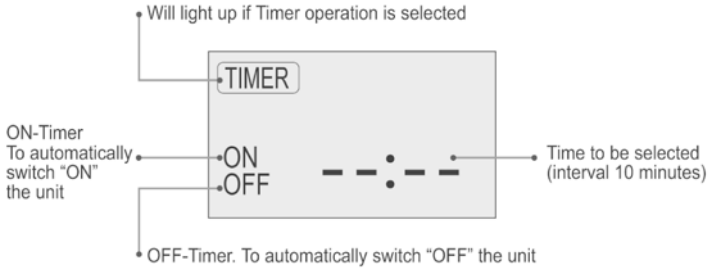
CLOCK Display (To set current Day and Time)



Note:
- The above display is shown if no valid timer setting is made.
- If valid timer setting is made.
  - Timer and setting will be displayed.
  - If you want to check the current time and day, press “MODE button” once.
    (However, after a few seconds, the display will change back to Timer and the setting)

8.6. Daily Timer Setting

- **Display**

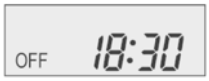


- **How to Set Daily Timer**
  - You can set only “ON” or only “OFF” or “ON” and “OFF” in a day.

1. **Change Display**
   Press “MODE button” to change the display to daily timer.

2. **ON-Timer, OFF-Timer and select Time**
   Press “SELECT button”; ON-Timer setting will be displayed.
   Press “UP or DOWN button” to select the desired time, (Example: ON 9:00), then press “SET button” to confirm the selected desired time.
   Or press “CANCEL button” if you do not want any setting for ON-Timer.

   Then OFF-Timer setting will be displayed.
   Press “UP or DOWN button” to select the desired time, (Example: OFF 18:30), then press “SET button” to confirm the selected desired time.
   Or press “CANCEL button” if you do not want any setting for ON-Timer.



Note:
- The setting timer will be activated everyday.
- Timer nearer to the current time will be activated first.

Final Display of Daily Timer:

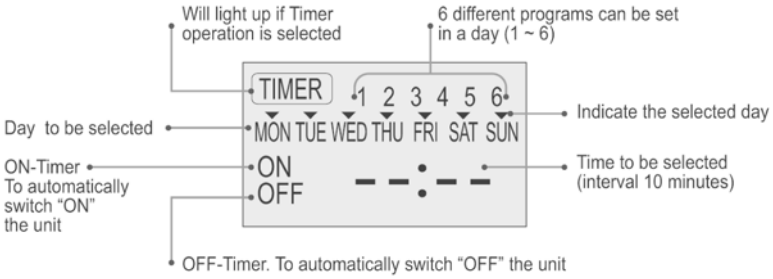
Only ON-Timer being selected. The Unit will automatically switch ON at 9:00.

Only OFF-Timer being selected. The Unit will automatically switch OFF at 18:30.

ON and OFF Timer are selected. ON-Timer will be activated first due to 9:00 being nearer to current time.

8.7. Weekly Timer Setting

- **Display**



- **How to Set Weekly Timer**
  - You can set the Timer for 1 week (Monday to Sunday) with 6 programs per day.
  - ON-Timer can be set together with your desired temperature. However, this temperature will be used continuously.
  - Cannot set 2 programs with same time setting in a day.
  - You also may select Collective - many days with same time setting or Individual
    - single/one day setting.

1. **Change Display**
   Press “MODE button” to change the display to weekly timer.

2. **Select Day** (please refer to next page for example of setting)
   You may select Collective or Individual day setting.
   - Collective day setting.
     Press “SELECT button”: display will show day selection setting.
     Press “UP or DOWN button” to select the day. Then press “SET button” to delete triangle mark (deselect) or add triangle mark (select).
     (Triangle mark on top of each day indicates the day to be selected).
     Repeat these steps if you want to deselect or select many days.
     To confirm the selected days, press the “SELECT button”.
   - Individual day setting.
     Press “UP or DOWN button” to select the day.
     Then press “SELECT button”.

3. **Select Time** (please refer to next page for example of setting)
   For 1st program setting.
   Press “UP or DOWN button” to select ON or OFF.
   Then press “SET button” to confirm.
   Press “UP or DOWN button” again to select the desired time.
   (If you want to set them together with your desired temperature, press “TEMP UP/DOWN button” to select the temperature).
   Then press “SET button” to confirm.
   Or press “CANCEL button” if you do not want to set any time.
   For 2nd ~ 6th program you may refer to the above step.

Example:
Setting 1st program

For example , if you want to set:

A - Monday to Friday: Same time, 1st program ON 9:00 & 2nd program OFF 16:00.
B - Only Wednesday: Additional 3rd program OFF 12:30 & 4th program ON 13:30.
C - Only Saturday: 1st program ON 10:00 with 20°C & 2nd program OFF 14:00.
D - Sunday: Holiday. No need to set any Timer.

- To set A (Monday to Friday - Collective day setting)
  Press “SELECT button”
  To select Monday to Friday, deselect Saturday and Sunday by pressing “UP or DOWN button” to Saturday, press “SET button” (triangle mark on top of Saturday will disappear)
  Follow the same step to deselect Sunday.
  Ensure triangle mark appears on top of Monday ~ Friday.
  - To confirm the selected days, press “SELECT button”.
    To set the time, please refer to step 3. Select time at page 28.
    - 1st program - select ON and desired time to 9:00.
      2nd program - select OFF and desired time to 16:00.
      3rd ~ 6th program - press “CANCEL button”.

- To set B (Wednesday - Individual day setting)
  - Press “UP or DOWN button” to select WED (Wednesday).
    Then press “SELECT button”.
    To set the time, please refer to step 3. Select time at page 28.
    - 1st program - press “SET button” twice (confirm ON and 9:00)
      2nd program - also press “SET button” twice. (Confirm OFF and 16:00)
      3rd program - select OFF and desired time to 12:30
      4th program - select ON and desired time to 13:30
      5th ~6th program - press “CANCEL button”

- To set C (Saturday - Individual day setting)
  - Follow the same step as above.
    To set the time, please refer to step 3. Select time at page 28.
    - 1st program - select ON, desired time to 10:00 and desired temperature to 20°C.
      2nd program - select OFF and desired time to 14:00.
      3rd ~ 6th program - press “CANCEL button”.

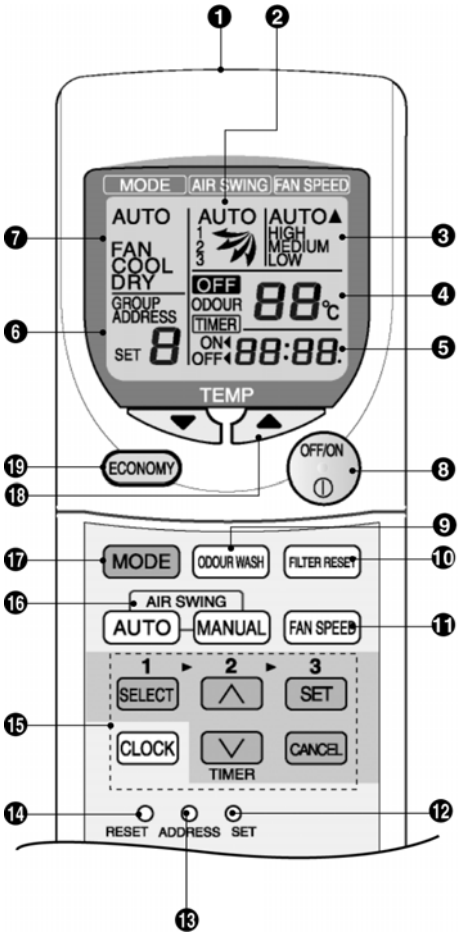
  - Final Display for Weekly timer may show as:
    (Display is showing, 9:00 ON - Timer on Wednesday will be activated next because it is nearest the current day/time.)

Note:

- Timer that has setting nearest to current time and day will be activated first.
- To check the setting timer, press “SELECT button”, then “UP or DOWN button” to select day. The display will show each program for the selected day.
- To reset the setting for all, press “SELECT button”, then ensure all day setting with triangle mark. Then press “CANCEL button” for all the programs.

8.8. Wireless Remote Control (Optional part)

Name and function of each part



1. **Transmitter**
   Transmits the remote control signal.
2. **Airflow direction setting display**
3. **Fan speed display**
4. **Temperature setting display (16°C - 31°C)**
5. **Time/time setting display**
   Shows the timer operation setting time or the current time.
6. **Address number display**
7. **Operation selection display**
8. **OFF/ON button**
   Used to start and stop the operation.
9. **ODOUR WASH button**
10. **FILTER RESET button**
    Press to cancel the “FILTER” indicator light on the control panel.
11. **FAN SPEED button**
    Used to select the fan speed of high (HI), medium (MED), low (LO) or auto (AUTO).
12. **SET button***
    Local setting function.
13. **ADDRESS SET button***
    Used to change the address setting when using more than one indoor unit.
14. **RESET button**
    Pressing this button will clear all the settings from memory.
    You will then need to make the settings again.
15. **TIMER/CLOCK SET buttons**
    Used to set the timer operation and the current time.
16. **AIR SWING (AUTO/MANUAL) buttons**
    Used to determine the air swing condition, either auto or manual.
17. **MODE button**
    Used to select the operation of AUTO, FAN, COOL or DRY.
18. **TEMP (UP/DOWN) buttons**
    Used to select the desired temperature.
19. **ECONOMY operation button**

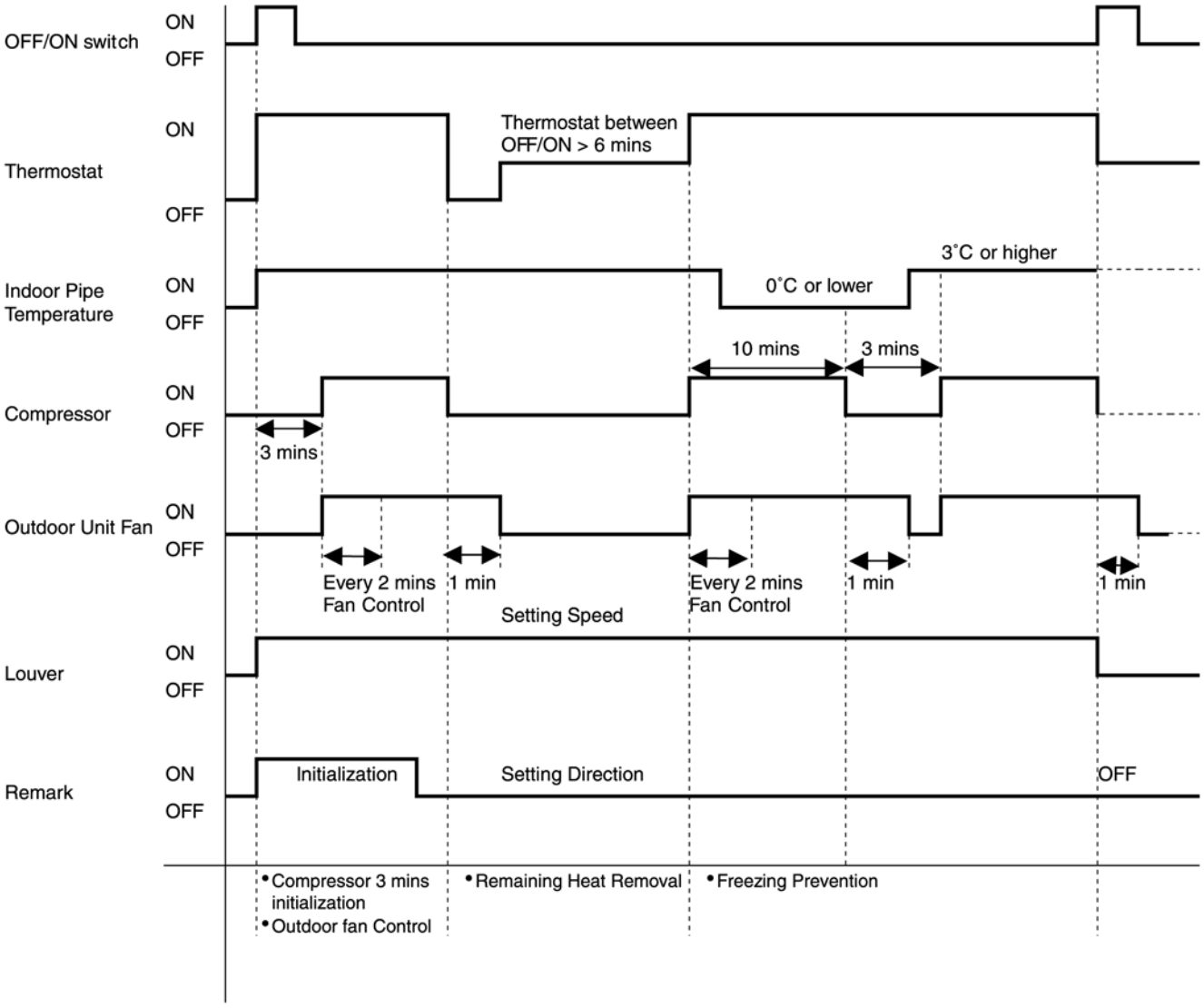
NOTES

- Ensure that the correct button is pressed as simultaneous pressing of the multiple buttons will not make the setting correct.
- The illustration above is for explanatory purpose only. The appearance will be different during actual operation.
- If using the wireless remote control in conjunction with the wired remote control, the settings made from the wireless remote control will appear on the wired remote control display (except when making timer settings).
- Buttons marked with * are not needed for normal operation. If one of these buttons is pressed by mistake, press the same button once more to cancel the operation.
- When the power resumed after power failure, the unit will restart automatically with all previous settings preserved by the memory function. (Auto restart function)

9 Operation Details

9.1. Cooling Operation

- Cooling operation can be set using remote control.
- This operation is applied to cool down the room temperature reaches the setting temperature set on the remote control.
- Cooling Operation Time Diagram.



9.2. Soft Dry Operation

- Soft Dry Operation can be set using remote control.
- Soft Dry operation is applied to dehumidify the room.
- When operation begins, the fan speed is fixed at Low speed while cooling operation is running until reaches the remote control setting temperature.

9.3. Auto Operation

- Automatic Mode can be set using remote control.
- This operation starts to judge the intake air temperature, setting temperature, and outdoor piping temperature. Then the unit starts to operate at determined operation mode.

9.4. Fan Operation

- Fan operation can be set using remote control.
- The indoor fan is operated at High, Medium or Low speed according to remote control setting.

9.5. Operation Control

9.5.1. Thermostat Control

- Depending on differences between room temperature and setting temperature, compressor operation is decided and starts operation.
- If temperature difference matches values shown below, thermostat switches off.

Cooling Mode	-1.5°C
Soft Dry Mode	-2.5°C

9.5.2. Indoor Fan Control

- Manual Fan Speed
  Operation starts at High, Medium or Low speed set by remote control.
- Auto Fan Speed
  When operation start, or shifting to thermostat ON condition from thermostat OFF condition, indoor fan operates as below.

Thermostat & Compressor ON/OFF		Thermostat & Compressor ON			Thermostat & Compressor OFF			Thermostat & Compressor ON		
Time		40 sec.	50 sec.	-	20 sec.	120 sec.	20 sec.	40 sec.	50 sec.	-
Cooling	Auto	Off	Lo	Hi	Lo	Off	Lo	Off	Lo	Me
Soft Dry	Auto	Off	Lo	Lo	Lo	Off	Lo	Off	Lo	Lo

9.5.3. Odour Cut Control

- Odour cut operation removes the odour generated at indoor heat exchanger by using drain water come out from indoor heat exchanger.
- Press “Odour” button at remote control to enable odour cut operation.
- Odour cut operation starts when compressor or thermostat is on.

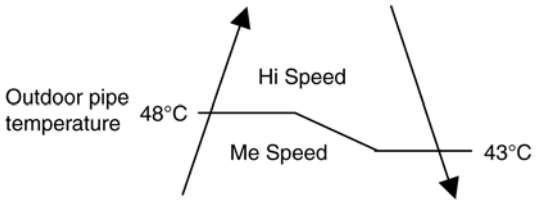
Thermostat & Compressor ON/OFF	Thermostat & Compressor ON			Thermostat & Compressor OFF			Thermostat & Compressor ON		
Time	40 sec.	50 sec.	-	20 sec.	120 sec.	20 sec.	40 sec.	50 sec.	-
Cooling	Off	Lo	Normal Operation	Lo	Off	Lo	Off	Lo	Normal Operation
Soft Dry	Off	Lo	Lo	Lo	Off	Lo	Off	Lo	Lo

9.5.4. Freeze Prevention Control

- After compressor starts operation for 4 minutes, the outdoor unit will stop its operation if indoor pipe temperature falls below 0°C for 6 minutes.
- After 3 minutes stops, compressor restarts operation if indoor pipe temperature is 3°C or more.
- This phenomenon is to protect the indoor heat exchanger from freezing and to prevent higher volume of refrigerant in liquid from returning to the compressor.

9.5.5. Dew Form Prevention Control

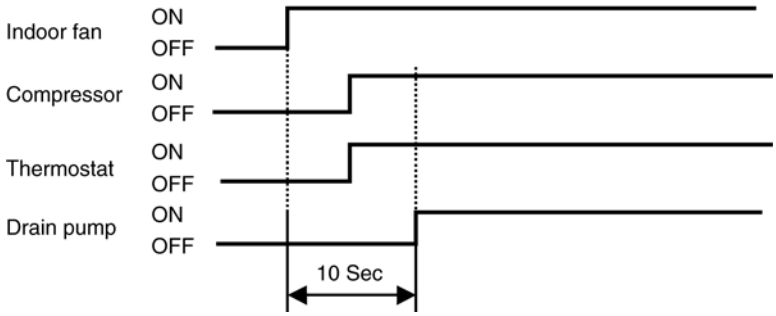
- During Cooling Operation, dew form prevention control activates if:
  - Indoor temperature falls between 24ºC and 30ºC.
  - Compressor and thermostat is ON.
  - Indoor fan speed is Low speed.
  - Setting temperature is less than 25ºC.
- During dew form prevention control, the louver is fixed at 30º.
- Outdoor fan speed changes according to outdoor pipe temperature.



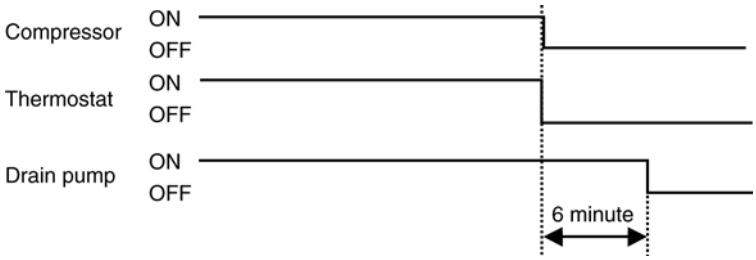
- Dew form prevention control cancel when:
  - Any one of the condition above does not comply.
  - During Outdoor Fan operates at Hi speed, the outdoor pipe temperature is more than 58ºC.

9.5.6. Drain Pump Control

- During Cooling and Soft Dry operation, drain pump operates by following the table below.
- When operation start, drain pump starts operating after 10 seconds of indoor fan starts.



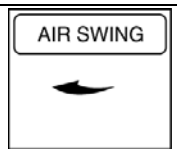
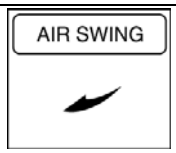
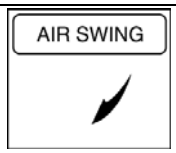
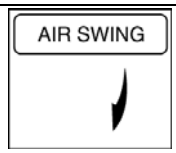
- When operation stop or thermostat is off, drain pump continue operates for 6 minutes to prevent the drain water from coming back.



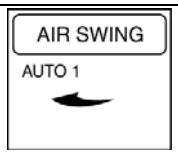
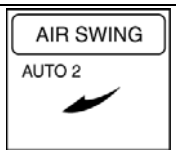
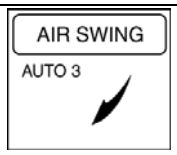
9.5.7. Louver Control

- Louver angle could be set by using remote control.
- When power is on, louver start initializing toward to close Direction.
- During operation, stopping, thermostat off condition, louver angle is shown in the table below.

Manual louver setting

Operation Mode	Display				
Cooling/Fan	Normal	20°	30°	50°	70°
Soft Dry	Thermostat Off	20°	30°	50°	70°
	Normal	20°	30°	50°	70°
	Thermostat Off	20°	30°	50°	70°
Operation mode judge		20°	30°	50°	70°
Stop Mode		0°			

Auto louver setting

Operation	Display			
Cooling/Fan	Normal	20° - 70°	10° - 40°	40° - 70°
	Thermostat Off	20° - 70°	10° - 40°	40° - 70°
Soft Dry	Normal	20° - 70°	10° - 40°	40° - 70°
	Thermostat Off	20° - 70°	10° - 40°	40° - 70°
Operation mode judge		20°	10°	20°
Stop Mode		0°		

9.5.8. Outdoor Fan Control

- Outdoor fan speed changes according to outdoor pipe temperature.
- The fan speed is controlled by the timing of turning the outdoor fan ON and OFF within an interval.
- There unit compares current temperature (T2) with previous (2 seconds before) temperature (T1) and decides the outdoor fan ON time (X).

Judgement	Outdoor fan ON time (X)
45°C < T2	X = X + 100ms
40°C ≤ T2 < 45°C & T2 ≤ T1	X = X + 50ms
40°C ≤ T2 < 45°C & T2 < T1	X = X
35°C ≤ T2 < 40°C	X = X
30°C ≤ T2 < 35°C & T2 ≤ T1	X = X - 50ms
30°C ≤ T2 < 35°C & T2 < T1	X = X
T2 < 30°C	X = X - 50ms

Outdoor fan ON time (X) is a variable with the range of 200ms to 1600ms or continuously ON.

- Every 2 minutes, the outdoor pipe temperature is detected and the outdoor unit fan speed is changed automatically.

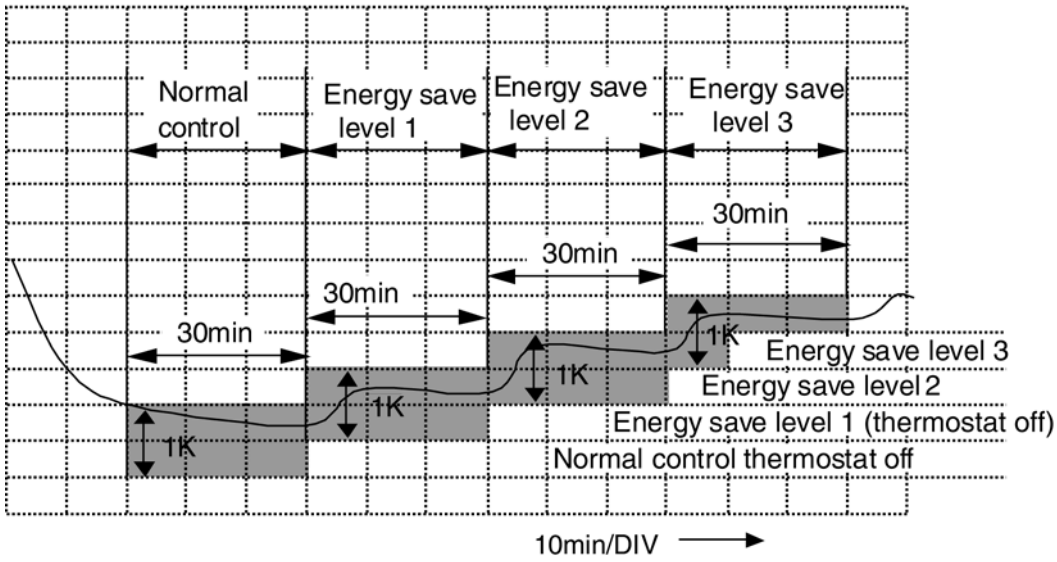
9.5.9. Outdoor Fan Remaining Heat Removal Control

- When compressor stop, outdoor fan operates at High speed for 1 minute to remove the remaining heat.

9.5.10. Energy Save Control

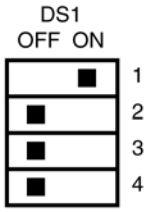
- During Cooling Operation, press "Economy" button at remote control to enable Energy Saving Operation
- The air conditioner judges the stable condition, where the different between indoor suction temperature and setting temperature is 1°C for 30 minutes and moderately shifts the set temperature in 0.5°C steps (Maximum 2°C) to control energy saving operation.
- If temperature different is out of range, energy save operation will not start.
- Energy Save Operation is canceled by pressing the "Economy" button again.

Energy save control time chart



9.6. Test Run (Forced Cooling mode)

- Test run is necessary after installation is completed.
- To enable test run operation, at outdoor PCB, set the DS1 Switch 1 to ON position.



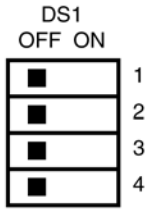
- Press Test Run button for 1 second.

9.6.1. Valve Error

- During test run, if the 3-way valve is close, valve error is shown on wired remote control.
- This control is to protect the compressor.
- Valve error is detected if comply with conditions below:
  - Power is on for the first time and within 5 minutes from compressor starts (However, the unit is considered power on for first time when compressor starts operating continuously for 7 minutes).
  - Indoor heat exchanger temperature at compressor start - 3°C < current indoor heat exchanger temperature for 1 minute.
  - Indoor suction temperature - 3°C < current heat exchanger temperature for 5 minutes.

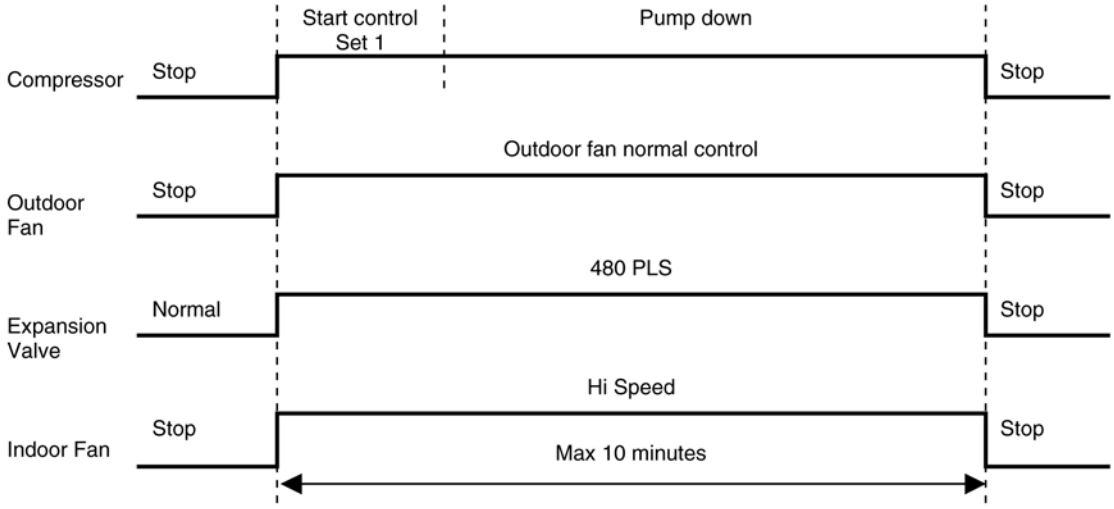
9.7. Pump down

• To enable pump down operation, at outdoor PCB, set the DS1 to OFF position.



• Press Test Run button for 1 second.

• During Pump Down operation, push the Test Run button again for 1 second to stop the pump down operation.
• The pump down operation run for 10 minutes.

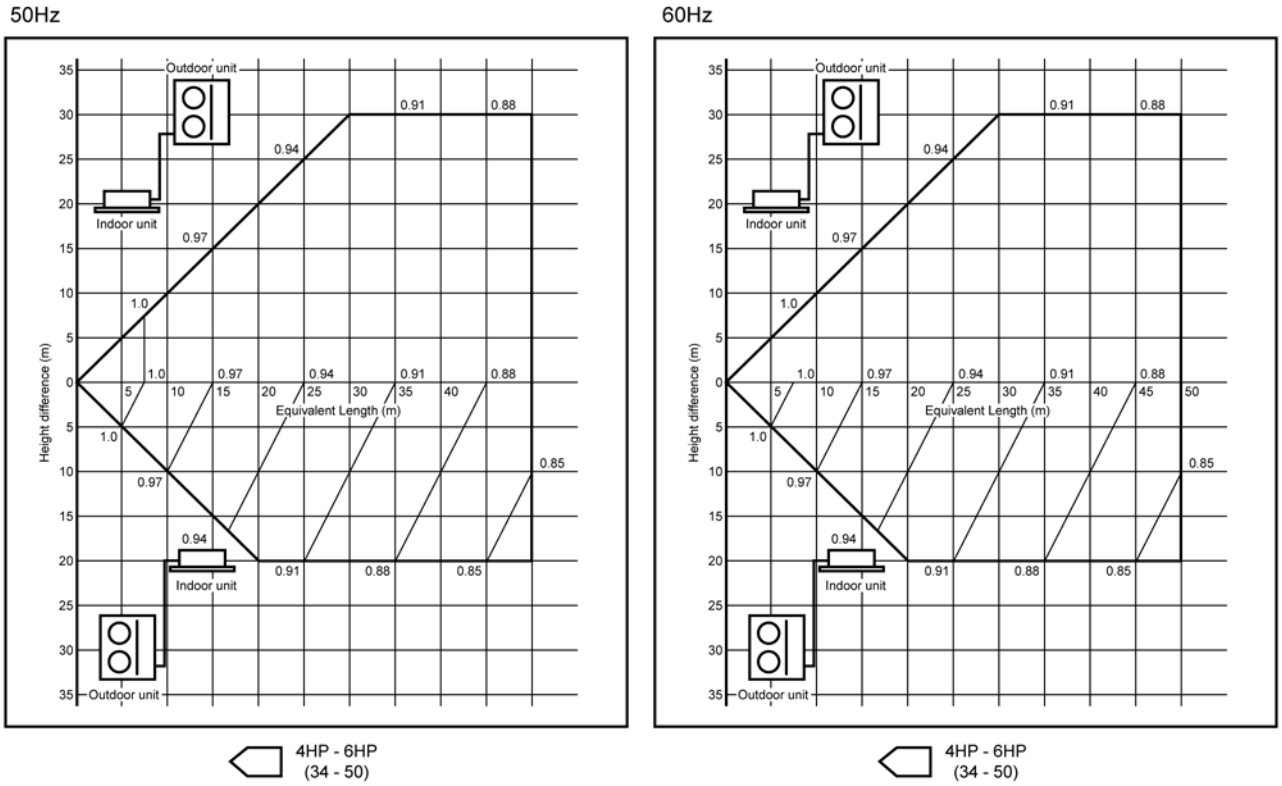


10 Installation Instruction

10.1. Pipe length

• **CORRECTION OF COOLING CAPACITY**

1. Correction of cooling capacities according to the connecting pipe length.
   The Data of cooling capacities (marked on the name plate) are based on 7.5 meters connecting pipe and horizontal installation.
   For other pipe length of other installation multiply by the following correction factor to determine the revised cooling capacity.



Equivalent Length = actual pipe length + number of elbow x ELE + number of oil trap x ELO
ELE : equivalent length of elbow
ELO : equivalent length of oil trap

2. For other pipe length of other installation multiply by the following correction factor to determine the revised cooling capacity.

Outer diameter of gas side pipe mm (inch)	ELE
12.7 (1/2)	0.20
15.88 (5/8)	0.25
19.05 (3/4)	0.35
6.35 (1/4)	0.18

10.2. Refrigerant additional charge

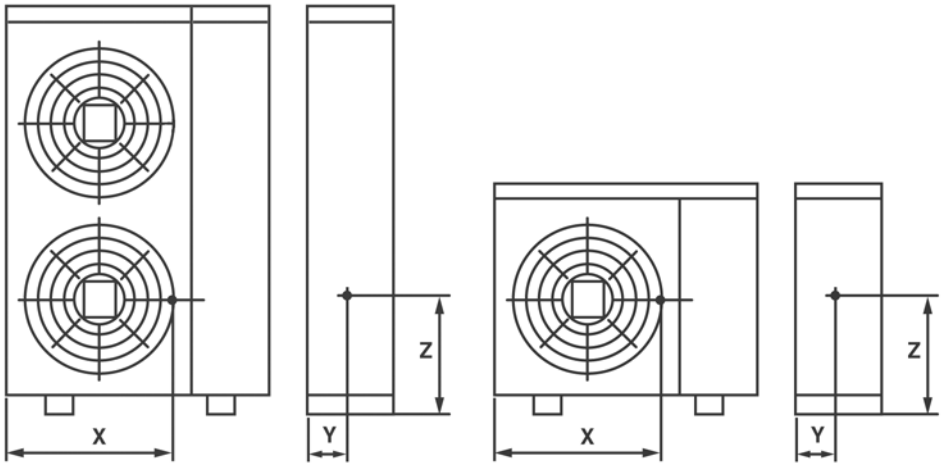
1. **Piping installation by standard piping**
   - At the time of shipment from the factory, this unit is charged with enough refrigerant for an equivalent pipe length of 30m. (Refer the following table)
     But when the piping length exceeds 30m, additional charge is required according to the following table.
     Example:
     CU-D34DBQ7
     In case of 50m long pipe (one way), the amount of refrigerant to be replenished is: (50 - 30) x 40 = 800g

Model Name	Standard piping specification			
	Liquid piping (dia.mm)	Gas piping (dia.mm)	Gas chargeless length (m)	Additional gas volume (g/m)
CU-D34DBQ7 (60Hz)	9.52	19.05	30	40
CU-D43DBQ7 (60Hz)	9.52	19.05	30	40
CU-D50DBQ7 (60Hz)	9.52	19.05	30	40
CU-D34DBQ7 (50Hz)	9.52	19.05	20	40
CU-D43DBQ7 (50Hz)	9.52	19.05	20	40
CU-D50DBQ7 (50Hz)	9.52	19.05	20	40

⚠ Attention

- Do not decrease the size of the gas piping. (It causes the breakdown of the compressor)

10.3. Position of the centre gravity



MODEL NAME	OUTSIDE DIMENSIONS			NET WEIGHT	CENTRE OF GRAVITY		
	WIDTH (mm)	DEPTH (mm)	HEIGHT (mm)	kg	X (mm)	Y (mm)	Z (mm)
CU-D34DBQ7	900	320	1170	83	560	150	450
CU-D43DBQ7	900	320	1170	83	560	150	450
CU-D50DBQ7	900	320	1170	83	560	150	450

10.4. Indoor unit installation

FOUR WAY CASSETTE TYPE AIR CONDITIONERS INSTALLATION INSTRUCTIONS

REFRIGERANT
R22

HP	Model name
2.5 HP	CS-D24DB4**
3 HP	CS-D28DB4**
4 HP	CS-D34DB4**
5 HP	CS-D43DB4**
6 HP	CS-D50DB4**

Precautions in terms of safety

Carry out installation work with reliability after through reading of this “Precautions in terms of safety”.

- Precautions shown here are differentiated between ⚠ Warnings and ⚠ Cautions. Those that have much chances for leading to significant result such as fatality or serious injury if wrong installation would have been carried out are listed compiling them especially into the column of ⚠ Warnings.

  However, even in the case of items which are listed in the column of ⚠ Cautions, such items also have a chance for leading to significant result depending on the situations.
  In either case, important descriptions regarding the safety are listed, then observe them without fail.
- As to indications with illustration

⚠	This mark means “Caution” or “Warning”.

⏚	This mark means “Earth”.

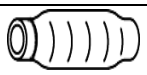
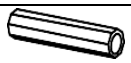
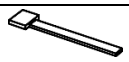
- After installation work has been completed, do not only make sure that the unit is free from any abnormal condition through the execution of trial run but also explain how to use and how to perform maintenance of this unit to the customer according to the instruction manual.
  In addition, request the customer to keep this manual for installation work together with instruction manual.

⚠ Warnings	
▲ The appliance must be installed by technician, who takes into account the requirements given by ISO5149 or eventual equivalent requirements.	▲ If installing inside a small room, measures should be taken to prevent refrigerant levels from building up to critical concentrations in the event of a refrigerant leak occurring. Please discuss with the place of purchase for advice on what measures may be necessary to prevent critical concentrations being exceeded. If the refrigerant leaks and reaches critical concentration levels, there is the danger that death from suffocation may result.
▲ As to installation, request the distributor or vendor to perform it. Imperfection in installation caused by that having been carried out by the customer himself may lead to water leakage, electric shock, fire, etc.	▲ Securely attach the protective covers for the outdoor unit connection cables and power cord so that they do not lift up after installation. If the covers are not properly attached and installed, the terminal connections may overheat, and fire or electric shock may result.
▲ Carry out the installation work with reliability according to this manual for installation work. Imperfection in installation leads to water leakage, electric shock, fire, etc.	▲ Switch off all supplies before accessing any electrical part.
▲ Carry out the installation work with reliability on the place that can bear the weight of this unit sufficiently. Insufficient strength leads to injury due to falling of the unit.	▲ If refrigerant gas escapes during installation, ventilate the affected area. If the refrigerant gas comes into contact with sparks or naked flames, it will cause toxic gases to be generated.
▲ Carry out predetermined installation work in preparation for strong wind such as typhoon, earthquake. Imperfection in installation work may lead to accidents arisen from overturn, etc.	▲ Once installation work is completed, check that there are no refrigerant gas in the room that can come into contact with sparks or flames from a fan heater, stove or kitchen range, which will cause toxic gases to be generated.

⚠ Warnings	
▲ The unit must be installed in accordance with applicable national and local regulations.Any electrical work should only be carried out by qualified technician and use exclusive circuits without fail. Presence of insufficient capacity in power circuit or imperfection in execution leads to electric shock, fire, etc.	▲ Earth This equipment must be properly earthed. Earth line must not be connected to earth of gas pipe, water pipe, lightning rod and telephone. Otherwise, it may cause electrical shock in case the equipment breakdown or has leakage current.
▲ Wiring shall be connected using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.	▲ Installation of Earth Leakage Current Breaker This equipment must be installed with earth leakage current breaker. Otherwise, it may cause electrical shock and fire in case the equipment breakdown or has leakage current.
▲ When performing piping work do not mix air except for specified refrigerant (R22) in refrigeration cycle. it causes capacity down, and risk of explosion and injury due to high tension inside the refrigerant cycle.	

⚠ Cautions	
▲ Do not install the unit at the place where the possibility of inflammable gas leakage exists. If gas leakage should arise and the gas builds up around the unit, such situation may lead to ignition.	▲ Position the indoor unit and outdoor unit, power cords and indoor/outdoor unit connection cables in a way so that they are at least 1 meter away from televisions and radios. This is to avoid problem such as interference with picture and/or sound. (However, note that depending on the electromagnetic wave conditions, interference may still occur even if the separation distance is more than 1 meter.)
▲ Drain piping should be made to ensure secure drainage according to the manual for installation work and carry out the thermal insulation to prevent the occurrence of condensation. Imperfection in piping work lead to water leakage and may cause the house and property, etc. to become wet.	

10.4.1. Accessories packed in the indoor unit container

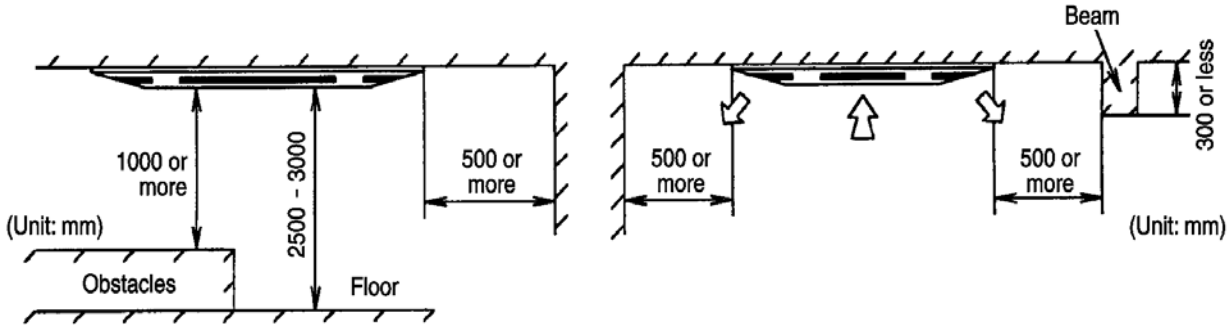
Name	Q'ty	Appearance	Purpose	Name	Q'ty	Appearance	Purpose
Drain hose with a clip	1		For drain piping	Flat washer for M10	8		For fixing the hanging bolts
Heat insulator	2		For insulating refrigerant pipe joint	Screw M5	4		Set screw for paper model and panel fixing
Band	4		For fastening the heat insulator				

10.4.2. Selecting the location for indoor unit

Provide a check port on the piping side ceiling for repair and maintenance.

• Install the indoor unit once the following conditions are satisfied and after receiving the customer approval.

1. The indoor unit must be within a maintenance space.
2. The indoor unit must be free from any obstacles in path of the air inlet and outlet, and must allow spreading of air throughout the room.



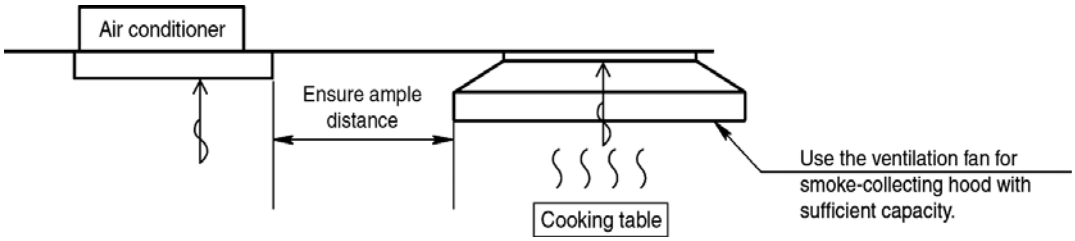
* If the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the effect is decreased.

3. The installation position must be able to support a load four times the indoor unit weight. ⚠ Warnings
4. The indoor unit must be away from heat and steam sources, but avoid installing it near an entrance.
5. The indoor unit must allow easy draining.
6. The indoor unit must allow easy connection to the outdoor unit.
7. Place the indoor unit according to the height from the ceiling shown in the illustration below.
8. The indoor unit must be from at least 3m away from any noise-generating equipment. The electrical wiring must be shielded with a steel conduit.
9. If the power supply is subject to noise generation, add a suppressor.
10. Do not install the indoor unit at a laundry. Electric shocks may result.

NOTE

• Thoroughly study the following installation locations.

1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the turbo fan, the fin of the heat exchanger and the drain pump, resulting in heat exchange reduction, spraying, dispersing of water drops, drain pump malfunction, etc.
   In these cases, take the following actions:
   • Make sure the ventilation fan for smoke-collection hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
   • Make enough distance from cooking room to install the air conditioner in such place where it may not suck in oily steam.



2. Avoid installing the air conditioner in such circumstances where cutting oil mist or iron powder exist especially in factories, etc.
3. Avoid places where inflammable gas is generated, flows-in, contaminated, or leak.
4. Avoid places where sulphurous acid gas or corrosive gas can be generated.
5. Avoid places near high frequency generators.

Model Name		Height in the ceiling
CS-D24DB4**	CS-D28DB4**	246 mm or more
CS-D34DB4**		
CS-D43DB4**	CS-D50DB4**	288 mm or more

10.4.3. Installation of indoor unit

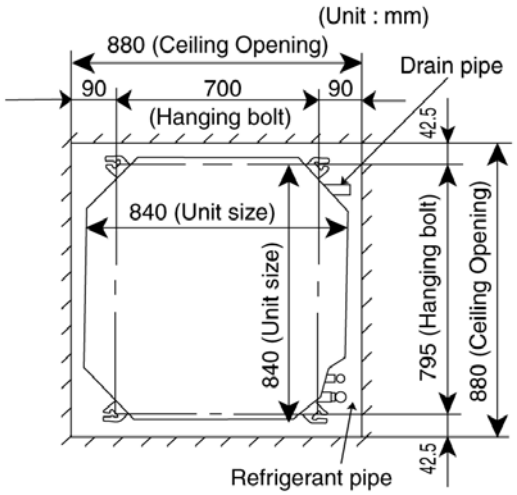
This air conditioner uses a drain up motor.
Horizontally install the unit using a level gauge.

CEILING OPENING DIMENSIONS AND HANGING BOLT LOCATION

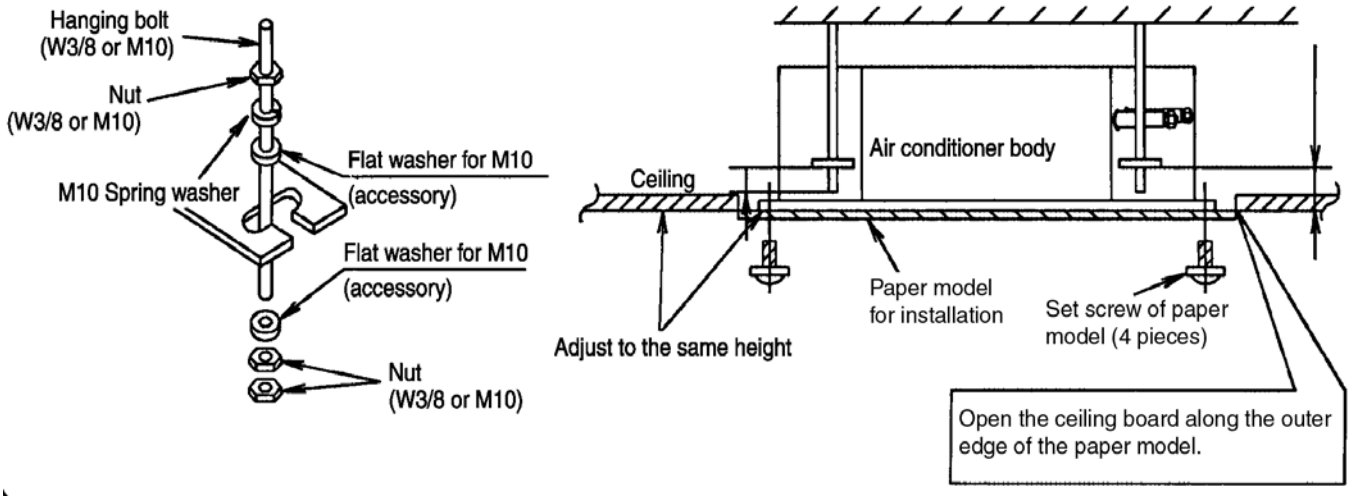
The paper model for installation expand or shrink according to temperature and humidity.
Check on dimensions before using it.

Caution During the installation, care must be taken not to damage the electric wires.

- The dimensions of the paper model for installation are the same as those of the ceiling opening dimensions.
- Be sure to discuss the ceiling drilling work with the workers concerned.

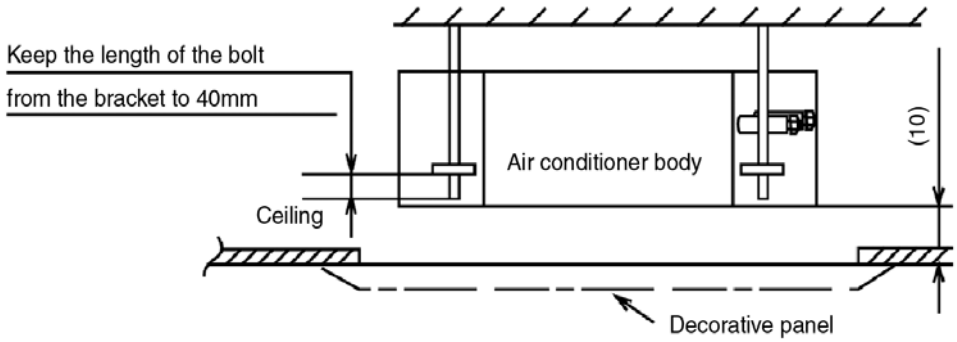


POSITIONS OF AIR CONDITIONER BODY AND CEILING SURFACE



⚠ Warning Tighten the nuts and bolt to prevent unit from falling.

HANGING POSITION OF THE AIR CONDITIONER BODY

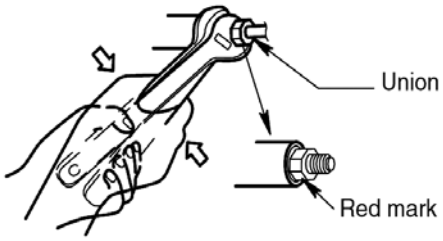


Air conditioner body gap setting between ceiling surface should be 10mm as above figure.
(Adjustment of height direction should be done after fixing decorative panel.)

10.4.4. Refrigerant piping

Refrigerant is charged to the outdoor unit. For details, see the manual for installation work of outdoor unit.(Additional charging, etc.)

1. Brazing for piping.
   a. Execute brazing before tightening the flare nut.
   b. Brazing must be executed while blowing nitrogen gas.
   (This prevents generation of oxidized scale in copper pipe.)
2. When there is a lot of brazings for long piping, install a strainer at the midway of the piping.
   (The strainer is locally supplied.)
3. Use clean copper pipe with inner wall surface free from mist and dust. Blow nitrogen gas or air to blow off dust in the pipe before connection.
4. Form the piping according to its routing. Avoid bending and bending back the same piping point more than three times.
   (This will result in hardening of the pipe).
5. After deforming the piping, align centers of the union fitting of the indoor unit and the piping and tighten them firmly with wrenches.
6. Connect pipe to the service valve or ball valve which is located below the outdoor unit.
7. After completed the piping connection, be sure to check if there is gas leakage in indoor and outdoor connection.



• Confirm the red mark of the union (thin side) is always at lower direction after connecting piping.

Vacuum drying

After completing the piping connection, perform vacuum drying for the connecting piping and the indoor unit.
The vacuum drying must be carried out by using the service ports of both the liquid and gas side valves.

CAUTION Use two wrenches and tighten with regular torque.

Flare nut fastening torque N.m (kgf.cm)					
ø6.35 mm	18 (180)	ø12.7 mm	55 (560)	ø19.05 mm	100 (1020)
ø9.52 mm	42 (430)	ø15.88 mm	65 (660)		

Model	Liquid side piping	Gas side piping
2.5 HP • 3 HP	ø9.52 mm	ø15.88 mm
4 HP~6HP	ø9.52 mm	ø19.05 mm

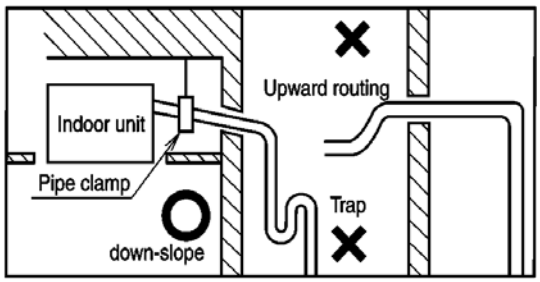
10.4.5. Indoor unit drain piping

- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port at the indoor unit.
- The outside diameter of the drain connection at the indoor unit is 32 mm.

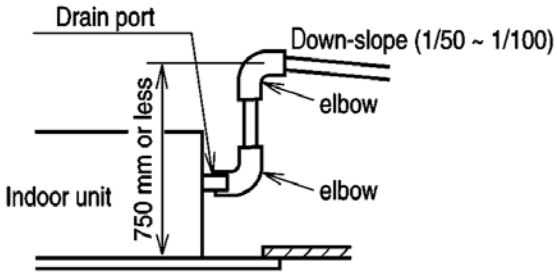
Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

- Be sure to perform heat insulation on the drain piping.

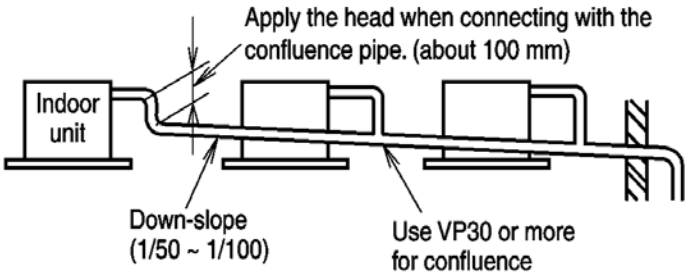
Heat insulation material: Polyethylene foam with thickness more than 8mm (local supply).



- The height of drain may be possible up to 750 mm.



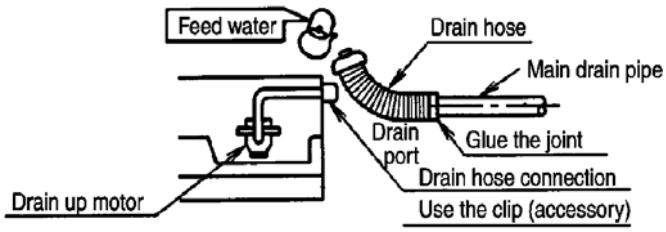
- When drain set piping, install as shown in the figure below.



Drain Test

The air conditioner uses a drain up motor to drain water. Use the following procedure to test the drain up motor operation.

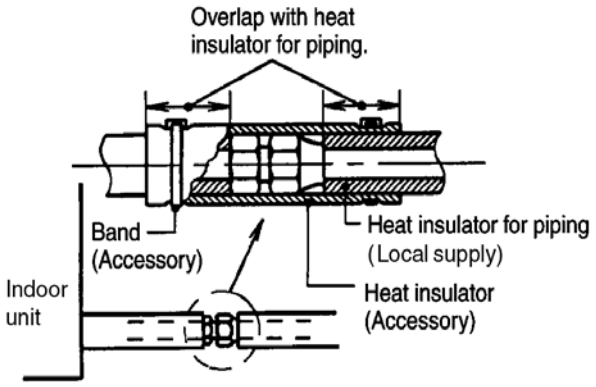
- Connect the main drain pipe to exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain up motor for normal operating and noise when electric wiring is complete.
- When the test is completed, connect the flexible drain hose to the drain port.

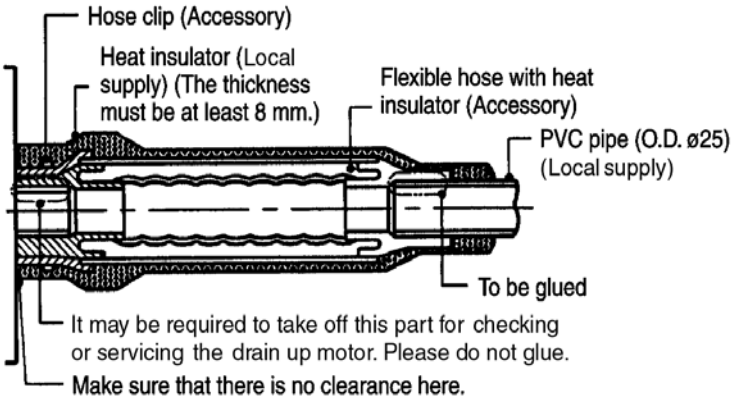


10.4.6. Heat insulation

⚠ Caution	Be sure to perform heat insulation on the drain, liquid and gas piping. Imperfection in heat insulation work leads to water leakage.

1. Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance (over 120°C).

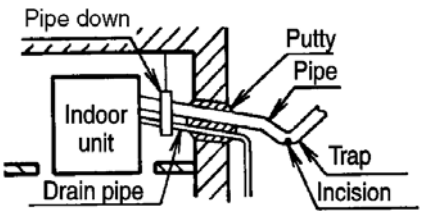




2. Precautions in high humidity circumstance.
   This air conditioner has been tested according to the “JIS Standard Conditions with Mist” and have been confirmed that there are no faults. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:
   - Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20 mm.
   - Stick glass wool on all air conditioners that are located in ceiling atmosphere.
   - In addition to the normal heat insulation (thickness: more than 8 mm) for refrigerant piping (gas piping: thick piping) and drain piping, add a further of 10 mm to 30 mm thickness material.

Wall seal

- When the outdoor unit is installed on a higher position than the indoor unit, install the trap so as not to instill rain water into the wall by transmitted in piping.
- Stuff the space among piping, the electric wire, and the drain hose with “Putty” and seal the penetration wall hole.
  Make sure that rain water do not instill into the wall.



✳ Put the incision at the trap part of the heat insulator (for water drain)

10.4.7. Electrical wiring

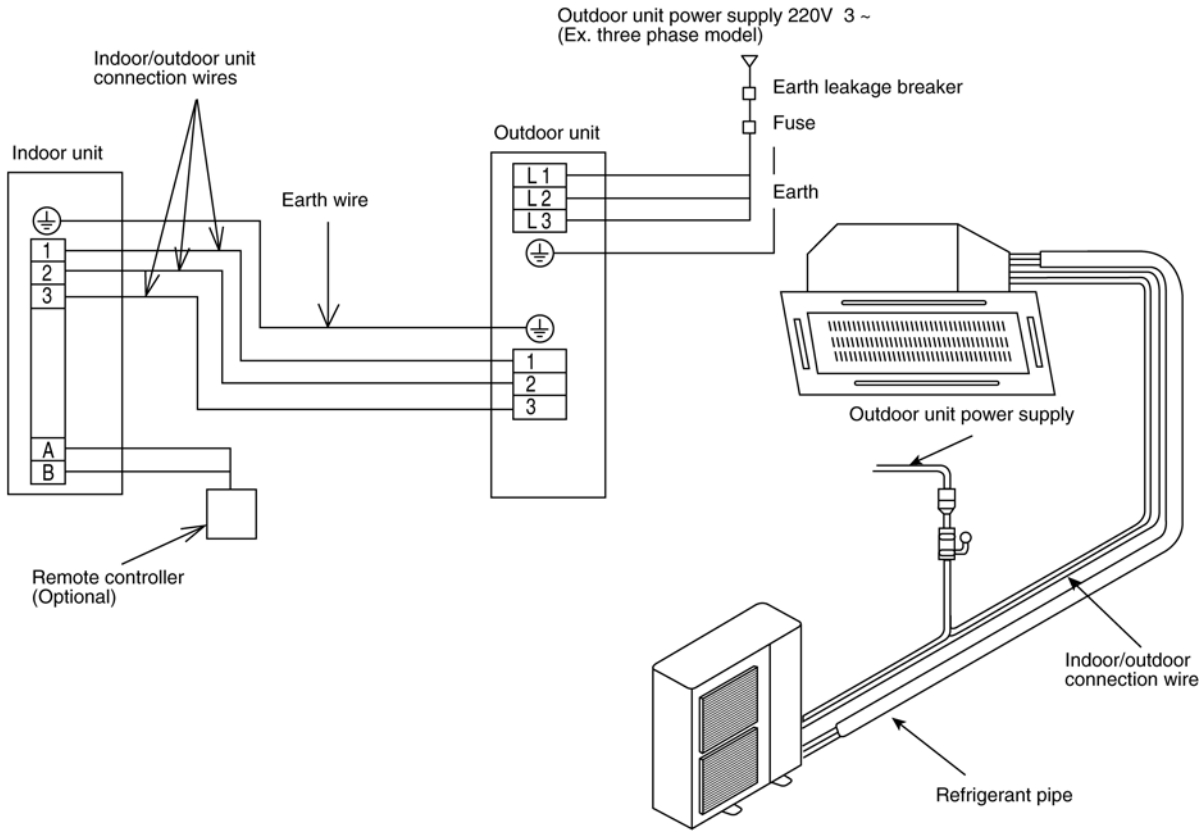
As to the main power source and cable size of outdoor unit, read the installation manual attached to the outdoor unit.

⚠ **Warning**	The units must be installed in accordance with applicable national and local regulations. The units installed by a professional installer must be supplied from a dedicated electrical circuit. All electric work must be carried out by a qualified technician according to proper technical standards for electrical work and according to installation manual for installation work. If circuits with insufficient capacity are used, or if electrical work is not carried out properly, electric shocks or fire may result.
	Be sure to install a current leakage breaker or circuit breaker to the main power supply, otherwise electric shocks may result.
	Be sure to connect the unit to secure earth connection. (with a earth resistance of 100Ω or less) If the earthing work is not carried out properly, electric shock may result.
	Wiring shall be connected securely using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

1. Select a power source that is capable of supplying the current required by the air conditioner.
2. Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnected all poles with a contact seperation of at least 3 mm.
3. Always ground the air conditioner with a grounding wire and screw to meet the LOCAL REGULATIONS.
4. Be sure to connect the wires correctly to terminal board with connecting the crimp tyre ring terminal to the wires.
5. Be sure to turn off the main power before installing and connecting the remote controller.

Note	If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off after at least 1 minute has passed. (for the system's automatic setting.) Turning off the power supply on the way may cause an abnormal operation.

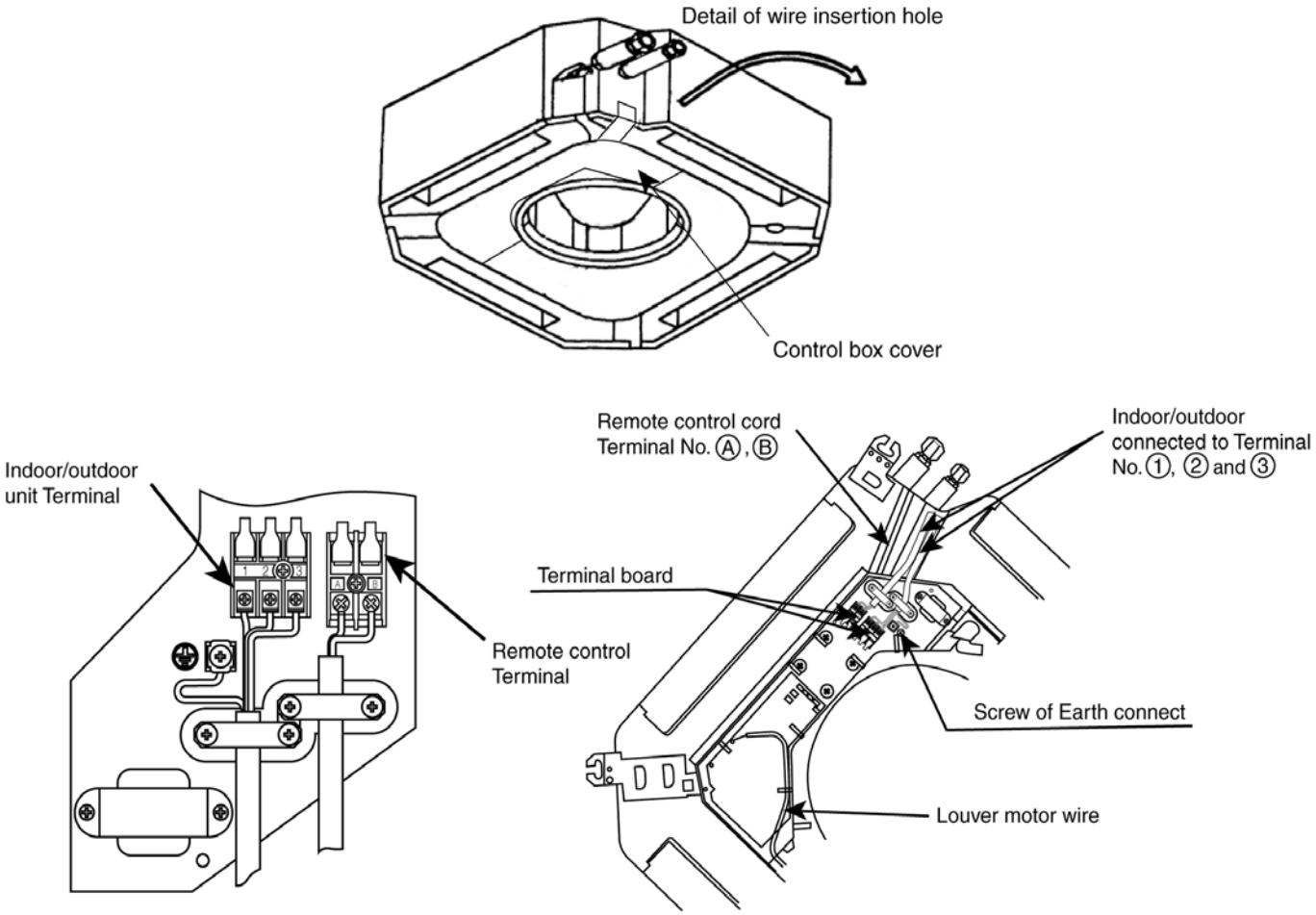
• Use the standard power cord for Europe (such as HO5RN-F or HO7RN-F which conforms to CENELEC (HAR) rating specifications) or use the cable based on IEC standard. (245IEC57, 245IEC66)



CONNECTING THE WIRES TO THE CONTROL BOX

• Remove a one mounting screw, remove the control box cover, and then connect the wires by following the procedure given in the illustration.

Caution	Make sure that screws of the terminal are securely tightened.



Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the slipping out of the cord from anchorage.

10.4.8. Settings

※ Do not operate the remote controller within 1 minute after turning on the power of the indoor unit.

※ When using group control with the standard type, at least 1 unit must be set at No.1 at the indoor unit.

※ Check the settings of the indoor unit in a case where there are no display at remote controller. If there is no problem to the settings, either group control or standard type should be set at No.16 at the indoor unit before turning the power on again.

• All sets in the group which uses the same remote controller thermistor settings can be controlled by the same remote controller thermistor.
• Up to a maximum of 16 indoor units can be connected at the time of group control. (Do not connect heat pump unit with cooling only unit.)
• Indoor unit No. will be set automatically at the time of group control. However, which indoor unit uses which number is unknown. Indoor unit No. is also possible to be set manually with DIP switches. Since manual address setting has priority to automatic address setting. To perform automatic address settings after doing manual setting, turn off all DIP switches from No.1 to No.4, and then stop the operation. Then press three switches such as [AIR SWING AUTO] . [MODE]. [A/C No.] at the same time. (Do not use manual address setting and automatic address setting together.)

• Centralized control is possible for master unit and slave unit at the time of group control.

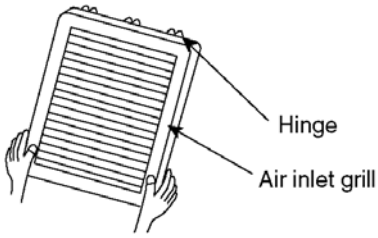
Manual Setting									
	Indoor unit No.	1	2	3	4	5	6	7	8
	DIP switch (SW2) address setting on indoor unit printed circuit board.								
	A/C No. setting	Unnecessary operation	1 ~ ON	2 ~ ON	1, 2 ~ ON	3 ~ ON	1, 3 ~ ON	2, 3 ~ ON	1, 2, 3 ~ ON
	Indoor unit No.	9	10	11	12	13	14	15	16
	DIP switch (SW2) address setting on indoor unit printed circuit board.								
	A/C No. setting	4 ~ ON	1, 4 ~ ON	2, 4 ~ ON	1, 2, 4 ~ ON	3, 4 ~ ON	1, 3, 4 ~ ON	2, 3, 4 ~ ON	1, 2, 3, 4 ~ ON

10.4.9. Installation of decorative panel

The decorative panel has its installation direction.
Confirm the direction by displaying of the piping side.

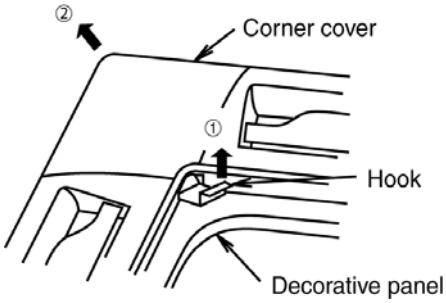
Before installing the decorative panel, always remove the paper template.

1. Remove the air inlet grill from the decorative panel.

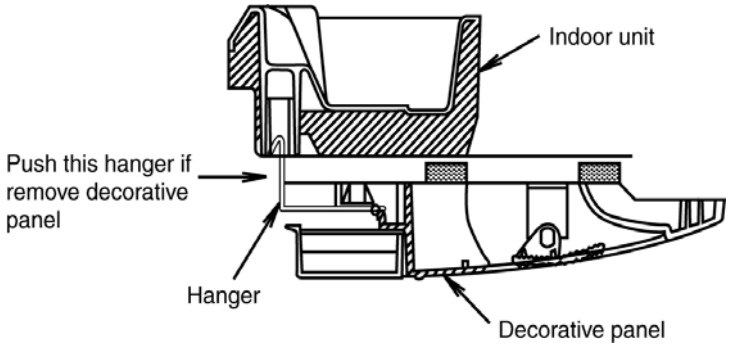


* Hang the hinge on the hole of the decorative panel. (The direction of the installation is free.)

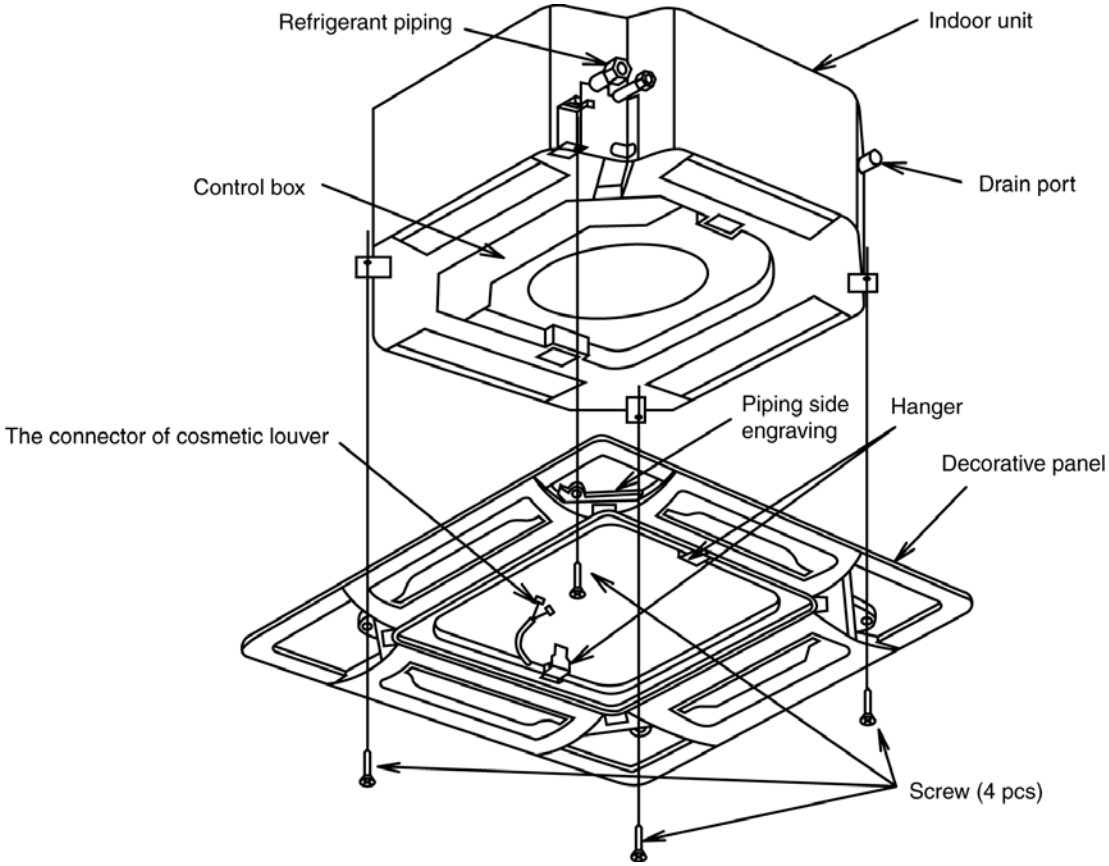
2. Remove the corner cover in 4 corner places.
   Pull hook of corner cover as direction ①, at same time remove it by sliding out in direction ②.



3. Fix the hanger (2 pieces) of the decorative panel to the indoor unit.
   There is direction information at decorative panel [PIPING SIDE] indication meaning the direction of piping side.

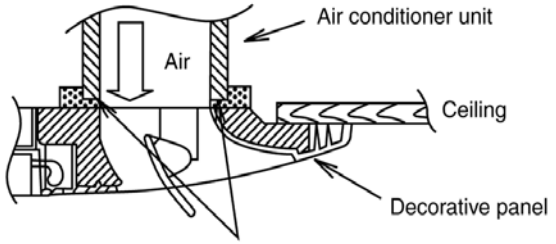


4. Adjust between decorative panel fixing hole and indoor unit screw hole.
5. Fix decorative panel with 4 screws with already fix at paper model for installation.



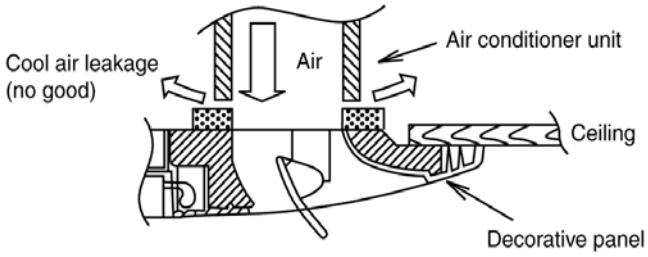
⚠ **Caution**	Install certainly the decorative panel. Cool air leakage causes sweating. → Water drops fall.

Good example

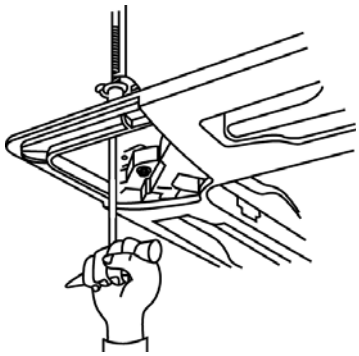


Fit the insulator (this part) and be careful for cool air leakage.

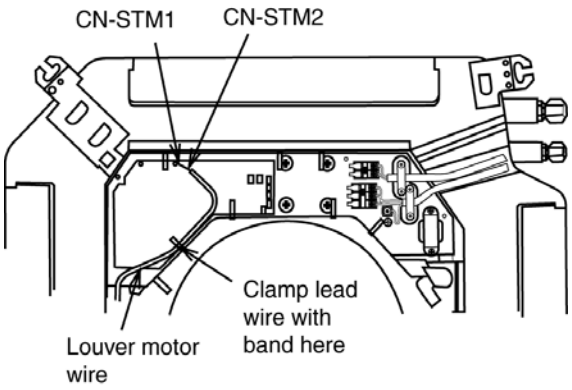
Bad example



6. Adhere the cosmetic panel and ceiling wall together and corfirm no gap in between. Readjust indoor unit height, if there is a gap between ceiling wall and decorative panel although it have been fixed by screw.
   If there are no effect to the indoor unit level and drain piping etc., the adjustment of indoor unit height can be adjusted through the corner hole. Tighten back firmly the fixing nut of indoor unit after adjustment has been made.



7. Open the indoor control box cover. (2 pcs)
8. Insert firmly the connector of cosmetic louver to indoor pcb CN-STM1 and CN-STM2.
   Be caution not to clamp the cord in between control board and control board cover.



9. After complete, install back removed part follow opposite procedure.

⚠ **Warning**	Be sure to hook the air inlet grill string, to prevent grill from falling and causing injury from it.

If fixing wireless remocon, follow the instruction manual that include inside wireless remocon accessory.

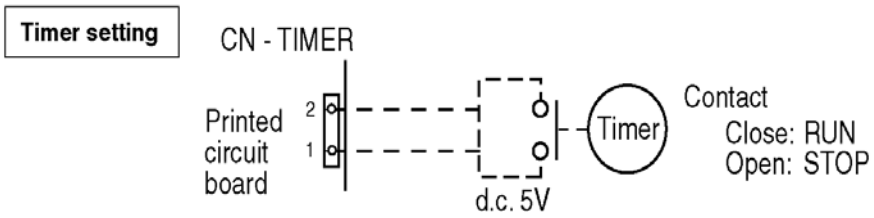
(Remote Control Address Setting)

(Refer to the Installation Manual which is provided with the remote controller for details.)

- Two remote controllers (including the wireless remote controller) can be connected. However, remote control thermistor setting is not possible.
- As for [master/slave] setting of remote controller, the automatic setting and manual setting are possible. Since manual setting is priority.
- Two remote controllers, which both are wireless, cannot be connected.

10.4.10. As for timer output

- Connect the timer cord to connector (CN-TIMER) on print circuit board.

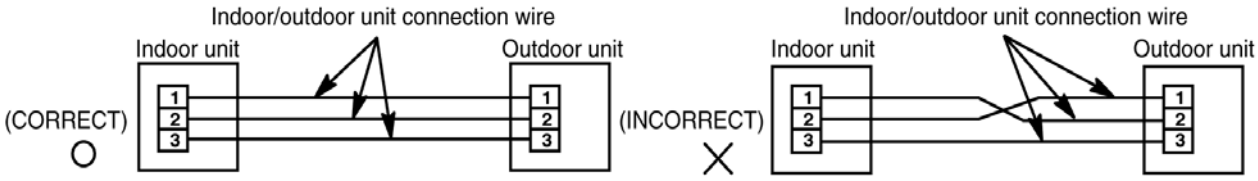


10.4.11. Precautions in test run

- The initial power supply must provide at least 90% of the rated voltage. Otherwise, the air conditioner may not operate.
- Test operation can be carried out using the remote control unit or at the outdoor unit. (If carrying out test operation at the outdoor unit, refer to “TEST OPERATION” in the outdoor unit installation manual.)
- If using the remote control unit to carry out test operation, follow the procedure given below.

- First, press the OFF/ON (⏻) button.
- Then press the TEST RUN button within 1 minute of pressing the OFF/ON (⏻) button.
- Next, select the operation modes.
- The temperature of the indoor unit pipes will be shown on the temperature setting display. (At the start of the test operation, it may take up to 1 minute for air conditioner number, switching time and other displays to appear.)
- After operation modes have been selected, stop the compressor for a moment.
- Press the OFF/ON (⏻) button of the TEST RUN button once more to cancel test operation mode.

NOTE 1 These units are equipped with connection error prevention circuits. If the units do not operate, it is possible that the connection error prevention circuits have operated. In such cases, check that the Indoor/outdoor unit connection wire (connected to terminals ①, ② and ③) are connected correctly. If they are connected incorrectly, connect them correctly. Normal operation should then commence.



NOTE 2 Do not short the remote control unit wires to each other. (The protection circuit will be activated and the units will not operate.) Once the cause of the short is eliminated, normal operation will then be possible.

NOTE 3 When running the units in heating mode during test operation, be sure to run the units in cooling mode first before selecting this mode. If heating mode is selected first, it may cause problems with operation of the compressor. (Heat pump model only.)

NOTE 4 Test operation should be carried out for a minimum of 5 minutes. (Test operation will be cancelled automatically after 30 minutes.)

NOTE 5 Test operation mode should always be cancelled once test operation itself has been completed.

10.4.12. Check the following items when installation is complete

- After completing work, be sure to measure and record trial run properties, and store measuring data, etc.
- Measuring items are room temperature, outside temperature, suction temperature, blow out temperature, wind velocity, wind volume, voltage, current, presence of abnormal vibration and noise, operating pressure, piping temperature, compressive pressure, airtight pressure.
- As to the structure and appearance, check the following items.

M3...69-98 N.cm {7-10 kgf.cm}
M4...157-196 N.cm {16-20 kgf.cm}
M5...196-245 N.cm {20-25 kgf.cm}

- ☐ Is circulation of air adequate?
- ☐ Is draining smooth?
- ☐ Is heat insulation complete (refrigerant and drain piping)?
- ☐ Is there any leakage of refrigerant?
- ☐ Is remote control switch operated?
- ☐ Is there any faulty wiring?
- ☐ Are the terminal screws loosened?

10.4.13. Hand over

- Teach the customer the operation and maintenance procedures, using the operation manual (air filter cleaning, temperature control, etc.)

As to parts to be sold separately

- With regards to installation of the parts sold separately, follow the installation manual which is provided with the parts sold separately

As for work specifications of the outdoor unit, read the OUTDOOR UNIT INSTALLATION MANUAL attached to the outdoor unit.

10.5. Outdoor unit installation

AIR CONDITIONERS OUTDOOR UNIT INSTALLATION INSTRUCTIONS

REFRIGERANT
R22

HP	Model name
2.5 HP	CU-D24DB**
3 HP	CU-D28DB**
4 HP	CU-D34DB**
5 HP	CU-D43DB**
6 HP	CU-D50DB**

Precautions in terms of safety

Carry out installation work with reliability after thorough reading of this “Precautions in terms of safety”.

- Precautions shown here are differentiated between ⚠ Warnings and ⚠ Cautions. Those that have much chances for leading to significant result such as fatality or serious injury if wrong installation would have been carried out are listed compiling them especially into the column of ⚠ Warnings.

  However, even in the case of items which are listed in the column of ⚠ Cautions, such items also have a chance for leading to significant result depending on the situations.
  In either case, important descriptions regarding the safety are listed, then observe them without fail.

- As to indications with illustration

⚠	This mark means “Caution” or “Warning”.

⏚	This mark means “Earth”.

- After installation work has been completed, do not only make sure that the unit is free from any abnormal condition through the execution of try run but also explain how to use and how to perform maintenance of this unit to the customer according to the instruction manual.
  In addition, request the customer to keep this manual for installation work together with instruction manual.

⚠ Warnings	
▲ The appliance must be installed by technician, who takes into account the requirements given by ISO5149 or eventual equivalent requirements.	▲ If installing inside a small room, measures should be taken to prevent refrigerant levels from building up to critical concentrations in the event of a refrigerant leak occurring. Please discuss with the place of purchase for advice on what measures may be necessary to prevent critical concentrations being exceeded. If the refrigerant leaks and reaches critical concentration levels, there is the danger that death from suffocation may result.
▲ As to installation, request the distributor or vendor to perform it. Imperfection in installation caused by that having been carried out by the customer himself may lead to water leakage, electric shock, fire, etc.	▲ Securely attach the protective covers for the outdoor unit connection cables and power cord so that they do not lift up after installation. If the covers are not properly attached and installed, the terminal connections may overheat, and fire or electric shock may result.
▲ Carry out the installation work with reliability according to this manual for installation work. Imperfection in installation leads to water leakage, electric shock, fire, etc.	▲ Switch off all supplies before accessing any electrical part.
▲ Carry out the installation work with reliability on the place that can bear the weight of this unit sufficiently. Insufficient strength leads to injury due to falling of the unit.	▲ If refrigerant gas escapes during installation, ventilate the affected area. If the refrigerant gas comes into contact with sparks or naked flames, it will cause toxic gases to be generated.
▲ Carry out predetermined installation work in preparation for strong wind such as typhoon, earthquake. Imperfection in installation work may lead to accidents arisen from overturn, etc.	▲ Once installation work is completed, check that there are no refrigerant gas in the room that can come into contact with sparks or flames from a fan heater, stove or kitchen range, which will cause toxic gases to be generated.

⚠ Warnings	
▲ The unit must be installed in accordance with applicable national and local regulations.Any electrical work should only be carried out by qualified technician and use exclusive circuits without fail. Presence of insufficient capacity in power circuit or imperfection in execution leads to electric shock, fire, etc.	▲ Earth This equipment must be properly earthed. Earth line must not be connected to earth of gas pipe, water pipe, lightning rod and telephone. Otherwise, it may cause electrical shock in case the equipment breakdown or has leakage current.
▲ Wiring shall be connected using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.	▲ Installation of Earth Leakage Current Breaker This equipment must be installed with earth leakage current breaker. Otherwise, it may cause electrical shock and fire in case the equipment breakdown or has leakage current.
▲ When performing piping work do not mix air except for specified refrigerant (R22) in refrigeration cycle. it causes capacity down, and risk of explosion and injury due to high tension inside the refrigerant cycle.	

⚠ Cautions	
▲ Do not install the unit at the place where the possibility of inflammable gas leakage exists. If gas leakage should arise and the gas builds up around the unit, such situation may lead to ignition.	▲ Position the indoor unit and outdoor unit, power cords and indoor/outdoor unit connection cables in a way so that they are at least 1 meter away from televisions and radios. This is to avoid problem such as interference with picture and/or sound. (However, note that depending on the electromagnetic wave conditions, interference may still occur even if the separation distance is more than 1 meter.)
▲ Drain piping should be made to ensure secure drainage according to the manual for installation work and carry out the thermal insulation to prevent the occurrence of condensation. Imperfection in piping work lead to water leakage and may cause the house and property, etc. to become wet.	

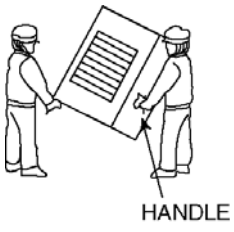
10.5.1. Accessories supplied with outdoor unit

- The following parts are supplied as accessories with each outdoor unit.
  Check that all accessory parts are present before installing the outdoor unit.

Part name	Q'ty	Diagram	Application
Protective bushing	2		For protecting electrical wires
Banding strap	3		For tying electrical wires together

10.5.2. Regarding handling

Handling the unit by hold the handle at compressor side and hold the basepan bottom at fan side.

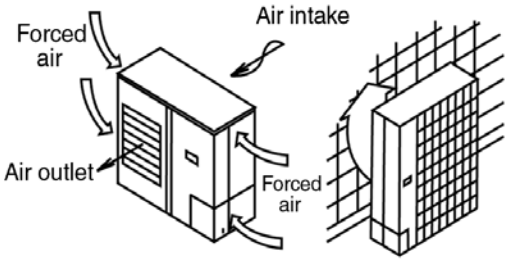


10.5.3. Selecting the outdoor unit installation locations

- Select location which satisfies the following condition, and then confirm with the customer that such a place is satisfactory before installing the outdoor unit.

1. There should be sufficient ventilation.
2. The outdoor unit should be sheltered as much as possible from rain and direct sunlight, and the air should be able to move around so that hot and cold air do not build up.

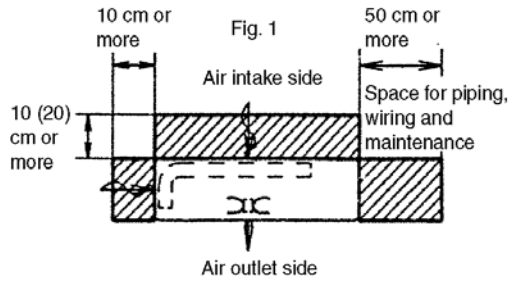
3. There should not be animals or plants near the air outlet which could be adversely affected by hot or cold air coming out from the unit.
4. The outlet air and operating noise should not be a nuisance to other occupants nearby.
5. The location should be able to withstand the full weight and vibration of the outdoor unit, and it should also be level and safe for the unit to be installed.
6. The intake and outlet should not be covered.
7. There should not be danger of flammable gas or corrosive gas leaks.
8. There should be as little back-ventilation (air blowing directly onto the fan) as possible.
   (If strong wind blows directly onto the fan, it may cause problems with normal operation.)
   - If you know which direction the prevailing wind comes from during the operating season, set the outdoor unit at a right-angle to this wind direction, or so that air outlet faces toward a wall or fence.
   - If there are obstructions near the outdoor unit and the wind direction is not constant, install an optional air guider.



9. Do not allow any obstacles near the outdoor unit which will interfere with air flow around the air intake and air outlet.
10. If installing in a location which is prone to snowfall, place the installation base as high as possible, and be sure to install a roof or enclosure which does not allow snow to accumulate.
11. Avoid installing the unit in places where petroleum products (such as machine oil), salinity, sulphurous, gases or high-frequency noise are present.
12. Be sure to leave enough space around the outdoor unit to maintain proper performance and to allow access for routine maintenance.
    - Allow enough space from any obstacles as shown in Fig. 1.2 below in order to prevent short-circuits from occurring.
      (If installing more than one outdoor unit, make the necessary space available as outlined in 13.)
      However, there should be at least 1 meter of free space above the unit.
    - The height of any obstacles at the air intake and outlet sides should not be greater than the height of the outdoor unit.

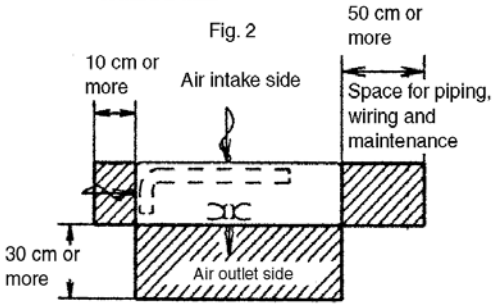
• When facing the air intake side toward a wall.

Fig. 1



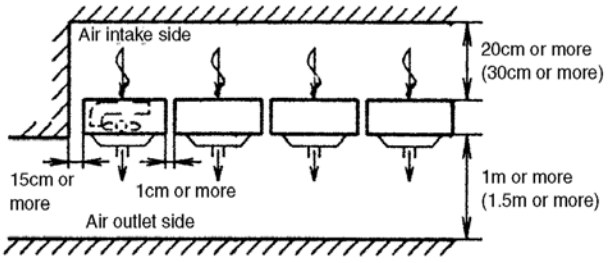
• When facing the air outlet side toward a wall.

Fig. 2

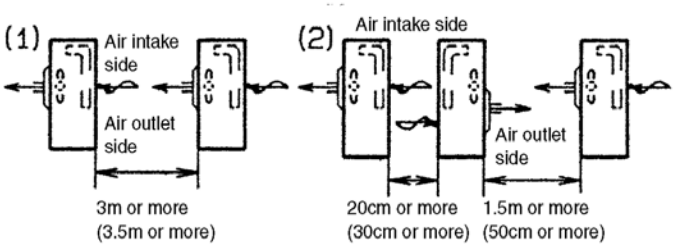


13. If installing more than one outdoor unit, allow enough space around each unit as shown below.

• When installing units side by side



• When installing units facing each other

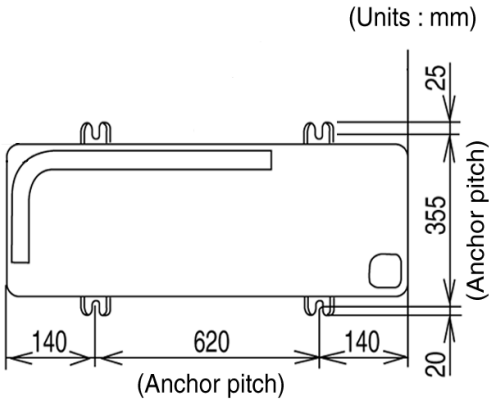


※ Maintain sufficient space above the unit.
Values inside brackets indicate distances when installing the 4HP - 6HP.

• The distance given above are the minimum distance required in order to maintain proper performance.
Allow as much space as possible in order to get the best performance from the units.

10.5.4. Transporting and installing the outdoor unit

- Transporting
  1. The outdoor unit should be transported in its original packaging as close to the installation location as possible.
  2. If suspending the outdoor unit, use a rope or belt, and use cloth or wood as padding in order to avoid damaging the unit.
- Installation
  1. Read the “Selecting the outdoor unit installation location” section thoroughly before installing the outdoor unit.
  2. If installing the unit to a concrete base or other solid base, use M10 or W3/8 bolts and nuts to secure the unit, and ensure that the unit is fully upright and level.
     (The anchor bolt positions are shown in the diagram at the right side.)
     In particular, install the unit at a distance from the neighbouring building which conforms to regulations specified by local noise emission regulation standards.
  3. Do not install the outdoor unit to the building’s roof.
  4. If there is a possibility that vibration may be transmitted to the rooms of the building, place rubber insulation between the unit and the installation surface.



10.5.5. Connecting the pipes

- Use a clean pipe which does not include water or dust for inside of piping.
- When cutting the refrigerant pipes, a piping cutter must be used. Before connecting the refrigerant pipes, blow nitrogen and blow off dust in the pipes.
  (Never use tools which cause a lot of dust such as a saw and a magnet.)
- When waxing replace nitrogen inside the piping after removing dirt and dust. (In order to prevent oxidization scale from forming inside the piping).
- The refrigerant pipes are of particular importance.
  The installation work for refrigerant cycles in separate-type air conditioners must be carried out perfectly.

1. Refer to the table below for the pipe diameters equivalent lengths and indoor/outdoor unit difference of elevation.

Model Name	Pipe diameter (mm)		Equivalent length (m)	Difference of elevation (m)	
	Liquid-side pipes	Gas-side pipes		Outdoor Unit Upper	Outdoor Unit Lower
CU-D24DBQ6 CU-D28DBQ6	ø9.52	ø15.88	50	30	20
CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7	ø9.52	ø19.05	50 *(40)	30	20

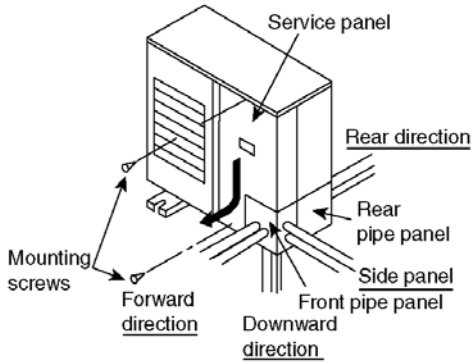
* Note
Values inside brackets indicate length when operating at 50Hz power supply.

2. Local pipes can project in any of four directions.
   • Make holes in the pipe panels for the pipes to pass through.
   • Be sure to install the pipe panels to prevent rain from getting inside the outdoor unit.

   [Removing the service panel].

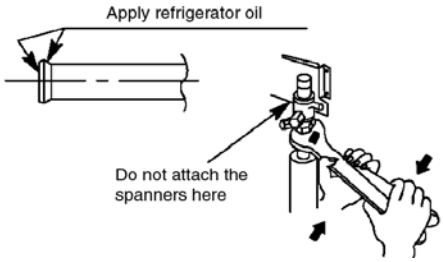
(1) Remove the two mounting screws.

(2) Slide the service panel downward to release the pawls. After this, pull the service panel toward you to remove it.

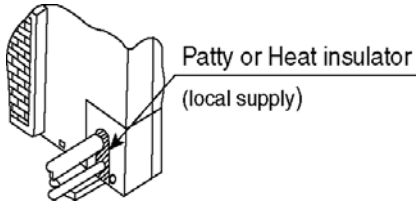


3. Notes when connecting the refrigerant pipes.
   • Use clean copper, pipes with no water or dust on the insides.
   • Use phosphorus-free, unjointed copper pipes for the refrigerant pipes.
   • If it is necessary to cut the refrigerant pipes, be sure to use a pipe cutter, and use compressed nitrogen or an air blower to clean out any foreign particles from inside the pipe.
   • Be careful not to let any dust, foreign materials or water get inside the pipes during connection.
   • If bending the pipes, allow as large a bending radius as possible. Do not flex the pipes any more than necessary.
   • If joining pipe ends, do so before tightening the flare nut.
   • Always blow the pipe end with nitrogen while joining pipe ends.
     (This will prevent any oxide scaling from occurring inside the pipe.)
   • If using long pipe lengths with several joined pipe ends, insert strainers inside the pipes. (Strainers are not supplied.)
   • When tightening the flare nuts, coat the flare (both inside surfaces) with a small amount of refrigerator oil, and screw in about 3-4 turns at first by hand.
   • Refer to the following table for the tightening torques. Be sure to use two spanners to tighten.
     (If the nuts are overtightened, it may cause the flares to break or leak.)

Flare nut fastening torque N•m (kgf•cm)			
ø6.35 mm	18 (180)	ø15.88 mm	65 (660)
ø9.52 mm	42 (430)	ø19.05 mm	100 (1020)
ø12.7 mm	55 (560)		



4. After piping connection has been completed, make sure that the joint areas of the indoor and outdoor units are free from gas leakage by the use of nitrogen, etc.
5. Air purge within connection piping shall be carried out by evacuation.
6. Close the tube joining area with putty heat insulator (local supply) without any gap as shown in below figure.
   (To prevent insects or small animal entering)



10.5.6. Heat insulation

⚠ Caution	Use a material with good heat-resistant properties as the heat insulation for the pipes. Be sure to insulate both the gas-side and liquid-side pipes. If the pipes are not adequately insulated, condensation or water leakages may occur.

Liquid-side pipes	Material that can withstand 120°C or higher
Gas-side pipes	

10.5.7. Charging with refrigerant

- At the time of shipment from the factory, this unit is charged with enough refrigerant for an equivalent pipe length of max charge-less lenght. (Refer table below)
  If the equivalent pipe length will be up to max charge-less length, no additional charging will be necessary.
- If the equivalent pipe length will max charge-less length, charge with additional refrigerant according to the equivalent length given in the table below.

  Example: CU-D24DBQ6
  In case of 50m equivalent length, the amount of refrigerant to be replenished is: (50 - 30) x 0.025 = 0.5kg

Model name	Power supply frequency	Equivalent length		Additional amount
		Mac charge-less length	Max equivalent length	
CU-D24DBQ6 CU-D28DBQ6	60Hz	30m	50m	0.025kg/m
CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7	50Hz	20m	40m	0.04kg/m
	50Hz	30m	50m	

- Pump down operation
  - Operate the pump down according to the following procedures.

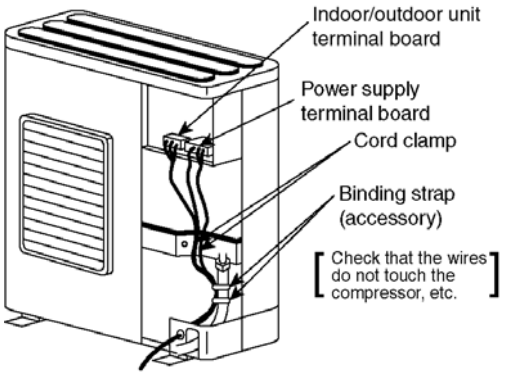
Procedure	Notes
1. Confirm the valve on the liquid side and the gas side is surely open.	
2. Press the PUMP DOWN switch on outdoor printed board for 1 second or more.	Perform the cooling operation for five minutes or more.
3. Shut the valve on the liquid side surely.	When the valve is shut halfway, the compressor is occasionally damaged.

10.5.8. Electrical wiring

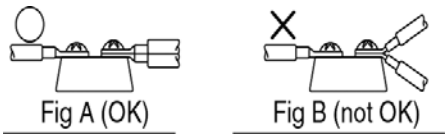
⚠ Warning	The units must be connected to the supply cables for fixed wiring by qualified technician. Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnected all poles with a contact separation of at least 3mm. When the supply cable is damaged, it must be replaced by qualified technician.
	Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.
	Be sure to connect the unit to secure earth connection. If the earthing work is not carried out properly, electric shocks may result.
	Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

- Connect the power supply wiring and indoor/outdoor unit connection wiring according to the electrical circuit diagram instructions.
- Clamp the wires securely to the terminal connections using cord clamps so that no undue force is placed on the wires.
- Once all wiring work has been completed, tie the wires and cords together with the binding strap so that they do not touch other parts such as the compressor and pipes.

1. Connect the power supply line to a 3-phase/220V (or single-phase 220V) power supply.
2. The equipment shall be connected to a suitable mains network with a main impedance less than the valve indicated in the table of power supply specifications.
3. Be sure to connect the wires correctly to terminal board with connecting the crimp type ring terminal to the wires.
4. The binding screws inside the power supply box may become loosened due to vibration during transportation, so check that they are tightened securely.
5. Tighten the binding screws to the specified torque while referring to the table below.
6. If connecting two separate wires to a single crimped terminal, place the two crimped terminal wires together as shown in Fig. A. (If the arrangement shown in Fig. B is used, poor contacts or contact damage may result.)

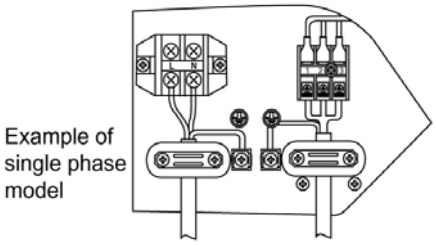


7. If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off again until at least 1 minute has passed (except when a reversed phase has been detected).

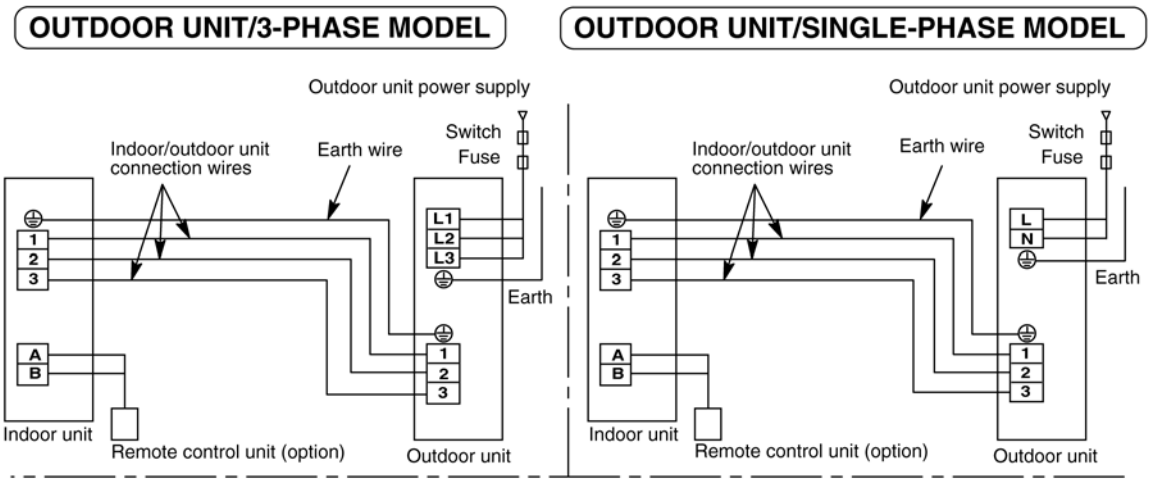


⚠ Warning	Use only the specified cables for wiring connections. Connect the cable securely, and secure them properly so that no undue force will be applied to the terminal connections. If the terminals are loose or if the wires are not connected securely, fire may result.

Terminal screw	Tightening torque N.cm {kgf.cm}
M3	69 ~ 98 {7 ~ 10}
M4	157 ~ 196 {16 ~ 20}
M5	196 ~ 245 {20 ~ 25}



Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the slipping out of the cord from the anchorage.



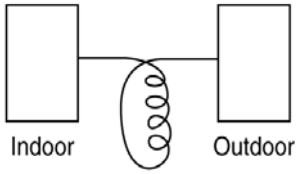
• Power supply specifications
Please follow below table.

Model name		Leakage current breaker (A)	Circuit breaker (Minimum Capacity) Switch (A)	Circuit breaker (Minimum Capacity) Fuse (A)	Minimum power supply cables	$4mm^2$ cable based on length (m)	Indoor/outdoor unit connection power cables (terminals ①, ②, ③, ⏚)
CU-D24DBQ6	220V~60Hz	30	30	30		17	
CU-D28DBQ6	220V~60Hz	30	30	30		14	
CU-D34DBQ7	220V 3~50/60Hz	30	30	30	4 mm^2	16	2.5 $mm^2 \times 4$
CU-D43DBQ7	220V 3~50/60Hz	40	40	40		12	
CU-D50DBQ7	220V 3~50/60Hz	50	50	50		11	

NOTE

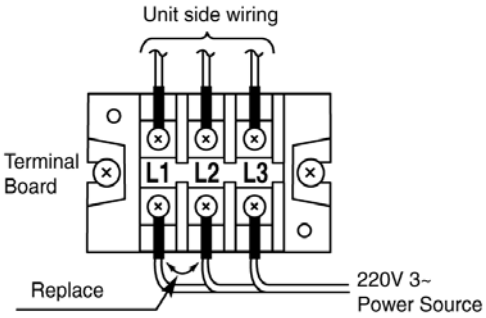
⏚

1. Where ground work (earth) is carried out, do not connect the ground return to the gas pipe, water line pipe, grounded circuit of the telephone and lightning rod, or ground circuit of other product in which earth leakage breaker is incorporated. (Such action is prohibited by statute, etc.)



Make sure the indoor and outdoor connection wires are detangled. (There might be effect to receive outside noise.)
2. Use the standard power supply cables for Europe (such as H05RN-F or H07RN-F which conforms to CENELEC (HAR) rating specifications) or use the cables based on IEC standard. (245IEC57, 245IEC66)
3. Select the particular size of electrical wire for power supply cables in accordance with the standards of the given nation and region.

10.5.9. Connecting power supply cables

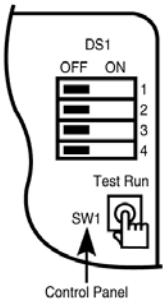


CAUTION

• For three phase model, never operate the unit by pressing the electromagnetic switch.
• Never correct the phase by switching over any of the wires inside the unit.

10.5.10. Precautions with regard to test operation

• Use only insulation tool to the switch on the microswitch on the electric circuit board. (Do not use finger or a metallic object.)
• Do not switch on power before all installation is completed.
• For 3 phase power, make sure the phases are connected correctly. (If the phases are connected incorrectly, LED indicator on the electric circuit board will start flashing.)
• After power on, make sure the voltage is 90% - 110% of the rated voltage.
• May use remote control or corresponding switches on the control panel of the outdoor unit to initiate “Test run”. If “Test Run” is initiated using remote control, refer to indoor unit installation.
• Test run consists of ① cooling and ② heating modes (Single mode unit does not have heating function).
• Press and hold SW1 more than 1 second. In DS1, under different setting condition, outdoor unit will perform “cooling” test run or “heating” test run.



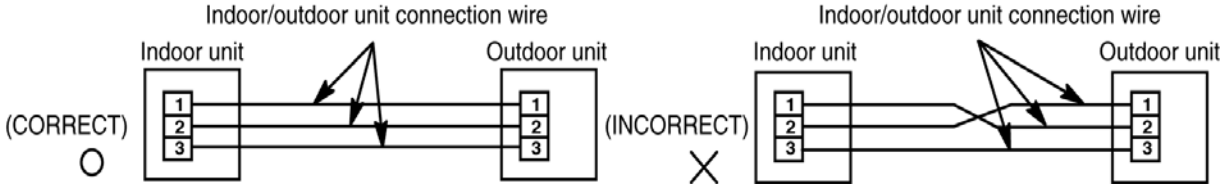
DS1				Operation mode
1	2	3	4	
ON	OFF	X	X	“Cooling” test run
ON	ON	X	X	“Heating” test run
OFF	OFF	X	X	PUMP DOWN

(Must first select “cooling” mode.)

※ When operation mode changes, the compressor stops operation momentary.

- Press SW1 again to cancel test run.
- If outdoor temperature is high during “heating” test run, or low during “cooling” test run, the protection system will be activated within several.

NOTE 1 These units are equipped with connection error prevention circuits. If the units do not operate, it is possible that the connection error prevention circuits have been operated. In such cases, check that the Indoor/outdoor unit connection wire (connected to terminals ①, ② and ③) is connected correctly. If they are connected incorrectly, connect them correctly. Normal operation should then commence.



NOTE 2 Do not short the remote control unit wires to each other. (The protection circuit will be activated and the units will not operate.) Once the cause of the short is eliminated, normal operation will then be possible.

NOTE 3 When running the units in heating mode during test operation, be sure to run the units in cooling mode first before selecting this mode. If heating mode is selected first, it may cause problems with operation of the compressor.

NOTE 4 Be sure to select cooling mode first, and run the unit in this mode for 5 minutes or more. If the cooling operation is not executed first for five minutes or more, the heating operation can not be executed.
(Test operation will be cancelled automatically after 30 minutes.)

NOTE 5 Test operation mode should always be cancelled once test operation itself has been completed.

NOTE 6 If the self-diagnosis function reports a problem but more than one problem has developed at the indoor and/or outdoor units, the problem display on the remote control unit may not match the LED display on the outdoor unit printed circuit board. In such cases, check both locations and remove the causes of the problems.

10.5.11. As to making the inspection after completion of work fully understood

- At the time when the work has been completed, measure and record the characteristics of test run without fail and keep the measuring date, etc.
- Carry out the measurement regarding room temperature outside air temperature, suction and air discharge temperatures, wind velocity, wind volume, voltage current, presence of abnormal vibration, operating pressure, piping temperature, compressive pressure, airtight pressure as items to be measured.
- As to the structure and appearance, check following items.

☐ Short circuit of the blow-out air

☐ Smooth flow of the drain

☐ Reliable thermal insulation

☐ Leakage of refrigerant

☐ Mistake in wiring

☐ Reliable connection of the grand wire

☐ Looseness in terminal screw, fastening torque

M3... 69-98N.cm {7-10kgf.cm} M4... 157-196N.cm {16-20kgf.cm}
M5... 196-245N.cm {20-25kgf.cm}

10.5.12. As to delivery to the customer

- Request the customer to operate this air conditioner viewing instruction manual come with indoor unit in practice and explain how to operate.
- Deliver the instruction manual to the customer without fail.

10.6. Wired remote control installation

Wired Remote Control Installation Manual

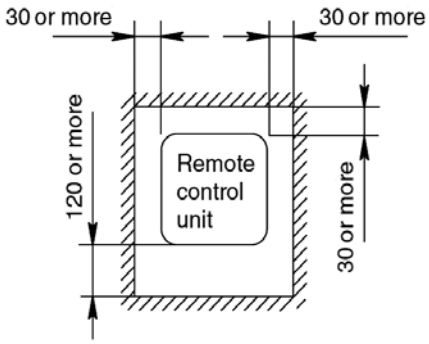
- Before installing the wired remote controller, be sure to thoroughly read the “Notes with regard to safety” section of the installation manual provided with the indoor unit.
- After installing the wired remote controller, carry out a test operation to check that the remote controller functions properly, and also explain the operation and cleaning procedures to the customer in accordance with the details in instruction manual. Furthermore, ask the customer to keep this installation manual and the instruction manual in a safe place for later reference.

10.6.1. Accessories supplied with wired remote controller

Name	Q’ty	Diagram	Remark
Remote controller	1		
Remote control cable	1		Length (10m)
4mm screw	3		Installing the remote controller to the wall
M4 screw	3		Installing the remote controller to an outlet box
Round terminal	2		Connecting to indoor unit terminal block

10.6.2. Notes regarding wired remote controller setting-up location

- Select a place where the remote controler can be operated easily (after obtaining approval from the building’s owner).
- Install in a place which is away from direct sunlight and as free from humidity as possible.
- Install in a place which is as flat as possible to avoid warping of the remote controller.
  (If installed to a wall an uneven surface, damage to the LCD case or operation problems may result.)
- Install in a place where the LCD can be seen easily. If the remote controller is installed somewhere which is too low or too high, it may be difficult to read the LCD. (Standard height from the floor is 1.2 to 1.5 meters.)
- Avoid installing the remote control cable near refrigerant pipes or drain pipes.
- Install the remote control cable at least 5cm away from other electric wires (including stereo and TV cables) to avoid mis-operation (electromagnetic noise).
- If passing the remote control cable through a wall, be sure to install a water trap above the cable.
- Allow sufficient space around the remote controller as shown in the illustration at right.
  Secure the remote controller lower case to the wall or to an outlet.

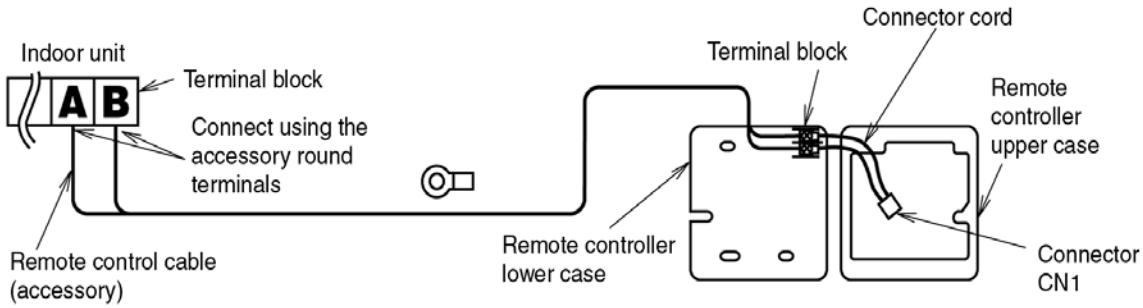


10.6.3. Remote controller installation

- Be sure to turn off the main power before installing and connecting the remote controller.
  (If the remote controller is connected while the power is still turned on, the remote controller displays may not appear.)
  If no displays appear on the remote controller, check while referring to “If no remote controller displays appear” in “5 Test operation”.
- The remote control cable is live during use, so please be careful with it.

Remote controller wiring

- Connect the indoor unit and the remote controller as shown in the illustration below.
- The remote control cable is non-polar.
- At the time of shipment from the factory, the connector cable used to connect the terminal block and connector CN1 is disconnected. When connecting the remote controller wiring and installing the remote controller, be sure to connect the cord to the connector CN1.



Extending the remote control cable

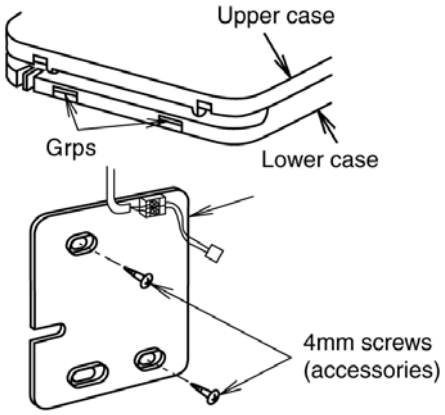
- Solder a sheathed PVC cord or cable (0.5 - 2 mm^2) with specifications among those given below to the remote controller end of the accessory remote control cable (10 m).

*	PVC round cabtire cord	IEC 502
*	600V PVC-insulated PVC sheathed round cable	IEC 227-4
*	600V PVC-insulated PVC sheathed flat cable	IEC 227-4

NOTE The maximum possible length for the remote control cable is 200 m.

Remote controller installation procedure

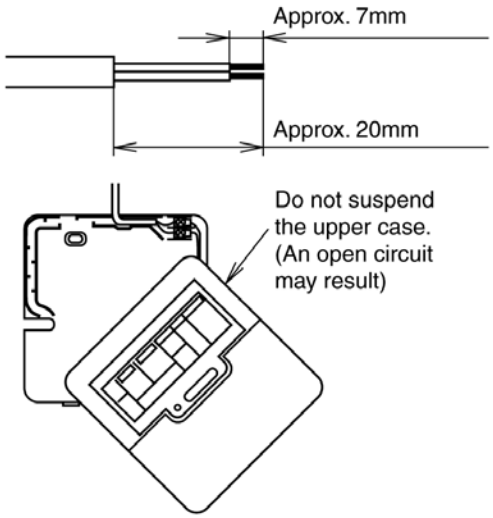
- Remove the remote controller lower case.
  (Insert a flat-tipped screw driver or similar 2 to 3 mm into one of the gaps at the bottom of the case, and then twist the screw driver to open. [Refer to the illustration below.])
  Be careful not to damage the lower case.



• Secure the lower case to the wall or outlet box.
(Refer to the illustration at right for the embedded and exposed positions for remote control cable.)

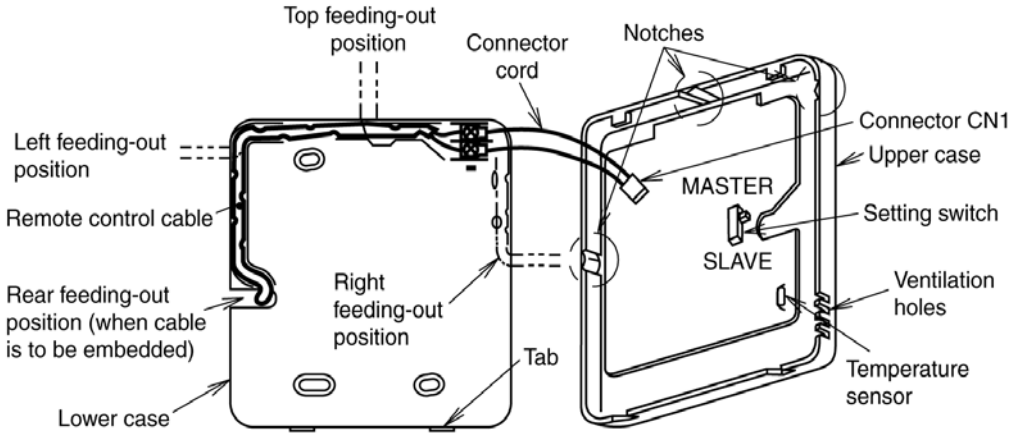
NOTE
- Be sure to use only the accessory screws.
- Do not bend the lower case when tightening the screws.
(If the screws are overtightened, damage may result.)
- Do not remove the protective tape which is affixed to the upper case circuit board.

• If installing the remote controller with the remote control cable exposed, use pliers to cut a notch into the upper case. (The feeding-out direction can be either up or to the left or right)
• Strip the end of the remote control cable which is to be connected to the remote controller. (Refer to the illustration below)

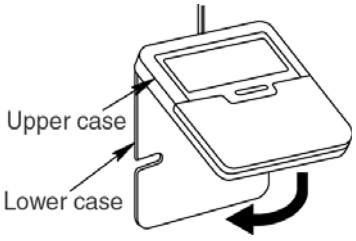


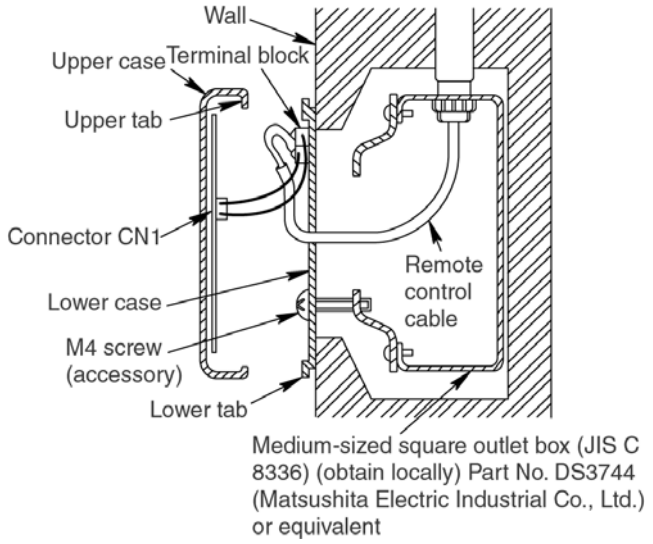
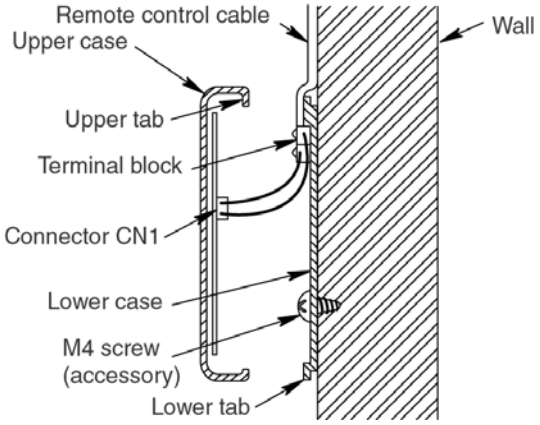
• Route the remote control cable inside the lower case in accordance with the intended feeding- out direction. (Refer to the illustration below.)
Securely connect connector CN1. (If it is not connected the remote controller will not operate.)

NOTE After connecting the connector, do not suspend the upper case by its own weight, otherwise the connector cord may break.



• If controlling using two remote controllers, refer to “Control using two remote controllers” in “4 Settings”.
• Secure the upper case to the lower case.
(Hook the upper tab of the upper case into the lower case, and then push the upper case until it snaps shut onto the lower case tab, while being careful not to clamp the remote control cable and the connector cord.)



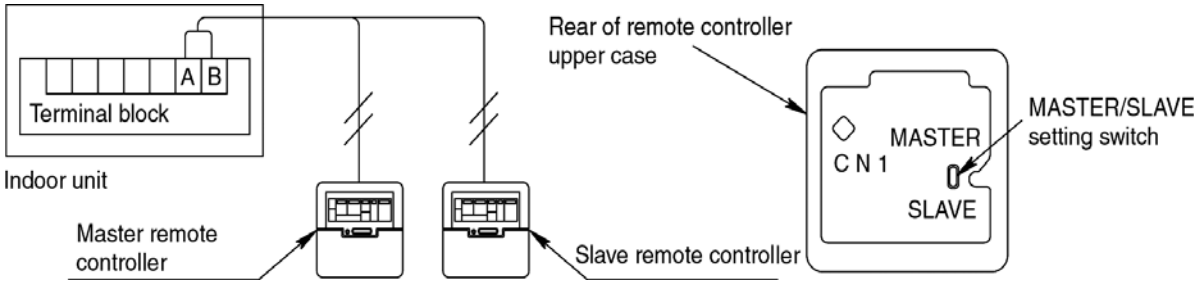
If remote control cable is embedded	If installing with the remote control cable exposed
1. Embed an outlet box (JIS C 8336) into the wall, and then secure the remote controller base plate to the outlet box with the two accessory M4 screws. Make sure that the base plate is flat against the wall at this time, with no bending (looseness) 2. Pass the remote control cable into the box and then install the remote controller. 	1. Secure the remote controller base plate to the wall with two accessory 4 mm screws. 2. The feeding-out direction for the remote control cable can be either up or to the left or right. (Refer to the illustration above.) After determining the feeding-out direction, use nippers to make a notch in the cover. 3. Route the remote control cable as shown in the illustration above. Pull the cord firmly around the outside of the base plate at this time. 

10.6.4. Settings

Control using two remote controllers

- Up to two remote controllers can be installed for a single indoor unit, and either remote controller can be used to operate the indoor unit.
- The indoor unit can be operated with the last switch pressed having priority.

1. Decide which is to be the master and which is to be the slave remote controller.
   The master or slave states of the remote controller are set automatically. The MASTER/SLAVE setting switch can also be use to make the setting manually, however if a manual setting is made, that manual setting has priority.
   Be sure to turn off the main power before making a manual setting.
2. Connect the remote controllers.
   Connect both remote controller to terminals (A) and (B) on the indoor unit terminal block (non-polar).



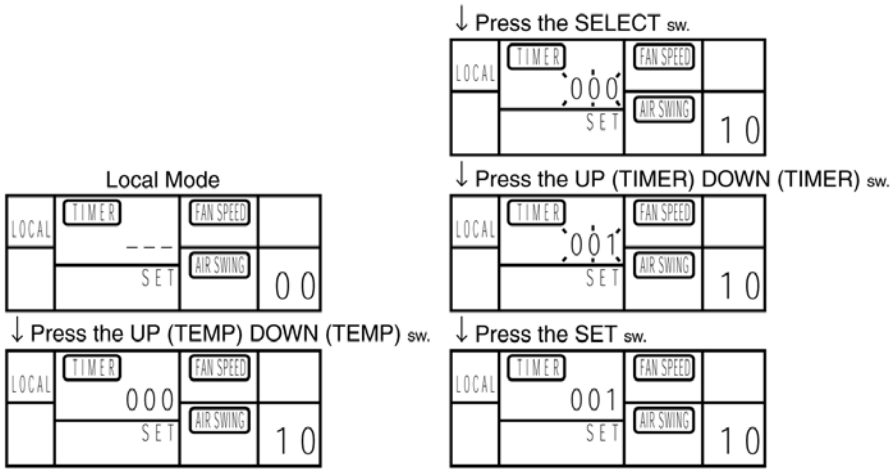
Group control

- All in group will be remote controller thermistor setting when using the remote controller thermistor.
- Up to a maximum of 16 indoor units can be connected at the time of group control.
  (Do not connect heat pump unit with cooling only unit.)
- Indoor unit No. is possible to set automatically at the time of group control. However, what number would be assigned to which indoor units is unknown.
  Indoor unit No. is also possible to set manually with DIP switches. Since manual address setting is priority during performing automatic address setting. (Do not use manual address setting and automatic address setting together.)

Indoor unit No.	1	2	3	4	5	6	7	8
DIP switch (SW2) address setting on indoor unit printed circuit board.								
A/C No. setting	Unneccessory operation	1 ~ ON	2 ~ ON	1, 2 ~ ON	3 ~ ON	1, 3 ~ ON	2, 3 ~ ON	1, 2, 3 ~ ON
Indoor unit No.	9	10	11	12	13	14	15	16
DIP switch (SW2) address setting on indoor unit printed circuit board.								
A/C No. setting	4 ~ ON	1, 4 ~ ON	2, 4 ~ ON	1, 2, 4 ~ ON	3, 4 ~ ON	1, 3, 4 ~ ON	2, 3, 4 ~ ON	1, 2, 3, 4 ~ ON

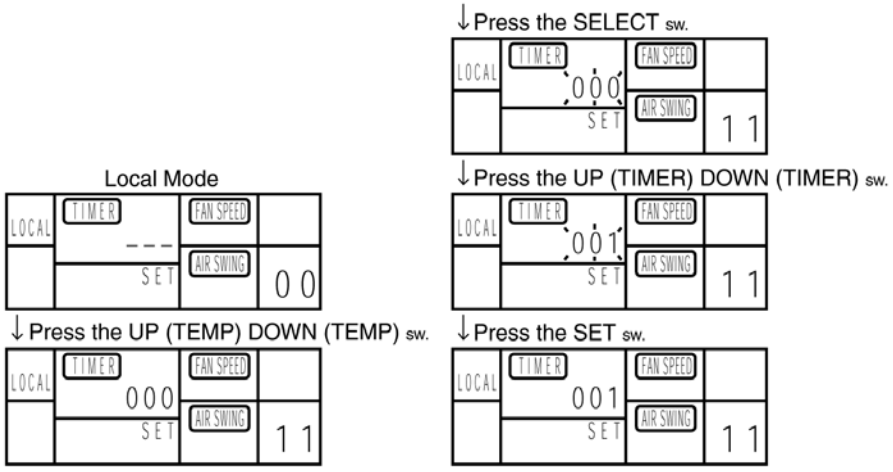
Automatic address resetting for group control

- The address settings for group control (air conditioner Nos. 1 to 16) can be reset automatically.
  1. When operation is stopped, press for 5 seconds, continue the TEST RUN switch to display “00” (will be LOCAL MODE).
  2. Press the UP (TEMP) DOWN (TEMP) switch to display 10.
  3. Press the SELECT switch to display “000”. It would blink.
  4. Press the UP (TIMER) DOWN (TIMER) switch to display “001”. It would blink.
  5. Press the SET switch.



Switching the thermistor

- The temperature detection thermistor can be switched between the thermistor at the indoor unit and the thermistor at the remote controller. However, do not switch to the remote controller thermistor if using two remote controllers.
  1. When operation is stopped, press for 5 seconds, continue the TEST RUN switch to display “00” (will be LOCAL MODE).
  2. Press the UP (TEMP) DOWN (TEMP) switch to display 11.
  3. Press the SELECT switch to display “000”. It would blink.
  4. Press the UP (TIMER) DOWN (TIMER) switch to choose display “000” or “001”.
     “000”... Indoor unit setting (factory default)
     “001”... Remote controller setting
  5. Press the SET switch. (Be sure to press the SET switch so that normal operation mode can be resumed.)
- Repeat the procedure in steps (1) to (5) to change the setting again.



10.6.5. Test operation

- Turn on the main power.
- After 3 minutes have passed since the power was turned on, press the OFF/ON switch on the remote controller. (No operation occurs within 3 minutes after the power was turned on.)
- Press the TEST RUN switch within 1 minute of pressing the OFF/ON switch.
- Next, select the operation mode. (Be sure to select cooling mode first, and run the unit in this mode for 5 minutes or more.)
- Press the OFF/ON switch or the TEST RUN switch to cancel test operation.
- Test operation will be cancelled automatically after 30 minutes.

If remote controller displays nothing

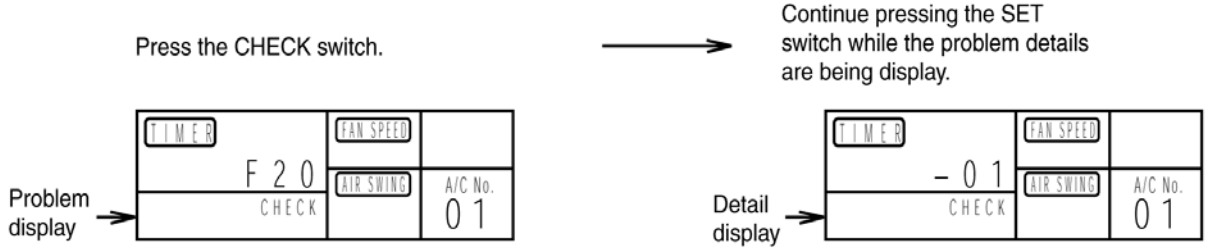
- Check once more that the remote control cable is securely connected. (Check for loose terminals, poor contacts, connection positions terminal block, etc.)
- If the above checks show that nothing is wrong but nothing appears on the remote controller display.
- It is possible that the remote controller was connected while the main power was still turned on. If such is the case, carry out the following.
- Set DIP switch (SW2) No. 1 to 4. The ON position, and then turn on the main power. If the display appears after about 30 seconds, turn DIP switches 2 to 4 to OFF position.

10.6.6. Self-diagnosis function

If “CHECK” is blinking on the timer

- If the “CHECK” display on the wired remote controller is blinking, the details of the problems are displayed on the timer display screen each time the CHECK switch is pressed.
- Further details of the problem can be displayed by pressing the SET switch while the general problem details are being displayed.

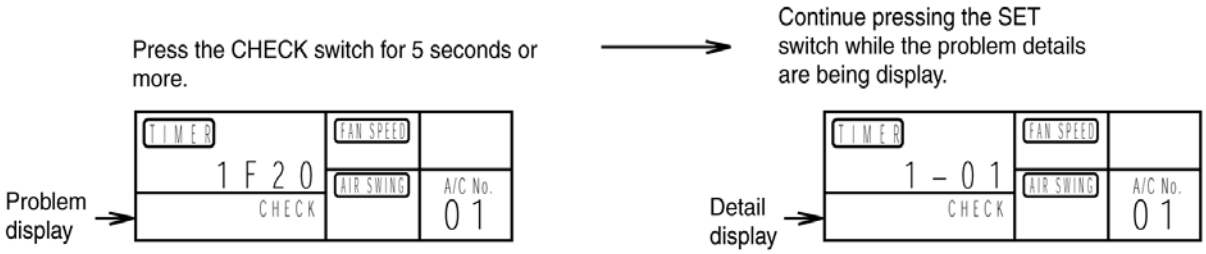
Example of current problem display



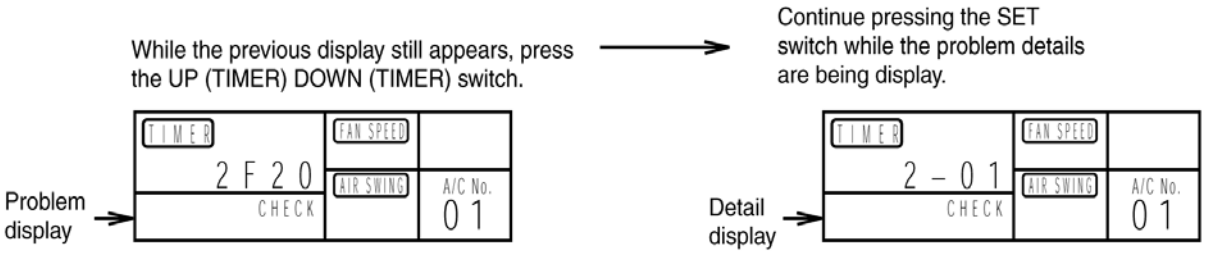
If “CHECK” is not blinking on the timer

- If the “CHECK” display on the wired remote controller is not blinking, press the CHECK switch continuously for 5 seconds or more to display the problem details for the last problem or the problem before that.
- You can then switch between the display for the previous problem and the problem before that by pressing the UP (TIMER) DOWN (TIMER) switches.
- Press the CHECK switch once more to return to the normal display.

Example of previous problem display



Example of abnormality display before previous display



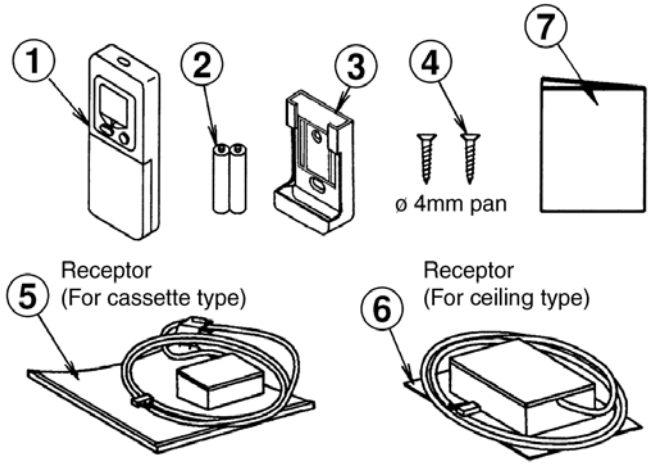
- The display can be switched between the previous problem and the one before that by pressing the UP (TIMER) DOWN (TIMER) switches.
- After eliminating the cause of the problem, press the CHECK switch once more to return to the normal display.

10.7. Wireless remote control installation manual

Wireless Remote Control Installation Manual

- Before installing the wireless remote controller, be sure to thoroughly read the “Notes with regard to safety” section of the installation manual provided with the indoor unit.
- After installing the wireless remote controller, carry out a test operation to check that the remote controller functions properly, and also explain the operation and cleaning procedures to the customer in accordance with the details in the instruction manual. Furthermore, ask the customer to keep this installation manual and the instruction manual in a safe place for later reference.

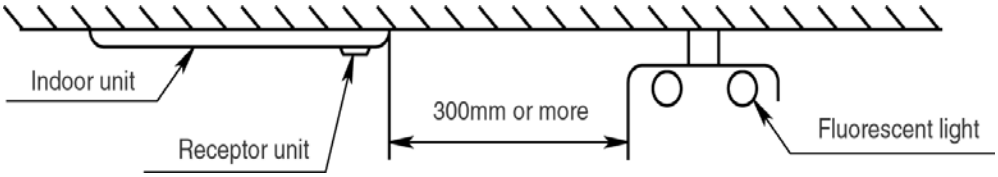
10.7.1. Accessories supplied with the wireless remote controller



No.	Name	Q’ty	
		Cassette	Ceiling
1.	Wireless Remote Controller	1	1
2.	R03 battery	2	2
3.	Holder (For securing remote controller)	1	1
4.	Holder fixing screw	2	2
5.	Receptor unit (For Cassette Type)	1	-
6.	Receptor unit (For Ceiling Type)	-	1
7.	Installation manual	1	1

10.7.2. Points and notes regarding wireless remote controller setting-up location

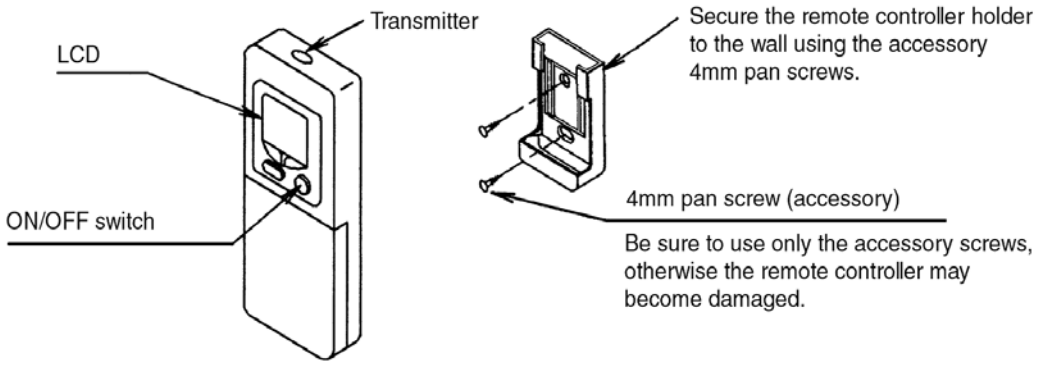
- The wireless remote controller can be used to operate indoor units at a maximum range of 8 metres from directly facing infront of the indoor unit.
- If the remote controller is at an angle to the receptor unit, the operation range may become shortened.
- The accessory receptor unit must be attached to the veneer panel.
- The receptor unit for the wireless remote controller should be in a place where it will not be affected by direct light from fluorescent lights. (Refer to the illustration below.)
  (If using an inverter-type fluorescent light, keep the receptor unit at least 1m away from the light, otherwise remote control operation may not work properly.)



- If installing in a place where a power supply is generating electromagnetic noise, take measures such as installing a noise filter.
- Install at least 3m away from any noise sources, and shield the electric cables using an iron conduit pipe.
- Install at least 1m away from equipment such as TVs and radios. (Otherwise picture distortion or static may occur.)

Wireless remote control installation procedure

• Installing the wireless remote controller to a wall (for remote control storage).



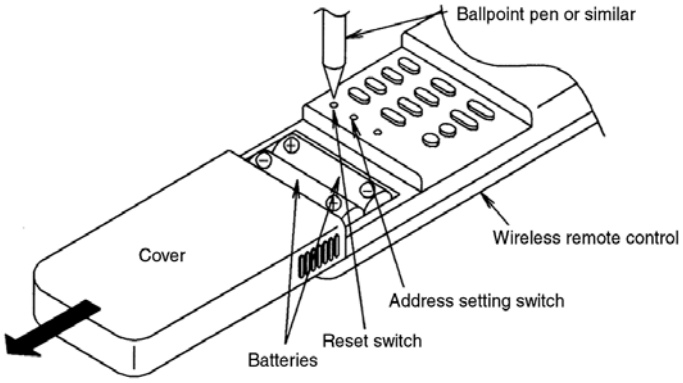
• If using a single remote controller to operate several air conditioners, address setting will be required. (Refer to later in this manual.)
• For twin and triple types, install to the main unit only. (Accordingly, the installation and wiring operations described later in this manual are for the main unit only.)

Inserting the batteries

• Remove the battery compartment cover of the wireless remote controller, and then insert the two accessory R03 size batteries. (Be sure not to make a mistake with the polarities.)

NOTE

The accessory batteries are to be used when checking operation. They should be replaced with new batteries as soon as possible. (Be sure not to make a mistake with the polarities.)



NOTE

• When inserting the batteries for the first time, or when replacing the batteries, the remote controller may stop working. In such case, use a ballpoint pen or similar object to push the reset switch.
  The remote controller should then start working normally.
• Replace the batteries with two new batteries of the same kind.
• Rechargeable (Ni-Cd) batteries differ in aspects such as shape and performance, and thus cannot be use.

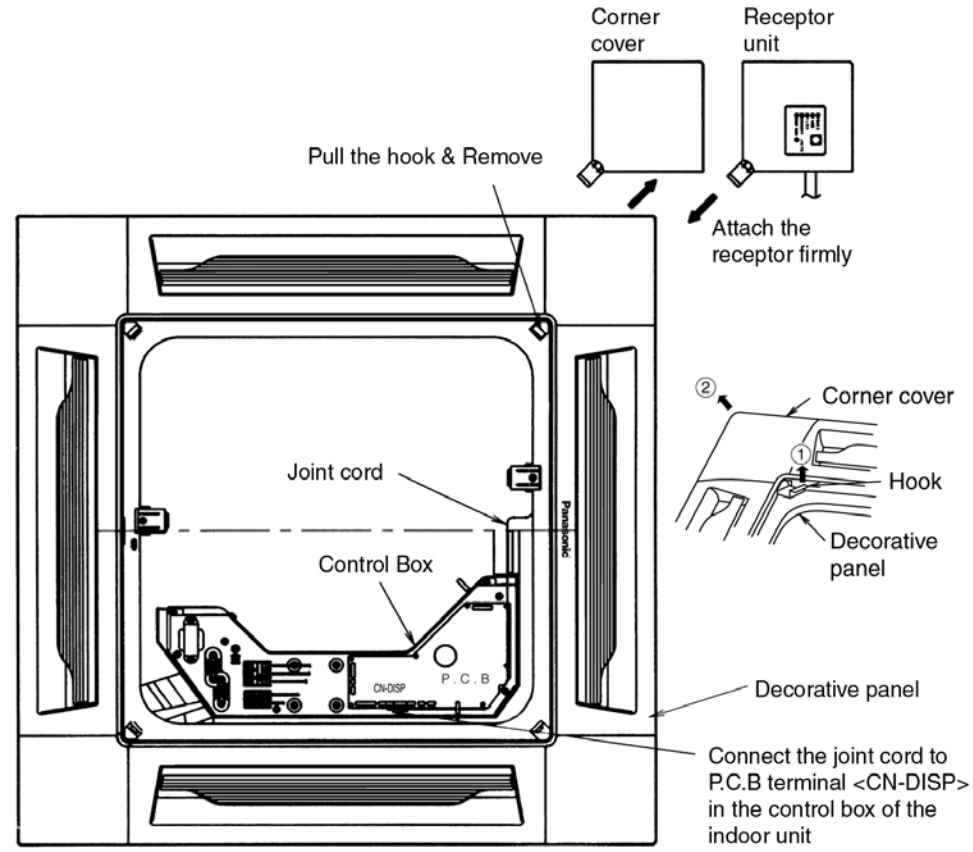
10.7.3. Installing the receptor unit

Receptor unit (for four-way cassette type) assembly procedure

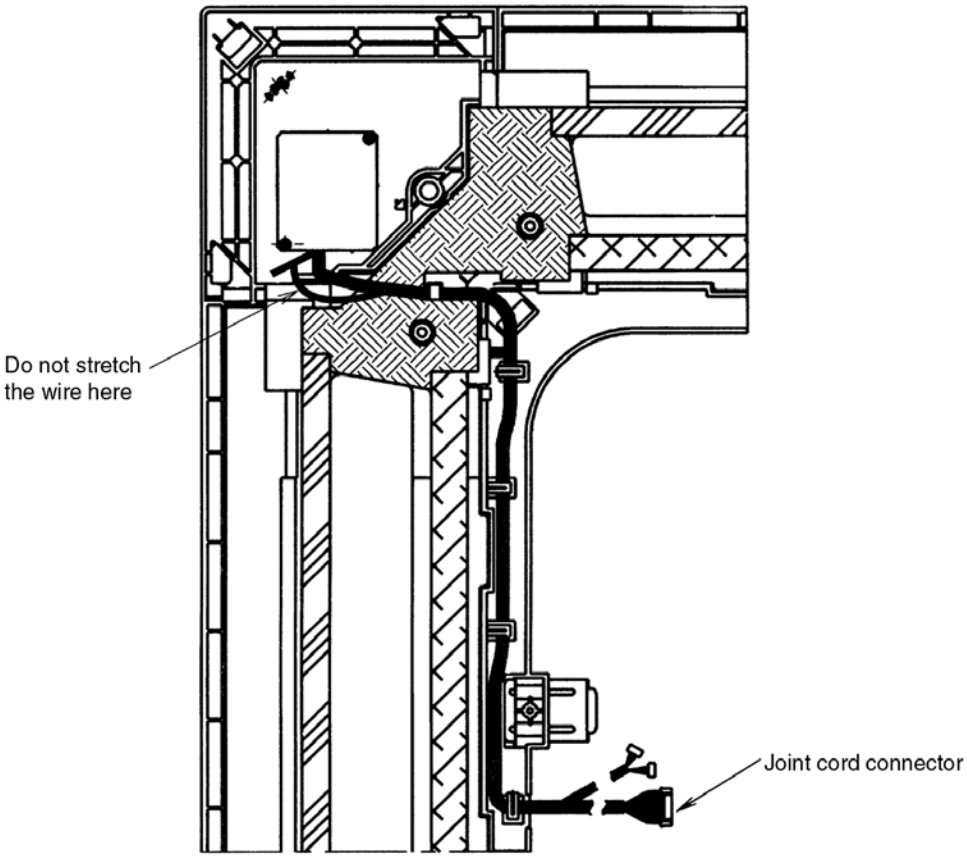
1	Attach the receptor unit onto the decorative panel of the indoor unit as shown in the figure below.

1. Remove the “corner cover” at the decorative panel indicate “Panasonic” logo left side.
2. Attach the receptor unit which same position.

2	Route the joint cord for wiring and connect it to P.C.B connector <CN-DISP> in the control box of the indoor unit.



1. Route the joint cord for wiring as shown in the figure (figure of the back of decorative panel) below.
   Pass the cord through the hook of the decorative panel, taking care that the cord does not run on the heat insulator, etc.

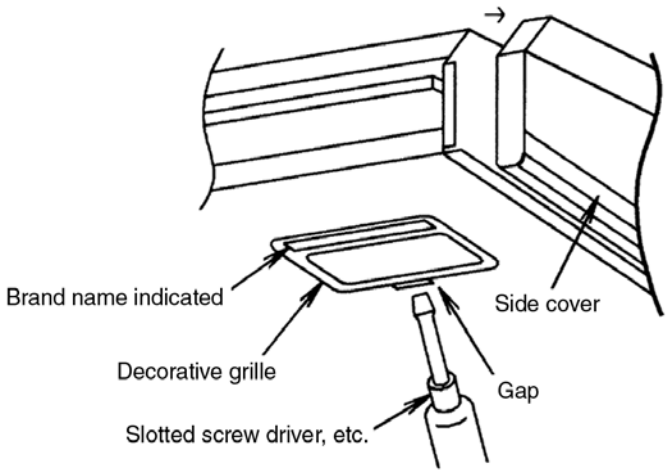


2. Remove the control box cover by removing the two fixing screws and connect the joint cord to P.C.B terminal <CN-DISP> in the control box.

Receptor unit (for ceiling type) assembly procedure

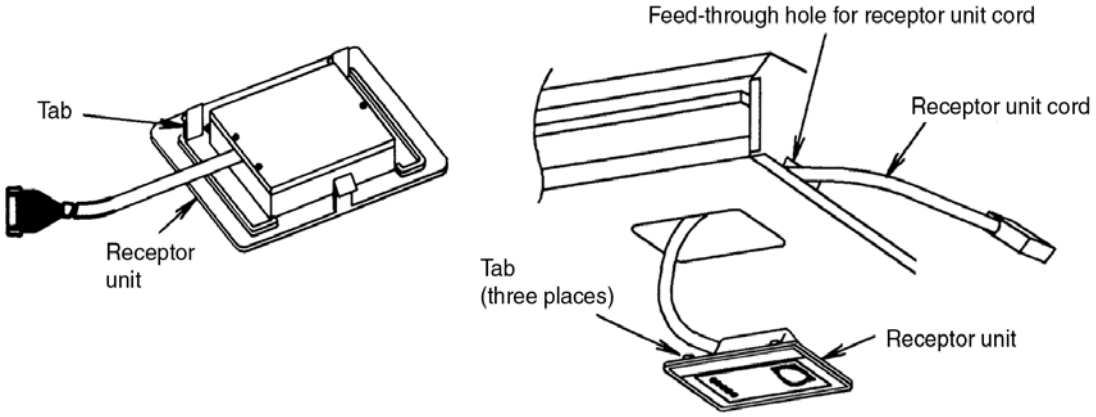
1	Attach the receptor unit onto the indoor main unit as shown in the figure below.

1. Remove the air-intake grille and the side cover.
   To remove the side cover, remove the fixing screw each on the left and the right and pull the side cover towards you.
   (Refer to the installation Manual supplied with the indoor main unit.)



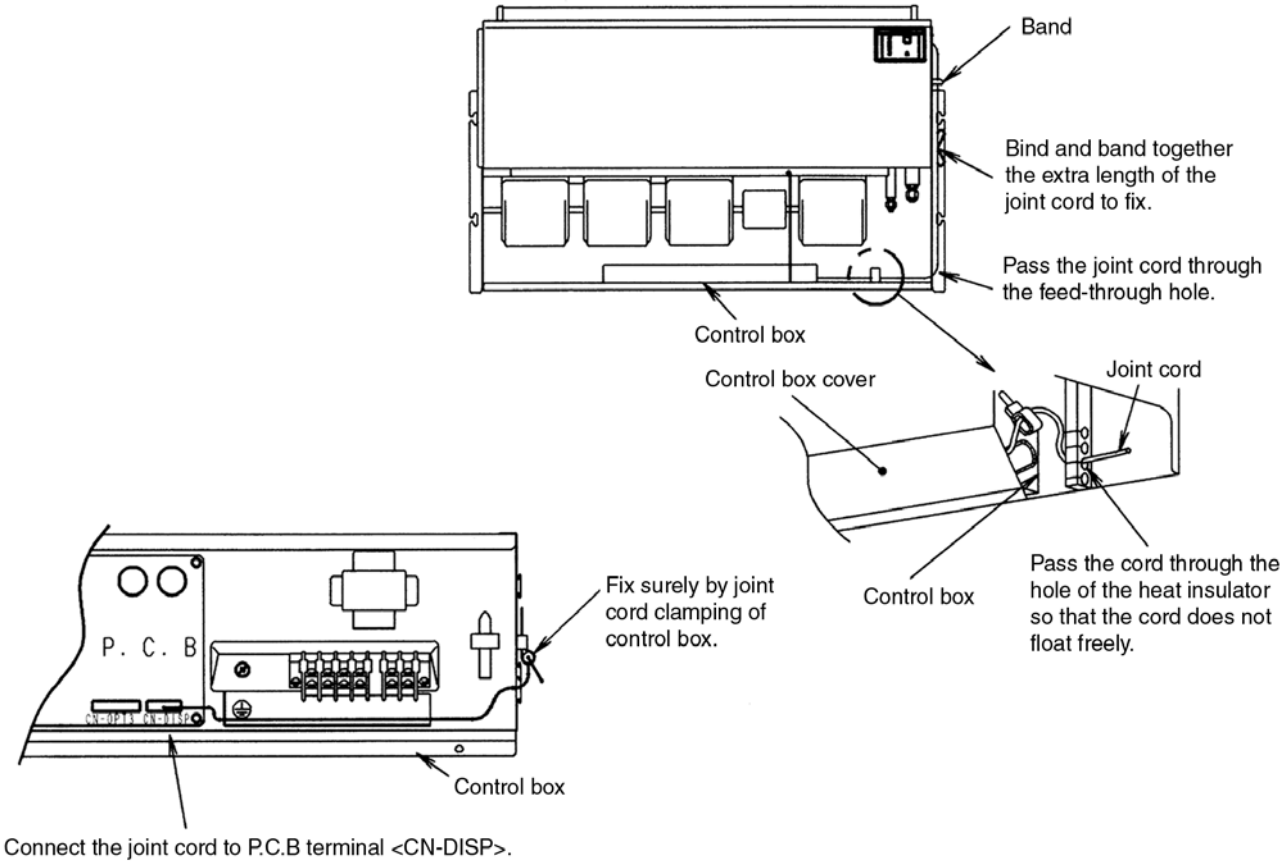
2. Remove the Decorative grille (component on which the brand name is shown) to the right on the air-blow opening. (Fixed with three tabs.)
   (There is a gap at the rear center of the decorative grille. Insert the tip of a slotted screwdriver, etc., 2 to 3mm into the gap and pry of the decorative grille to remove.)

3. Draw out the cord of the receptor unit through the feed-through hole toward the side plate and attach the receptor unit onto the main unit.
   Hook the three tabs onto the receptor unit to attach the receptor unit on the main unit. (Press in the receptor unit until a click sound is heard.)



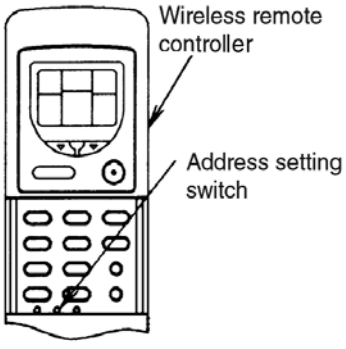
2	Route the joint cord for wiring and connect it to P.C.B terminal <CN-DISP> in the control box of the indoor unit.

1. Route for wiring the cord as shown in the figure to the right.
2. Remove the control box cover by removing the two fixing screws and connect the joint cord to P.C.B terminal <CN-DISP> in the control box.

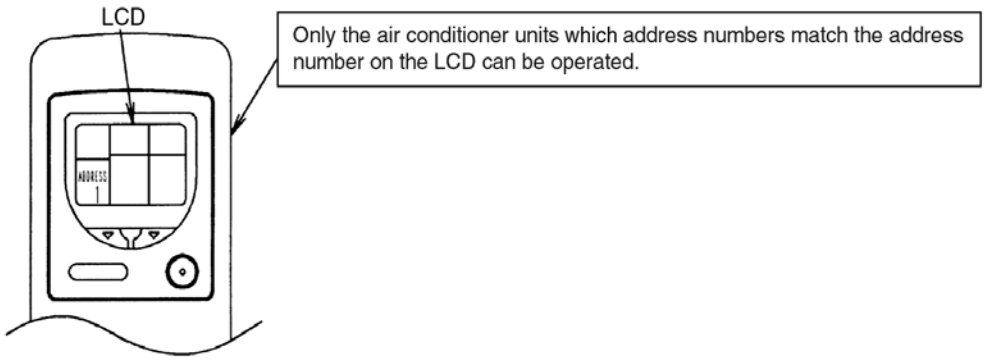


10.7.4. Address setting for wireless remote controller and receptor unit (only when using more than one indoor unit)

- Only the air conditioner units which receptor unit address numbers match the remote controller address number can be operated.
- At the time of shipment from the factory, the address numbers for both the wireless remote controller and the receptor unit are set to “1”. (When using only one indoor unit, the indoor unit can be used without changing the factory default settings.)



Press the address setting switch with a ballpoint pen or similar object to change the address setting.
The address number displayed on the LCD change in the order [ADDRESS 1] → [ADDRESS 2] → [ADDRESS 3] → [GROUP] → [ADDRESS 1] each time the switch is pressed.



NOTE

- If the batteries are replaced or the remote controller is reset, the address setting will return to ADDRESS1, so you will need to repeat the address setting again.
  All setting details which are stored in memory will be cleared, so you will need to repeat the setting.
- If the address is set to GROUP, more than one indoor unit can be operated at the same time.

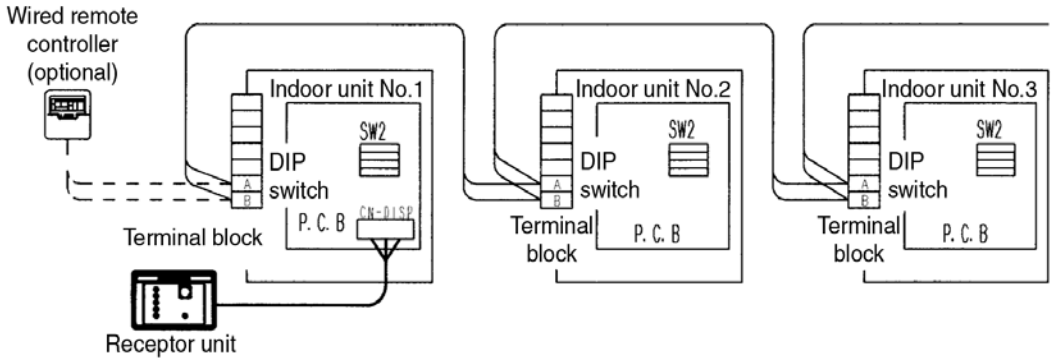
Example:	If the address numbers for all indoor units are changed, other indoor units may operate accidentally due to signal interference.

Control using two remote controllers

- If both the wireless remote controller and the optional wired remote controller are being used together, either remote controller can be used to operate the indoor units.
- The optional wired remote controller can be connected to only one other indoor unit besides the one with the receptor unit.
- Two wireless remote controller cannot be connected at the same time.
- When using the wireless remote controller and the optional wired remote controller, the MASTER/SLAVE setting is not needed.

Group control

- When using group control, be sure to install the receptor unit to indoor unit No. 1. (Refer to the illustration below.)



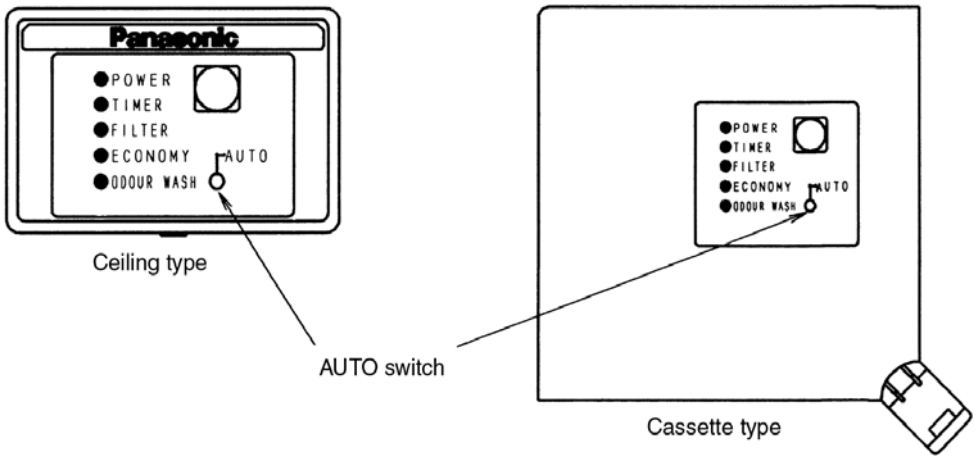
- When using group control, up to a maximum of 16 indoor units can be connected. (Do not mix heat pump units and cooling only units.)
- When using group control, the indoor unit address numbers can be set automatically. However, you will not know at this time which address number corresponds to which indoor unit.
- Setting of address numbers can be carried out manually using the DIP switches. Manual settings have priority. (Do not combine both manual settings and automatic settings.)

[Manual setting]

Indoor unit No.	1	2	3	4	5	6	7	8
DIP switch (SW2) address setting on indoor unit printed circuit board.								
A/C No. setting	Unneccessory operation	1 ~ ON	2 ~ ON	1, 2 ~ ON	3 ~ ON	1, 3 ~ ON	2, 3 ~ ON	1, 2, 3 ~ ON
Indoor unit No.	9	10	11	12	13	14	15	16
DIP switch (SW2) address setting on indoor unit printed circuit board.								
A/C No. setting	4 ~ ON	1, 4 ~ ON	2, 4 ~ ON	1, 2, 4 ~ ON	3, 4 ~ ON	1, 3, 4 ~ ON	2, 3, 4 ~ ON	1, 2, 3, 4 ~ ON

10.7.5. Emergency operation

- If you do not have the wireless remote controller (because the batteries are weak, or some other reason prevents the wireless remote controller from being used), emergency operation can be carried out at receptor unit.



- Press the AUTO switch to start emergency operation.
  Press the AUTO switch once more to stop emergency operation.
- Press the AUTO switch continue 5 seconds to start cooling operation.
  Again press the AUTO switch continue 5 seconds to start heating operation.
- The setting temperature, fan speed and louver control will be fixed at the settings shown in the table below.
- While the indoor unit is running, the OPERATION indicator on the receptor unit will illuminate, and it will switch off when the indoor units stops.
- Heating operation is not available for indoor units which are for cooling only. (If set to HEAT, the setting will change to FAN instead.)

Operation mode	Fan speed	Louver
Cooling	Hi	Previous setting
Heating	Hi	Previous setting

Instructions for users

Please refer to the instruction manual provided with the indoor unit for instruction on how to use the wireless remote controller.

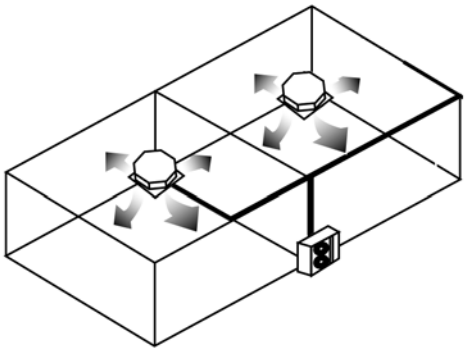
10.8. Twin Operation

- Simultaneous air conditioning of wide spaces and corners is possible. Indoor units with same horsepowers can be used in combination.
- Master unit and slave-unit can be set automatically in twin systems. No address setting is necessary.
- 2 units can be operated simultaneously with a single remote control unit. Note that individual operation is not possible.

Twin Combination Table

Outdoor unit	Simultaneous twin operation
	Standard
5.0 HP	5.0 → 2.5 + 2.5
6.0 HP	6.0 → 3.0 + 3.0

: Outdoor unit capac
: Indoor unit capacit



11 Troubleshooting Guide

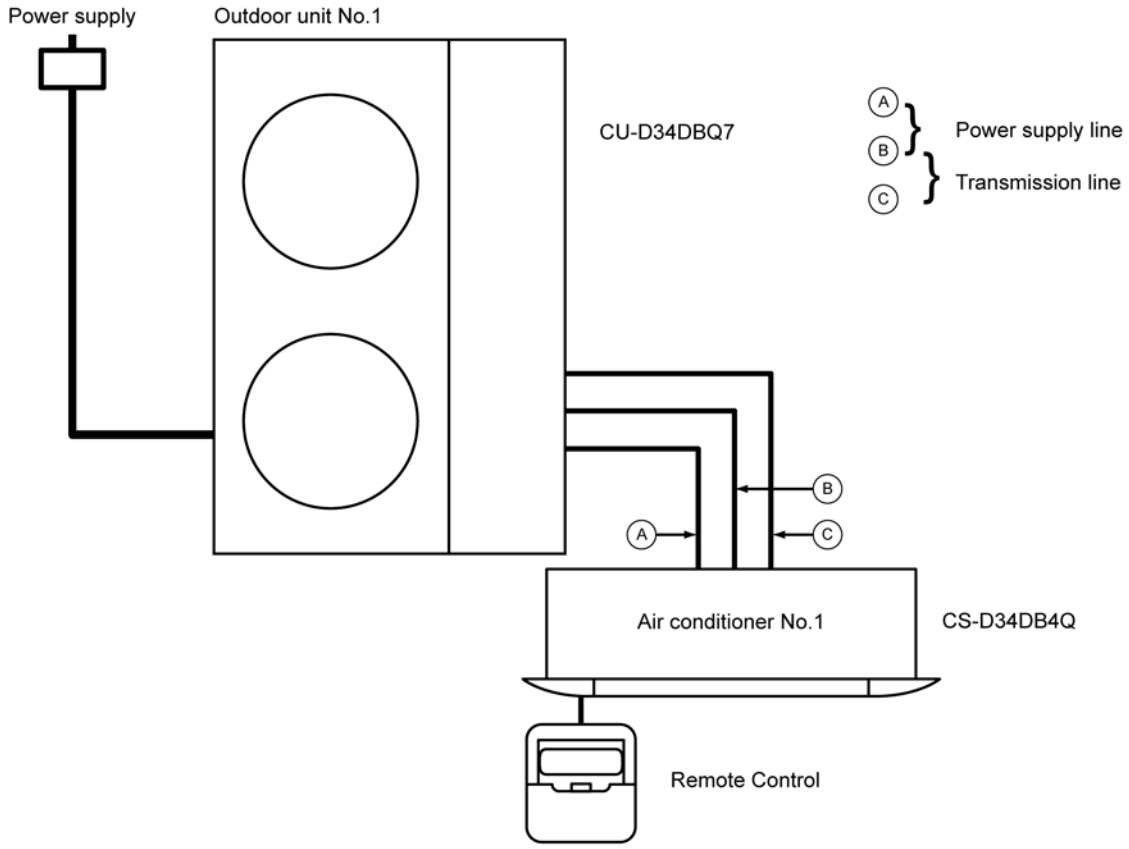
If test operation does not proceed correctly

Carry out test operation after approximately 12 hours have passed since the power was turned on (crankcase heater is energized). If operation is started by using the remote control within 1 minute of turning on the power, the outdoor unit settings will not be made correctly and correct operation will not be possible.

If the following symptoms occur after turning on the power, check the wiring connections once more.

11.1. For standard installation

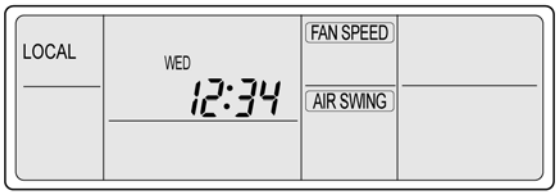
System example



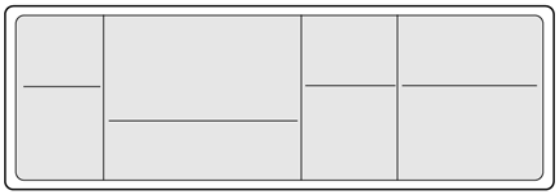
1. The main power is turned on while the indoor-outdoor transmission wires are not connected.
   (open circuit at A: power line)
   Symptom
   Indoor unit: no power supply
   Remote control unit: no power supply
   Outdoor unit: LED2, 4, 6 on P.C.B flashes
2. The main power is turned on while the indoor-outdoor transmission wires are not connected.
   (open circuit at B: power/transmission line)
   Symptom
   Indoor unit: no power supply
   Remote control unit: no power supply
   Outdoor unit: LED2, 4, 6 on P.C.B flashes

3. The main power is turned on while the indoor-outdoor transmission wires are not connected.
   (open circuit at C: transmission line)
   Symptom
   Remote control unit: “check” flashes
   Error code: F27-01 (indoor/outdoor transmission error)
   Indoor unit: LED1 on P.C.B flashes
   Outdoor unit: LED2, 4, 6 on P.C.B flashes

   (When remote control display shows “power supply”)
   Clock setting, and no timer setting

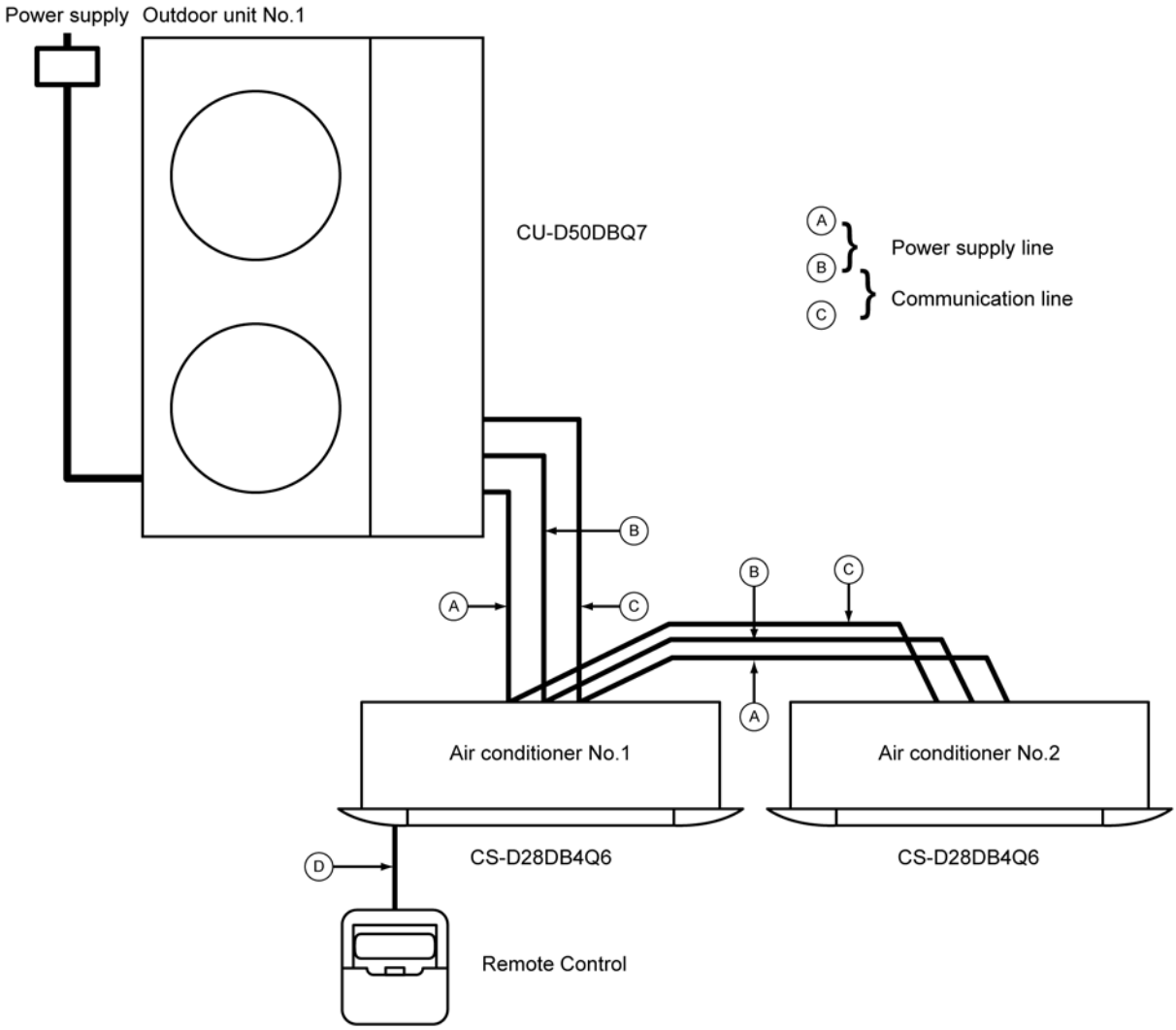


   (When remote control display shows “No power supply”)



11.2. During twin operation

System example



1. The main power is turned on while the transmission wires between the indoor units are not connected.
   (open circuit at A or B)
   Symptom
   Remote control unit: “check” flashes
   Error code: F30-01 (connected indoor capacity error)
   Indoor unit No. 1: LED1 on P.C.B flashes
   Indoor unit No. 2: no power supply
   Outdoor unit: LED6, 7 on P.C.B flashes (connected indoor capacity error)
2. The main power is turned on while the transmission wires between the indoor units are not connected.
   (open circuit at section C)
   Symptom
   Remote control unit: “check” flashes
   Error code: F30-01 (connected indoor capacity error)
   Indoor unit No. 1: LED1 on P.C.B flashes
   Indoor unit No. 2: no power supply
   Outdoor unit: LED5, 6 on P.C.B flashes (connected indoor capacity error)
3. The main power is turned on and the connection wire is all ok.
   If operation starts in this condition, combination of the D50DBQ7 outdoor unit and D24DB4Q6 indoor unit will result in abnormal operation.
   Symptom
   Remote control unit: “check” flashes
   Error code: F30-01 (connected indoor capacity error)
   Indoor unit: LED1 on P.C.B flashes
   Outdoor unit: LED6, 7 on P.C.B flashes

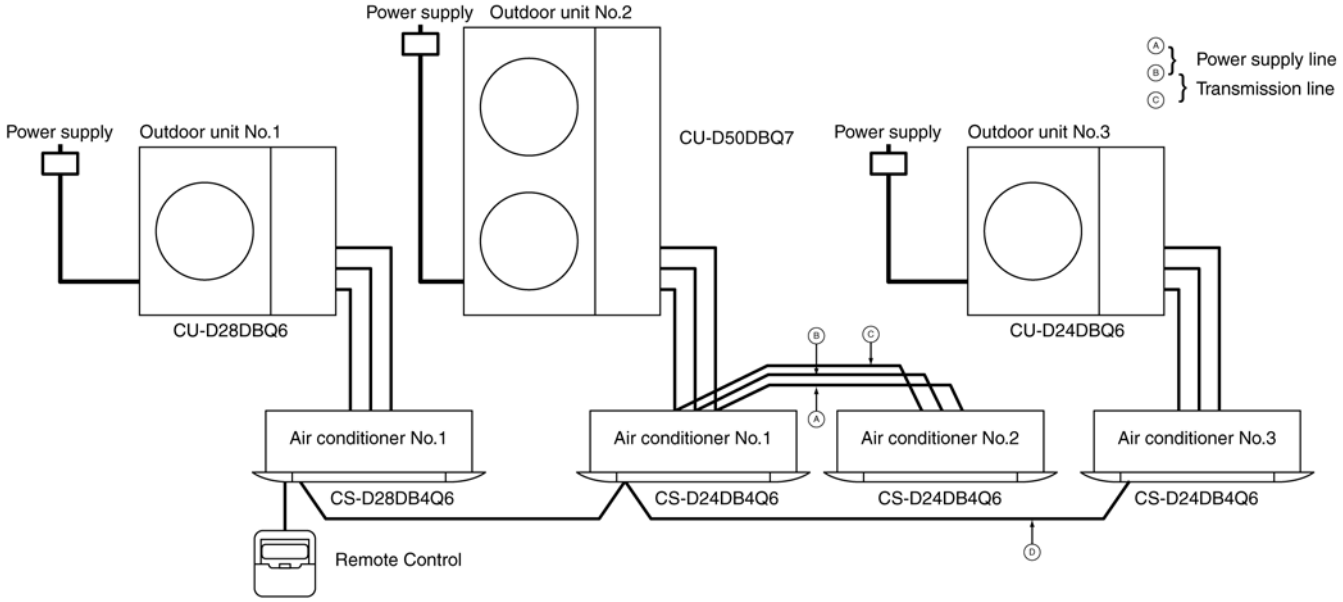
4. The main power is turned on and the connection wire is all ok.
   If operation starts in this condition, combination of the D50DBQ7 outdoor unit and D34DB4Q6 indoor unit will result in abnormal operation.
   Symptom
   Remote control unit: “check” flashes
   Error code: F30-01 (connected indoor capacity error)
   Indoor unit: LED1 on P.C.B flashes
   Outdoor unit: LED6, 7 on P.C.B flashes (connected indoor capacity error)

Remedy

1. Turn off the main power.
   ↓
2. Connect the disconnected wire correctly.
   ↓
3. Turn on the main power.
   ↓
4. After 1 minute, start the operation using the remote control.
   (Indoor unit operation will start according to the remote control setting.)
   (Outdoor unit operation will start after 3-5 minutes.)

11.3. During group control operation

System example



1. The main power is turned on while the transmission wires between the indoor units are not connected.
   (open circuit at A or B or C)
   Symptom
   Operation of indoor unit No.1 and No.3 is possible.
   However “check” flashes in the remote control display for 3-5 minutes after main power is turned on.
   Remote control unit: “check” flashes
   Error code: F30-01 (indoor capacity error)
   Indoor unit: LED1 on P.C.B flashes
   Outdoor unit: LED6, 7 on P.C.B flashes
2. The main power is turned on while the remote control connection wire is not connected.
   (open circuit at section D)
   Symptom
   Nothing abnormal appears on the remote control display.
   Operation of indoor unit No.1 and No.2 is possible.
   However indoor unit No.3 cannot be operated.

Remedy

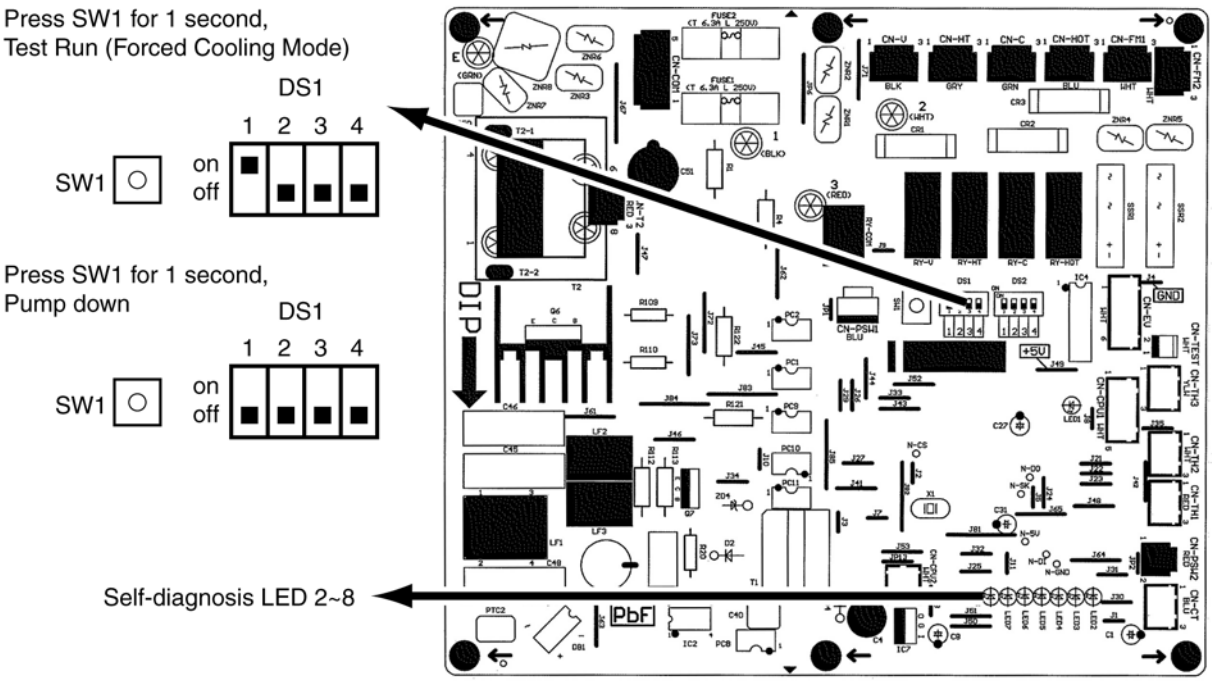
1. Turn off the main power.
   ↓
2. Connect the disconnected wire correctly.
   ↓
3. Turn on the main power.
   ↓
4. After 1 minute, start the operation using the remote control.
   (Indoor unit operation will start according to the remote control setting.)
   (Outdoor unit operation will start after 3-5 minutes.)

11.4. Test operation and self-diagnosis

11.4.1. Test Run (Forced Cooling mode)

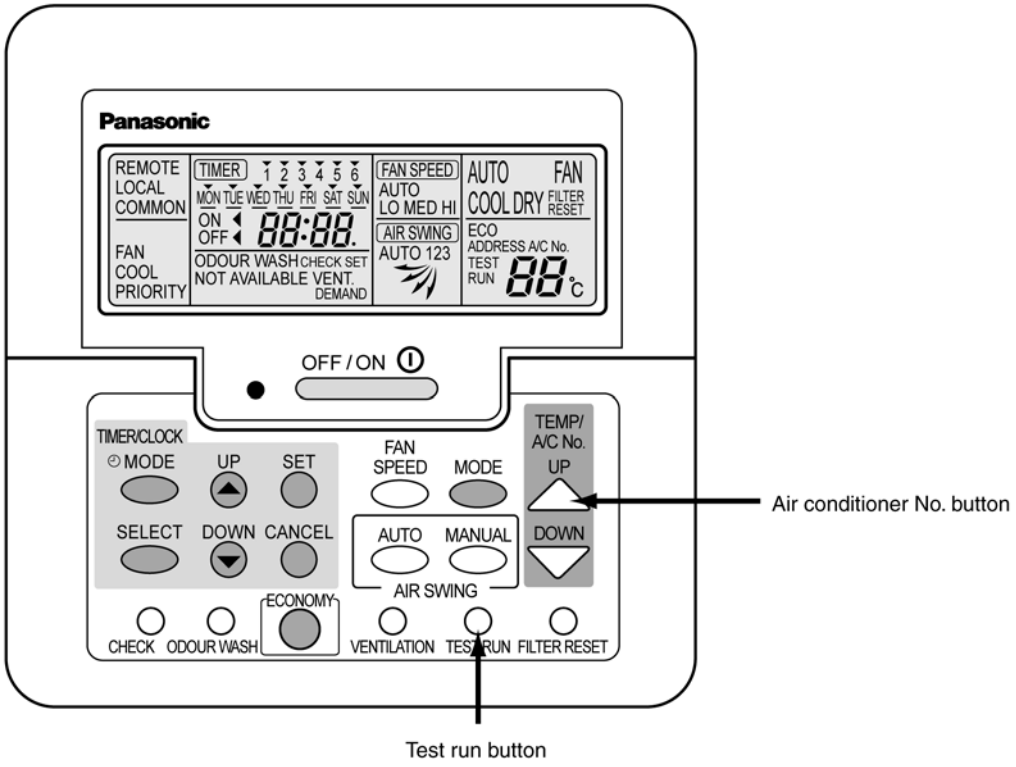
1. Always use a properly-insulated tool to operate the switch on the circuit board.
   (Do not use your finger or any metalic object.)
2. Never turn on the power supply unit until all installation work has been completed.
3. Turn on the circuit breaker before test operation extends past 12 hours.
4. Check that the voltage is -10% of the rated voltage (198V) or higher when starting the unit.
   The unit will not operate if the voltage is less than -10% of the rated voltage (198V).
5. If test operation continue more than 30 minutes, test operation finishes and shift to normal operation.
6. Test operation mode can be selected cooling mode.

11.4.2. Test operation from the outdoor unit



During emergency operation or when test operation is carried out, the LED on the P.C.B. will turn on.

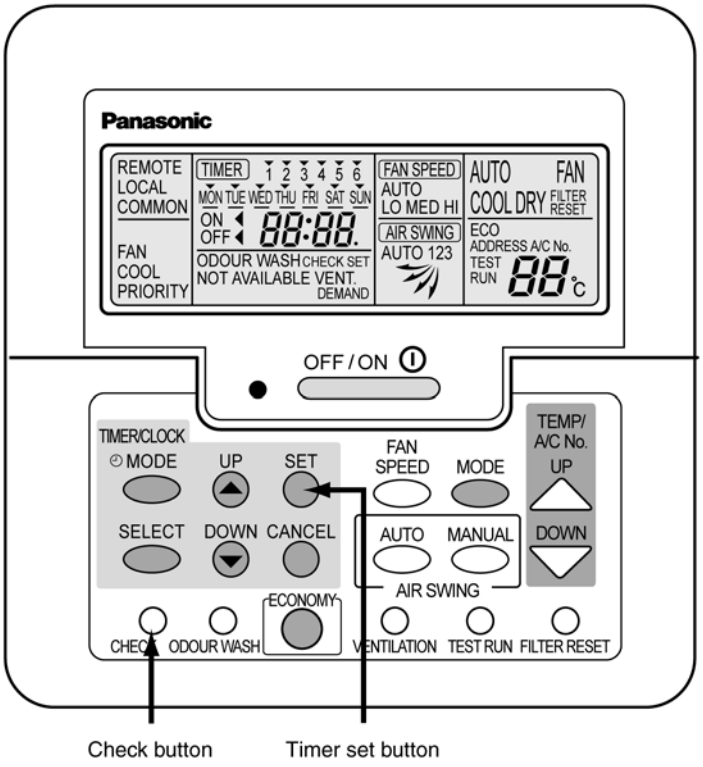
11.4.3. Test operation using the wired remote control



1. Check that “COOL” is displayed on the LCD, and then press the OFF/ON button to start test operation.
2. After pressing the OFF/ON button, press the TEST RUN button within 1 minute.
3. Then, the pipe temperature (gas pipe) will be displayed in the LCD of the remote control.
4. Check that the pipe temperature in the display of the remote control starts dropping after operation has been continuing for sometime.

11.4.4. Self-diagnosis function

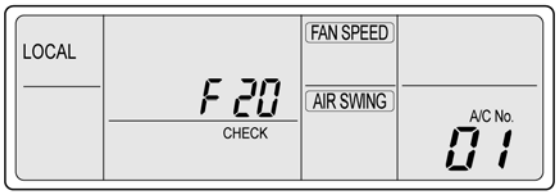
The wired remote control display and the self-diagnosis LEDs (green) on the outdoor unit printed circuit board indicate where the abnormality has occurred.
Recalling the error display.



The air conditioner No.”01” appears during normal installation and use.
When using group control, a different number may appear.
The air conditioner No. can be displayed by pressing the air conditioner No. button.
(= same as Temp. up and down button)

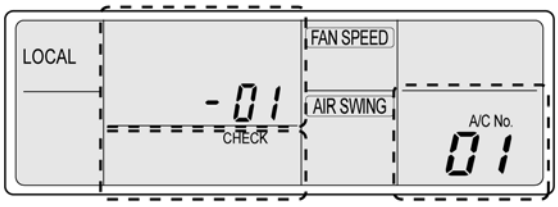
When an abnormality occurs at this unit, “check” flashes in the display.

- **Press the check button while the display is flashing.**



The timer display will change and an error code from F15 to F44 will appear in place of time.
(the temperature setting display will also change to show the air conditioner. No.)

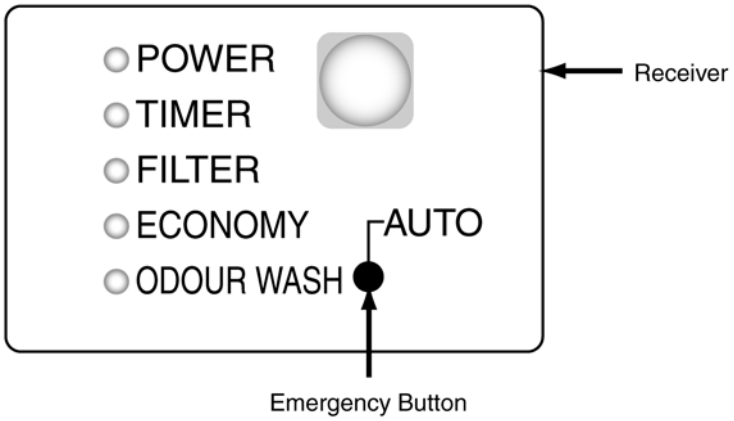
- **Press the timer set button while the error is displayed.**



The F15-44 display will change to the detail display.

- **How to display the past error message.**
  If the CHECK display on the wired remote control is not flashing, press the CHECK button continuously for 5 seconds or more to display the past problem details.

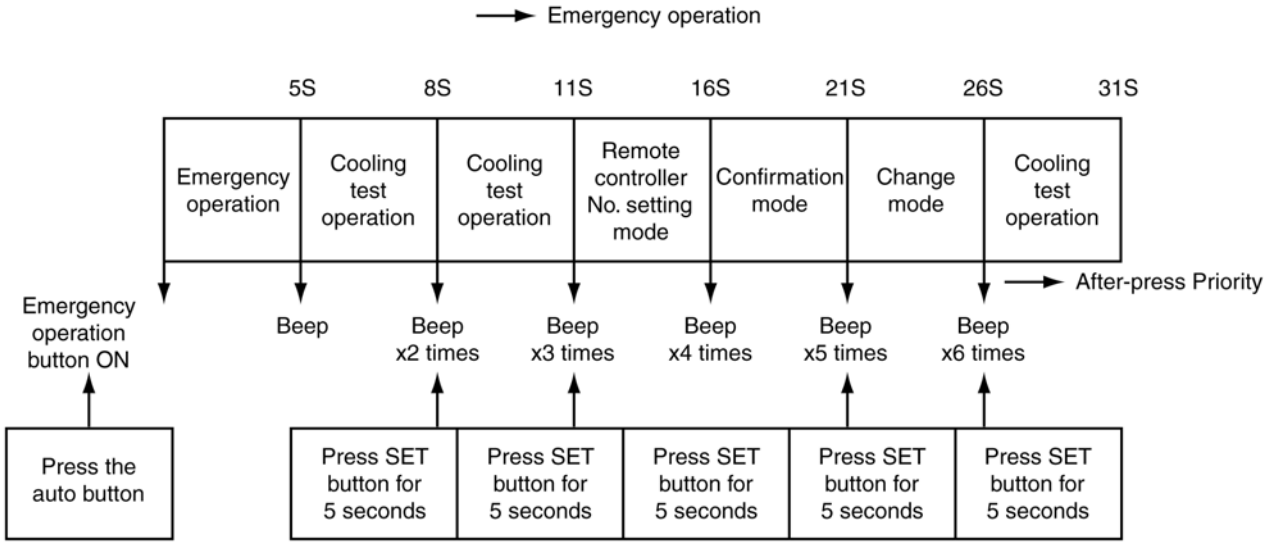
11.4.5. Test operation using the receiver auto button (If using wireless remote controller)



11.5. Emergency operation

When using the wireless remote control and losing the remote controller, emergency operation can be operated by pressing auto button in the receiver.

- **Press the auto button continuously within 5 seconds**



Press the auto button continuously within 5 seconds
→ emergency operation

- **Press the auto button continuously for more than 5 seconds to less than 8 seconds**
→ **cooling test operation**
- **Press the auto button continuously for more than 8 seconds to less than 11 seconds**
→ **cooling test operation**

Press the auto button continuously for more than 11 seconds to less than 16 seconds
→ set remote controller address
Press the auto button continuously for more than 16 seconds to less than 21 seconds
→ remote controller address confirmation mode
Press the auto button continuously for more than 21 seconds to less than 26 seconds
→ change address of branch unit
Press the auto button continuously for more than 26 seconds to less than 31 seconds
→ individual change mode
During the above each stage, finally press the SET button, then the operation mode can be decided.

If there is an abnormality in the temperature thermistor (disconnect or shorted), indoor unit cannot be operated.
If abnormality detected in the indoor or outdoor unit, turn off the main power supply and find the cause.
Check the resistance of each thermistor of both indoor and outdoor units by referring the resistance table as follows.

Thermistor resistance table

Temperature °C	Resistance value (kΩ)±5%			
	Indoor		Outdoor	
	Room temperature thermistor	Pipe temperature thermistor	Discharge temperature thermistor	Pipe temperature thermistor
-20	158.5	211.3	528.3	47.9
-10	87.5	116.7	291.8	27.1
-5	66.1	88.2	220.5	20.7
0	50.5	67.3	168.3	15.9
5	38.9	51.9	129.8	12.4
10	30.3	40.4	100.9	9.8
15	23.8	31.7	79.2	7.7
20	18.8	25.1	62.7	6.2
25	15	20	50	5
30	12.1	16.1	40.2	4
40	8	10.6	26.5	2.7
50	5.4	7.2	17.9	1.9
60	3.7	5	12.4	1.3
70	-	3.5	8.8	0.9

	Resistance value (kΩ)±5%			
80	-	2.5	6.3	-
90	-	1.9	4.7	-
100	-	1.4	3.5	-

During outdoor unit emergency operation or test operation, the LED on the P.C.B. will flash.

11.6. Self-diagnosis error code table

- The display screen on the wired remote control unit and the self-diagnosis LEDs (green) on the outdoor unit printed circuit board in the outdoor unit can be used to indicate where the location of a problem is.
  Refer to the table below to remove the cause of the problem, and then re-start the air conditioner system.
- If the problem disappears and operation returns to normal, the CHECK display on the remote control unit will switch off, but the self-diagnosis LED will remain illuminated until operation is resumed. ●... illuminated ○... flashing Blank off.

Wired remote control unit display		Outdoor unit printed circuit board LED							Location or problem	Check location
Abnormal display	Detail display	2	3	4	5	6	7	8		
F15	-01		○	○	○	○		(※2)	Drain level Float switch problem	Drain pump and drain pipe, indoor unit connectors CN-DRMTR&CN-TH2
F16	-01						○	(※2)	Louver switch problem	Louver motor, decorative panel connection terminal, or indoor unit louver motor connectors
F20	-01				○		○	(※2)	Indoor temperature sensor problem	Indoor temperature sensor lead wire or indoor unit connector or CN-TH2
	-02	○			○		○	(※2)	Remote control thermistor problem	Remote control thermistor
F21	-01		○		○		○	(※2)	Pipe temp. sensor problem (indoor unit)	Pipe temperature sensor lead wire or indoor unit connector CN-TH1
F26	-01			○		○	○	(※2)	Remote control transmission problem	Remote control unit cable and connection terminals
F27	-01	○		○		○			Indoor/outdoor unit disconnection problem	Indoor/outdoor unit connection cable and connection terminals, or indoor unit and outdoor unit power supplies
	-05	○	○	○		○	○	(※2)	Indoor/outdoor unit connection error problem	Indoor/outdoor unit connection wire
F30	-01					○	○		System problem	Total capacity for the number of indoor units is insufficient, or over check the total capacity and the number of indoor units
	-02	○		○		○	○		Open phase, or reversed phase of supply	Check the main power supply terminal board connections, or switch over any two of the power supply wires.
F31	-01		○						Suction pressure protection	Insufficient refrigerant
	-02	○							High-pressure cut-off	Check the Refrigeration system
	-10		○	○		○			Refrigerant system problem	Insufficient refrigerant or valve operation (closed)
F32	-05	○	○						Compressor overcurrent protection	Open phase or lock in compressor
	-06	○	○		○				Compressor discharge temp. protection	Insufficient refrigerant
F40	-21	○		○					Heat exchanger outlet temperature sensor problem	Heat exchanger outlet temperature sensor (COND TEMP) lead wire, connector CN-TH1
	-51		○	○					Compressor discharge temperature sensor problem	Compressor discharge temperature sensor (DIS T. TEMP) lead wire, connector CN-DIS
F41	-02	○	○				○		High pressure switch open circuit problem	High-pressure switch lead wire, connector CN-PSW1
F42	-01	○	○	○		○	○		Current detector open circuit or compressor current problem	Outdoor unit connector CN2, compressor internal protection system activated, or blown main power supply fuse
	-11		○		○				Current detector open circuit	Outdoor unit P.C. B (NOISE FILTER) fault or connector ACN2

(※2)

LED8	Unit No. (when twin operation)
●	Master unit problem
○	Slave unit problem

- The LED1 (green) illuminates to indicate that the microprocessor on the printed circuit board is operating normally.

  If the LED is switched off is flashing irregularly. Check the power supply, and turn it off and then back on again.

12 Technical Data

12.1. Cooling capacity performance data

Model (CS-)	Power Source	Ambient Return Air		Temperature Air Entering Condenser (°C D.B.)														
				25°C			30°C			35°C			40°C			43°C		
				TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
		D.B.	W.B.	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
D34DB4Q	220V, 60Hz, 3 phase	23	17	11.24	7.36	3.50	10.80	7.29	3.79	10.16	7.06	4.13	9.40	6.77	4.53	8.85	6.55	4.80
			19	11.87	6.05	3.71	11.50	6.10	4.02	10.91	6.00	4.38	10.18	5.80	4.80	9.66	5.70	5.09
			22	12.96	4.67	4.01	12.62	4.79	4.34	12.04	4.82	4.73	11.26	4.73	5.19	10.73	4.72	5.50
		25	17	11.11	8.50	3.51	10.68	8.38	3.79	10.06	8.10	4.12	9.33	7.79	4.50	8.80	7.53	4.77
			19	11.89	7.49	3.73	11.48	7.46	4.03	10.86	7.27	4.39	10.11	7.03	4.79	9.58	6.85	5.08
			22	12.96	5.90	4.03	12.57	5.97	4.35	11.95	5.91	4.74	11.13	5.73	5.18	10.63	5.69	5.49
		27	17	10.97	9.77	3.51	10.56	9.61	3.78	9.96	9.26	4.12	9.26	8.89	4.48	8.76	8.68	4.74
			19	11.90	8.81	3.75	11.45	8.70	4.04	10.80	8.42	4.40	10.04	8.14	4.78	9.50	7.89	5.07
			22	12.95	7.12	4.05	12.51	7.13	4.37	11.86	7.00	4.75	11.02	6.72	5.17	10.53	6.63	5.47
		29	17	10.95	10.73	3.49	10.56	10.45	3.78	9.93	9.93	4.07	9.33	9.33	4.37	8.87	8.87	4.55
			19	11.88	10.09	3.73	11.45	9.96	4.03	10.80	9.62	4.35	10.12	9.26	4.67	9.62	9.04	4.87
			22	12.90	8.45	4.11	12.46	8.41	4.44	11.78	8.19	4.79	11.03	7.94	5.14	10.52	7.79	5.36
		32	17	10.93	10.72	3.47	10.56	10.56	3.77	9.24	9.24	4.04	9.38	9.38	4.30	8.94	8.94	4.43
			19	11.86	11.74	3.71	11.45	11.45	4.03	10.81	10.81	4.31	10.18	10.18	4.59	9.70	9.70	4.73
			22	12.86	10.55	4.14	12.42	10.43	4.50	11.77	10.12	4.81	11.04	9.82	5.13	10.52	9.57	5.43
D34DB4Q	220V, 50Hz, 3 phase	23	17	10.41	6.82	3.10	10.00	6.75	3.36	9.41	6.54	3.66	8.70	6.26	4.02	8.19	6.06	4.26
			19	10.99	5.61	3.29	10.65	5.64	3.56	10.11	5.56	3.88	9.42	5.37	4.26	8.94	5.28	4.51
			22	12.00	4.32	3.55	11.68	4.44	3.85	11.15	4.46	4.19	10.43	4.38	4.60	9.94	4.37	4.88
		25	17	10.29	7.87	3.11	9.89	7.76	3.36	9.32	7.50	3.66	8.64	7.21	3.99	8.15	6.97	4.23
			19	11.01	6.93	3.31	10.63	6.91	3.57	10.05	6.74	3.89	9.36	6.51	4.25	8.87	6.34	4.50
			22	12.00	5.46	3.57	11.63	5.53	3.86	11.06	5.48	4.20	10.31	5.31	4.59	9.84	5.27	4.86
		27	17	10.16	9.04	3.11	9.77	8.89	3.35	9.22	8.57	3.65	8.57	8.23	3.97	8.11	8.03	4.20
			19	11.02	8.15	3.33	10.60	8.06	3.58	10.00	7.80	3.90	9.30	7.53	4.24	8.80	7.30	4.49
			22	11.99	6.59	3.59	11.59	6.60	3.87	10.98	6.48	4.21	10.20	6.22	4.58	9.75	6.14	4.85
		29	17	10.14	9.94	3.09	9.77	9.68	3.35	9.20	9.20	3.61	8.64	8.64	3.87	8.21	8.21	4.04
			19	11.00	9.35	3.31	10.60	9.22	3.58	10.00	8.90	3.85	9.37	8.58	4.14	8.91	8.37	4.31
			22	11.94	7.82	3.64	11.53	7.79	3.94	10.91	7.58	4.24	10.21	7.35	4.56	9.74	7.21	4.75
		32	17	10.12	9.92	3.08	9.78	9.78	3.34	8.55	8.55	3.58	8.69	8.69	3.81	8.28	8.28	3.92
			19	10.98	10.87	3.29	10.60	10.60	3.57	10.01	10.01	3.82	9.42	9.42	4.07	8.98	8.98	4.19
			22	11.91	9.77	3.67	11.50	9.66	3.99	10.90	9.37	4.27	10.22	9.10	4.54	9.74	8.86	4.83

TC: Cooling Capacity
SHC: Sensible Heat Capacity
IPT: Cooling Power Consumption

Model (CS-)	Power Source	Ambient Return Air		Temperature Air Entering Condenser (°C D.B.)															
				25°C			30°C			35°C			40°C			43°C			
				TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	
		D.B.	W.B.	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	
D43DB4Q	220V, 60Hz, 3 phase	23	17	14.16	9.27	4.50	13.60	9.18	4.87	12.80	8.89	5.31	11.83	8.52	5.82	11.14	8.24	6.17	
			19	14.95	7.62	4.77	14.48	7.68	5.16	13.74	7.56	5.62	12.81	7.30	6.17	12.16	7.18	6.54	
			22	16.33	5.88	5.15	15.89	6.04	5.58	15.16	6.06	6.07	14.19	5.96	6.66	13.51	5.95	7.06	
		25	17	13.99	10.70	4.50	13.45	10.55	4.86	12.67	10.20	5.30	11.75	9.81	5.78	11.09	9.48	6.13	
			19	14.97	9.43	4.79	14.45	9.39	5.18	13.67	9.16	5.64	12.73	8.85	6.16	12.07	8.63	6.52	
			22	16.32	7.42	5.18	15.82	7.52	5.59	15.05	7.45	6.09	14.02	7.22	6.65	13.39	7.16	7.05	
		27	17	13.82	12.30	4.51	13.29	12.10	4.86	12.54	11.66	5.29	11.66	11.19	5.75	11.03	10.92	6.09	
			19	14.99	11.09	4.82	14.42	10.96	5.19	13.60	10.61	5.65	12.65	10.24	6.14	11.97	9.93	6.51	
			22	16.31	8.97	5.21	15.76	8.98	5.61	14.93	8.81	6.10	13.88	8.46	6.63	13.26	8.35	7.03	
		29	17	13.79	13.51	4.48	13.29	13.16	4.85	12.51	12.51	5.22	11.75	11.75	5.61	11.17	11.17	5.85	
			19	14.96	12.71	4.79	14.42	12.54	5.18	13.61	12.11	5.58	12.75	11.66	6.00	12.12	11.39	6.25	
			22	16.24	10.64	5.28	15.69	10.59	5.71	14.83	10.31	6.15	13.89	10.00	6.60	13.25	9.81	6.88	
		32	17	13.77	13.49	4.46	13.30	13.30	4.84	11.63	11.63	5.18	11.82	11.82	5.52	11.26	11.26	5.68	
			19	14.93	14.78	4.77	14.42	14.42	5.17	13.61	13.61	5.54	12.82	12.82	5.90	12.21	12.21	6.07	
			22	16.20	13.28	5.32	15.64	13.14	5.77	14.82	12.74	6.18	13.90	12.37	6.58	13.25	12.05	6.93	
D43DB4Q	220V, 50Hz, 3 phase	23	17	13.01	8.52	4.06	12.50	8.44	4.40	11.76	8.17	4.79	10.88	7.83	5.25	10.24	7.58	5.57	
			19	13.74	7.01	4.30	13.31	7.06	4.66	12.63	6.95	5.08	11.78	6.71	5.57	11.18	6.60	5.90	
			22	15.01	5.40	4.65	14.60	5.55	5.03	13.93	5.57	5.48	13.04	5.48	6.01	12.42	5.46	6.38	
		25	17	12.86	9.84	4.07	12.36	9.70	4.39	11.64	9.37	4.78	10.80	9.02	5.22	10.19	8.71	5.53	
			19	13.76	8.67	4.33	13.28	8.63	4.67	12.57	8.42	5.09	11.70	8.13	5.56	11.09	7.93	5.89	
			22	15.00	6.82	4.67	14.54	6.91	5.05	13.83	6.85	5.50	12.88	6.63	6.00	12.30	6.58	6.36	
		27	17	12.70	11.30	4.07	12.22	11.12	4.39	11.53	10.72	4.77	10.72	10.29	5.19	10.14	10.04	5.50	
			19	13.78	10.19	4.35	13.25	10.07	4.69	12.50	9.75	5.10	11.63	9.42	5.54	11.00	9.13	5.88	
			22	14.99	8.24	4.70	14.48	8.25	5.06	13.73	8.10	5.51	12.75	7.78	5.99	12.19	7.68	6.35	
		29	17	12.67	12.42	4.04	12.22	12.10	4.38	11.50	11.50	4.72	10.80	10.80	5.06	10.27	10.27	5.28	
			19	13.75	11.68	4.32	13.25	11.53	4.68	12.50	11.13	5.04	11.72	10.72	5.41	11.14	10.47	5.64	
			22	14.93	9.78	4.76	14.42	9.73	5.15	13.64	9.48	5.55	12.77	9.19	5.96	12.18	9.01	6.21	
		32	17	12.66	12.40	4.03	12.22	12.22	4.37	10.69	10.69	4.68	10.86	10.86	4.98	10.35	10.35	5.13	
			19	13.73	13.59	4.30	13.25	13.25	4.67	12.51	12.51	5.00	11.78	11.78	5.32	11.23	11.23	5.48	
			22	14.89	12.21	4.80	14.38	12.08	5.21	13.62	11.71	5.58	12.78	11.37	5.94	12.18	11.08	6.27	

TC: Cooling Capacity
SHC: Sensible Heat Capacity
IPT: Cooling Power Consumption

Model (CS-)	Power Source	Ambient Return Air		Temperature Air Entering Condenser (°C D.B.)															
				25°C			30°C			35°C			40°C			43°C			
				TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	
		D.B.	W.B.	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	
D50DB4Q	220V, 60Hz, 3 phase	23	17	15.09	9.89	4.94	14.50	9.79	5.34	13.64	9.48	5.82	12.62	9.08	6.39	11.88	8.79	6.77	
			19	15.94	8.13	5.23	15.44	8.18	5.67	14.65	8.06	6.17	13.66	7.79	6.77	12.97	7.65	7.18	
			22	17.41	6.27	5.65	16.94	6.44	6.12	16.16	6.47	6.66	15.12	6.35	7.31	14.41	6.34	7.75	
		25	17	14.91	11.41	4.94	14.34	11.25	5.34	13.51	10.87	5.81	12.52	10.46	6.35	11.82	10.11	6.73	
			19	15.96	10.05	5.26	15.41	10.01	5.68	14.58	9.77	6.19	13.57	9.43	6.75	12.86	9.20	7.16	
			22	17.40	7.92	5.68	16.87	8.01	6.14	16.04	7.94	6.68	14.94	7.70	7.29	14.27	7.64	7.73	
		27	17	14.73	13.11	4.95	14.17	12.90	5.33	13.37	12.43	5.80	12.43	11.94	6.31	11.76	11.65	6.68	
			19	15.98	11.82	5.29	15.37	11.68	5.70	14.50	11.31	6.20	13.49	10.92	6.74	12.76	10.59	7.14	
			22	17.39	9.56	5.71	16.80	9.58	6.15	15.92	9.39	6.70	14.79	9.02	7.28	14.14	8.91	7.71	
		29	17	14.70	14.41	4.92	14.17	14.03	5.32	13.34	13.34	5.73	12.53	12.53	6.16	11.91	11.91	6.42	
			19	15.95	13.55	5.26	15.37	13.37	5.69	14.51	12.91	6.13	13.59	12.44	6.58	12.92	12.14	6.86	
			22	17.32	11.34	5.79	16.72	11.29	6.26	15.82	10.99	6.75	14.81	10.66	7.25	14.13	10.46	7.55	
		32	17	14.68	14.39	4.90	14.18	14.18	5.31	12.40	12.40	5.69	12.60	12.60	6.06	12.01	12.01	6.24	
			19	15.92	15.76	5.23	15.37	15.37	5.68	14.51	14.51	6.08	13.66	13.66	6.47	13.02	13.02	6.67	
			22	17.27	14.16	5.84	16.68	14.01	6.34	15.80	13.59	6.78	14.82	13.19	7.22	14.12	12.85	7.59	
D50DB4Q	220V, 50Hz, 3 phase	23	17	14.05	9.21	4.38	13.50	9.11	4.74	12.70	8.83	5.16	11.75	8.46	5.67	11.06	8.18	6.01	
			19	14.84	7.57	4.64	14.38	7.62	5.03	13.64	7.50	5.47	12.72	7.25	6.00	12.07	7.12	6.37	
			22	16.21	5.83	5.01	15.77	5.99	5.43	15.05	6.02	5.91	14.08	5.91	6.49	13.41	5.90	6.88	
		25	17	13.89	10.62	4.38	13.35	10.48	4.74	12.58	10.12	5.16	11.66	9.74	5.63	11.00	9.41	5.97	
			19	14.86	9.36	4.67	14.34	9.32	5.04	13.57	9.09	5.49	12.64	8.78	5.99	11.98	8.56	6.35	
			22	16.20	7.37	5.04	15.71	7.46	5.44	14.94	7.39	5.93	13.91	7.17	6.47	13.29	7.11	6.86	
		27	17	13.72	12.21	4.39	13.19	12.01	4.73	12.45	11.58	5.15	11.58	11.11	5.59	10.95	10.84	5.93	
			19	14.88	11.01	4.69	14.31	10.88	5.05	13.50	10.53	5.50	12.56	10.17	5.98	11.88	9.86	6.34	
			22	16.19	8.90	5.07	15.64	8.92	5.46	14.82	8.75	5.94	13.77	8.40	6.46	13.16	8.29	6.84	
		29	17	13.69	13.41	4.36	13.20	13.06	4.72	12.42	12.42	5.09	11.67	11.67	5.46	11.09	11.09	5.69	
			19	14.85	12.62	4.66	14.31	12.45	5.04	13.51	12.02	5.43	12.65	11.58	5.84	12.03	11.30	6.08	
			22	16.12	10.56	5.14	15.57	10.51	5.56	14.73	10.23	5.99	13.79	9.93	6.43	13.15	9.73	6.70	
		32	17	13.67	13.39	4.34	13.20	13.20	4.71	11.55	11.55	5.04	11.73	11.73	5.37	11.18	11.18	5.53	
			19	14.82	14.68	4.64	14.31	14.31	5.04	13.51	13.51	5.39	12.72	12.72	5.74	12.12	12.12	5.91	
			22	16.08	13.18	5.18	15.53	13.04	5.62	14.71	12.65	6.02	13.80	12.28	6.41	13.15	11.97	6.75	

TC: Cooling Capacity

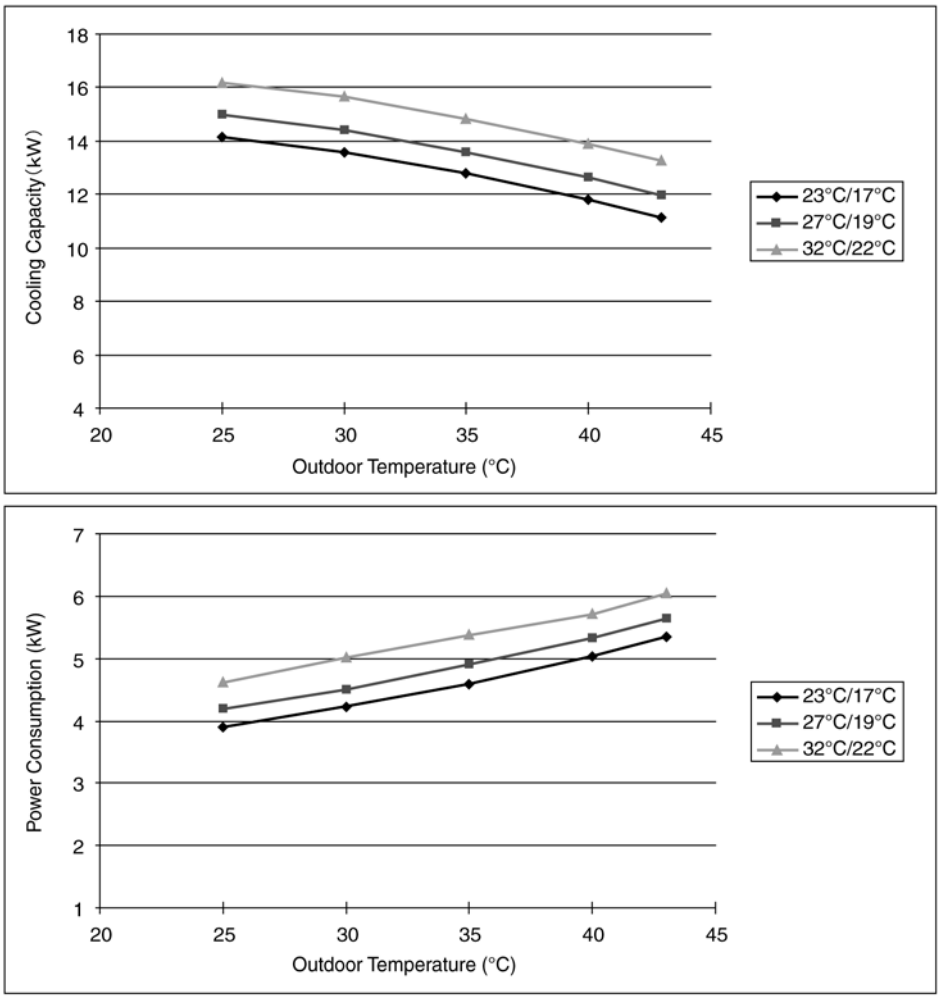
SHC: Sensible Heat Capacity

IPT: Cooling Power Consumption

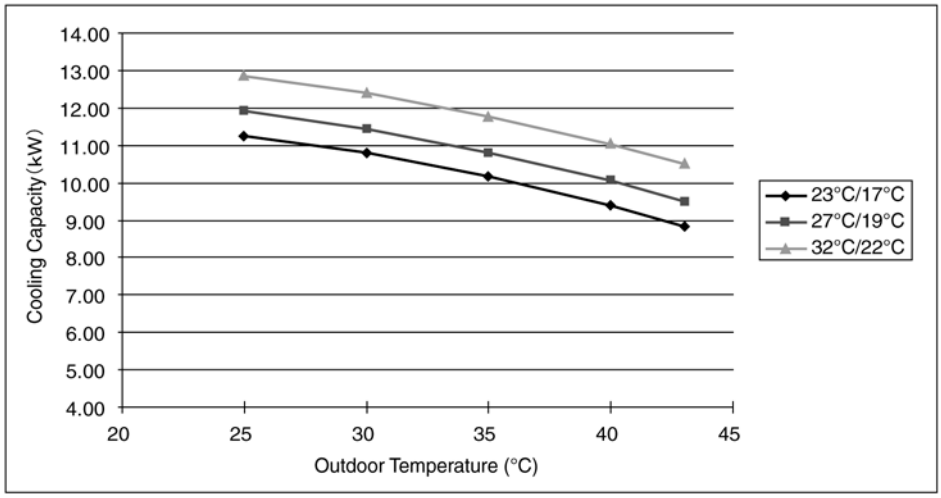
12.2. Capacity and power consumption

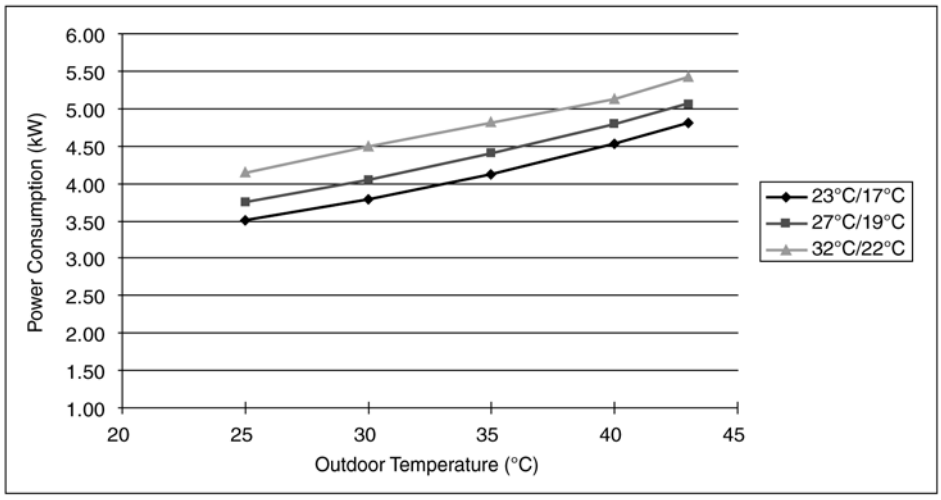
12.2.1. CS-D34DB4Q

Model	Cooling capacities are based on conditions
CS-D34DB4Q	Single phase, 50Hz 220V
Cooling capacity	Indoor temp. 27°C D.B. 19°C W.B.
10.0kW	Outdoor temp. 35°C D.B.
	Standard air volume 24 m^3/min



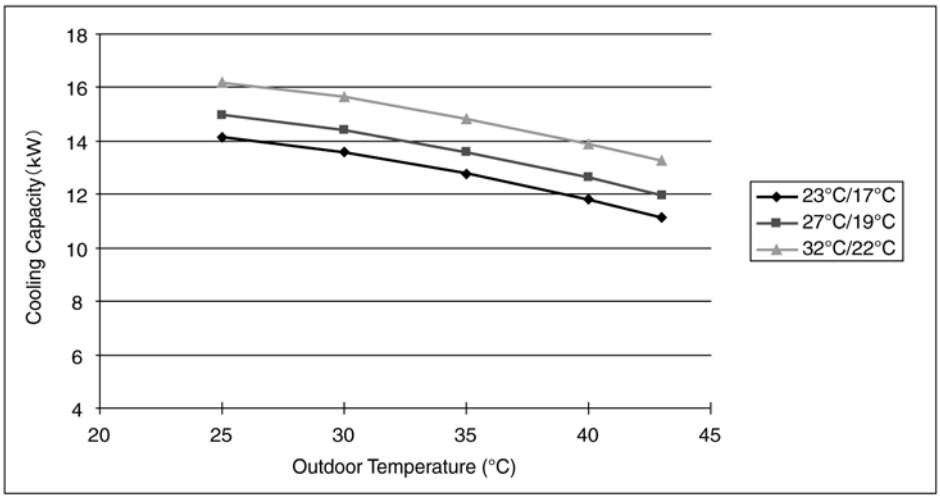
Model	Cooling capacities are based on conditions
CS-D34DB4Q	Single phase, 60Hz 220V
Cooling capacity	Indoor temp. 27°C D.B. 19°C W.B.
10.8kW	Outdoor temp. 35°C D.B.
	Standard air volume 24 m^3/min

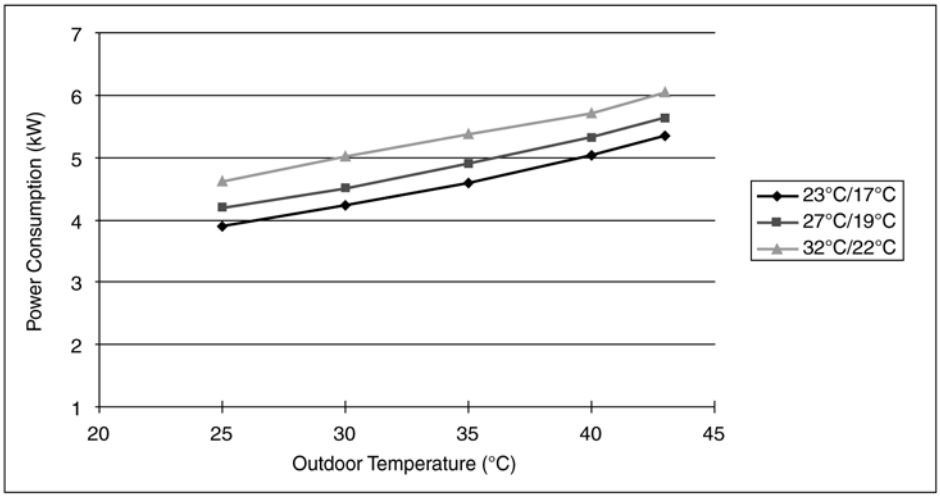




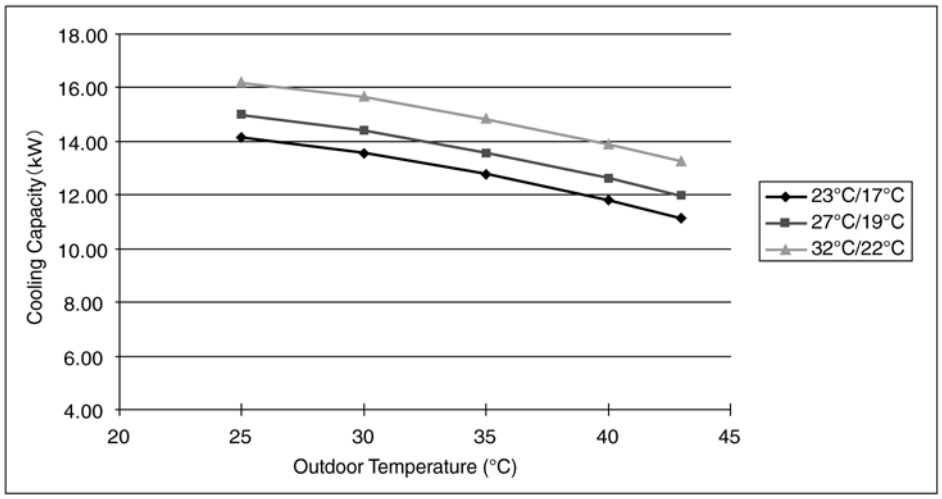
12.2.2. CS-D43DB4Q

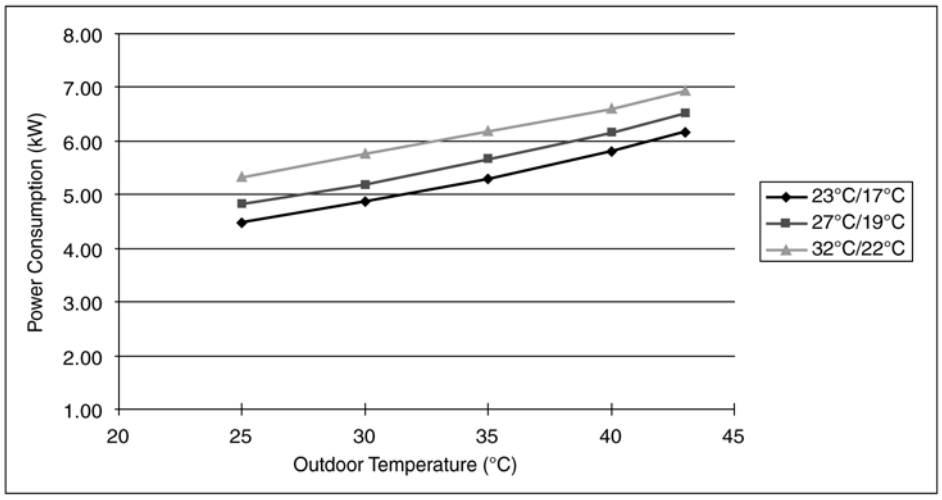
Model	Cooling capacities are based on conditions
CS-D43DB4Q	Single phase, 50Hz 220V
Cooling capacity	Indoor temp. 27°C D.B. 19°C W.B.
12.5kW	Outdoor temp. 35°C D.B.
	Standard air volume 31 m^3/min





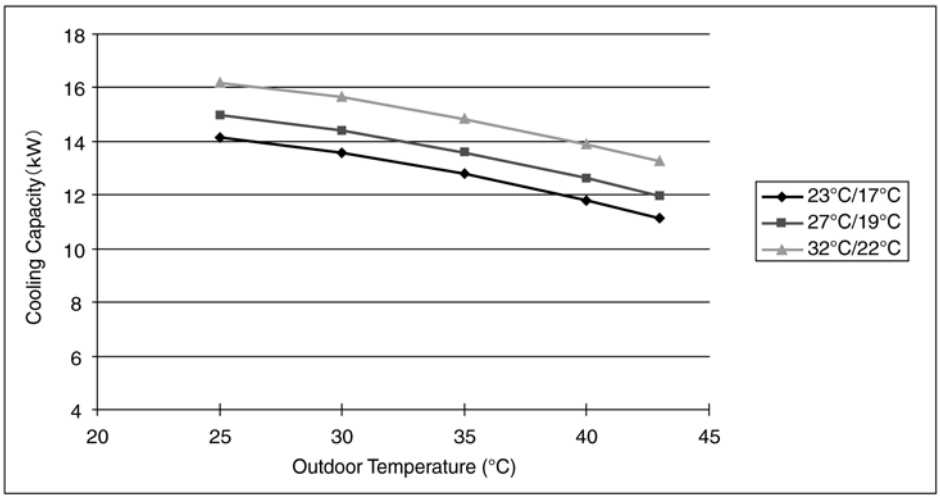
Model	Cooling capacities are based on conditions
CS-D43DB4Q	Single phase, 60Hz 220V
Cooling capacity	Indoor temp. 27°C D.B. 19°C W.B.
13.5kW	Outdoor temp. 35°C D.B.
	Standard air volume 31 m^3/min

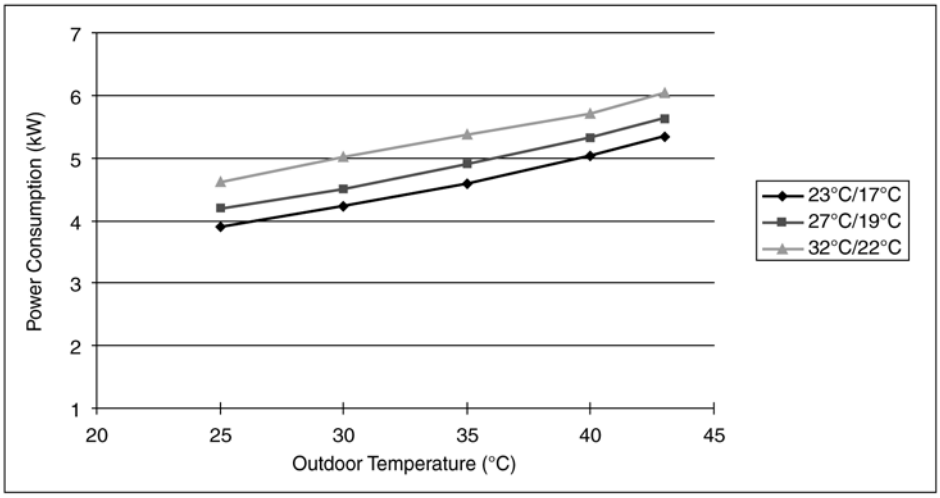




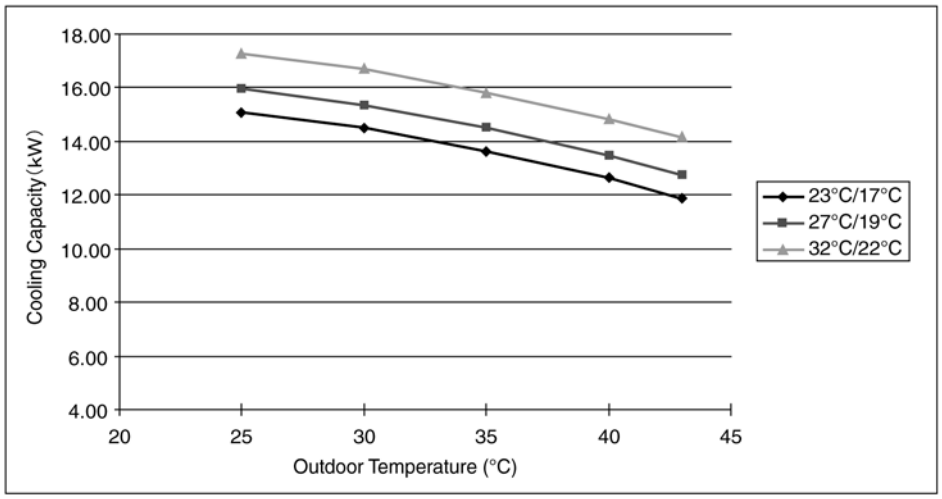
12.2.3. CS-D50DB4Q

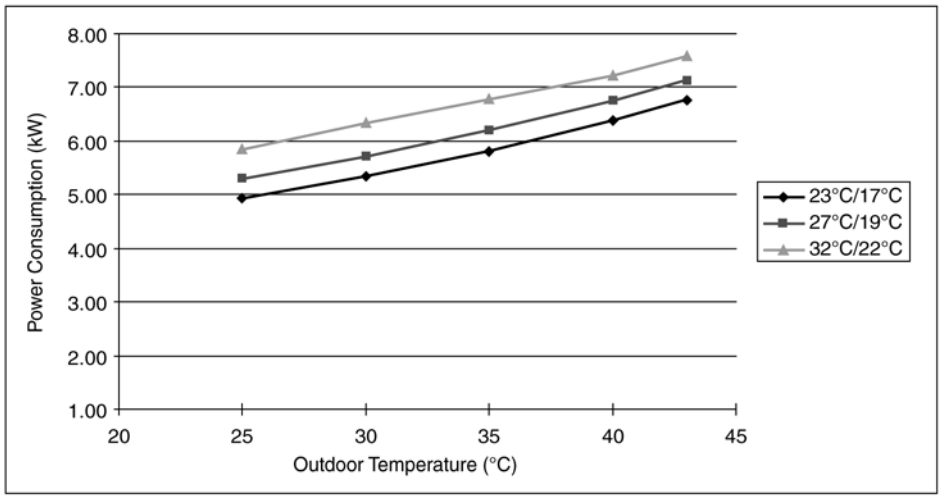
Model	Cooling capacities are based on conditions
CS-D50DB4Q	Single phase, 50Hz 220V
Cooling capacity	Indoor temp. 27°C D.B. 19°C W.B.
13.5kW	Outdoor temp. 35°C D.B.
	Standard air volume 33 m^3/min





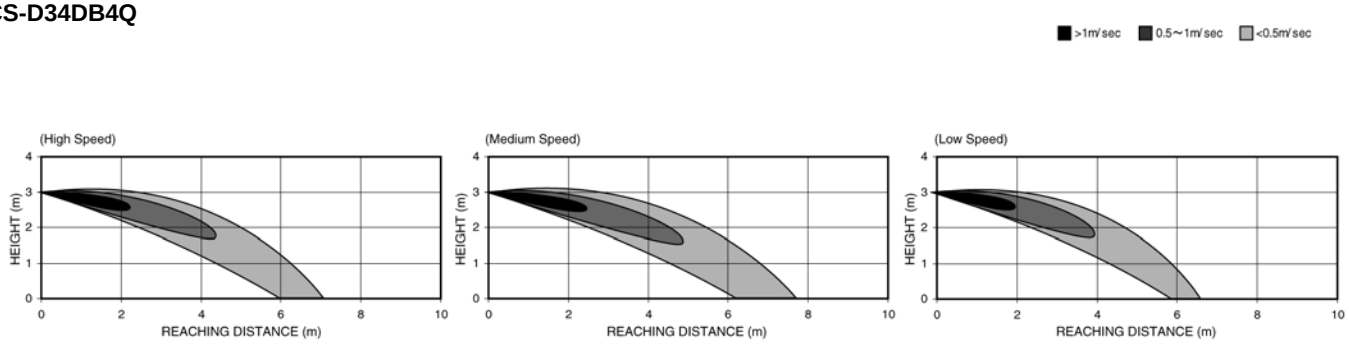
Model	Cooling capacities are based on conditions
CS-D50DB4Q	Single phase, 60Hz 220V
Cooling capacity	Indoor temp. 27°C D.B. 19°C W.B.
14.5kW	Outdoor temp. 35°C D.B.
	Standard air volume 33 m^3/min



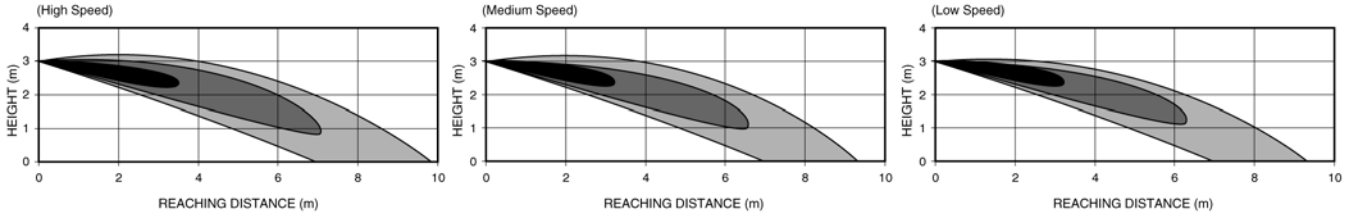


12.3. Reaching distance

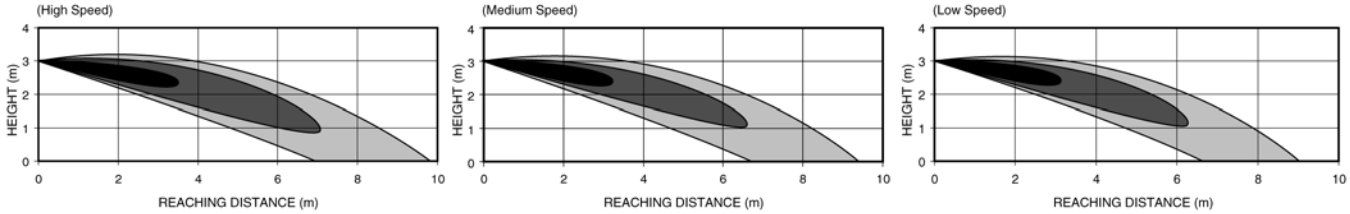
CS-D34DB4Q



CS-D43DB4Q

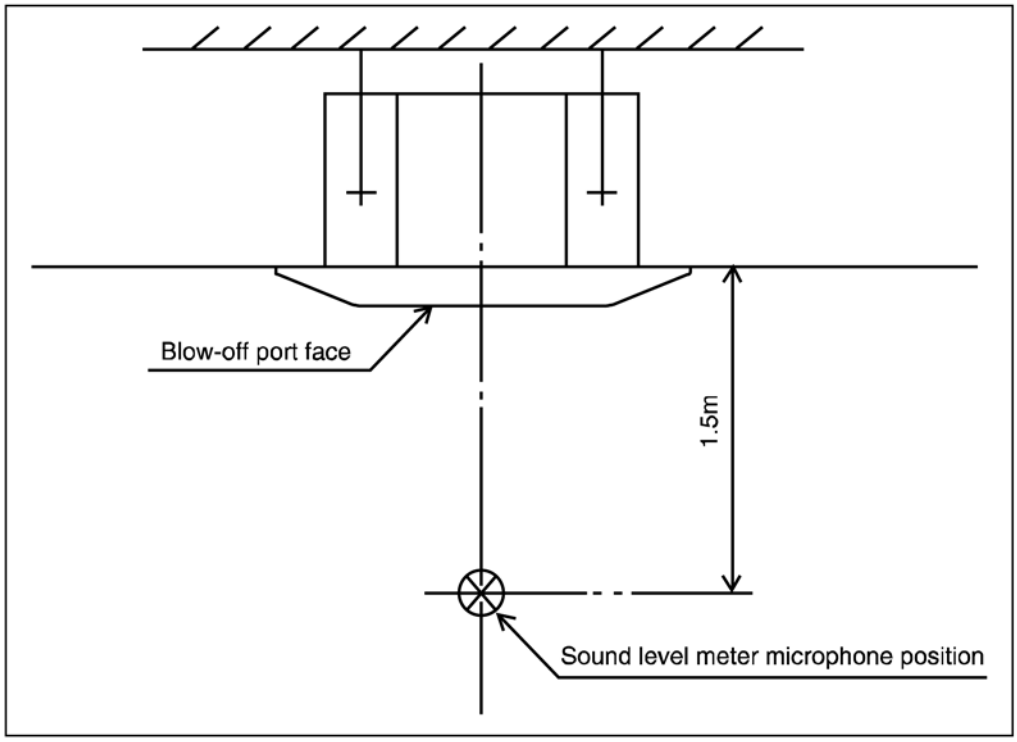


CS-D50DB4Q

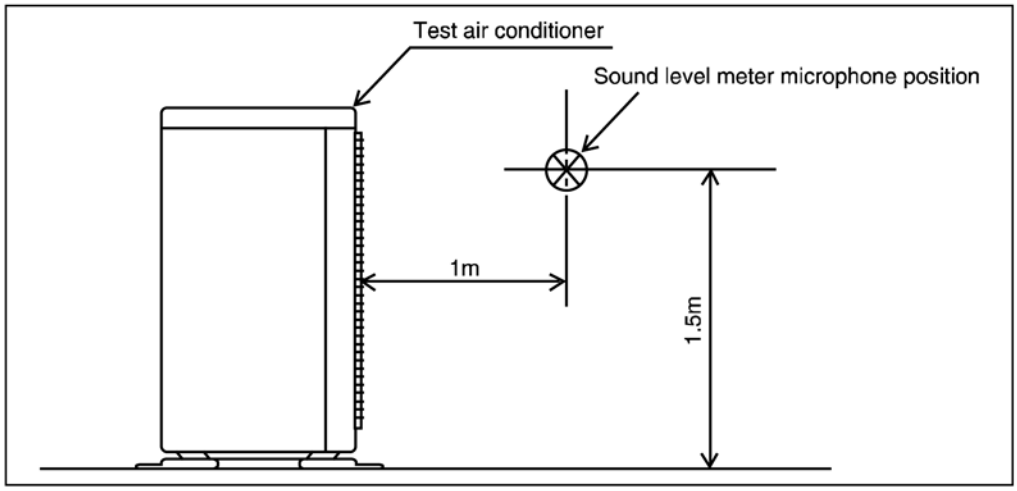


12.4. Sound measuring point

12.4.1. Indoor Unit



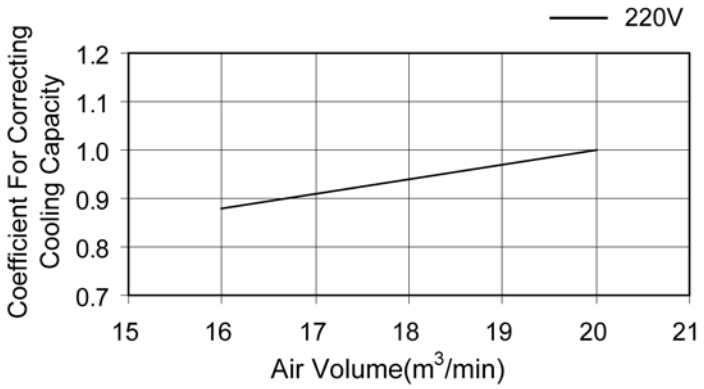
12.4.2. Outdoor Unit



12.5. Fan performance

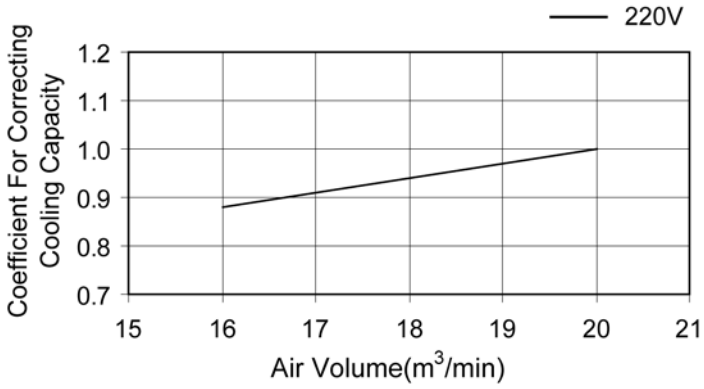
CS-D34DB4Q

ITEM/MODEL		Indoor Unit			Outdoor Unit
		CS-D34DB4Q			CU-D34DBQ7
MODE		Hi	Me	Lo	Hi
Air Volume	m^3/min	24	22	20	103
Running Current	A	0.29	0.26	0.22	1.20
Power Consumption	kW	0.126	0.114	0.100	0.27
Fan Speed	r/min	465	440	400	770



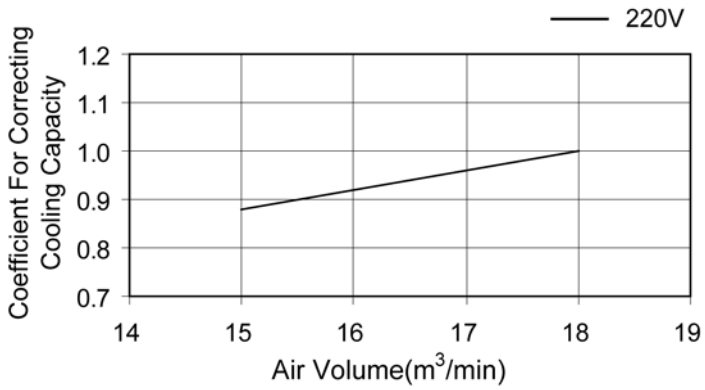
CS-D43DB4Q

ITEM/MODEL		Indoor Unit			Outdoor Unit
		CS-D43DB4Q			CU-D43DBQ7
MODE		Hi	Me	Lo	Hi
Air Volume	m^3/min	31	29	27	103
Running Current	A	0.92	0.78	0.71	1.20
Power Consumption	kW	0.200	0.169	0.153	0.27
Fan Speed	r/min	600	545	513	770



CS-D50DB4Q

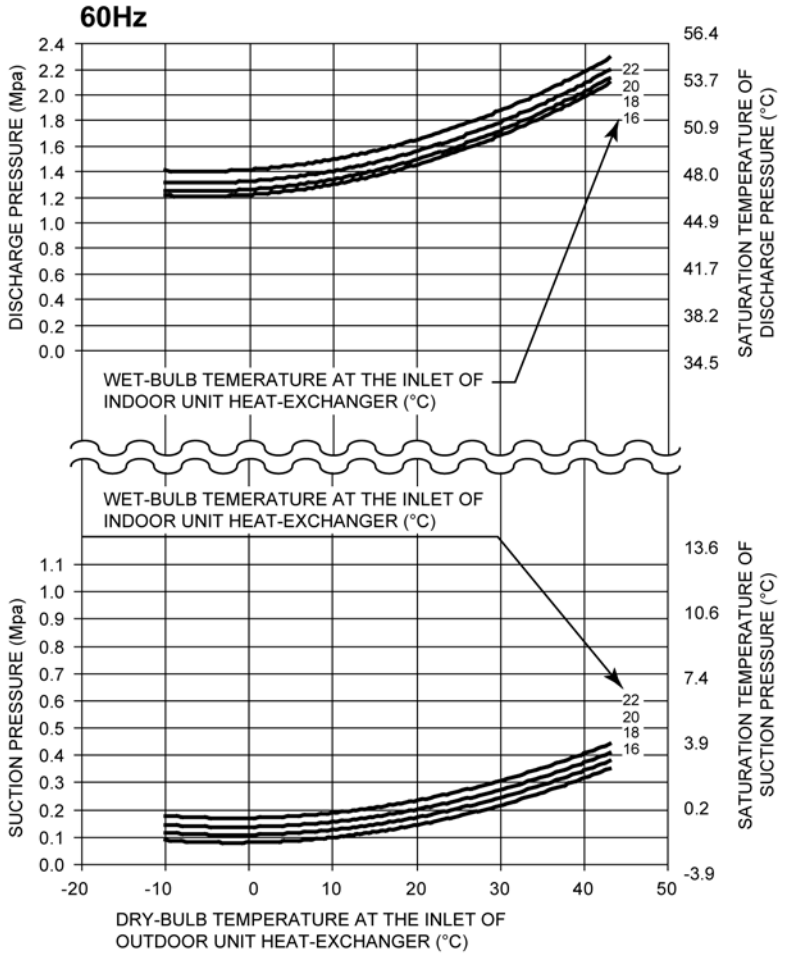
ITEM/MODEL		Indoor Unit			Outdoor Unit
		CS-D50DB4Q			CU-D50DBQ7
MODE		Hi	Me	Lo	Hi
Air Volume	m^3/min	33	31	30	103
Running Current	A	0.95	0.82	0.74	1.20
Power Consumption	kW	0.21	0.180	0.16	0.27
Fan Speed	r/min	630	580	545	770



12.6. Discharge and suction pressure

SATURATION TEMPERATURE OF DISCHARGE AND SUCTION PRESSURE

COOLING



12.7. Operating characteristics

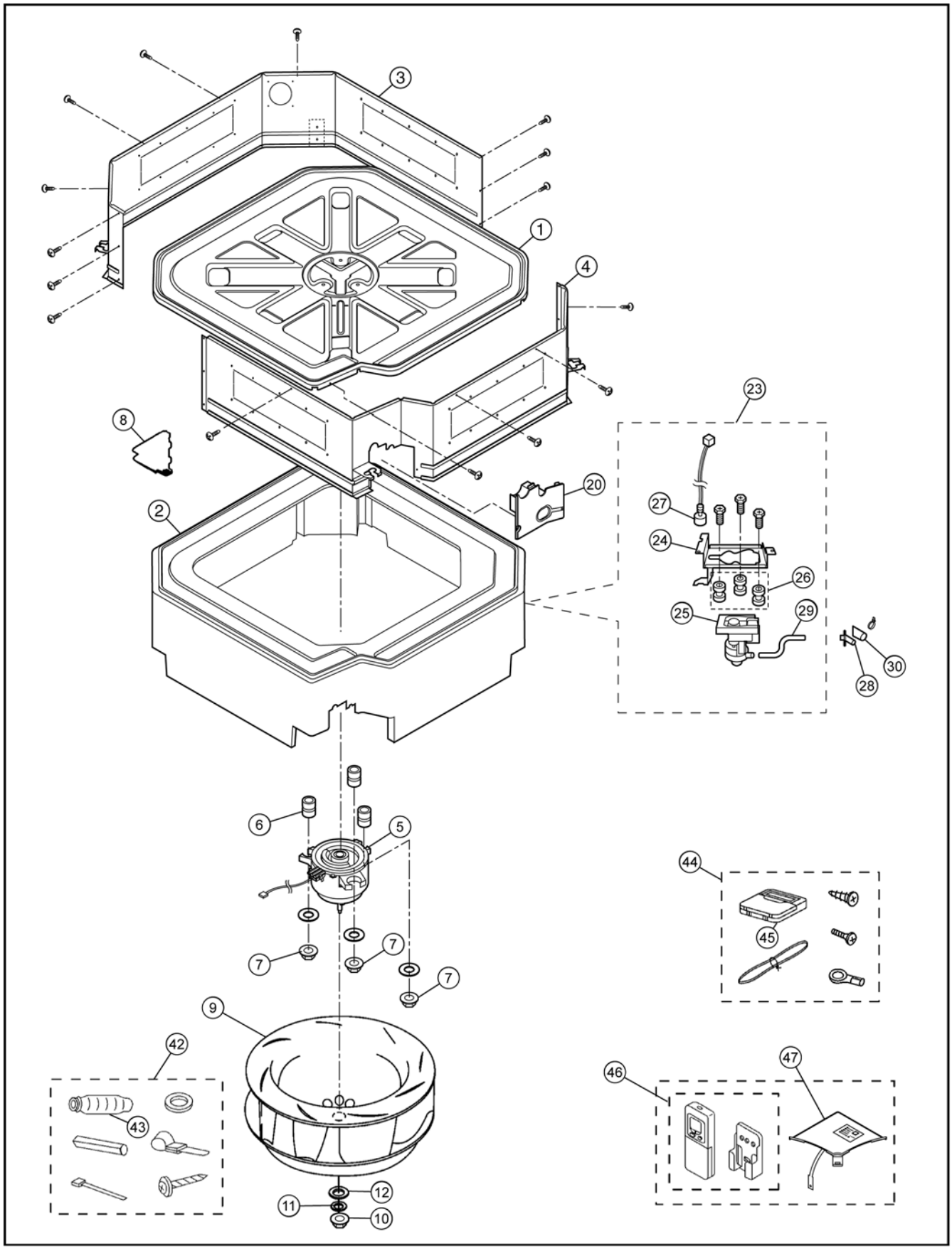
COOLING ONLY MODEL

Model		Main Power Source		Compressor Motor			Indoor Unit Fan Motor		Outdoor Unit Fan Motor		Electrical Data (60Hz)	
		Voltage	Frequency	S.C.	R.C. (A)	IPT (kW)	R.C.	IPT	R.C.	IPT	Current. (A)	Power Con-sumption (kW)
		(V)	(Hz)	(A)	COOL	COOL	(A)	(kW)	(A)	(kW)	COOL	COOL
COOLING MODEL	CS-D34DB4Q CU-D34DBQ7	220	60	46	12.00	4.09	0.54	0.115	1.20	0.27	12.80	4.40
	CS-D43DB4Q CU-D43DBQ7	220	60	46	15.2	5.12	0.95	0.205	1.20	0.27	16.7	5.65
	CS-D50DB4Q CU-D50DBQ7	220	60	46	16.10	5.47	1.00	0.220	1.20	0.27	18.00	6.20

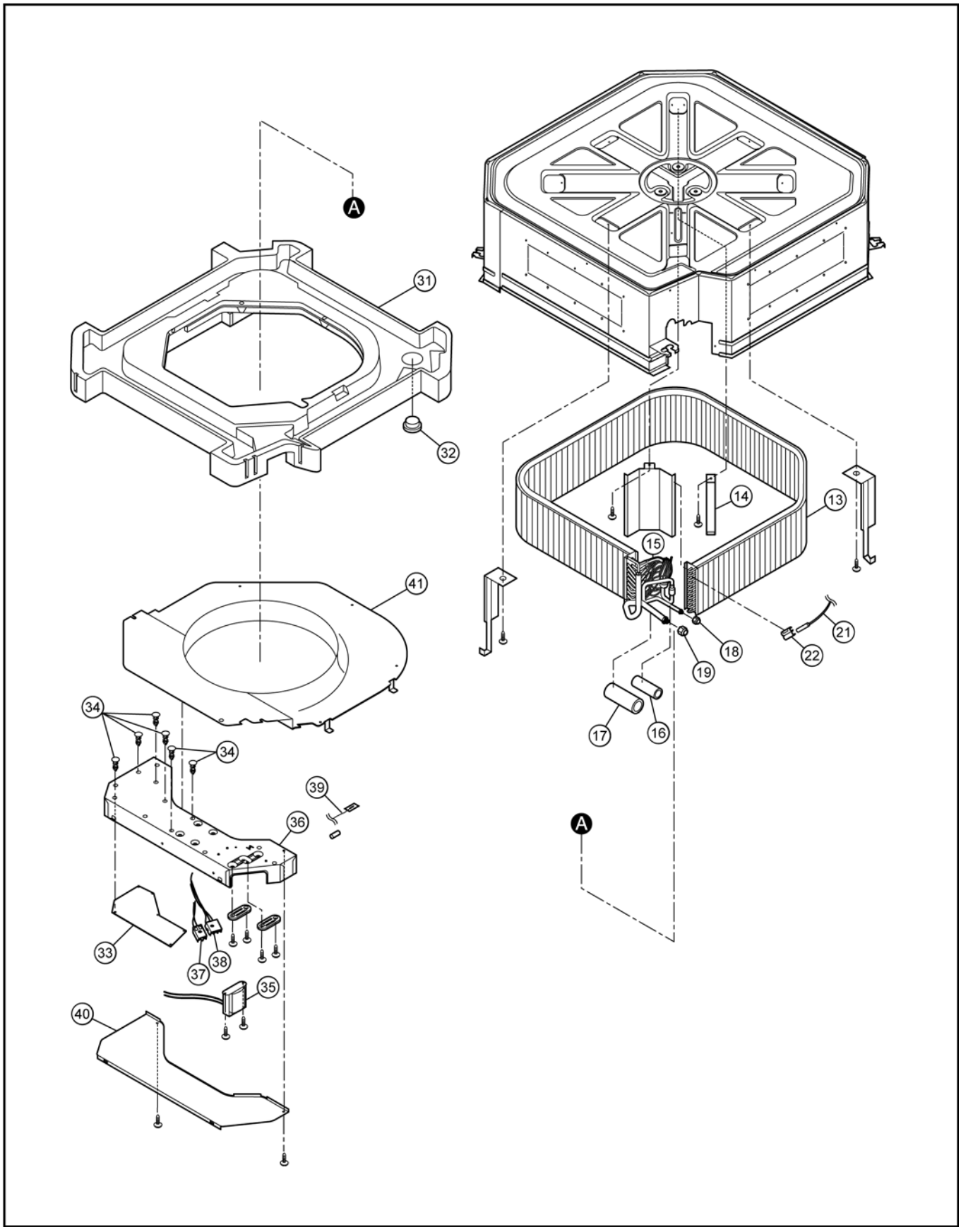
Legend : S.C. : Starting Current
R.C. : Running Current
IPT : Power Consumption

13 Exploded View (Indoor Unit)

13.1. CS-D34DB4Q CS-D43DB4Q CS-D50DB4Q



13.2. CS-D34DB4Q CS-D43DB4Q CS-D50DB4Q



14 Replacement Part List (Indoor Unit)

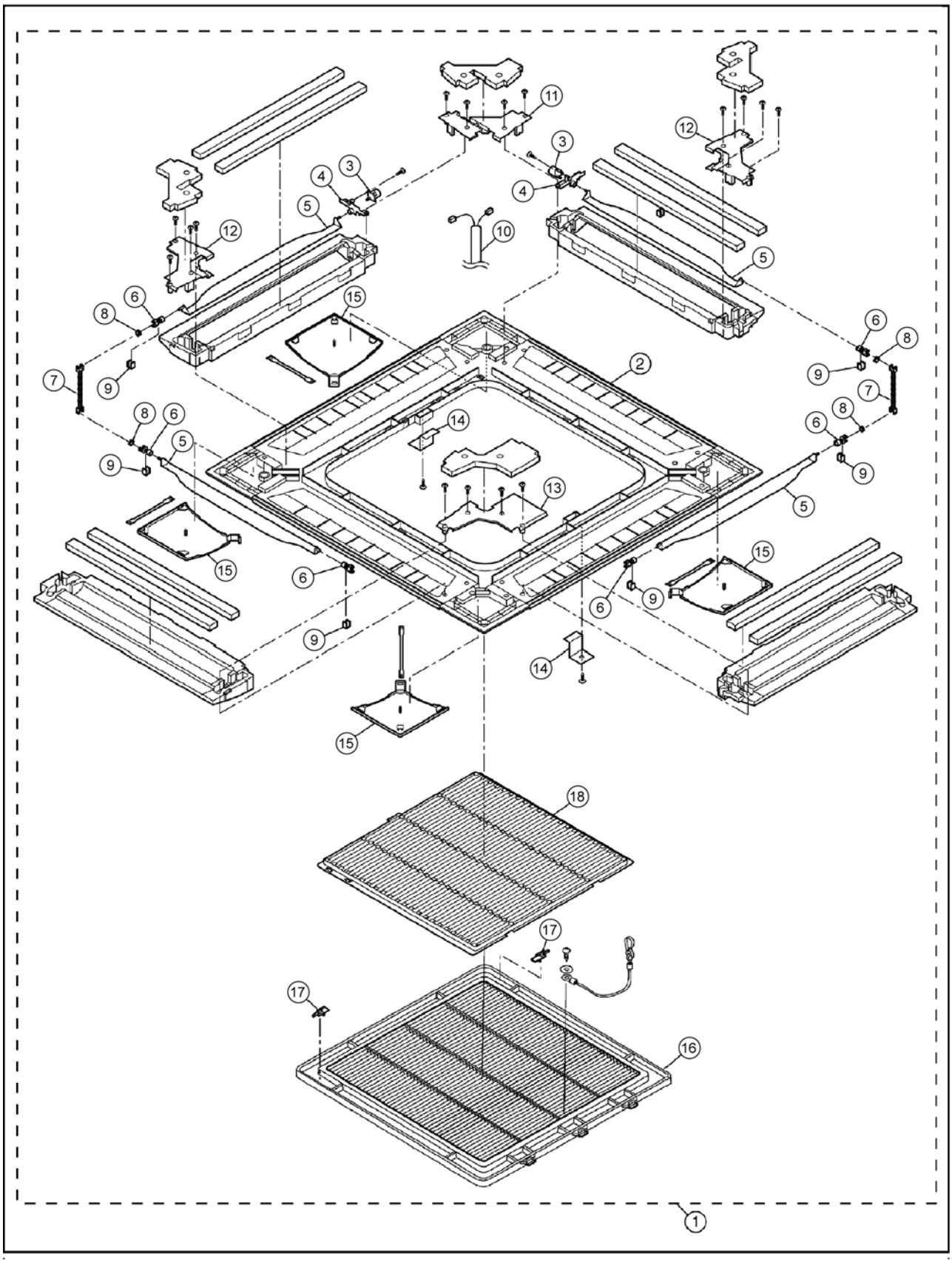
14.1. CS-D34DB4Q CS-D43DB4Q CS-D50DB4Q

REF. NO.	PART NAME & DESCRIPTION	QTY.	CS-D34DB4Q	CS-D43DB4Q	CS-D50DB4Q
1	BASE PAN ASS'Y	1	CWD52K1115	CWD52K1118	←
2	INNER POLYSTYRENE COMPLETE	1	CWG07C1045	CWG07C1048	←
3	CABINET SIDE PLATE ASS'Y	1	CWE041112	CWE041135	←
4	CABINET SIDE PLATE ASS'Y	1	CWE041113	CWE041136	←
5	FAN MOTOR	1	CWA951512	CWA951511	←
6	ANTI-VIBRATION BUSHING	4	CWH501016	CWH501052	←
7	SCREW-FAN MOTOR	4	CWH7080300J	←	←
8	CORD HOLDER	1	CWD741020	←	←
9	TURBO FAN	1	CWH03K1021	CWH03K1023	←
10	NUT for TURBO FAN	1	XNG8FJ	←	←
11	SP WASHER	1	XWA8BFJ	←	←
12	WASHER	1	XWG8H22FJ	←	←
13	EVAPORATOR COMPLETE	1	CWB30C1647	CWB30C1653	←
14	EVAPORATOR SUPPORTER	1	CWD911403	CWD911467	←
15	TUBE ASS'Y (CAPIL. TUBE-EVA)	1	CWT07K1245	CWT07K1248	←
16	HEATPROOF TUBE	1	CWG021035	←	←
17	HEATPROOF TUBE	1	CWG021021	←	←
18	FLARE NUT (3/8")	1	CWT251031	←	←
19	FLARE NUT (5/8")	1	CWT251037	←	←
20	PIPE COVER	1	CWD93C1047	←	←
21	SENSOR-EVAPORATOR	1	CWA50C2216	←	←
22	SENSOR HOLDER	1	CWH321044	←	←
23	DRAIN PUMP COMPLETE	1	CWB53C1014	←	←
24	PANEL DRAIN PUMP ASS'Y	1	CWD93K1007	←	←
25	DRAIN PUMP	1	CWB532043J	←	←
26	ANTI-VIBRATION BUSHING	3	CWH501080	←	←
27	FLOAT SWITCH-DRAIN PUMP	1	CWA121215	←	←
28	DRAIN NOZZLE	1	CWH411013	←	←
29	FLEXIBLE PIPE	1	CWH851030	←	←
30	DRAIN HOSE HEAT INSULATION	1	CWG101025	←	←
31	DRAIN PAN-COMPLETE	1	CWH40C1040	CWH40C1033	←
32	DRAIN PLUG	1	CWB821008	←	←
33	ELECTRONIC CONTROLLER (MAIN)	1	CWA73C2212	CWA73C2213	CWA73C2214
34	SPACER	6	CWH541026	←	←
35	CAPACITOR FAN MOTOR	1	DS461305QP-A	DS461405QP-A	DS451505BPQD
36	CONTROL BOARD ASS'Y	1	CWH10K1047	←	←
37	TERMINAL BOARD ASS'Y	1	CWA28K1112	←	←
38	TERMINAL BOARD ASS'Y	1	CWA28K1076J	←	←
39	LEADWIRE-AIR TEMP. SENSOR	1	CWA67C5139	←	←
40	CONTROL BOARD COVER COMPLETE	1	CWH13C1112	CWH13C1150	←
41	AIR GUIDER BLOWER WHEEL	1	CWD321057	CWD321059	←
42	ACCESSORY COMPLETE	1	CWH82C1270	←	←
43	HEATPROOF TUBE	1	CWG021025	←	←
44	WIRED REMOTE CONTROL COMPLETE (ACCESSORY)	1	CWG50C2604	←	←
45	WIRED REMOTE CONTROL COMPLETE	1	CWA75C2586	←	←
46	WIRELESS REMOTE CONTROL COMPLETE (COOLING ONLY)	1	CWA75C2739	←	←
47	RAY RECEIVER COMPLETE	1	CWD91C0057	←	←
48	OPERATING INSTRUCTION	1	CWF565207	←	←
49	INSTALLATION INSTRUCTION	1	CWF613014	←	←

All parts are supplied from PHAAM, Malaysia (Vendor Code: 061)

15 Explode View (Front Grille)

15.1. CS-D34DB4Q CS-D43DB4Q CS-D50DB4Q



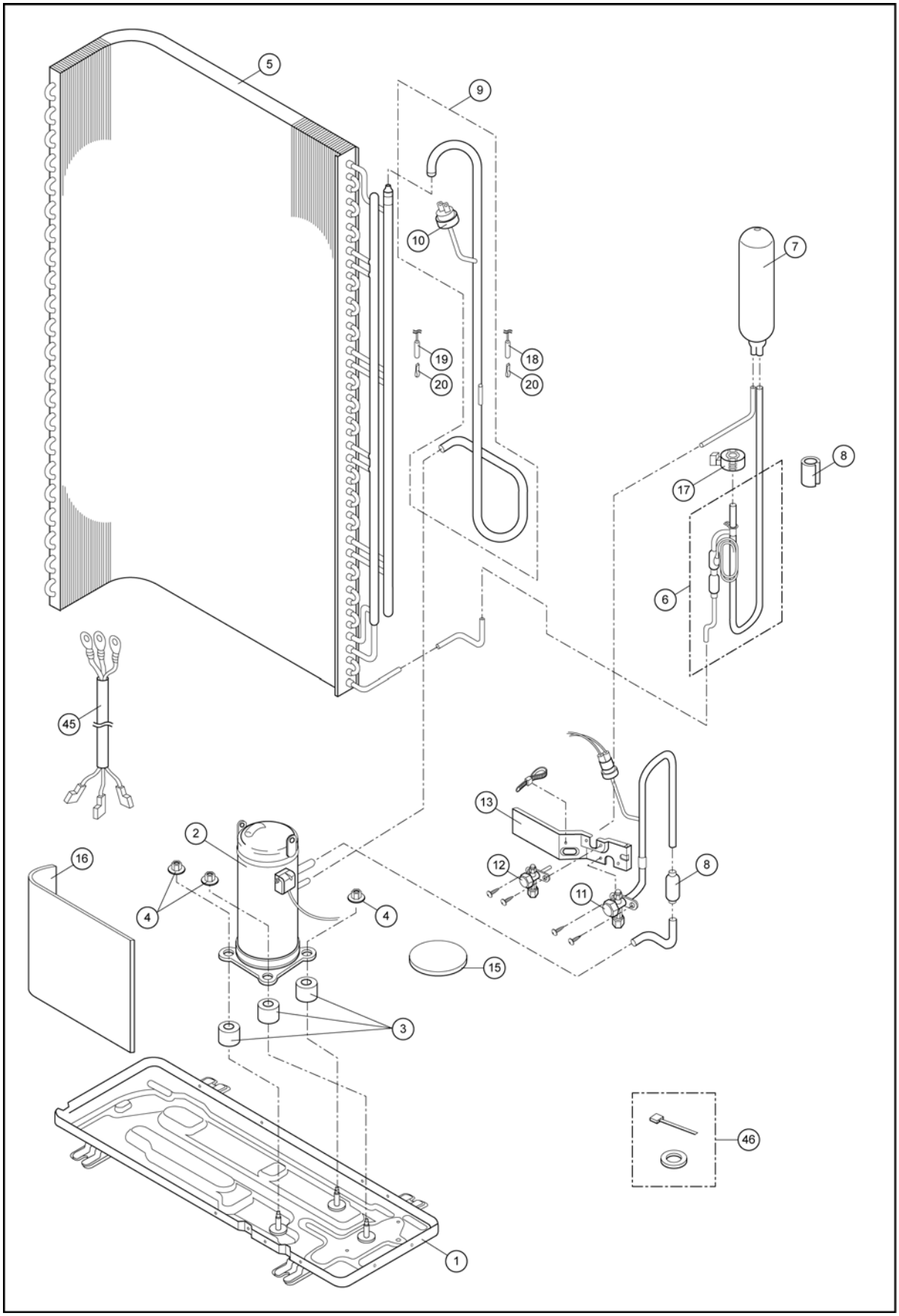
16 Replacement Part List (Front Grille)

REF. NO.	PART DESCRIPTION	QTY	PART NO.
1	FRONT GRILLE-COMPLETE	1	CWE11C3104
2	FRAME-FRONT GRILLE CO.	1	CWE11C3101
3	A.S MOTOR DC, SINGLE 12V 250 OHM	2	CWA981105
4	BRACKET-A.S.MOTOR	2	CWD932391
5	VANE	4	CWE241146
6	SHAFT	6	CWH631038
7	SHAFT	2	CWH631039
8	CONNECTOR-SHAFT	4	CWH081007
9	BEARING	6	CWH641008
10	LEAD WIRE-A.S.MOTOR	1	CWA67C5117
11	PLATE COVER FOR A.S.MOTOR	1	CWD911395
12	PLATE COVER FOR CONNECTING SHAFT	2	CWD911396
13	PLATE COVER FOR END SHAFT	1	CWD911397
14	L-PIECE	2	CWD701033
15	SIDE COVER FOR FRONT GRILLE CO.	4	CWD911398
16	INTAKE GRILLE	1	CWE221122
17	LEVER ARM	2	CWH651029
18	AIR FILTER	1	CWD001130

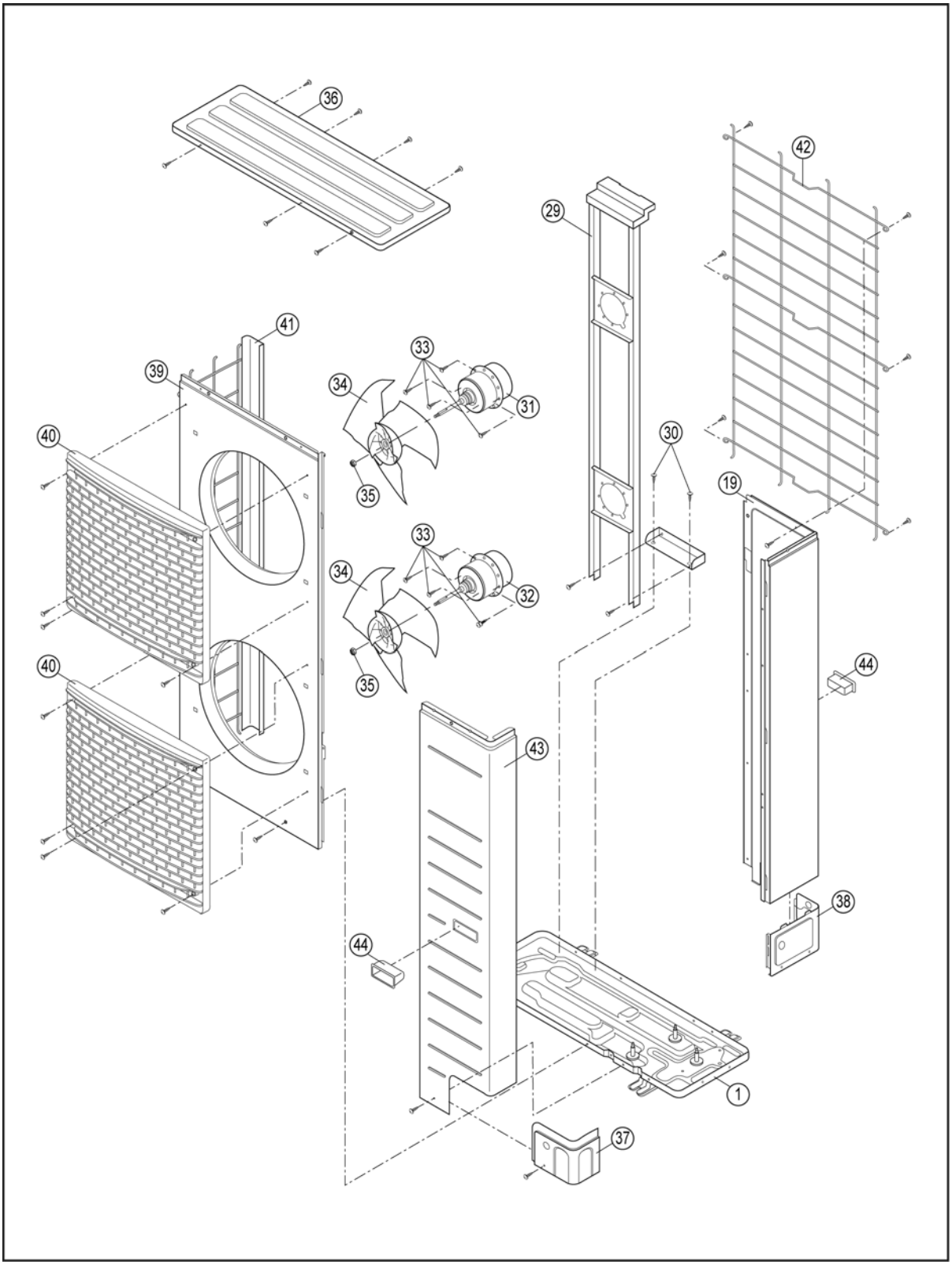
All parts are supplied from PHAAM, Malaysia (Vendor Code: 061)

17 Exploded View (Outdoor Unit)

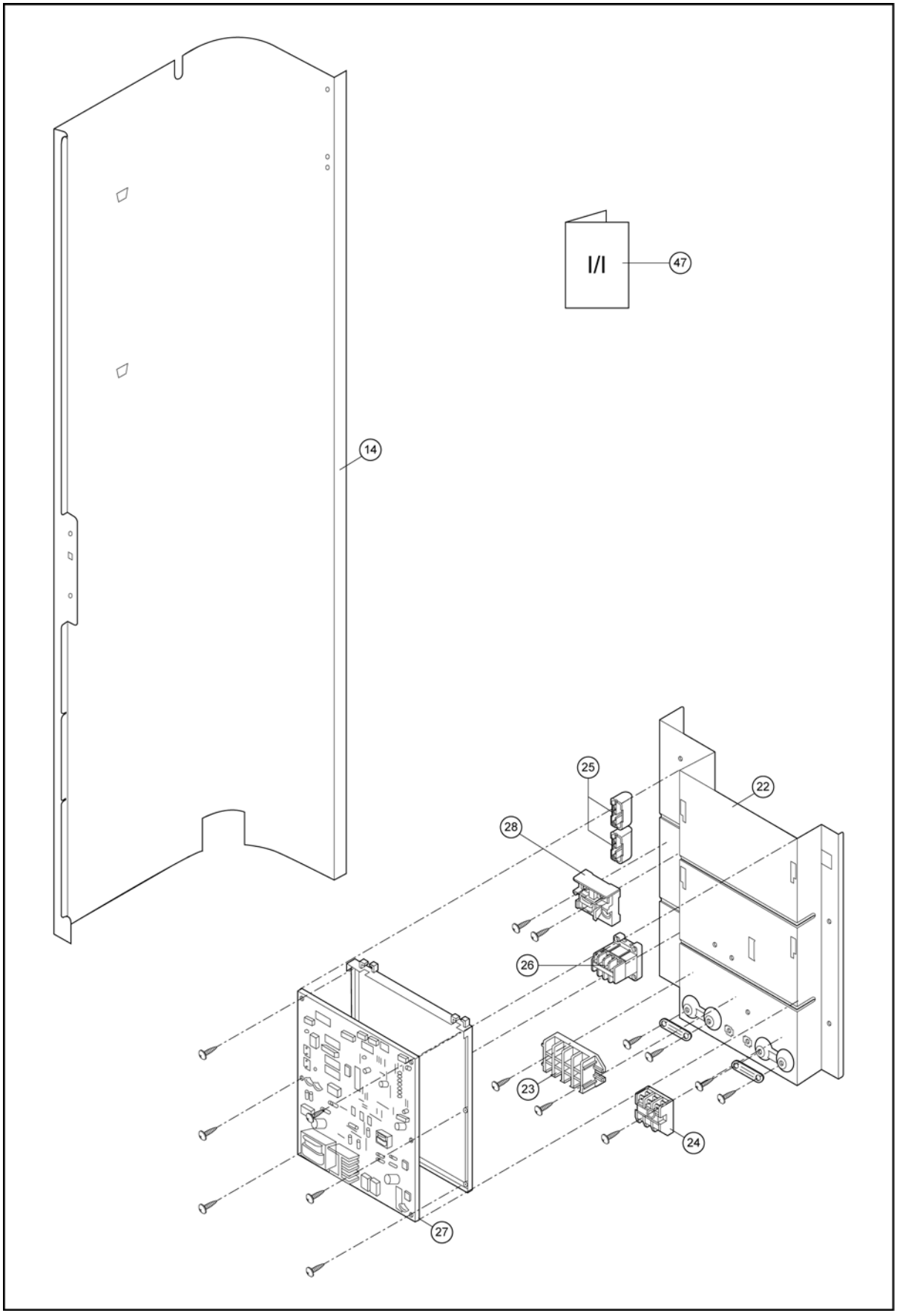
17.1. CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7



17.2. CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7



17.3. CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7



18 Replacement Part List (Outdoor Unit)

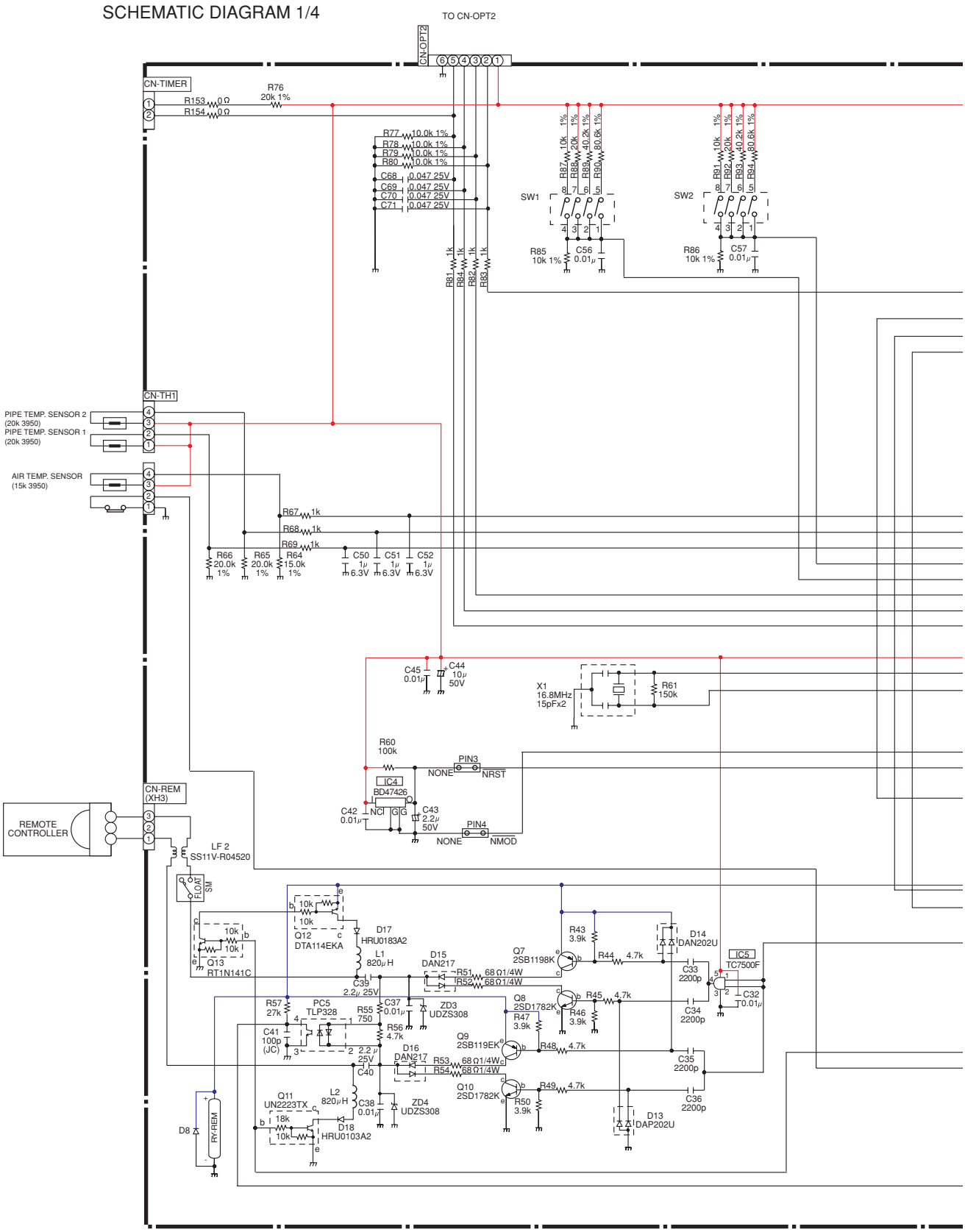
18.1. CU-D34DBQ7 CU-D43DBQ7 CU-D50DBQ7

REF. NO.	PART DESCRIPTION	QTY.	CU-D34DBQ7	CU-D43DBQ7	CU-D50DBQ7
1	BASE PAN ASS'Y	1	CWD52K1103	←	←
2	COMPRESSOR DC 280V	1	JT125GA	JT160GA	JT170GA
3	ANTI-VIBRATION BUSHING	3	CWH501081	←	←
4	NUT FOR COMP. MOUNT.	3	CWH561049	←	←
5	CONDENSER COMPLETE	1	CWB32C1790	←	←
6	TUBE ASS'Y (EXP.VALVE AND STRAINER)	1	CWT023540	CWT023741	←
7	RECEIVER	1	CWB141021	←	←
8	PIPE HOLDER RUBBER	1	CWG251022	←	←
9	TUBE ASS'Y (PRESSURE SWITCH)	1	CWT023519	←	CWT024183
10	HIGH PRESSURE SWITCH	1	CWA101012	←	←
11	3-WAYS VALVE (GAS)	1	CWB011295	←	←
12	3-WAYS VALVE (LIQUID)	1	CWB011299	←	←
13	HOLDER-SERVICE VALVE	1	CWD911425	←	←
14	SOUND-PROOF BOARD	1	CWH151079	←	←
15	SOUND PROOF MATERIAL	1	CWG302311	←	←
16	SOUND PROOF MATERIAL	1	CWG302360	←	←
17	V-COIL COMPLETE	1	CWA43C2203	←	←
18	PIPE SENSOR (DISCHARGE)	1	CWA50C2293	←	←
19	PIPE SENSOR (COIL)	1	CWA50C2294	←	←
20	SPRING FOR SENSOR	2	CWH711010	←	←
21	CABINET REAR PLATE COMPLETE	1	CWE02C1026	←	←
22	CONTROL BOARD ASS'Y	1	CWH10K1064	←	←
23	TERMINAL BOARD ASS'Y	1	CWA28K1158	←	←
24	TERMINAL BOARD ASS'Y	1	CWA28K1076J	←	←
25	CAPACITOR-FAN MOTOR	2	DS461305QP-A	←	←
26	ELECTRONIC MAGNETIC SWITCH	1	K6C4E8A00001	K6C5E8A00001	←
27	ELECTRONIC CONTROLLER (MAIN)	1	CWA73C1859	CWA73C1860	CWA73C1861
28	TRANSFORMER	1	CWA401060	←	←
29	BRACKET FAN MOTOR ASS'Y	1	CWD54K1019	←	←
30	SCREW-BRACKET FAN MOTOR	2	CWH551040J	←	←
31	FAN MOTOR	1	CWA951516	←	←
32	FAN MOTOR	1	CWA951509	←	←
33	SCREW-FAN MOTOR	8	CWH551040J	←	←
34	PROPELLER FAN	2	CWH30K1017	←	←
35	NUT for PROPELLER FAN	2	CWH561038J	←	←
36	CABINET TOP PLATE COMPLETE	1	CWE03C1039	←	←
37	PIPE COVER (FRONT)	1	CWD601074A	←	←
38	PIPE COVER (BACK)	1	CWD60K1003A	←	←
39	CABINET FRONT PLATE	1	CWE061092A	←	←
40	DISCHARGE GRILLE	2	CWE201075	←	←
41	CABINET SIDE PLATE ASS'Y	1	CWE04K1022A	←	←
42	WIRE NET	1	CWD041064A	←	←
43	CABINET FRONT PLATE COMPLETE	1	CWE06C1132	←	←
44	HANDLE	2	CWE161008	←	←
45	LEADWIRE-COMPRESSOR	1	CWA67C6239	CWA67C6250	←
46	ACCESSORY COMPLETE	1	CWH82C1105	←	←
47	INSTALLATION INSTRUCTION	1	CWF613013	←	←

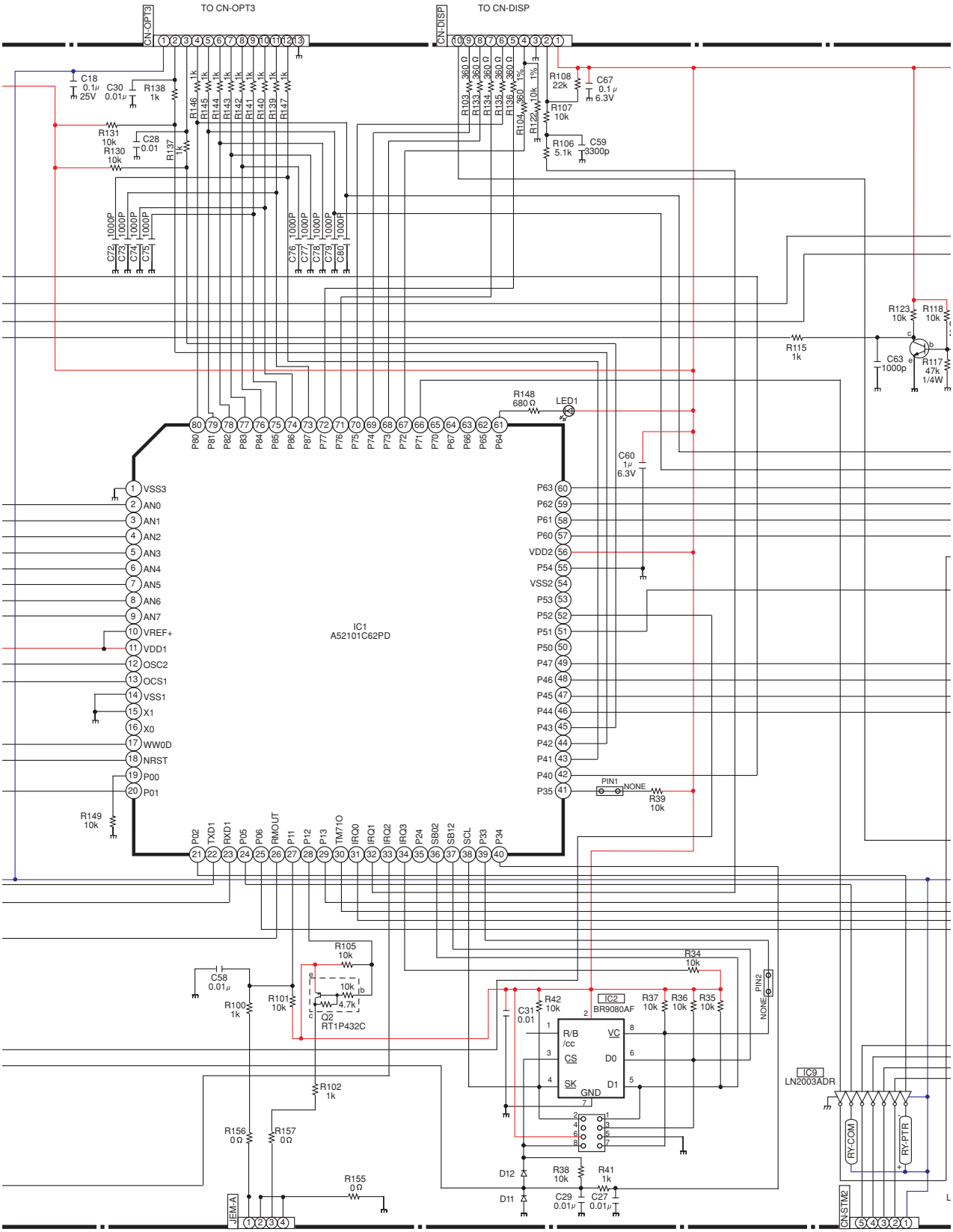
All parts are supplied from PHAAM, Malaysia (Vendor Code: 061)

19 Electronic Circuit Diagram

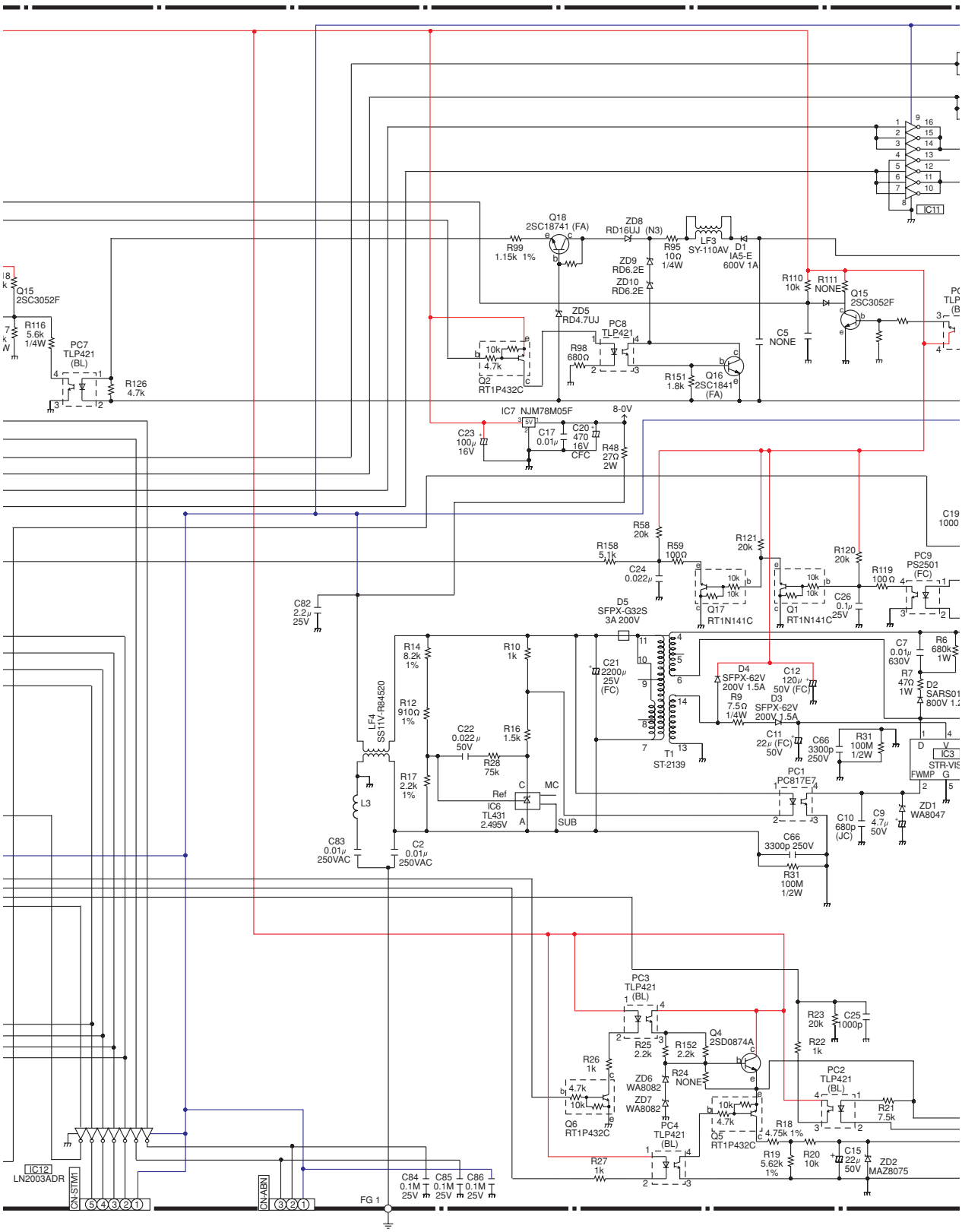
19.1. Indoor unit



SCHEMATIC DIAGRAM 2/4

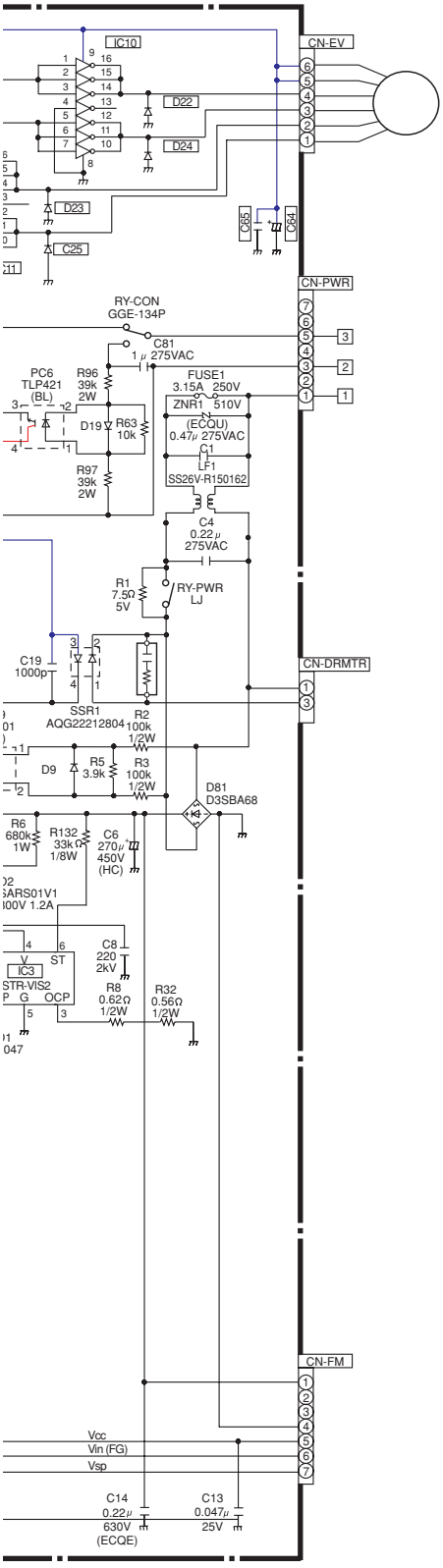


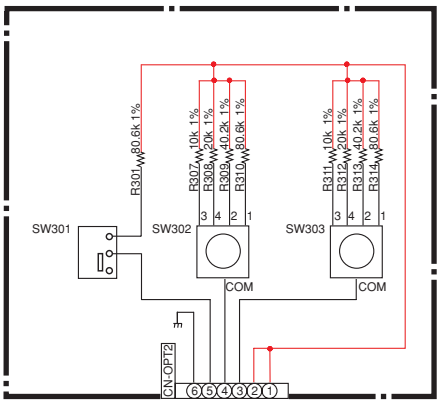
SCHEMATIC DIAGRAM 3/4



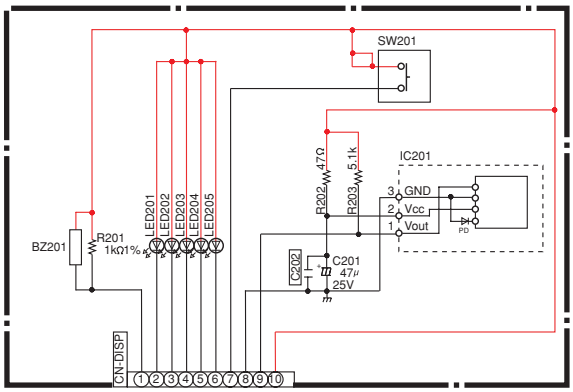
SCHEMATIC DIAGRAM 4/4

ELECTRONIC CONTROL UNIT

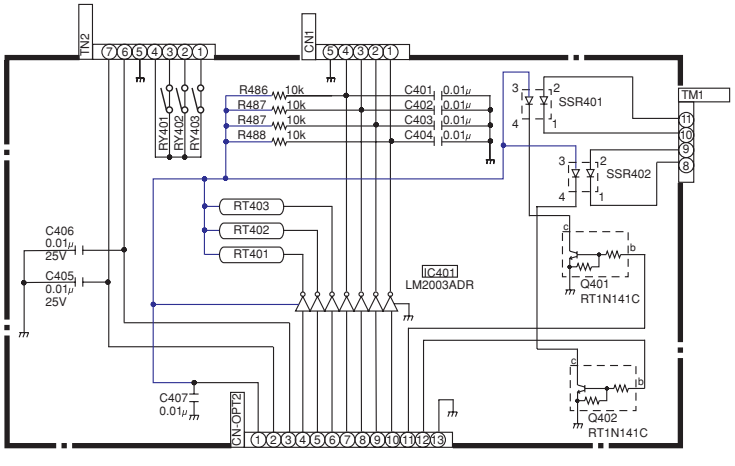




FROM CN-OPT2



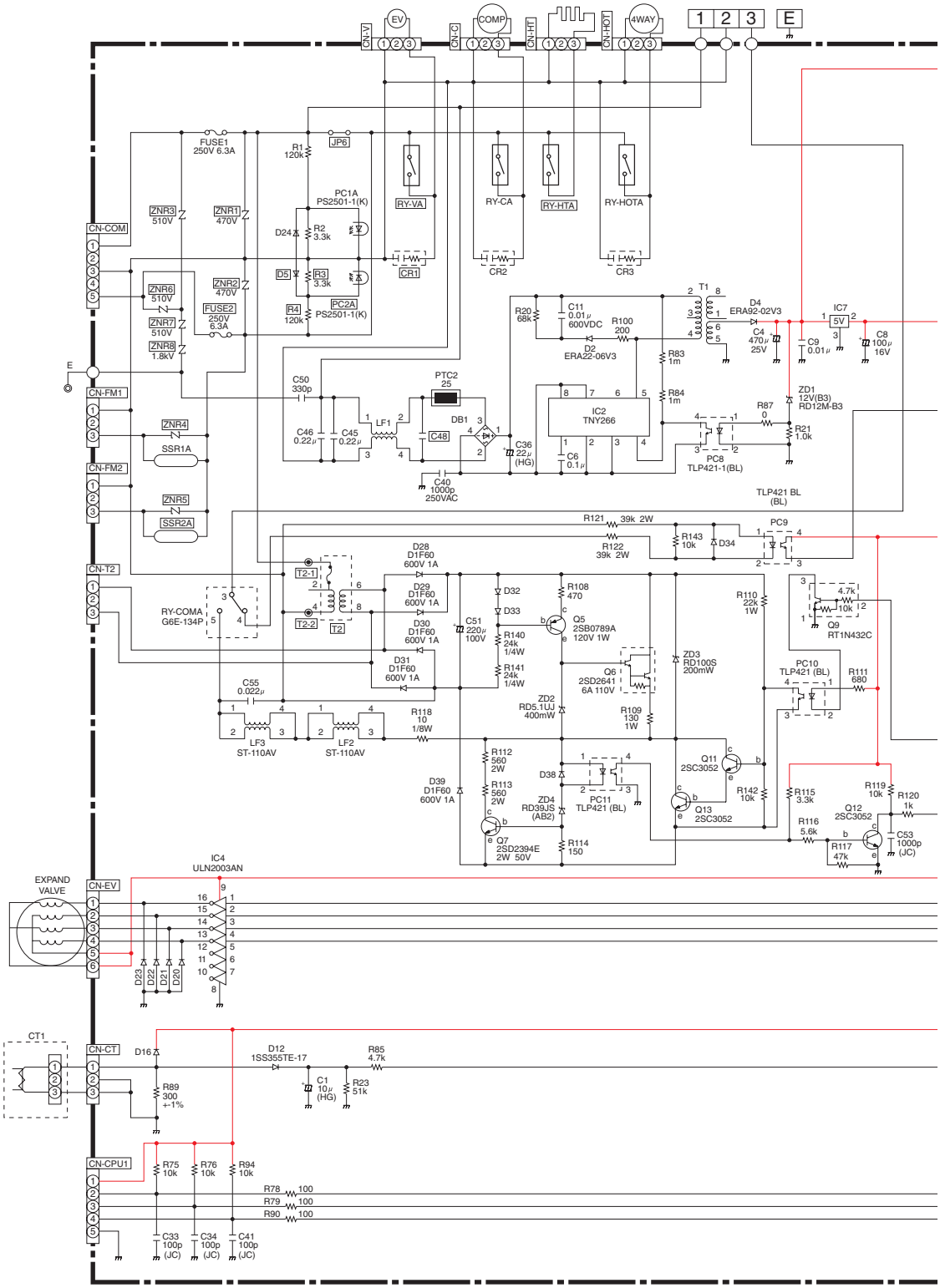
FROM CN-DISP



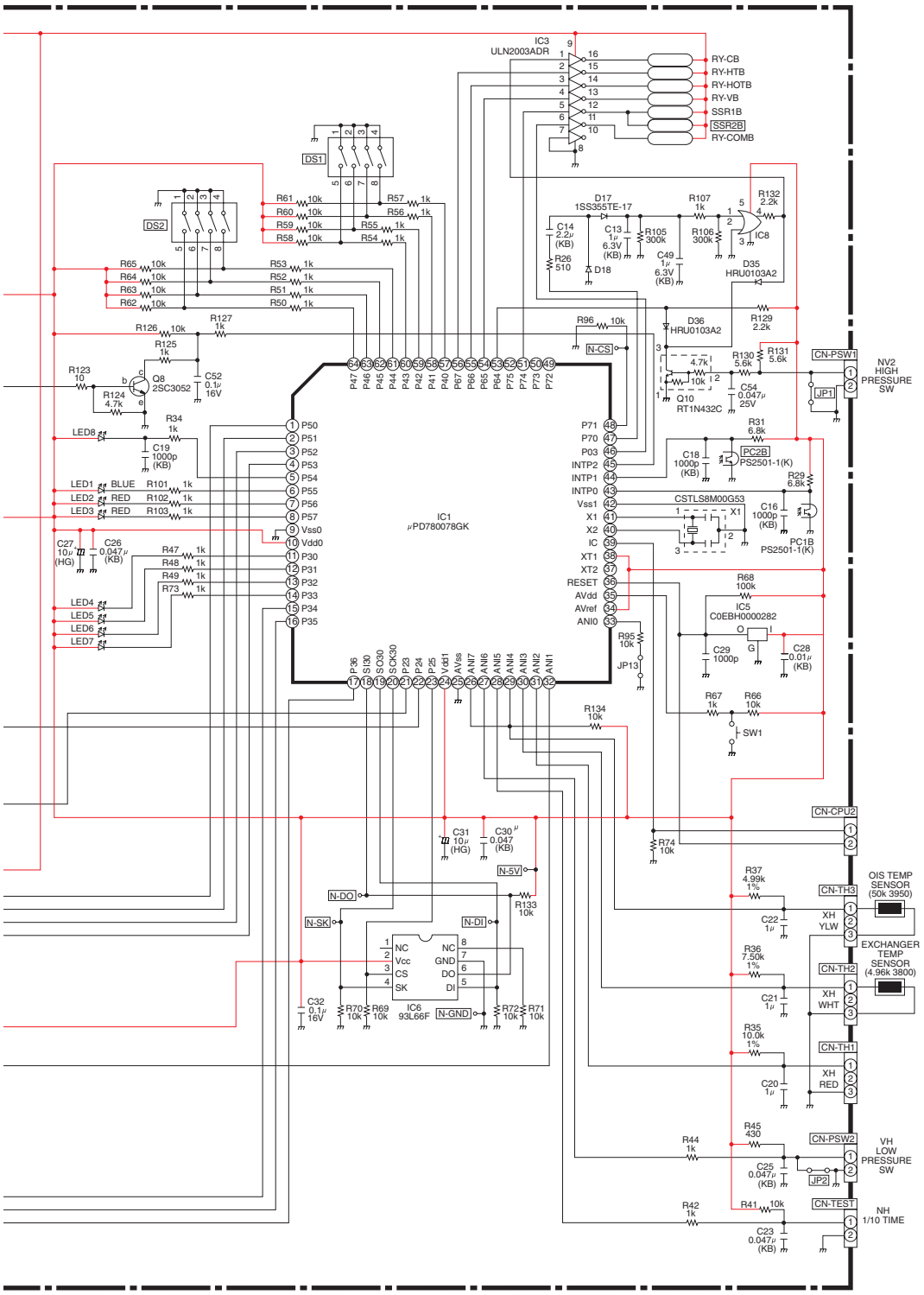
FROM CN-OPT3

19.2. Outdoor unit

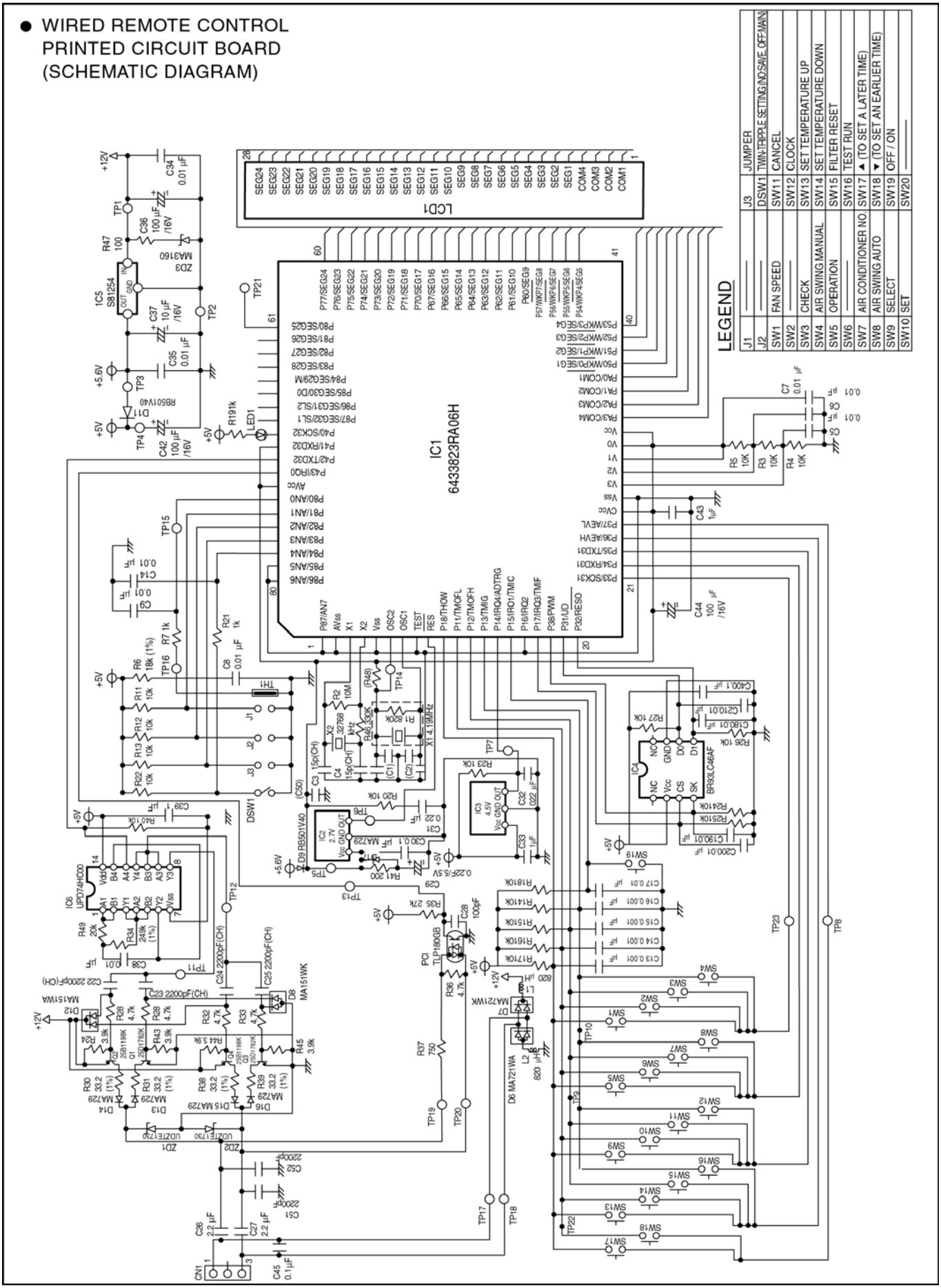
SCHEMATIC DIAGRAM 1/2



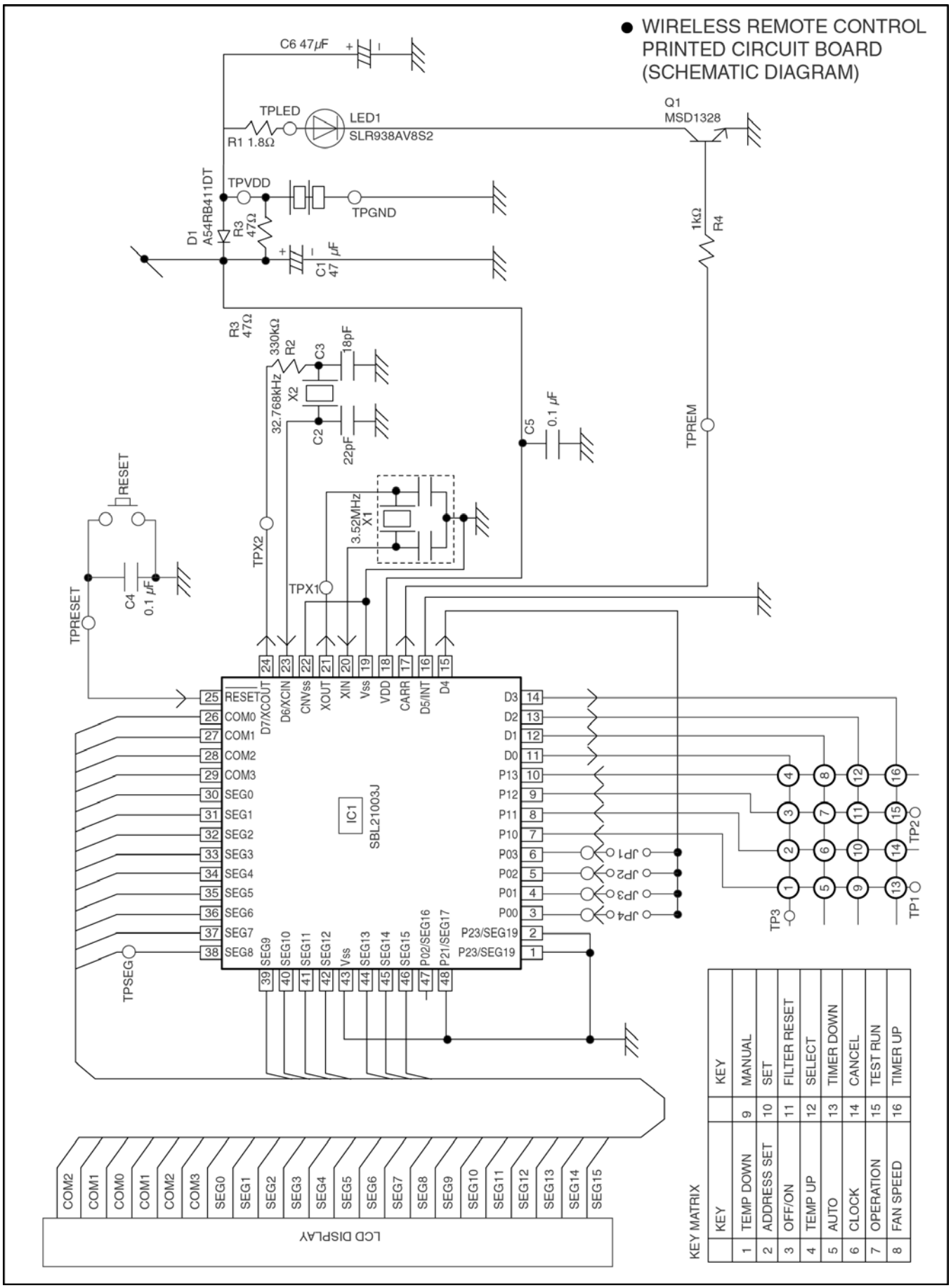
SCHEMATIC DIAGRAM 2/2



19.3. Wired remote control

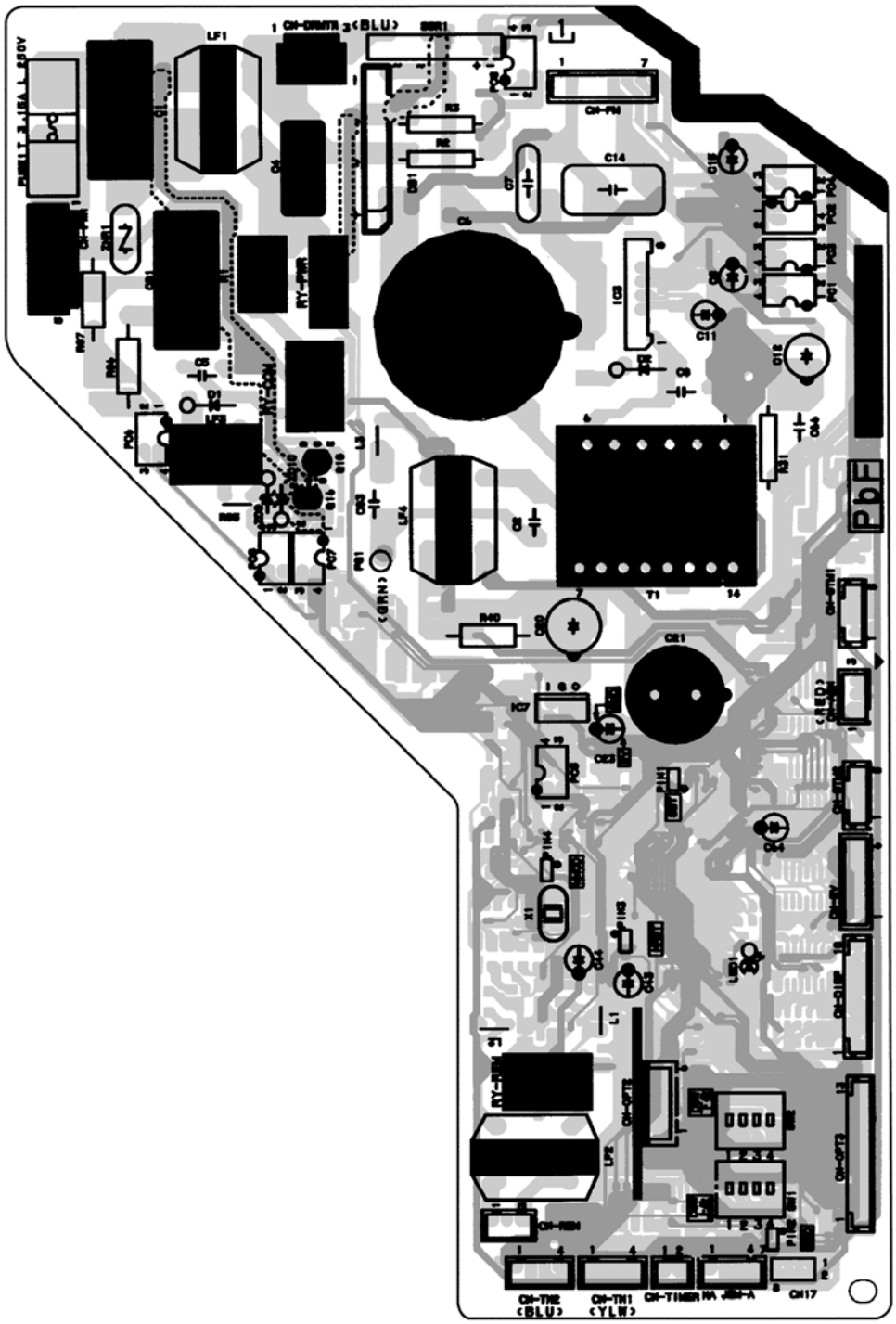


19.4. Wireless remote control

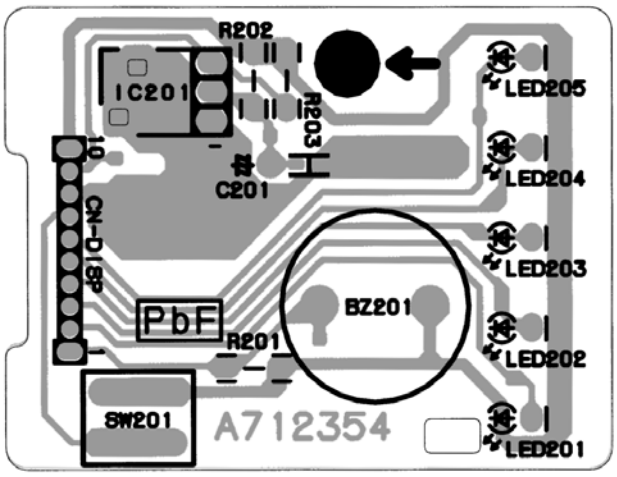


19.5. Print Pattern

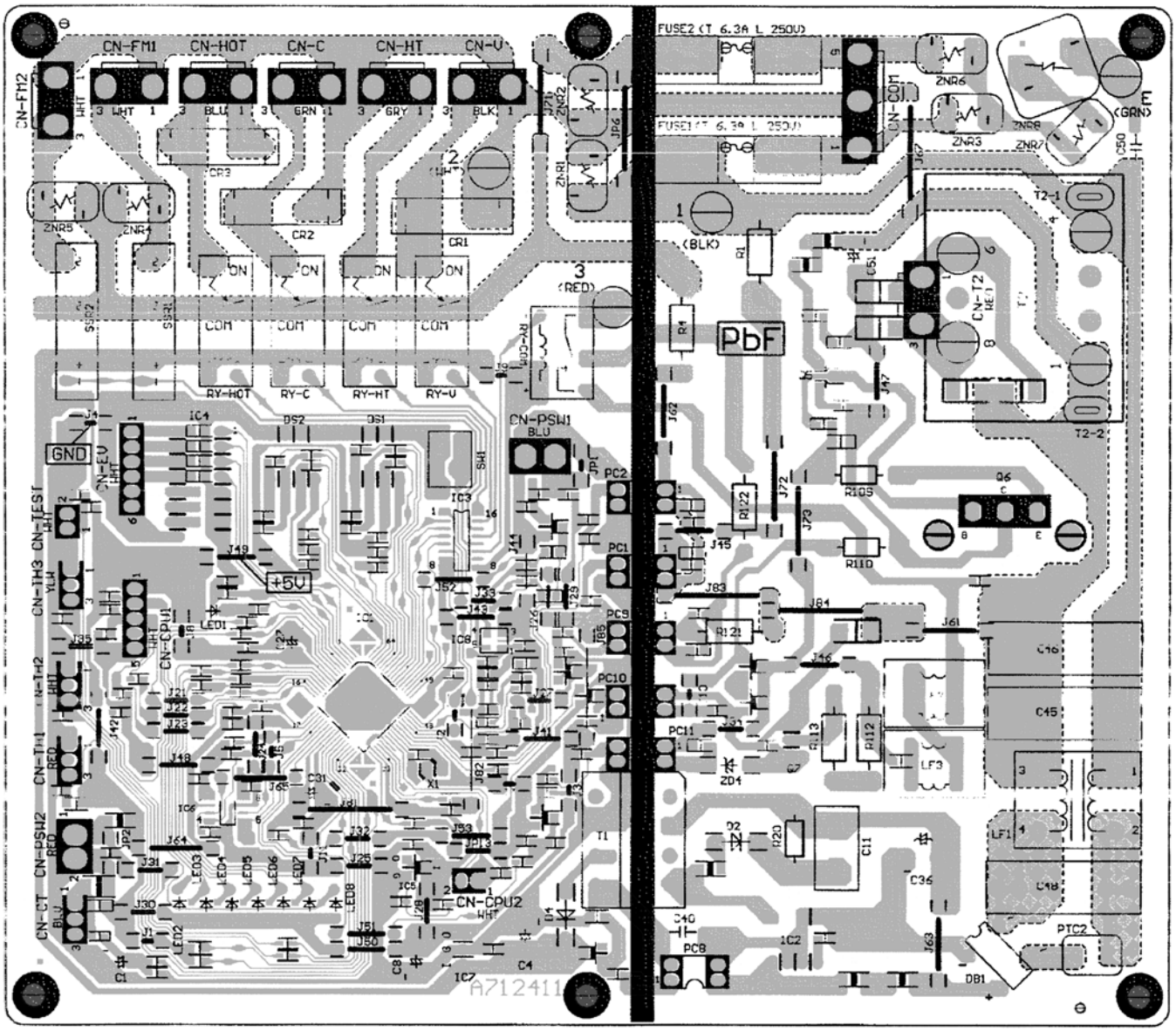
19.5.1. Indoor Unit Printed (Main)



19.5.2. Indoor Unit Printed (Indicator)



19.5.3. Outdoor Unit (Main)



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SSBZ0603-00