Компания Полель - официальный дистрибьютор ***SANYO***

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т. **(495) 101-30-99**

Кондиционеры
Сплит-системы
Полупромышленные кондиционеры
Мультизональные ***VRF*** системы кондиционирования
Чиллеры

SERVICE MANUAL

SANYO

FILE NO.

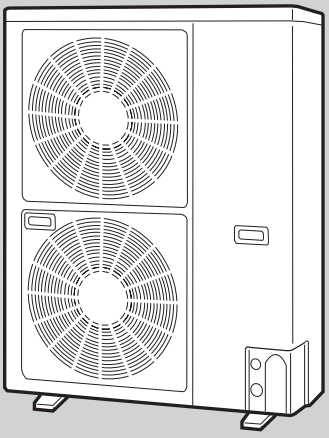
1

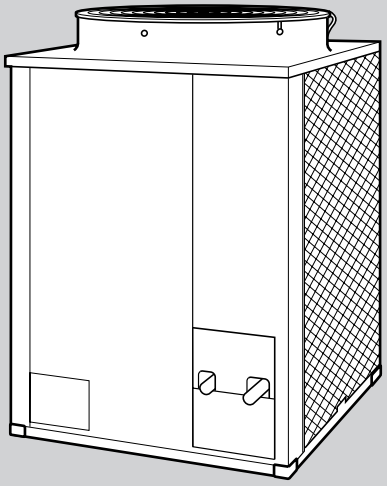
2

3

4

ECO MULTI System





OUTDOOR MODEL No.	PRODUCT CODE No.	APPLICABLE INDOOR MODEL No.	V / ø / Hz
SPW-C483GYH8	85401274	SPW - K · AS · S· F· FM· U 93GH56	OUTDOOR 380 - 415 / 3 ø / 50
SPW-C703GYH8	85401128	SPW - X · K · U · AS · S · F · FM 123GH56	
SPW-C903GYH8	85401129	SPW - X · K · T · S · U · F · FM 183GH56	
SPW-C483GY8	85401275	SPW - X · T · S · U · D · F · FM 253GH56	INDOOR 220 - 240 / 1 ø / 50
SPW-C703GY8	85401163	SPW - X · T · U · D 363GH56	
SPW-C903GY8	85401164	SPW - X · T · U · D 483GH56	

85464849152001

REFERENCE NO. **SM**830052

Important

Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must :

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.

WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidentaly injury or death**.
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing

…In a Room
Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

…In Moist or Uneven Locations
Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

…In an area with High Winds
Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

…In a Snowy Area (for Heat Pump-type Systems)
Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Ventilate the room well, in the event that refrigerant gas leaks during the installation. Be careful not to allow contact of the refrigerant gas with a flame as this will cause the generation of poisonous gas.
- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "narrow" or "wide" rather than as "liquid" or "gas".

When Servicing

- Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site when installation is finished. Check that no metal scraps or bits of wiring have been left inside the unit.

CAUTION

- Ventilate any enclosed areas when installing or testing the refrigeration system. Contact of refrigerant gas with fire or heat can produce poisonous gas.
- Confirm after installation that no refrigerant gas is leaking. If the gas comes in contact with a burning stove, gas water heater, electric room heater or other heat source, it can cause the generation of poisonous gas.

Check of Density Limit **Important**

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its density will not exceed a set limit.

The refrigerant R-22 which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its density should rise excessively. Suffocation from leakage of R-22 is almost non-existent. With the recent increase in the number of high density buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi air conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its density does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

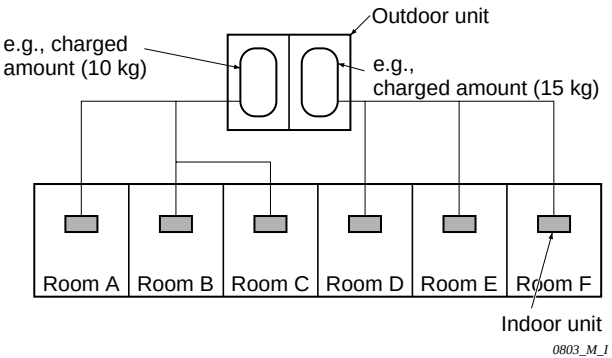
In a room where the density may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

The density is as given below.

$$\frac{\text{Total amount of refrigerant (kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leqq \text{Density limit (kg/m}^3\text{)}$$

The density limit of R-22 which is used in multi air conditioners is 0.15 kg/m^3.

NOTE **1** : If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



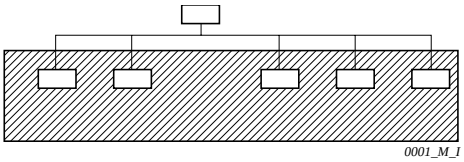
For the amount of charge in this example:

The possible amount of leaked refrigerant gas in rooms A, B and C is 10 kg.

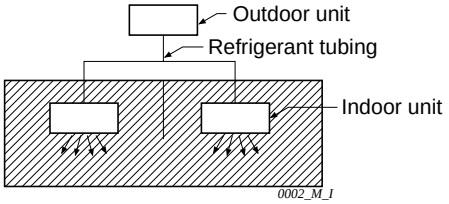
The possible amount of leaked refrigerant gas in rooms D, E and F is 15 kg.

NOTE **2** : The standards for minimum room volume are as follows.

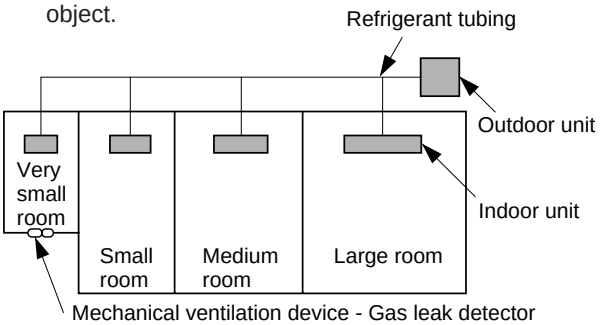
(1) No partition (shaded portion)



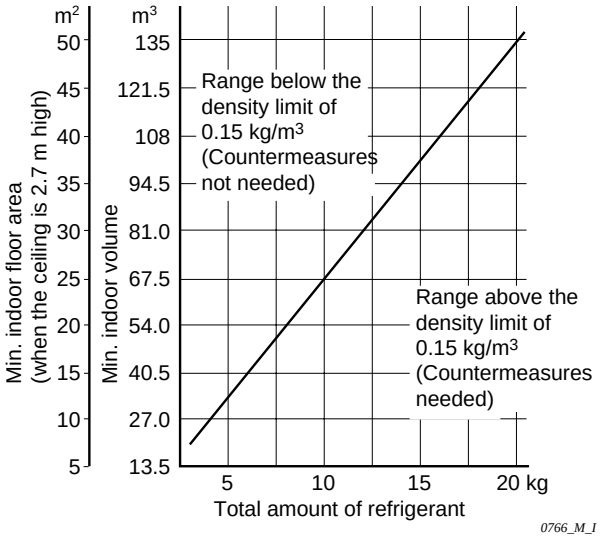
(2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).



(3) If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



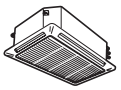
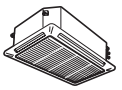
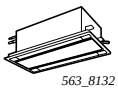
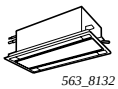
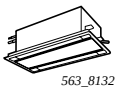
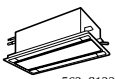
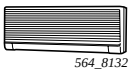
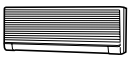
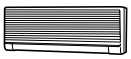
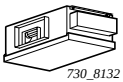
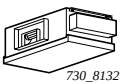
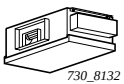
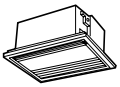
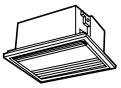
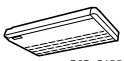
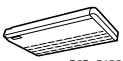
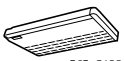
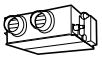
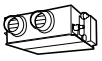
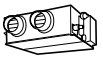
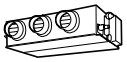
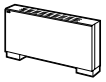
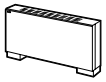
NOTE **3** : The minimum indoor floor space compared with the amount of refrigerant is roughly as follows.
(When the ceiling is 2.7 m high)



—— Contents ——

Line Up

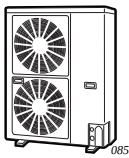
Indoor Units

Type	9	12	18	25	36	48
Capacity: kW (BTU/h) Cooling / Heating	2.8 (9,600) / 3.2 (11,000)	3.6 (12,000) / 4.2 (14,000)	5.6 (19,000) / 6.3 (21,000)	7.3 (25,000) / 8.0 (27,000)	10.6 (36,000) / 11.4 (39,000)	14.0 (47,800) / 16.0 (54,600)
4-Way Air Discharge Semi-Concealed Type		 566_8132 X123GH	 566_8132 X183GH	 566_8132 X253GH	 729_8132 X363GH	 729_8132 X483GH
2-Way Air Discharge Semi-Concealed Type	 563_8132 S93GH	 563_8132 S123GH	 563_8132 S183GH	 563_8132 S253GH		
Wall-Mounted Type & Concealed-Duct High Static Pressure Type	 564_8132 K93GH	 564_8132 K123GH	 564_8132 *K183GH	 730_8132 D253GH	 730_8132 D363GH	 730_8132 D483GH
1-Way Air Discharge Semi-Concealed Type & Ceiling-Mounted Type	 584_8132 AS93GH	 584_8132 AS123GH	 565_8132 T183GH	 565_8132 T253GH	 565_8132 T363GH	 565_8132 T483GH
Concealed-Duct Type	 567_8132 U93GH	 567_8132 U123GH	 567_8132 U183GH	 568_8132 U253GH	 569_8132 U363GH	 569_8132 U483GH
Floor Standing Type (F type)	 0855_V_I F93GH	 0855_V_I F123GH	 0856_V_I F183GH	 0856_V_I **F253GH		
Concealed Floor Standing Type (FM type)	 0857_V_I FM93GH	 0857_V_I FM123GH	 0858_V_I FM183GH	 0858_V_I **FM253GH		

* K183GH: Cooling / Heating capacity is 5.0 (17,000) / 6.0 (20,000) : KW (BTU / h)

** F253GH, FM253GH: Cooling / Heating capacity is 7.1 (24,000) / 8.0 (27,000) : KW (BTU / h)

Outdoor units

Type	48	70	90
Capacity: kW (BTU/h) Cooling / Heating	14 (47,800) / 16 (54,600)	22.4 (76,400) / 25.0 (85,300)	28.0 (95,500) / 31.5 (107,500)
Outdoor Unit Heat pump Cooling Only	 0859_C_S C483GYH8 C483GY8	 570_8132 C703GYH C703GY	 570_8132 C903GYH C903GY
Indoor / Outdoor Unit Capacity Ratio $\frac{\text{Indoor Unit Total Capacity}}{\text{Outdoor Unit Capacity}} \times 100$	Max. 130 % (Cooling)		
Operating Range Outdoor Air Intake Temperature	Cooling –5 °C ~ 43 °C DB / Heating –15 °C ~ 15.5 °C WB		
Limit of Elevation Difference	40 m (When outdoor unit installed higher)	50 m (When outdoor unit installed higher)	
	30 m (When outdoor unit installed lower)	30 m (When outdoor unit installed lower)	
Limit of Tubing Length	50 m	100 m	
Allowable No. of Indoor Unit Connected	6 units	10 units	13 units

Contents

1. ECO MULTI SYSTEM Unit Specifications

Contents

1

1. Outdoor Unit

1-1. Specifications

Unit specifications (A)

MODEL No.	Outdoor Unit			SPW – C483GYH8	
POWER SOURCE				380 - 400 - 415 V / 3 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	14 47,800	16 54,600
Air circulation (Hi)			m^3/min(cu. ft/min)	84 (2,970)	
ELECTRICAL RATINGS					
Voltage rating			V	380 - 400 - 415	
Available voltage range			V	342 - 456	
Running amperes			A	8.5 - 8.5 - 8.8	8.9 - 8.8 - 9.0
Max. running amperes*			A	10.0 - 9.9 - 10.0	—
Power input			kW	4.87 - 4.92 - 4.97	5.18 - 5.17 - 5.18
Max. power input*			kW	5.90 - 5.91 - 5.95	—
Power factor			%	87 - 84 - 79	88 - 85 - 80
C.O.P			W/W	2.87 - 2.85 - 2.82	3.09 - 3.09 - 3.09
Compressor locked rotor amperes			A	62 - 65 - 67	
FEATURES					
Controls				Microprocessor	
Defrost control				Reverse cycle, microprocessor control	
Service function				Sensor temp. recall function Past service warnings recall function	
Refrigerant amount at shipment			kg	R22 - 3.0	
Refrigerant control				Electronic Refrigerant Control Valve	
Operation sound (Hi)			dB-A	55	
REFRIGERANT TUBING					
Limit of tubing length			m(ft.)	50 (164)	
Limit of elevation difference between the two units			m(ft.)	Outdoor unit is higher than indoor unit : 40 (131) Outdoor unit is lower than indoor unit : 30 (98)	
Refrigerant tube outer diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	19.05 (3 / 4)	
Refrigerant tubing kit / joint kit				Optional	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Unit dimensions	Height		mm(in)	1,235 (48 - 20 / 32)	1,326 (52 - 7 / 32)
	Width		mm(in)	940 (37)	1,016 (40)
	Depth		mm(in)	340 (13 - 12 / 32)	416 (16 - 12 / 32)
Net weight			kg(lb)	109 (240)	
Shipping weight			kg(lb)	116 (251)	
Shipping volume			m^3(Cu. ft.)	0.56 (19.8)	

Rated conditions DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling: Indoor air temperature 27 °C DB / 19.0 °C WB , Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Full load conditions at Indoor / outdoor capacity ratio 100 %

Cooling: Indoor air temperature 32 °C DB / 22.5 °C WB , Outdoor air temperature 43 °C DB / 25.5 °C WB

1. Outdoor Unit

Unit specifications (B)

MODEL No.	Outdoor Unit			SPW – C483GY8
POWER SOURCE				380 - 400 - 415 V / 3 phase / 50Hz
PERFORMANCE				Cooling
Capacity			kW BTU / h	14 47,800
Air circulation (Hi)			m^3/min(cu. ft/min)	84 (2,970)
ELECTRICAL RATINGS				
Voltage rating			V	380 - 400 - 415
Available voltage range			V	342 - 456
Running amperes			A	8.5 - 8.5 - 8.8
Max. running amperes*			A	10.0 - 9.9 - 10.0
Power input			kW	4.87 - 4.92 - 4.97
Max. power input*			kW	5.90 - 5.91 - 5.96
Power factor			%	87 - 84 - 79
C.O.P			W/W	2.87 - 2.85 - 2.82
Compressor locked rotor amperes			A	62 - 65 - 67
FEATURES				
Controls				Microprocessor
Defrost control				Reverse cycle, microprocessor control
Service function				Sensor temp. recall function Past service warnings recall function
Refrigerant amount at shipment			kg	R22 - 3.0
Refrigerant control				Electronic Refrigerant Control Valve
Operation sound (Hi)			dB-A	55
REFRIGERANT TUBING				
Limit of tubing length			m(ft.)	50 (164)
Limit of elevation difference between the two units			m(ft.)	Outdoor unit is higher than indoor unit : 40 (131) Outdoor unit is lower than indoor unit : 30 (98)
Refrigerant tube outer diameter	Narrow tube		mm (in)	9.52 (3 / 8)
	Wide tube		mm (in)	19.05 (3 / 4)
Refrigerant tubing kit / joint kit				Optional
DIMENSIONS & WEIGHT				Unit dimensions / Package dimensions
Unit dimensions	Height		mm(in)	1,235 (48 - 20/32) / 1,326 (52 - 7/32)
	Width		mm(in)	940 (37) / 1,016 (40)
	Depth		mm(in)	340 (13 - 12/32) / 416 (16 - 12/32)
Net weight			kg(lb)	107 (236)
Shipping weight			kg(lb)	114 (251)
Shipping volume			m^3(Cu. ft.)	0.56 (19.8)

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19.0 °C WB , Outdoor air temperature 35 °C DB

* Full load conditions at Indoor / outdoor capacity ratio 100 %

Cooling: Indoor air temperature 32 °C DB / 22.5 °C WB , Outdoor air temperature 43 °C DB / 25.5 °C WB

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

1. Outdoor Unit

Unit specifications (C)

MODEL No.	Outdoor Unit			SPW – C703GYH8	
POWER SOURCE				380 - 400 - 415 V / 3 phase / 50Hz	
PERFORMANCE				Cooling	Heating
	Capacity		kW BTU / h	22.4 76,400	25.0 85,300
	Air circulation (Hi)		m^3/min(cu. ft/min)	155 (5,470)	
ELECTRICAL RATINGS					
	Voltage rating		V	380 - 400 - 415	
	Available voltage range		V	342 - 456	
	Running amperes		A	15.0 - 14.4 - 14.1	13.2 - 12.7 - 12.5
	Max. running amperes*		A	20.6 - 19.6 - 19.2	—
	Power input		kW	9.23 - 9.28 - 9.34	8.15 - 8.20 - 8.25
	Max. power input*		kW	12.6 - 12.6 - 12.7	—
	Power factor		%	93 - 93 - 92	94 - 93 - 92
	C.O.P		W/W	2.43 - 2.41 - 2.40	3.07 - 3.05 - 3.03
	Compressor locked rotor amperes		A	51 - 53 - 55	
FEATURES					
	Controls			Microprocessor	
	Defrost control			Reverse cycle, microprocessor control	
	Service function			Sensor temp. recall function Past service warnings recall function	
Refrigerant amount at shipment			kg	R22 - 9.5	
Refrigerant control				Electronic Refrigerant Control Valve	
Operation sound (Hi)			dB-A	58	
REFRIGERANT TUBING					
	Limit of tubing length		m(ft.)	100 (328)	
	Limit of elevation difference between the two units		m(ft.)	Outdoor unit is higher than indoor unit : 50 (165) Outdoor unit is lower than indoor unit : 30 (100)	
	Refrigerant tube outer diameter	Narrow tube	mm (in)	12.7 (1 / 2)	
		Wide tube	mm (in)	25.4 (1)	
	Refrigerant tubing kit / joint kit			Optional	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
	Unit dimensions	Height	mm(in)	1,218 (48)	1,351 (53 - 1 / 4)
		Width	mm(in)	883 (34 - 3 / 4)	1,047 (41 - 1 / 4)
		Depth	mm(in)	883 (34 - 3 / 4)	1,005 (39 - 5 / 8)
	Net weight		kg(lb)	219 (483)	
	Shipping weight		kg(lb)	234 (516)	
	Shipping volume		m^3(Cu. ft.)	1.42 (50.1)	

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19.0 °C WB , Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Full load conditions at Indoor / outdoor capacity ratio 130 %

Cooling: Indoor air temperature 32 °C DB / 22.5 °C WB , Outdoor air temperature 43 °C DB / 25.5 °C WB

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

SM830052

1. Outdoor Unit

Unit specifications (D)

MODEL No.	Outdoor Unit			SPW – C903GYH8	
POWER SOURCE				380 - 400 - 415 V / 3 phase / 50Hz	
PERFORMANCE				Cooling	Heating
	Capacity		kW BTU / h	28.0 95,500	31.5 107,500
	Air circulation (Hi)		m^3/min(cu. ft/min)	150 (5,300)	
ELECTRICAL RATINGS					
	Voltage rating		V	380 - 400 - 415	
	Available voltage range		V	342 – 456	
	Running amperes		A	17.6 - 17.1 - 16.8	15.2 - 14.8 - 14.7
	Max. running amperes*		A	24.2 - 23.6 - 23.1	—
	Power input		kW	10.9 - 11.0 - 11.1	9.38 - 9.54 - 9.70
	Max. power input*		kW	15.0 - 15.2 - 15.3	—
	Power factor		%	94 - 93 - 92	94 - 93 - 92
	C.O.P.		W/W	2.57 - 2.55 - 2.52	3.36 - 3.30 - 3.25
	Compressor locked rotor amperes		A	62 - 65 - 67	
FEATURES					
	Controls			Microprocessor	
	Defrost control			Reverse cycle, microprocessor control	
	Service function			Sensor temp. recall function Past service warnings recall function	
Refrigerant amount at shipment			kg	R22 - 11.0	
Refrigerant control				Electronic Refrigerant Control Valve	
Operation sound (Hi)			dB-A	58	
REFRIGERANT TUBING					
	Limit of tubing length		m(ft.)	100 (328)	
	Limit of elevation difference		m(ft.)	Outdoor unit is higher than indoor unit : 50 (165)	
	between the two units			Outdoor unit is lower than indoor unit : 30 (100)	
	Refrigerant tube	Narrow tube	mm (in)	12.7 (1 / 2)	
	outer diameter	Wide tube	mm (in)	28.58 (1-1 / 8)	
	Refrigerant tubing kit / joint kit			Optional	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
	Unit dimensions	Height	mm(in)	1,218 (48)	1,351 (53 - 1 / 4)
		Width	mm(in)	883 (34 - 3 / 4)	1,047 (41 - 1 / 4)
		Depth	mm(in)	883 (34 - 3 / 4)	1,005 (39 - 5 / 8)
	Net weight		kg(lb)	227 (500)	
	Shipping weight		kg(lb)	242 (534)	
	Shipping volume		m^3(cu. ft.)	1.42 (50.1)	

Rated conditions

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling: Indoor air temperature 27 °C DB / 19.0 °C WB , Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Full load conditions at Indoor / outdoor capacity ratio 130 %

Cooling: Indoor air temperature 32 °C DB / 22.5 °C WB , Outdoor air temperature 43 °C DB / 25.5 °C WB

SM830052

1. Outdoor Unit

Unit specifications (E)

MODEL No.	Outdoor Unit			SPW – C703GY8
POWER SOURCE				380 - 400 - 415 V / 3 phase / 50Hz
PERFORMANCE				Cooling
Capacity			kW BTU / h	22.4 76,400
Air circulation (Hi)			m^3/min(cu. ft/min)	155 (5,470)
ELECTRICAL RATINGS				
Voltage rating			V	380 - 400 - 415
Available voltage range			V	342 - 456
Running amperes			A	15.0 - 14.4 - 14.1
Max. running amperes*			A	20.6 - 19.6 - 19.2
Power input			kW	9.23 - 9.28 - 9.34
Max. power input*			kW	12.6 - 12.6 - 12.7
Power factor			%	93 - 93 - 92
C.O.P			W/W	2.43 - 2.41 - 2.40
Compressor locked rotor amperes			A	51 - 53 - 55
FEATURES				
Controls				Microprocessor
Defrost control				Reverse cycle, microprocessor control
Service function				Sensor temp. recall function Past service warnings recall function
Refrigerant amount at shipment			kg	R22 - 9.5
Refrigerant control				Electronic Refrigerant Control Valve
Operation sound (Hi)			dB-A	58
REFRIGERANT TUBING				
Limit of tubing length			m(ft.)	100 (328)
Limit of elevation difference between the two units			m(ft.)	Outdoor unit is higher than indoor unit : 50 (165) Outdoor unit is lower than indoor unit : 30 (100)
Refrigerant tube outer diameter	Narrow tube		mm (in)	12.7 (1/ 2)
	Wide tube		mm (in)	25.4 (1)
Refrigerant tubing kit / joint kit				Optional
DIMENSIONS & WEIGHT				Unit dimensions / Package dimensions
Unit dimensions	Height		mm(in)	1,218 (48) / 1,351 (53 - 1 / 4)
	Width		mm(in)	883 (34 - 3 / 4) / 1,047 (41 - 1 / 4)
	Depth		mm(in)	883 (34 - 3 / 4) / 1,005 (39 - 5 / 8)
Net weight			kg(lb)	214 (472)
Shipping weight			kg(lb)	229 (505)
Shipping volume			m^3(Cu. ft.)	1.42 (50.1)

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19.0 °C WB , Outdoor air temperature 35 °C DB

* Full load conditions at Indoor / outdoor capacity ratio 130 %

Cooling: Indoor air temperature 32 °C DB / 22.5 °C WB , Outdoor air temperature 43 °C DB / 25.5 °C WB

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

1. Outdoor Unit

Unit specifications (F)

MODEL No.	Outdoor Unit			SPW – C903GY8
POWER SOURCE				380 - 400 - 415 V / 3 phase / 50Hz
PERFORMANCE				Cooling
Capacity			kW BTU / h	28.0 95,500
Air circulation (Hi)			m^3/min(cu. ft/min)	150 (5,300)
ELECTRICAL RATINGS				
Voltage rating			V	380 - 400 - 415
Available voltage range			V	342 – 456
Running amperes			A	17.6 - 17.1 - 16.8
Max. running amperes*			A	24.2 - 23.6 - 23.1
Power input			kW	10.9 - 11.0 - 11.1
Max. power input*			kW	15.0 - 15.2 - 15.3
Power factor			%	94 - 93 - 92
C.O.P.			W/W	2 .57 - 2.55 - 2.52
Compressor locked rotor amperes			A	62 - 65 - 67
FEATURES				
Controls				Microprocessor
Defrost control				Reverse cycle, microprocessor control
Service function				Sensor temp. recall function Past service warnings recall function
Refrigerant amount at shipment			kg	R22 - 11.0
Refrigerant control				Electronic Refrigerant Control Valve
Operation sound (Hi)			dB-A	58
REFRIGERANT TUBING				
Limit of tubing length			m(ft.)	100 (328)
Limit of elevation difference between the two units			m(ft.)	Outdoor unit is higher than indoor unit : 50 (165) Outdoor unit is lower than indoor unit : 30 (100)
Refrigerant tube outer diameter	Narrow tube		mm (in)	12.7 (1 / 2)
	Wide tube		mm (in)	28.58 (1-1 / 8)
Refrigerant tubing kit / joint kit				Optional
DIMENSIONS & WEIGHT				Unit dimensions / Package dimensions
Unit dimensions	Height		mm(in)	1,218 (48) / 1,351 (53 - 1 / 4)
	Width		mm(in)	883 (34 - 3 / 4) / 1,047 (41 - 1 / 4)
	Depth		mm(in)	883 (34 - 3 / 4) / 1,005 (39 - 5 / 8)
Net weight			kg(lb)	222 (489)
Shipping weight			kg(lb)	237 (522)
Shipping volume			m^3(cu. ft.)	1.42 (50.1)

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19.0 °C WB , Outdoor air temperature 35 °C DB

* Full load conditions at Indoor / outdoor capacity ratio 130 %

Cooling: Indoor air temperature 32 °C DB / 22.5 °C WB , Outdoor air temperature 43 °C DB / 25.5 °C WB

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

1-2. Major component specifications

Outdoor Unit (A)

MODEL No.			SPW – C483GYH8 / SPW – C483GY8
Source			380 - 400 - 415 V / 3 phase / 50Hz
Controller P.C.B. Ass'y			CR - C483GYH / CR - C483GY
Control circuit fuse			250 V , 3.15 A
Compressor			Rotary (Hermetic)
			PC (Power Control)
Model … Code No.			C-5R433H8U ... 80843688
Nominal output		kW	4.3
Compressor oil (SUNISO 4GSD-T)		cc	2,000
Coil resistance		Ω	V - U: 2.76 , U - W: 2.59
(Ambient temperature 25°C)			W - V: 2.71
Safety devices			
Thermal protector ON / OFF		°C	120 ± 5 / 98 ± 11
Microprocessor safety devices			Compressor current detection circuit Compressor discharge gas temperature control Defective and negative phase detection circuit Voltage drop detection circuit
Crank case heater		V, W	240, 32
High pressure switch			ACB - 1TB07
Set pressure	ON / OFF	kg/cm^2	24 ± 2.0 / 30 $^{+2.0}_{+0.5}$
Fan (Number … diameter(mm))			Propeller (2 … ø 460)
Fan motor			
Model … Nominal output		W	KFC6T - 91C5P × 2 … 70W × 2
No. of pole … r.p.m. (230 V, High)			6 … 772 r.p.m.
Coil resistance (Ambient temperature 20 °C)		Ω	BRN - WHT : 127.3 WHT - VLT : 56.7 VLT - YEL : 15.0 YEL - PNK : 7.2
Safety device			
Thermal protector ON / OFF		°C	130 ± 8 / 79 ± 15
Run capacitor		VAC , μF	440 V , 6 μF × 2
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows … fin pitch		mm	2 … 2.0
Face area		m^2	1.08

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1-2. Major component specifications

Outdoor Unit (B)

MODEL No.		SPW – C703GYH8 / SPW – C703GY8	
Source		380 - 400 - 415 V / 3 phase / 50Hz	
Controller P.C.B. Ass'y		CR - C703GYH / CR - C703GY	
Control circuit fuse		250 V , 3.15 A	
Compressor		Rotary (Hermetic)	
		PC (Power Control)	AC (Standard)
Model … Code No.		C-5R373H8U ... 80837688	C-5R373H8C ... 80837588
Nominal output	kW	3.75	3.75
Compressor oil (SUNISO 4GSD-T)	cc	2,000	2,000
Coil resistance (Ambient temperature 25°C)	Ω	V - U: 2.83 , U - W: 2.65 W - V: 2.78	V - U: 2.83 , U - W: 2.65 W - V: 2.78
Safety devices			
Thermal protector ON / OFF	°C	120 ± 5 / 98 ± 11	120 ± 5 / 98 ± 11
Microprocessor safety devices		Compressor current detection circuit Compressor discharge gas temperature control Defective and negative phase detection circuit Voltage drop detection circuit	
Crank case heater	V, W	240 , 32	240 , 32
Fusible plug (Operating temp.)	°C	73 ± 2	
High pressure switch		ACB - 1TB04W (TÜV Approved)	
Set pressure ON / OFF	kg/cm²	24 ± 2.0 / 30 $^{+0}_{-1.5}$	
Fan (Number … diameter(mm))		Propeller (1 … ø 750)	
Fan motor			
Model … Nominal output	W	KFS8T - 201C3P … 200 W	
No. of pole … r.p.m. (230 V, High)		8 … 567 r.p.m.	
Coil resistance (Ambient temperature 20 °C)	Ω	BRN - WHT : 9.42 WHT - VLT : 4.59 VLT - YEL : 5.85 YEL - PNK : 3.33	
Safety device			
Thermal protector ON / OFF	°C	125 – 15 / 130 ± 5	
Run capacitor	VAC , µF	440 V , 15.0 µF	
Heat exchanger			
Coil		Aluminum plate fin / Copper tube	
Rows … fin pitch	mm	2 … 1.7	
Face area	m²	2.40	

Outdoor Unit (C)

MODEL No.		SPW – C903GYH8 / SPW – C903GY8	
Source		380 - 400 - 415 V / 3 phase / 50Hz	
Controller P.C.B. Ass'y		CR - C703GYH / CR - C703GY	
Control circuit fuse		250 V , 3.15 A	
Compressor		Rotary (Hermetic)	
		PC (Power Control)	AC (Standard)
Model … Code No.		C-5R433H8U ... 80843688	C-5R433H8A ... 80843588
Nominal output	kW	4.3	4.3
Compressor oil (SUNISO 4GSD-T)	cc	2,000	2,000
Coil resistance (Ambient temperature 25°C)	Ω	V - U: 2.76 , U - W: 2.59 W - V: 2.71	V - U: 2.76 , U - W: 2.59 W - V: 2.71
Safety devices			
Thermal protector ON / OFF	°C	120 ± 5 / 98 ± 11	120 ± 5 / 98 ± 11
Microprocessor safety devices		Compressor current detection circuit Compressor discharge gas temperature control Defective and negative phase detection circuit Voltage drop detection circuit	
Crank case heater	V, W	240 , 32	240 , 32
Fusible plug (Operating temp.)	°C	73 ± 2	
High pressure switch		ACB - 1TB04W (TÜV Approved)	
Set pressure ON / OFF	kg/cm²	24 ± 2.0 / 30 $^{+0}_{-1.5}$	
Fan (Number … diameter(mm))		Propeller (1 … ø 750)	
Fan motor			
Model … Nominal output	W	KFS8T - 201C3P … 200W	
No. of pole … r.p.m. (230 V, High)		8 … 567 r.p.m.	
Coil resistance (Ambient temperature 20 °C)	Ω	BRN - WHT : 9.42 WHT - VLT : 4.59 VLT - YEL : 5.85 YEL - PNK : 3.33	
Safety device			
Thermal protector ON / OFF	°C	125 – 15 / 130 ± 5	
Run capacitor	VAC , µF	440 V , 15.0 µF	
Heat exchanger			
Coil		Aluminum plate fin / Copper tube	
Rows … fin pitch	mm	2 … 1.7	
Face area	m²	2.40	

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1-3. Control specifications

MODEL No.	Outdoor Unit		SPW – C483GYH8 / SPW – C483GY8 SPW – C703GYH8 / SPW – C703GY8 SPW – C903GYH8 / SPW – C903GY8
Thermostat	Available Setting temp.	Cooling	18 – 30 °C
		Dry	18 – 30 °C
		Heating	16 – 26 °C
Mode setting	Operation mode		HEAT* • DRY • COOL • FAN
	Fan speed		Auto • Hi • Med • Lo
	Timer		ON • OFF • (Max. 72 hour)
	Auto. flap		Fan Aim / Sweep
Alarm message	Serial communication		E1 – E 7
	Improper address setting & others		E8 – E18
	Activation of protective device		P1 – P17
	Thermistor failure		F1 – F 9
	Fault with comp. & its circuit		H1 – H12
Compressor contactor (Mg SW) abnormal			H9 & H19
*Cold draft prevention	Timer		–
	Indoor unit coil temp. E2 < 27 °C		
Defrosting control*	Reverse cycle, microprocessor control		
Service function	Sensor temp. recall function		
	Past service warnings recall function (Max. 4 alarms)		
System control	Multiple remote control		Max. 2 controllers (Main : 1, Sub: 1)
	Group control		Simultaneous operation Max. 8 units
Automatic restart after power interruption			
Test run function (built in 60 min. timer)			

*: Only for heat pump type.

1-4. Other component specifications

MODEL No.	Outdoor Unit		SPW – C483GYH8 / SPW – C483GY8
Power Transformer			ATR-195, CL-4
Thermostat (Option)	Available setting temp.	Cooling	18 – 30 °C
		Dry	18 – 30 °C
		Heating	16 – 26 °C
Thermistor (Coil sensor)			PBC-41E-S36
Coil resistance		KΩ	–10 ˚C : 23.7 ± 5 % , 20 ˚C : 6.5 ± 5 % –5 ˚C : 18.8 ± 5 % , 30 ˚C : 4.4 ± 5 % 0 ˚C : 15.0 ± 5 % , 40 ˚C : 3.1 ± 5 % 5 ˚C : 12.1 ± 5 % , 45 ˚C : 2.6 ± 5 % 10 ˚C : 9.7 ± 5 %
Thermistor (Discharge gas sensor or coil sensor)			PTC-51H
Coil resistance		KΩ	60 ˚C : 13.8 ± 5 % , 90 ˚C : 5.1 ± 5 % 70 ˚C : 9.7 ± 5 % , 100 ˚C : 3.8 ± 5 % 75 ˚C : 8.2 ± 5 % , 110 ˚C : 2.8 ± 5 % 80 ˚C : 7.0 ± 5 % , 120 ˚C : 2.2 ± 5 % 85 ˚C : 5.9 ± 5 % , 130 ˚C : 1.7 ± 5 %
Relay			FMCA-1SZ607
Coil rated		V	AC 220 V - 240 V
Contact rating		V.A	AC 440 V, 13 A
Coil Resistance (at 25 ˚C)		kΩ	—
Solenoid control valve or coil			
Solenoid control valve			NEV603DXFa19 / NEV202DXFa19
Solenoid coil			NEV-MOAJ50B0
Reversing valve or coil			(only heat pump type)
Reversing valve			CHV-0401
Solenoid coil			CHV-01AJ504D1

1. Outdoor Unit

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Other component specifications

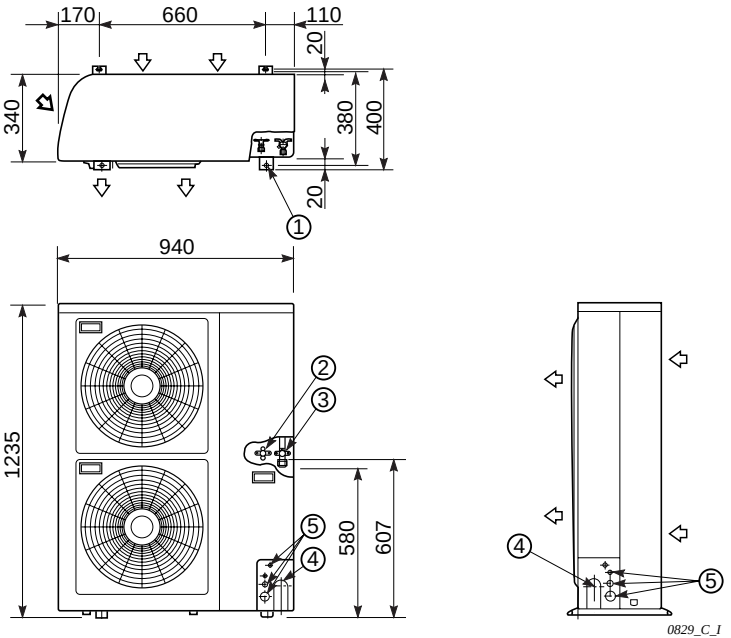
MODEL No.	Outdoor Unit		SPW – C703GYH8 / SPW – C703GY8 SPW – C903GYH8 / SPW – C903GY8
Power Transformer			ATR-II45, CT CL-3
Thermostat (Option)	Available setting temp.	Cooling	18 – 30 °C
		Dry	18 – 30 °C
		Heating	16 – 26 °C
Thermistor (Coil sensor)			PBC-41E-S36
Coil resistance		KΩ	–10 ˚C : 23.7 ± 5 % , 20 ˚C : 6.5 ± 5 % –5 ˚C : 18.8 ± 5 % , 30 ˚C : 4.4 ± 5 % 0 ˚C : 15.0 ± 5 % , 40 ˚C : 3.1 ± 5 % 5 ˚C : 12.1 ± 5 % , 45 ˚C : 2.6 ± 5 % 10 ˚C : 9.7 ± 5 %
Thermistor (Discharge gas sensor or coil sensor)			PTC-51H
Coil resistance		KΩ	60 ˚C : 13.8 ± 5 % , 90 ˚C : 5.1 ± 5 % 70 ˚C : 9.7 ± 5 % , 100 ˚C : 3.8 ± 5 % 75 ˚C : 8.2 ± 5 % , 110 ˚C : 2.8 ± 5 % 80 ˚C : 7.0 ± 5 % , 120 ˚C : 2.2 ± 5 % 85 ˚C : 5.9 ± 5 % , 130 ˚C : 1.7 ± 5 %
Relay			HH62S / 085
Coil rated		V	AC 220 V - 240 V
Contact rating		V.A	AC 250 V, 5 A
Coil Resistance (at 25 ˚C)		kΩ	17.2 ± 10 %
Solenoid control valve or coil			
Solenoid control valve			NEV603DXFa19 / NEV202DXFa19
Solenoid coil			NEV-MOAJ504B0
Reversing valve or coil			(only heat pump type)
Reversing valve			VH 60100
Solenoid coil			LB 60012

1-5. Dimentional data

Diagram of ECO MULTI Outer Dimensions

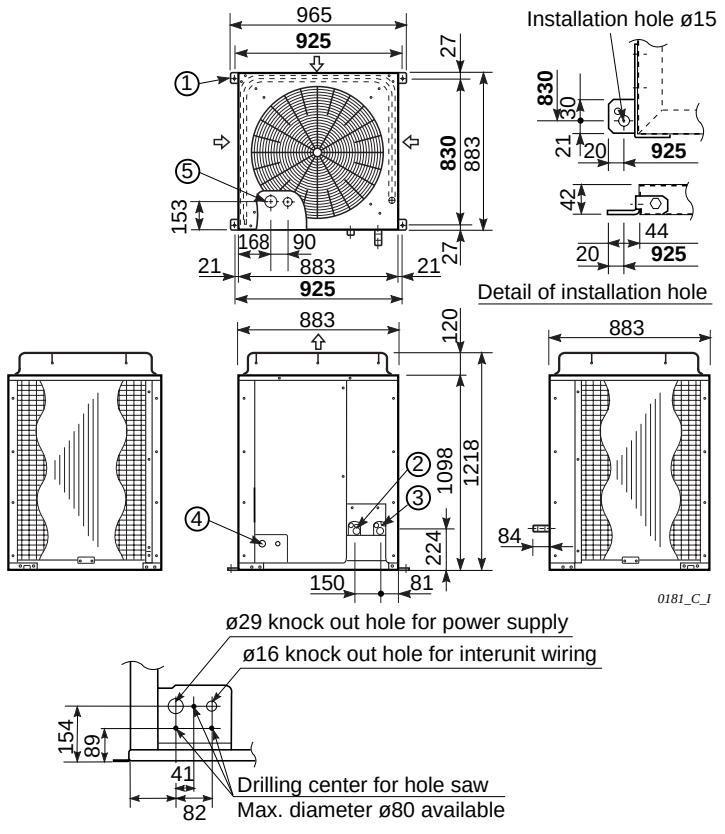
5SPW-C483GYH8 / C483GY8

①	Hole for anchor bolt (4 - ø13)
②	Refrigerant tube joint (narrow tube) Flare connection 3/8 in (9.52 mm)
③	Refrigerant tube joint (wide tube) Flare connection 3/8 in (19.05 mm)
④	Refrigerant tubing inlet
⑤	Power supply inlet



SPW-C703GYH8 / C703GY8
SPW-C903GYH8 / C903GY8

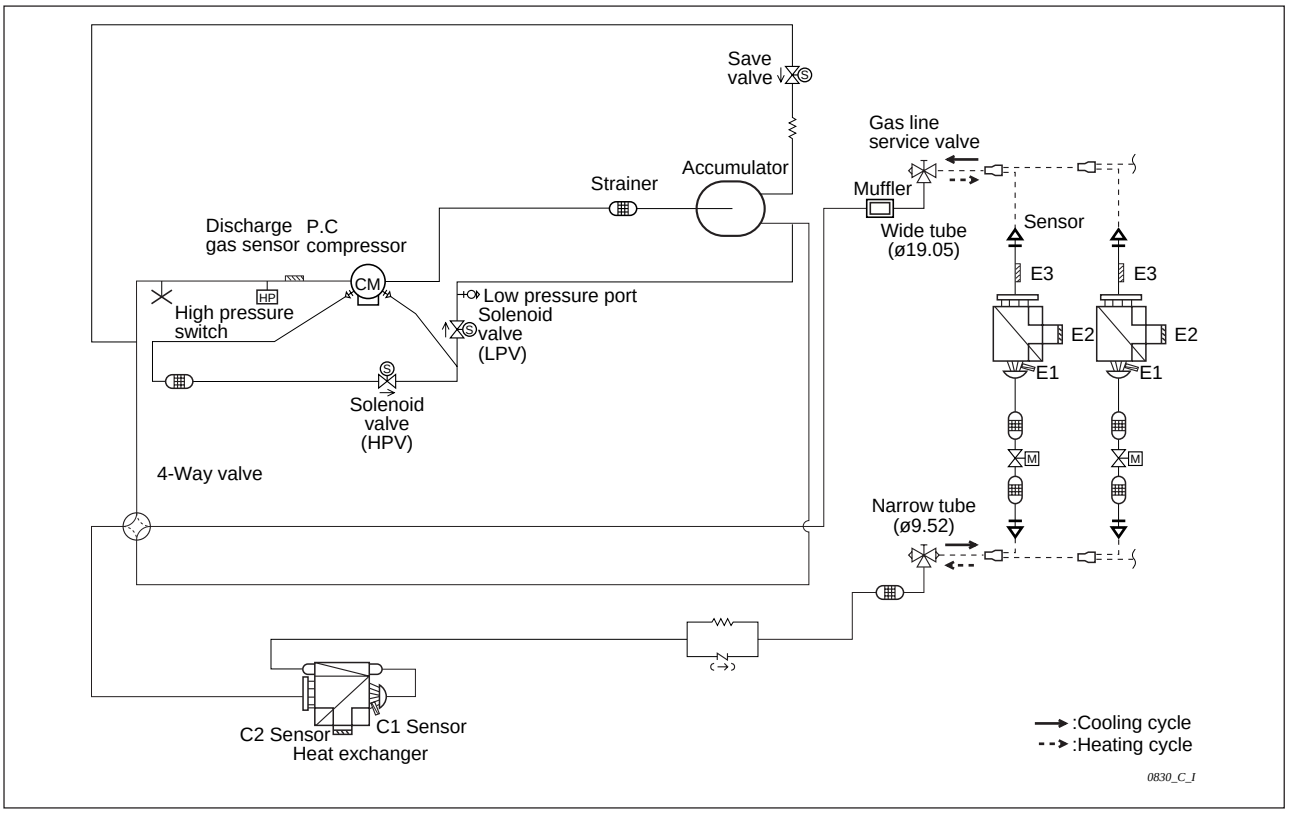
①	Installation hole (4 - ø15 hole)
②	Refrigerant liquid line ø12.7 (narrow tube) flare connection
③	Refrigerant gas line (wide tube) 90 type: ø28.58 70 type: ø25.4 Brazing connection
④	Knock out hole for power supply, inter-unit wiring (Front side)
⑤	Power supply, inter-unit wiring openings (Bottom side) ø60, ø38 conduit connection



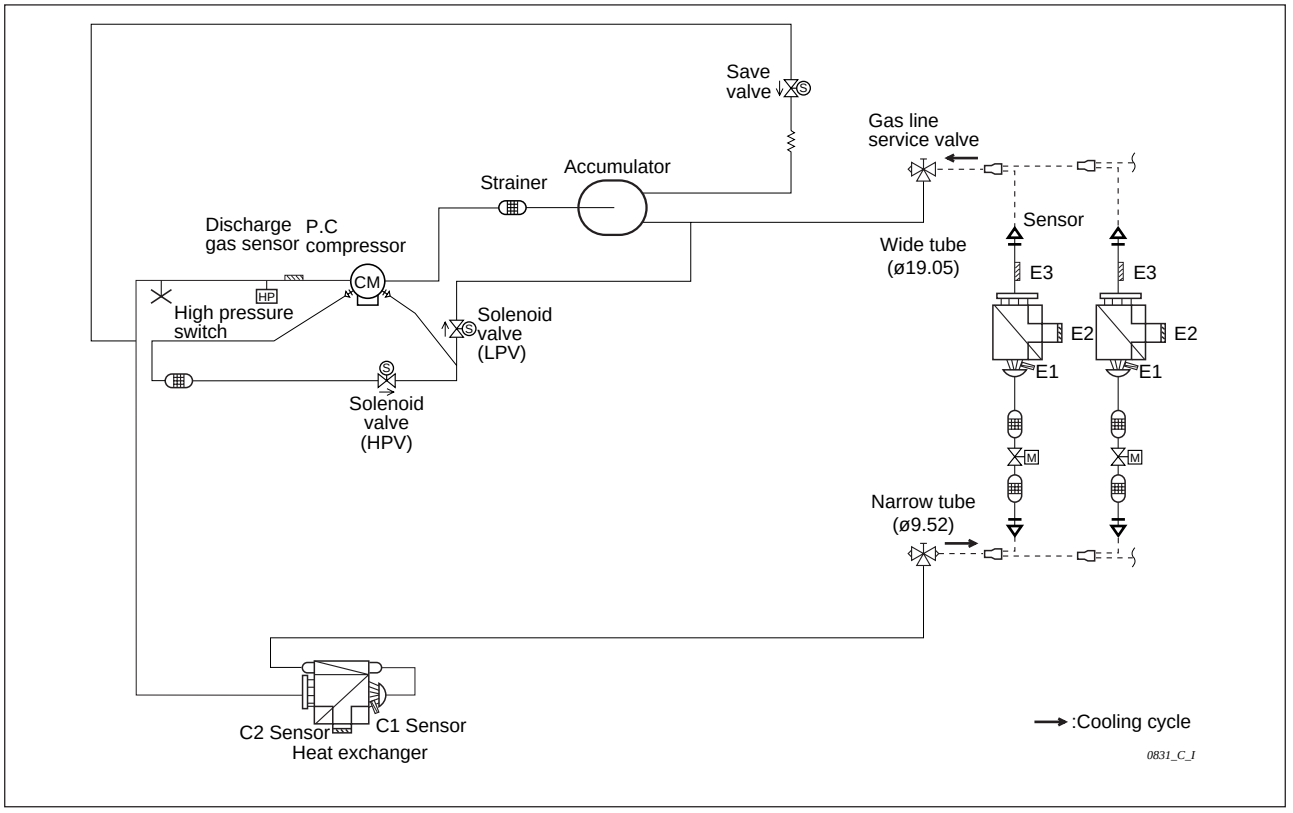
1

1-6. Refrigerant flow diagram

SPW-C483GYH8 (Heat pump only)

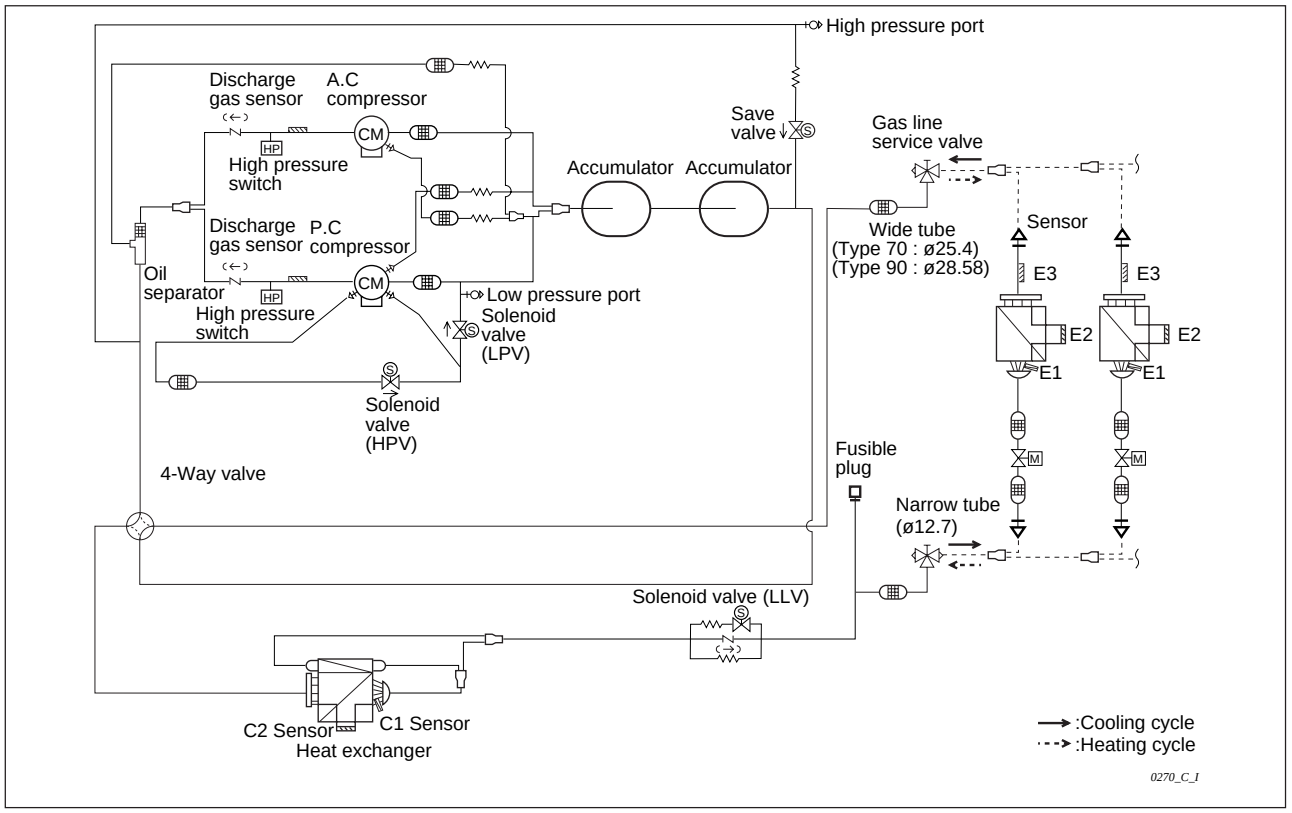


SPW-C483GY8 (Cooling only type)

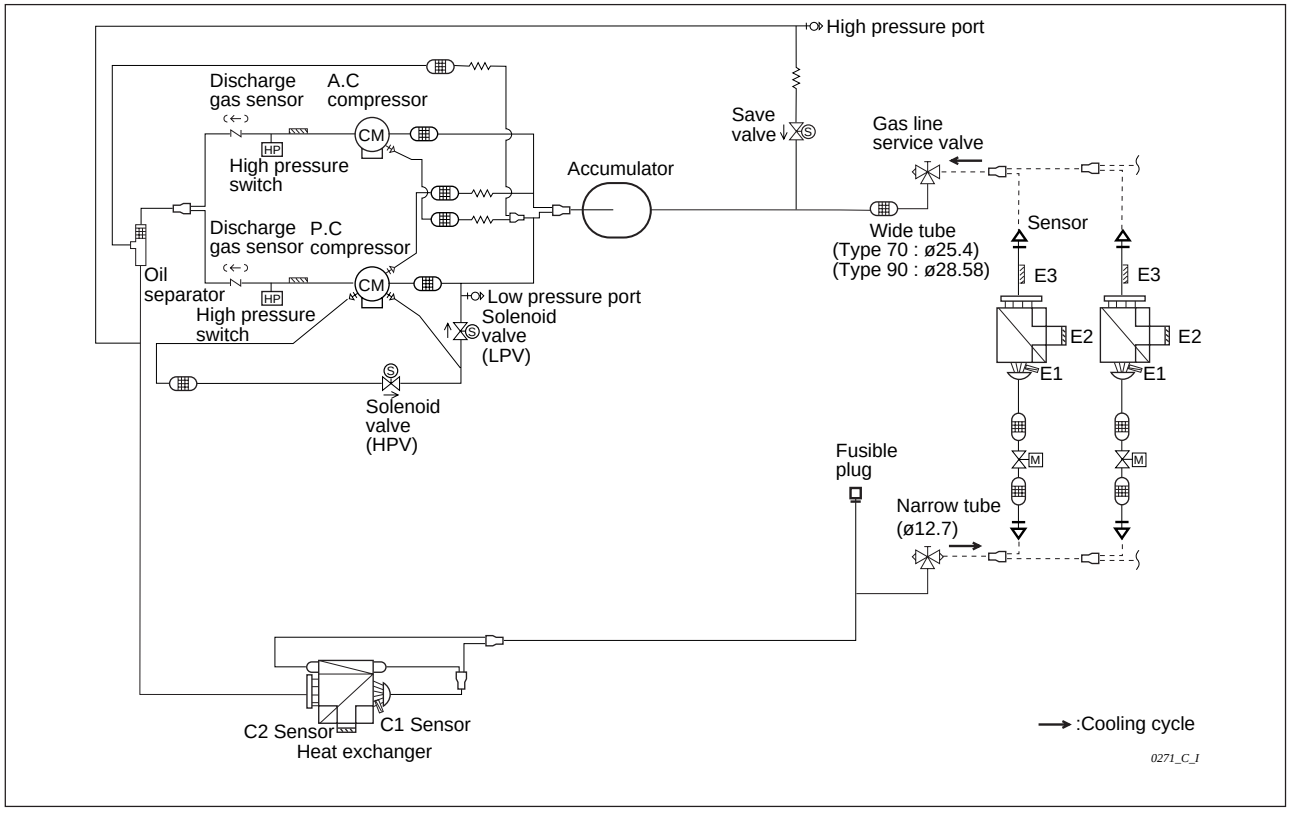


Refrigerant flow diagram

SPW-C703GYH8, C903GYH8 (Heat pump only)

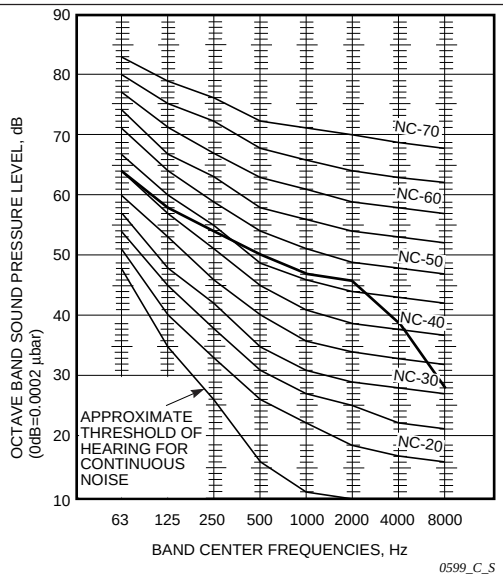


SPW-C703GY8, C903GY8 (Cooling only type)

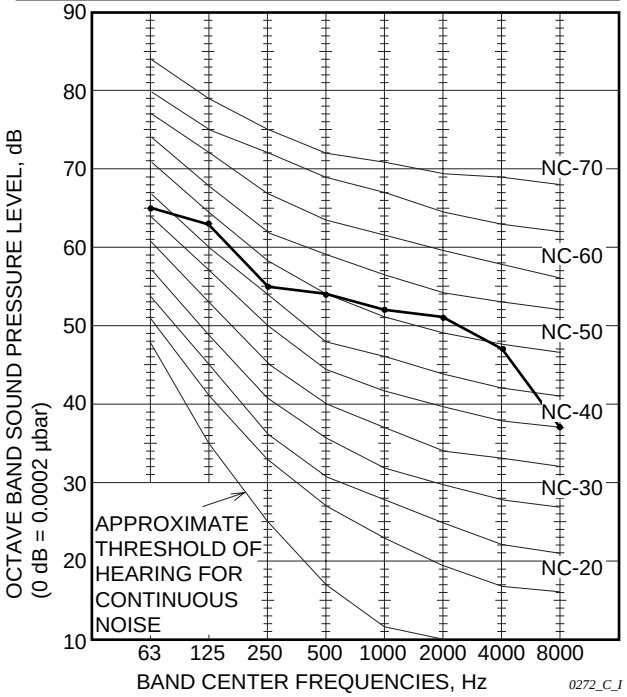


1-7. Noise criterion curves

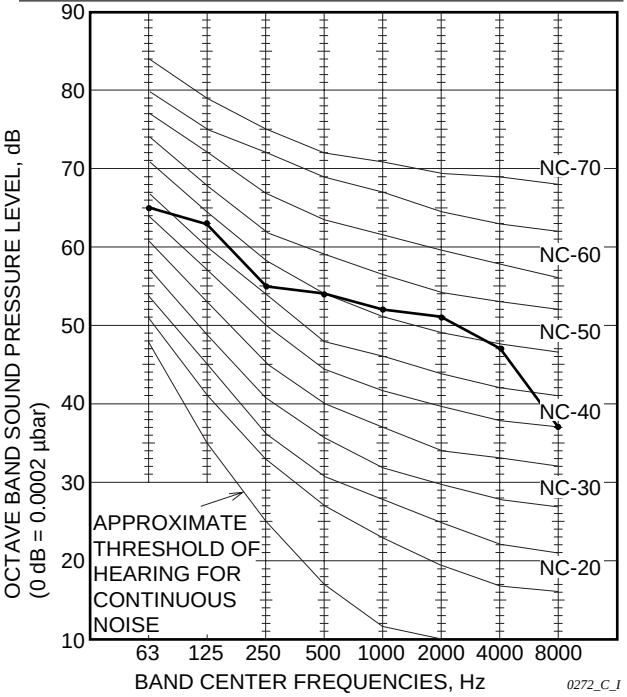
MODEL	: SPW-C483GYH8 , C483GY8
SOUND LEVEL	: HIGH 55 dB(A), NC 47
CONDITION	: Height 1 m, distance 1 m
SOURCE	: 380 / 400 / 415 V, 3 Phase, 50 Hz



MODEL	: SPW-C703GYH8 , C703GY8
SOUND LEVEL	: HIGH 58 dB(A), NC 52
CONDITION	: Height 1 m, distance 1 m
SOURCE	: 380 / 400 / 415 V, 3 Phase, 50 Hz



MODEL	: SPW-C903GYH8 , C903GY8
SOUND LEVEL	: HIGH 58 dB(A), NC 52
CONDITION	: Height 1 m, distance 1 m
SOURCE	: 380 / 400 / 415 V, 3 Phase, 50 Hz



2. 4-Way Air Discharge Semi-concealed Type

2-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-X123GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase – 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	3.6 12,000	4.2 14,000
Air circulation (Hi / Me / Lo)		m^3/h	900 / 780 / 660	
Moisture removal (High)		Liters/h	1.5	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.60 - 0.62 - 0.63	0.37 - 0.40 - 0.42
Power input		W	130 - 140 - 150	80 - 90 - 100
Power factor		%	98 - 98 - 99	98 - 98 - 99
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	37 / 35 / 30	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)	
	Wide tube	mm (in.)	12.7 (1 / 2)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	328 (12 - 29 / 32)	410 (16 - 3 / 8)
	Width	mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
	Depth	mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
Net weight		kg (lbs.)	29 (64)	
Shipping weight		kg (lbs.)	46 (101)	
Shipping volume		m^3 (cu. ft)	0.400 (14.1)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

2. 4-Way Air Discharge Semi-concealed Type

Unit specifications (B)

MODEL No.	Indoor Unit			SPW-X183GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	5.6 19,000	6.3 21,000
Air circulation (Hi / Me / Lo)			m^3/h	900 / 780 / 660	
Moisture removal (High)			Liters/h	3.0	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.60 - 0.62 - 0.63	0.37 - 0.40 - 0.42
Power input			W	130 - 140 - 150	80 - 90 - 100
Power factor			%	98 - 98 - 99	98 - 98 - 99
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	37 / 35 / 30	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in.)	9.52 (3 / 8)	
	Wide tube		mm (in.)	15.88 (5 / 8)	
Drain connection				25 A, OD32 mm	
Drain pump				Max. head 25 cm above drain connection	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)				Unit dimensions	Package dimensions
Dimensions	Height		mm (in.)	328 (12 - 29 / 32)	410 (16 - 3 / 8)
	Width		mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
	Depth		mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
Net weight			kg (lbs.)	29 (64)	
Shipping weight			kg (lbs.)	46 (101)	
Shipping volume			m^3 (cu. ft)	0.400 (14.1)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

2. 4-Way Air Discharge Semi-concealed Type

Unit specifications (C)

MODEL No.	Indoor Unit		SPW-X253GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	7.3 25,000	8.0 27,000
Air circulation (Hi / Me / Lo)		m^3/h	1,140 / 1,020 / 840	
Moisture removal (High)		Liters/h	3.6	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.60 - 0.62 - 0.63	0.37 - 0.40 - 0.42
Power input		W	130 - 140 - 150	80 - 90 - 100
Power factor		%	98 - 98 - 99	98 - 98 - 99
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	37 / 35 / 31	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)*	
	Wide tube	mm (in.)	15.88 (5 / 8)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	328 (12 - 29 / 32)	410 (16 - 3 / 8)
	Width	mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
	Depth	mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
Net weight		kg (lbs.)	30 (66)	
Shipping weight		kg (lbs.)	47 (104)	
Shipping volume		m^3 (cu. ft)	0.400 (14.1)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Use the “Tube connector” (accessory part with unit).

2. 4-Way Air Discharge Semi-concealed Type

Unit specifications (D)

MODEL No.	Indoor Unit		SPW-X363GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	10.6 36,000	11.4 39,000
Air circulation (Hi / Me / Lo)		m^3/h	1,920 / 1,680 / 1,320	
Moisture removal (High)		Liters/h	4.7	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.92 - 0.92 - 0.93	0.65 - 0.67 - 0.68
Power input		W	200 - 210 - 220	140 - 150 - 160
Power factor		%	99 - 99 - 99	98 - 97 - 98
Fan motor locked rotor amperes		A	2 - 2 - 2	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	43 / 40 / 36	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)	
	Wide tube	mm (in.)	19.05 (3 / 4)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	358 (14 - 3 / 32)	440 (17 - 3 / 8)
	Width	mm (in.)	1,150 (45 - 1 / 4)	1,278 (50 - 3 / 8)
	Depth	mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
Net weight		kg (lbs.)	38 (84)	
Shipping weight		kg (lbs.)	62 (137)	
Shipping volume		m^3 (cu. ft)	0.556 (19.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

2. 4-Way Air Discharge Semi-concealed Type

Unit specifications (E)

MODEL No.	Indoor Unit		SPW-X483GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	14.0 47,800	16.0 54,600
Air circulation (Hi / Me / Lo)		m^3/h	1,920 / 1,680 / 1,320	
Moisture removal (High)		Liters/h	7.4	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.92 - 0.92 - 0.93	0.65 - 0.67 - 0.68
Power input		W	200 - 210 - 220	140 - 150 - 160
Power factor		%	99 - 99 - 99	98 - 97 - 98
Fan motor locked rotor amperes		A	2 - 2 - 2	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	43 / 40 / 36	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)	
	Wide tube	mm (in.)	19.05 (3 / 4)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	358 (14 - 3 / 32)	440 (17 - 3 / 8)
	Width	mm (in.)	1,150 (45 - 1 / 4)	1,278 (50 - 3 / 8)
	Depth	mm (in.)	860 (33 - 7 / 8)	988 (38 - 7 / 8)
Net weight		kg (lbs.)	38 (84)	
Shipping weight		kg (lbs.)	62 (137)	
Shipping volume		m^3 (cu. ft)	0.556 (19.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

1

2-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-X123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Turbo (1 … ø 490)
Fan motor			
Model…Nominal output		W	SFG6X-41A5P … 40 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 442
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 114.0 ORG – YEL : 66.4 WHT – VLT : 23.9 WHT – PNK : 77.4 VLT – ORG : 12.4 YEL – BLK : 82.1
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ±15 °C
Run capacitor		VAC, μF	440 V , 3.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS582E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2…1.7
Face area		m^2	0.295
Panel			
Model No.			PNR-X253GHA
Dew proof heater			240 V, 26 W
Auto louver motor			M2LB24ZA12
Auto louver motor…Rated		V, W, rpm.	240 VAC, 3W, 2.5 rpm
Coil resistance (at 25 °C)		Ω	15,620 Ω ± 15 %
Drain Pump			WP20SL - 21
Rated		V, W	AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

2. 4-Way Air Discharge Semi-concealed Type

Indoor unit (B)

MODEL No.			SPW-X183GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Turbo (1 … ø 490)
Fan motor			
Model…Nominal output		W	SFG6X-41A5P … 40 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 442
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 114.0 ORG – YEL : 66.4 WHT – VLT : 23.9 WHT – PNK : 77.4 VLT – ORG : 12.4 YEL – BLK : 82.1
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ±15 °C
Run capacitor		VAC, μF	440 V , 3.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS582E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2…1.7
Face area		m^2	0.295
Panel			
Model No.			PNR-X253GHA
Dew proof heater			240 V, 26 W
Auto louver motor			M2LB24ZA12
Auto louver motor…Rated		V, W, rpm.	240 VAC, 3W, 2.5 rpm
Coil resistance (at 25 °C)		Ω	15,620 Ω ± 15 %
Drain Pump			WP20SL - 21
Rated		V, W	AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

2. 4-Way Air Discharge Semi-concealed Type

Indoor unit (C)

MODEL No.			SPW-X253GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Turbo (1 … ø 490)
Fan motor			
Model…Nominal output		W	SFG6X-41A5P … 40 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 470
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 114.0 ORG – YEL : 66.4 WHT – VLT : 23.9 WHT – PNK : 77.4 VLT – ORG : 12.4 YEL – BLK : 82.1
Safety device			
Operating temperature	Open °C		130 ± 8°C
	Close °C		79 ± 15°C
Run capacitor		VAC, μF	440 V , 4 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS582E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46, YEL – GRY : 46 RED – GRY : 46, BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.295
Panel			
Model No.			PNR-X253GHA
Dew proof heater			240 V, 26 W
Auto louver motor			M2LB24ZA12
Auto louver motor…Rated		V, W, rpm.	240 VAC, 3W, 2.5 rpm
Coil resistance (at 25 °C)		Ω	15,620 Ω ± 15 %
Drain Pump			WP20SL - 21
Rated		V, W	AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

2. 4-Way Air Discharge Semi-concealed Type

Indoor unit (D)

MODEL No.			SPW-X363GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Turbo (1 … ø 490)
Fan motor			
Model…Nominal output		W	SFG6X-61A3P…60 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 530
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 71.1 ORG – YEL : 22.7 WHT – VLT : 8.7 VLT – PNK : 43.2 VLT – ORG : 13.3 YEL – BLK : 126.7
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ±15 °C
Run capacitor		VAC, μF	440 V , 6 μF
Electronic refrigerating control valve			
Solenoid control model			EKV-MOZS584E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV-30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2…1.7
Face area		m^2	0.479
Panel			
Model No.			PNR-X483GHA
Dew proof heater			240 V, 31 W
Auto louver motor			M2LB24ZA12
Auto louver motor…Rated		V, W, rpm.	240 VAC, 3W, 2.5 rpm
Coil resistance (at 25 °C)		Ω	15,620 Ω ± 15 %
Drain Pump			WP20SL - 21
Rated		V, W	AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

2. 4-Way Air Discharge Semi-concealed Type

Indoor unit (E)

MODEL No.			SPW-X483GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Turbo (1 … ø 490)
Fan motor			
Model…Nominal output		W	SFG6X-61A3P…60 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 530
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 71.1 ORG – YEL : 22.7 WHT – VLT : 8.7 VLT – PNK : 43.2 VLT – ORG : 13.3 YEL – BLK : 126.7
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ±15 °C
Run capacitor		VAC, μF	440 V , 6 μF
Electronic refrigerating control valve			
Solenoid control model			EKV-MOZS584E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV-30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2…1.7
Face area		m^2	0.479
Panel			
Model No.			PNR-X483GHA
Dew proof heater			240 V, 31 W
Auto louver motor			M2LB24ZA12
Auto louver motor…Rated		V, W, rpm.	240 VAC, 3W, 2.5 rpm
Coil resistance (at 25 °C)		Ω	15,620 Ω ± 15 %
Drain Pump			WP20SL - 21
Rated		V, W	AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

2-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-X123 ~ 483GH56
Power Transformer			ATR-II215TA
Rated			
	Primary	V, Hz	AC 230 V, 50 Hz
	Secondary		10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT – WHT : 84 , BRN – BRN : 0.7 RED – RED : 2.7
Thermal cut off temperature		℃	145
Thermistor (Coil sensor)			PB3M-41E-S4 , PBC-41E-S25 , PBC-41E-S26 , PBC-41E-S36
Coil resistance		KΩ	-10˚C : 23.7 ±5% , 20˚C : 6.5 ±5% -5˚C : 18.8 ±5% , 30˚C : 4.4 ±5% 0˚C : 15.0 ±5% , 40˚C : 3.1 ±5% 5˚C : 12.1 ±5% , 45˚C : 2.6 ±5% 10˚C : 9.7 ±5%
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12 (SPW-X123 ~ 253GH56) HKV-30D16 (SPW-X363 · 483GH56)
Solenoid coil			DKV-MOZS582E0 (SPW-X123 ~ 253GH56) EKV-MOZS584E0 (SPW-X363 · 483GH56)
Drain pump			WP20SL-21
Rated			AC 230 V, 14.7 W
Float switch			FS-0218-103 (SPW-X123 · 183GH56) FS-3502-204 (SPW-X253 ~ 483GH56)
Rated (Contact rated)			AC 230 V, 50 W

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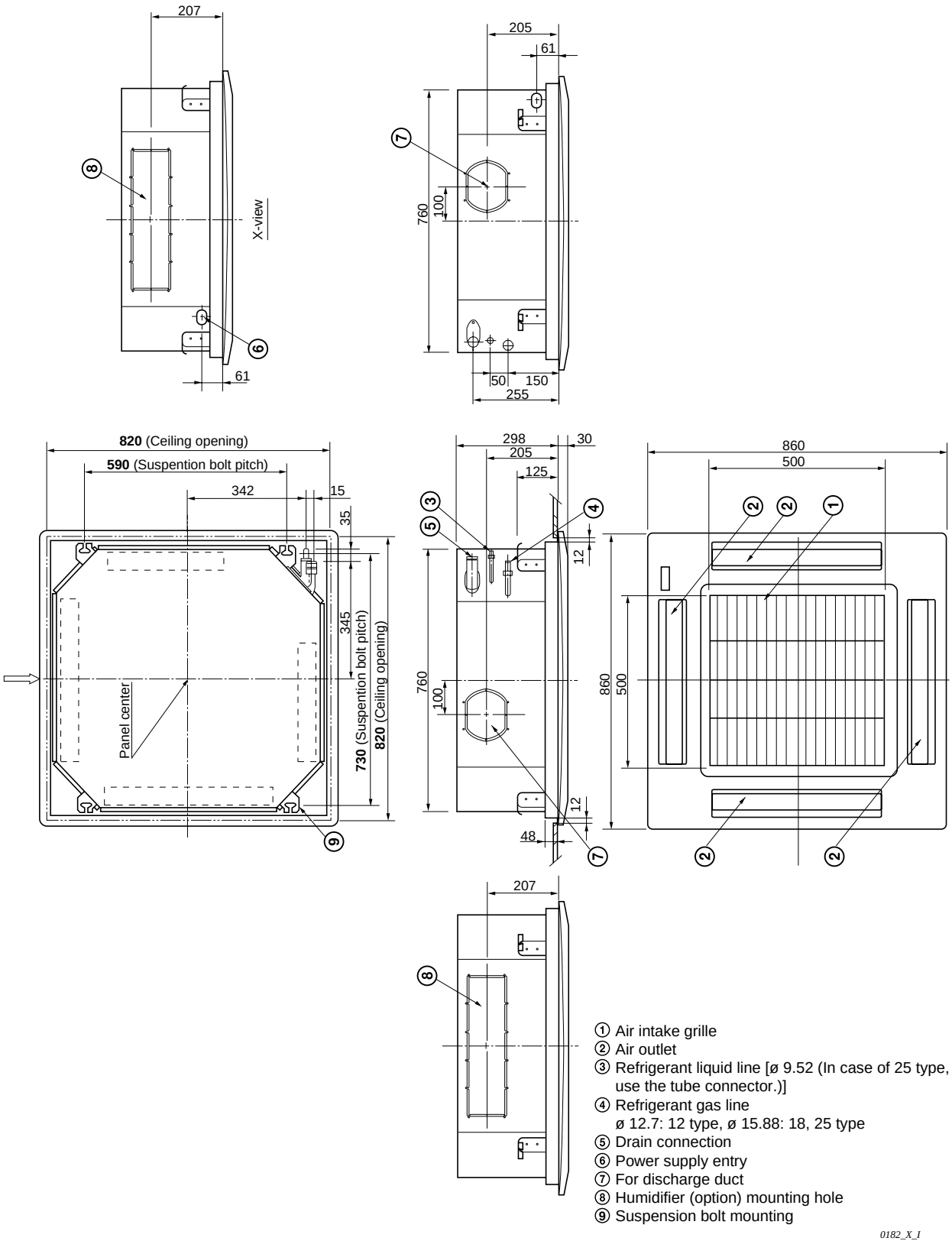
2-4. Dimensional data

Indoor unit : 12, 18, 25 Type



① Air intake grille
② Air outlet
③ Refrigerant liquid line [ø 9.52 (In case of 25 type, use the tube connector.)]
④ Refrigerant gas line
ø 12.7: 12 type, ø 15.88: 18, 25 type
⑤ Drain connection
⑥ Power supply entry
⑦ For discharge duct
⑧ Humidifier (option) mounting hole
⑨ Suspension bolt mounting

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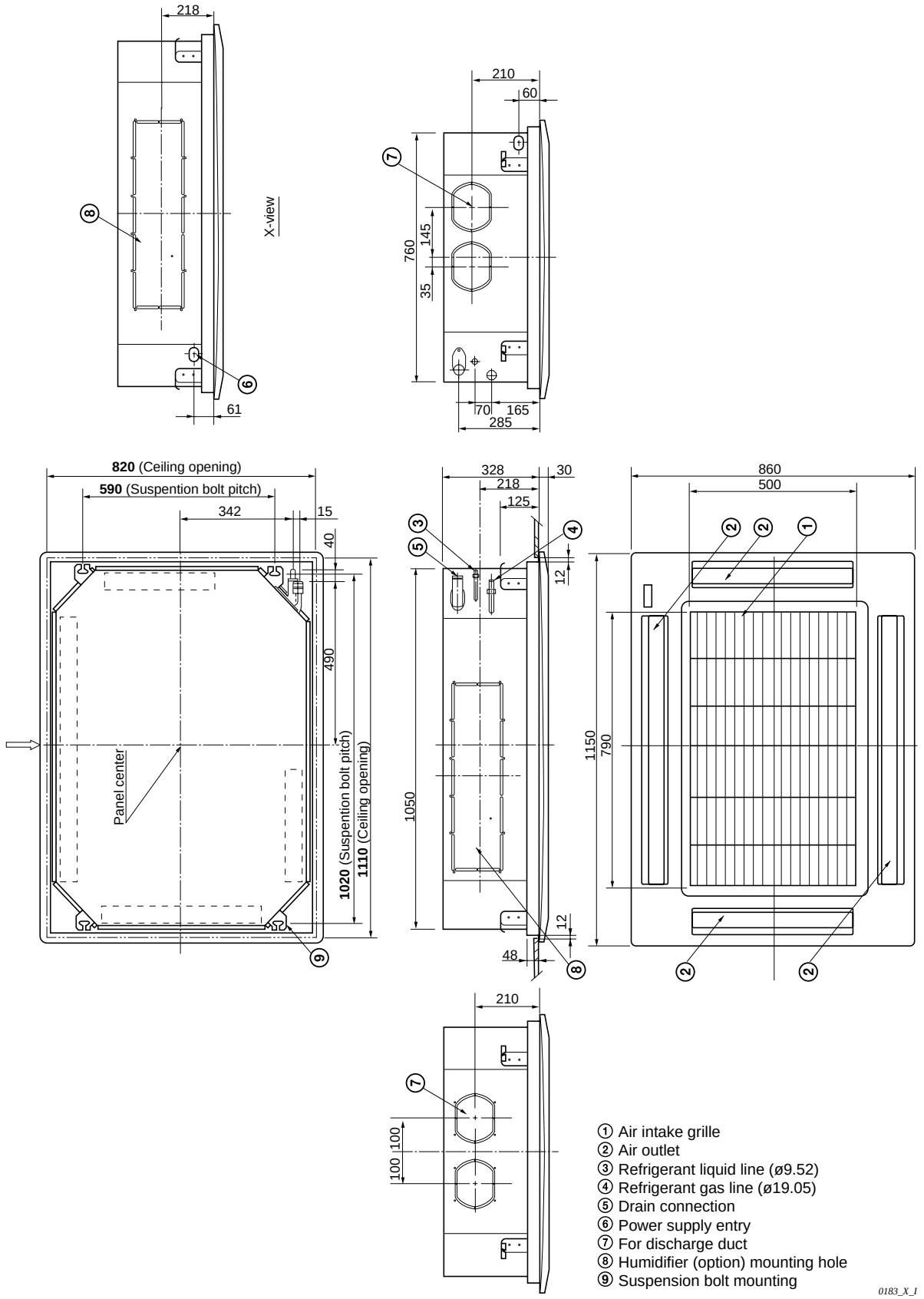
2. 4-Way Air Discharge Semi-concealed Type

Indoor unit : 36, 48 Type



① Air intake grille
② Air outlet
③ Refrigerant liquid line (ø9.52)
④ Refrigerant gas line (ø19.05)
⑤ Drain connection
⑥ Power supply entry
⑦ For discharge duct
⑧ Humidifier (option) mounting hole
⑨ Suspension bolt mounting

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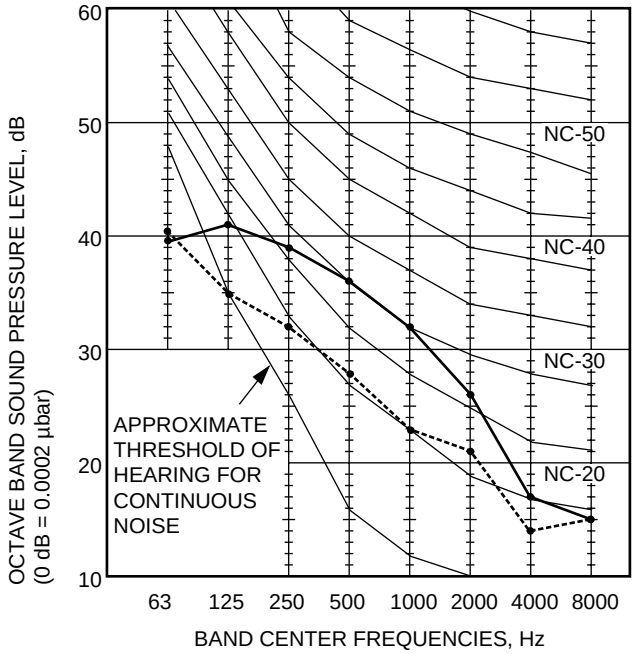
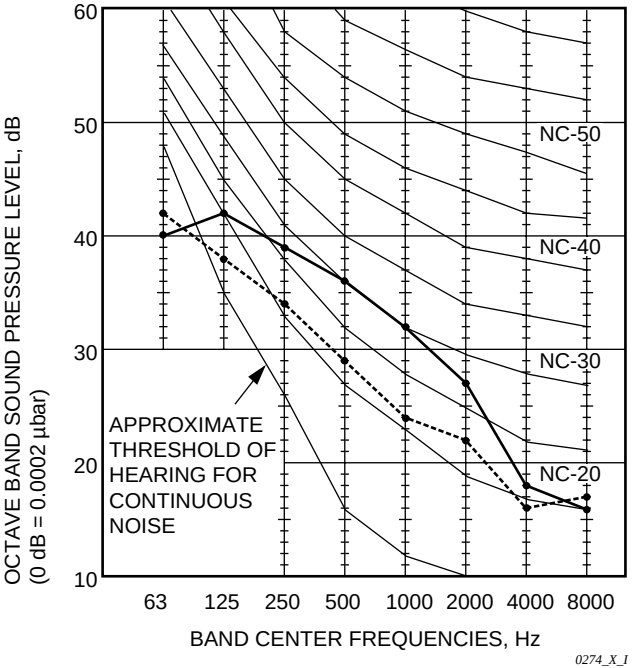
2-5. Noise criterion curves

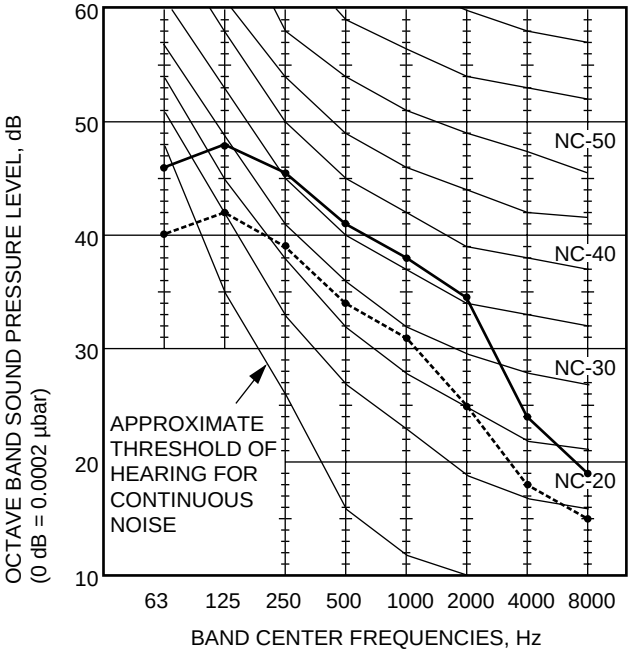
MODEL	: SPW-X123GH56 , X183GH56
SOUND LEVEL	: HIGH 37 dB(A), NC 30
	LOW 30 dB(A), NC 22
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-X253GH56
SOUND LEVEL	: HIGH 37 dB(A), NC 30
	LOW 31 dB(A), NC 22
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-X363GH56 , X483GH56
SOUND LEVEL	: HIGH 43 dB(A), NC 36
	LOW 36 dB(A), NC 24
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz

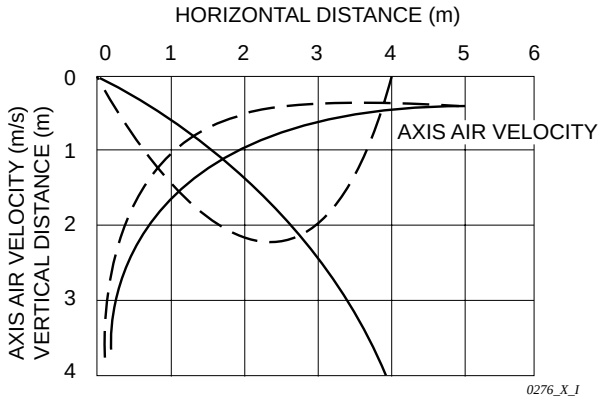


REMARKS:
1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

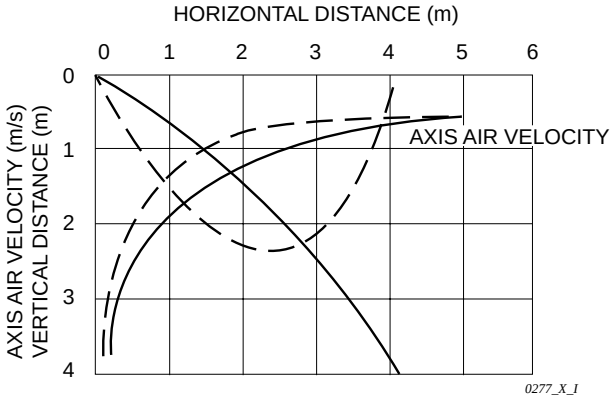
NOTE To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

2-6. Air throw distance chart

Model: 12, 18, 25 Type



Model: 36, 48 Type



——————— : LOUVER ANGLE 20˚ in Cooling mode
— — — — — : LOUVER ANGLE 60˚ in Heating mode

Condition Fan Speed : Hi
Room air temp. : 27˚C DB in cooling mode
20˚C DB in heating mode

3. 2-Way Air Discharge Semi-concealed Type

3-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-S93GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	2.8 9,600	3.2 11,000
Air circulation (Hi / Me / Lo)		m^3/h	540 / 485 / 410	
Moisture removal (High)		Liters/h	1.1	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.33 - 0.34 - 0.35	0.24 - 0.25 - 0.26
Power input		W	70 - 75 - 80	50 - 55 - 60
Power factor		%	96 - 96 - 95	95 - 96 - 96
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	32 / 30 / 25	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)	
	Wide tube	mm (in.)	12.7 (1 / 2)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	398 (15 - 5 / 8)	519 (20 - 3 / 8)
	Width	mm (in.)	1,110 (43 - 3 / 4)	1,218 (48)
	Depth	mm (in.)	680 (26 - 3 / 4)	788 (31)
Net weight		kg (lbs.)	40 (88)	
Shipping weight		kg (lbs.)	61 (135)	
Shipping volume		m^3 (cu. ft)	0.498 (17.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

3. 2-Way Air Discharge Semi-concealed Type

Unit specifications (B)

MODEL No.	Indoor Unit		SPW-S123GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	3.6 12,000	4.2 14,000
Air circulation (Hi / Me / Lo)		m^3/h	570 / 510 / 430	
Moisture removal (High)		Liters/h	1.5	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.36 - 0.37 - 0.38	0.27 - 0.28 - 0.29
Power input		W	75 - 80 - 85	55 - 60 - 65
Power factor		%	95 - 94 - 93	93 - 93 - 93
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	33 / 30 / 26	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)	
	Wide tube	mm (in.)	12.7 (1 / 2)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	398 (15 - 5 / 8)	519 (20 - 3 / 8)
	Width	mm (in.)	1,110 (43 - 3 / 4)	1,218 (48)
	Depth	mm (in.)	680 (26 - 3 / 4)	788 (31)
Net weight		kg (lbs.)	40 (88)	
Shipping weight		kg (lbs.)	61 (135)	
Shipping volume		m^3 (cu. ft)	0.498 (17.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

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Unit specifications (C)

MODEL No.	Indoor Unit		SPW-S183GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	5.6 19,000	6.3 21,000
Air circulation (Hi / Me / Lo)		m^3/h	960 / 860 / 720	
Moisture removal (High)		Liters/h	3.0	—
ELECTRICAL RATINGS				
Voltage rating		V	220 / 230 / 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.60 - 0.61 - 0.62	0.50 - 0.51 - 0.53
Power input		W	129 - 137 - 146	105 - 113 - 122
Power factor		%	98 - 98 - 98	95 - 96 - 96
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	34 / 31 / 27	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)	
	Wide tube	mm (in.)	15.88 (1 / 2)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	398 (15 - 5 / 8)	519 (20 - 3 / 8)
	Width	mm (in.)	1,390 (54 - 3 / 4)	1,498 (59)
	Depth	mm (in.)	680 (26 - 3 / 4)	788 (31)
Net weight		kg (lbs.)	50 (110)	
Shipping weight		kg (lbs.)	76 (168)	
Shipping volume		m^3 (cu. ft)	0.613 (21.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

3. 2-Way Air Discharge Semi-concealed Type

Unit specifications (D)

MODEL No.	Indoor Unit		SPW-S253GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	7.3 25,000	8.0 27,000
Air circulation (Hi / Me / Lo)		m^3/h	1,140 / 1,030 / 860	
Moisture removal (High)		Liters/h	4.2	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.65 - 0.66 - 0.67	0.55 - 0.56 - 0.57
Power input		W	141 - 150 - 158	117 - 126 - 134
Power factor		%	99 - 99 - 98	97 - 98 - 98
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	37 / 35 / 30	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in.)	9.52 (3 / 8)*	
	Wide tube	mm (in.)	15.88 (1 / 2)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / Mounting plates	
DIMENSIONS & WEIGHT (include ceiling panel)			Unit dimensions	Package dimensions
Dimensions	Height	mm (in.)	398 (15 - 5 / 8)	519 (20 - 3 / 8)
	Width	mm (in.)	1,390 (54 - 3 / 4)	1,498 (59)
	Depth	mm (in.)	680 (26 - 3 / 4)	788 (31)
Net weight		kg (lbs.)	50 (110)	
Shipping weight		kg (lbs.)	76 (168)	
Shipping volume		m^3 (cu. ft)	0.613 (21.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Use the “Tube connector” (accessory part with unit).

3-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-S93GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 190)
Fan motor			
Model…Nominal output		W	UF4X-31B3P ... 30 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4P ... 540
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 139.3 ORG – YEL : 25.59 WHT – VLT : 19.77 YEL – BLK : 43.02 VLT – ORG : 38.20 BLK – PNK : 84.32
Safety device			
Operating temperature	Open °C		130 ± 5°C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, µF		440 V, 1.0 µF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46, BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2…1.7
Face area		m^2	0.265
Panel			
Model No.			PNR-S123GHA
Auto louver motor			MT8-3C
Auto louver motor…Rated	V, W, rpm.		200 ~ 240 VAC, 3 W, 2.5 rpm
Coil resistance (at 25 °C)	Ω		16,430 Ω ± 8 %
Drain Pump			WP20SL-18
Rated	V, W		AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

Indoor unit (B)

MODEL No.			SPW-S123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1…ø 190)
Fan motor			
Model…Nominal output		W	UF4X-31B3P ... 30 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4P ... 690
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 139.3 ORG – YEL : 25.59 WHT – VLT : 19.77 YEL – BLK : 43.02 VLT – ORG : 38.20 BLK – PNK : 84.32
Safety device			
Operating temperature	Open	°C	130 ± 5 °C
	Close	°C	Differential 15 deg. (min.)
Run capacitor		VAC, μF	440 V, 1.2 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.265
Panel			
Model No.			PNR-S123GHA
Auto louver motor			MT8-3C
Auto louver motor…Rated		V, W, rpm.	200 ~ 240 VAC, 3 W, 2.5 rpm
Coil resistance (at 25 °C)		Ω	16,430 Ω ± 8 %
Drain Pump			WP20SL-18
Rated		V, W	AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

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Indoor unit (C)

MODEL No.			SPW-S183GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 ... ø190)
Fan motor			
Model…Nominal output		W	KFG4X-51E3P ... 50 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4P ... 568
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 68.62 ORG – YEL : 10.37 WHT – VLT : 12.46 YEL – BLK : 24.04 VLT – ORG : 16.31 BLK – PNK : 16.26
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 1.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2…1.7
Face area		m^2	0.382
Panel			
Model No.			PNR-S253GHA
Auto louver motor			MT8-3C
Auto louver motor…Rated	V, W, rpm.		200 ~ 240 VAC, 3 W, 2.5 rpm
Coil resistance (at 25 °C)	Ω		16,430 Ω ± 8 %
Drain Pump			WP20SL-18
Rated	V, W		AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

Indoor unit (D)

MODEL No.			SPW-S253GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 … ø 190)
Fan motor			
Model…Nominal output		W	KFG4X-51E3P ... 50 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4P ... 827
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 68.62 ORG – YEL : 10.37 WHT – VLT : 12.46 YEL – BLK : 24.04 VLT – ORG : 16.31 BLK – PNK : 16.26
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 2.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.382
Panel			
Model No.			PNR-S253GHA
Auto louver motor			MT8-3C
Auto louver motor…Rated	V, W, rpm.		200 ~ 240 VAC, 3 W, 2.5 rpm
Coil resistance (at 25 °C)	Ω		16,430 Ω ± 8 %
Drain Pump			WP20SL-18
Rated	V, W		AC230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

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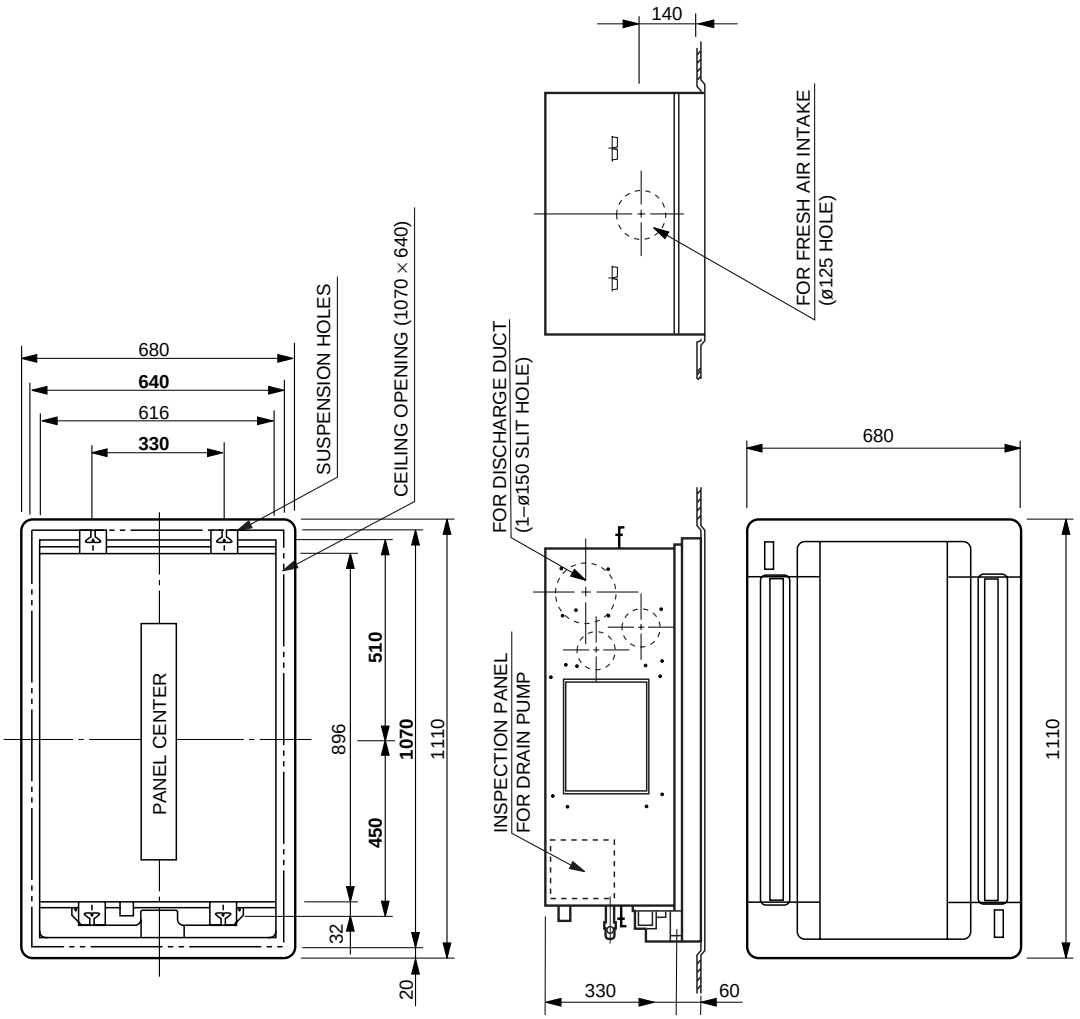
3-3. Other component specifications

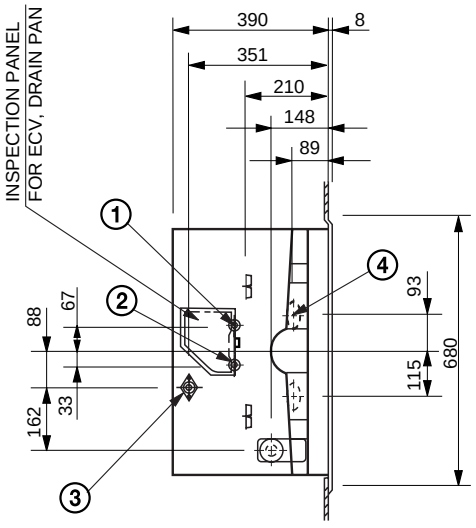
MODEL NO.	Indoor Unit		SPW-S93 ~ 253GH56
Power Transformer			ATR-II215TB
Rated			
	Primary	V, Hz	AC 230 V, 50 Hz
	Secondary		10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		℃	145
Thermistor (Coil sensor)			PBC-41E-S14 , PBC-41E-S25
Coil resistance		KΩ	-10˚C : 23.7 ±5 % , 20˚C : 6.5 ±5 % -5˚C : 18.8 ±5 % , 30˚C : 4.4 ±5 % 0˚C : 15.0 ±5 % , 40˚C : 3.1 ±5 % 5˚C : 12.1 ±5 % , 45˚C : 2.6 ±5 % 10˚C : 9.7 ±5 %
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12
Solenoid coil			DKV-MOZS550E0
Drain pump			WP20SL-18
Rated			AC 230 V, 14.7 W
Float switch			FS-3502-201
Rated (Contact rated)			AC 230 V, 50 W

3-4. Dimensional data

Indoor unit : 9, 12 Type



① Refrigerant liquid line (ø 9.52)
② Refrigerant gas line (ø 12.7)
③ Drain connection (25 A. O.D.32 mm)
④ Power supply entry



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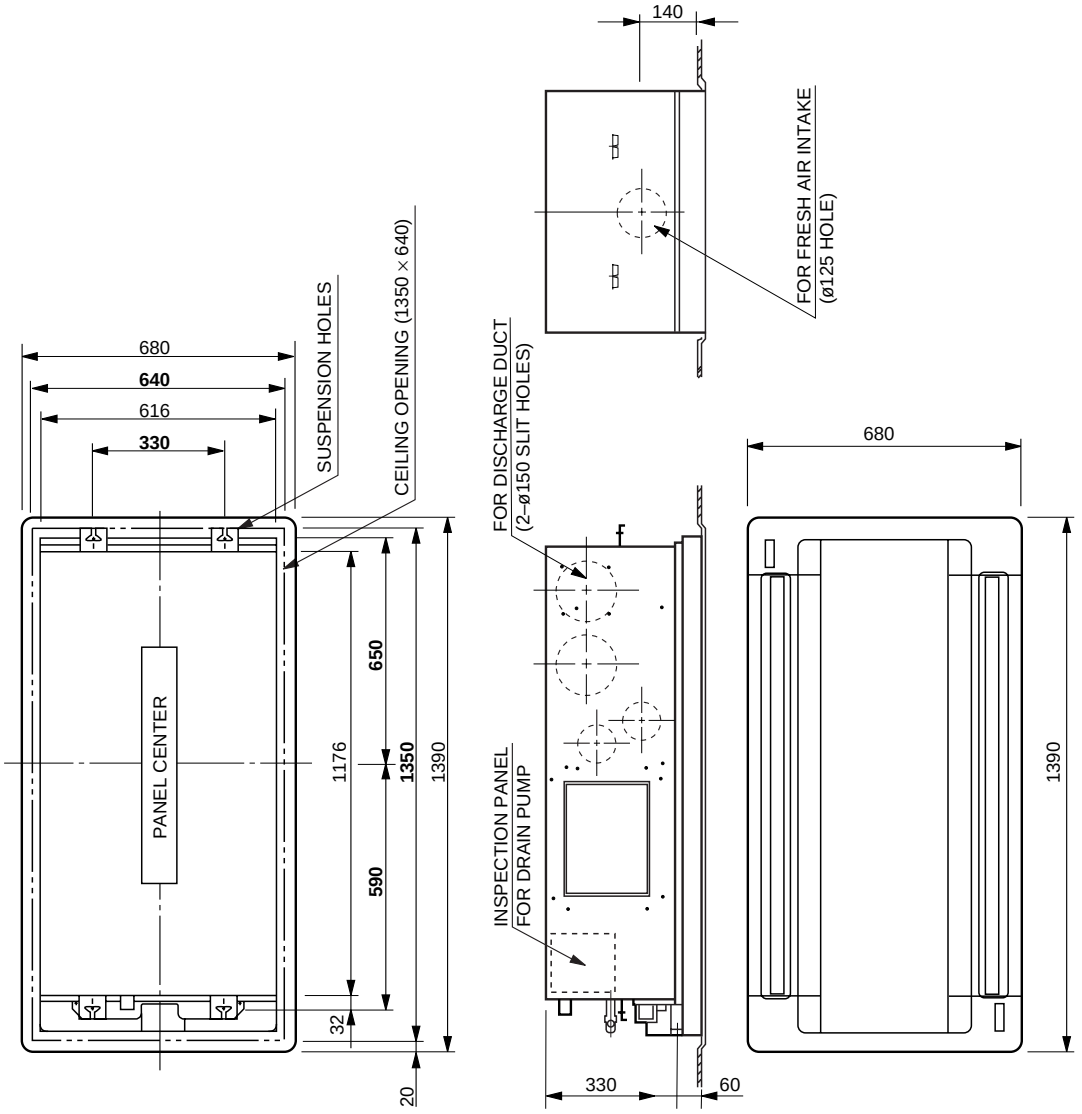
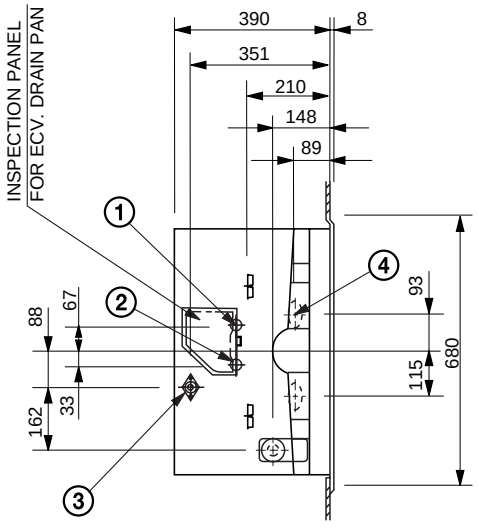
1

Indoor unit : 18, 25 Type



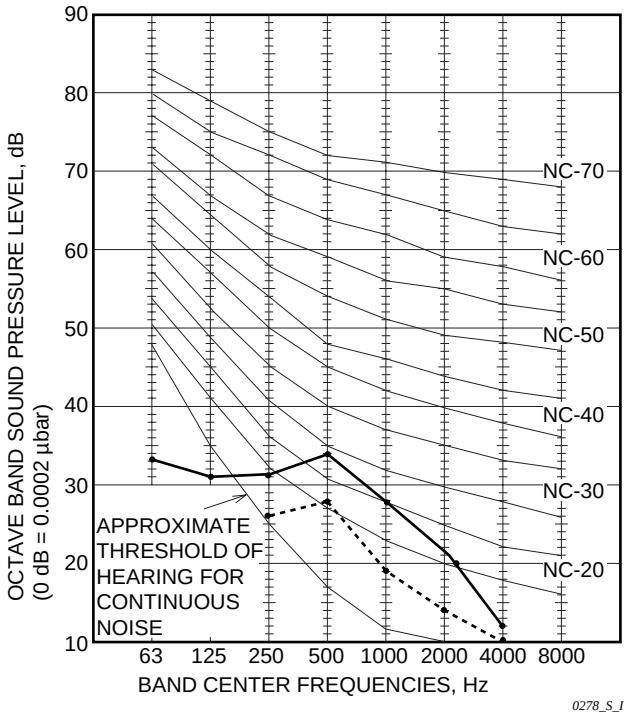
① Refrigerant liquid line (ø 9.52)
(In case of 25 type, use the tube connector.)
② Refrigerant gas line (ø 15.88)
③ Drain connection (25 A. O.D.32 mm)
④ Power supply entry



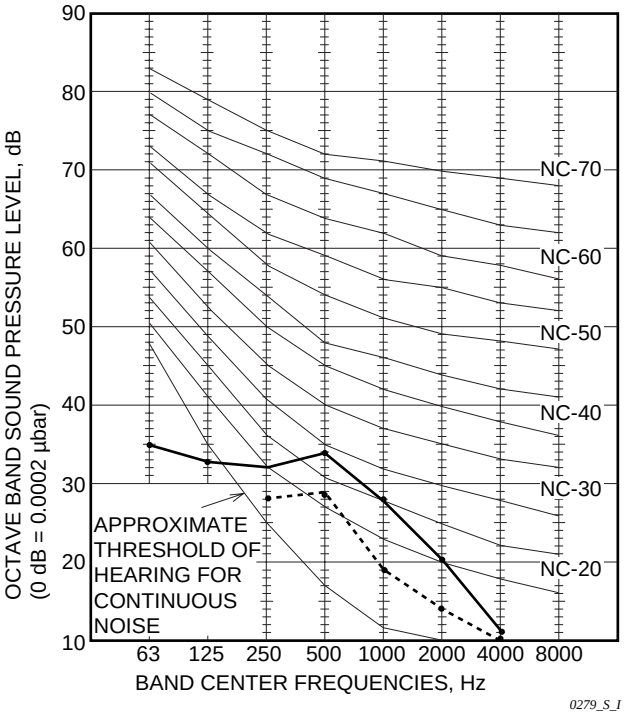
0207_S_I

3-5. Noise criterion curves

MODEL	: SPW-S93GH56
SOUND LEVEL	: HIGH 32 dB(A), NC 29
	LOW 25 dB(A), NC 21
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-S123GH56
SOUND LEVEL	: HIGH 33 dB(A), NC 29
	LOW 26 dB(A), NC 22
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



REMARKS :

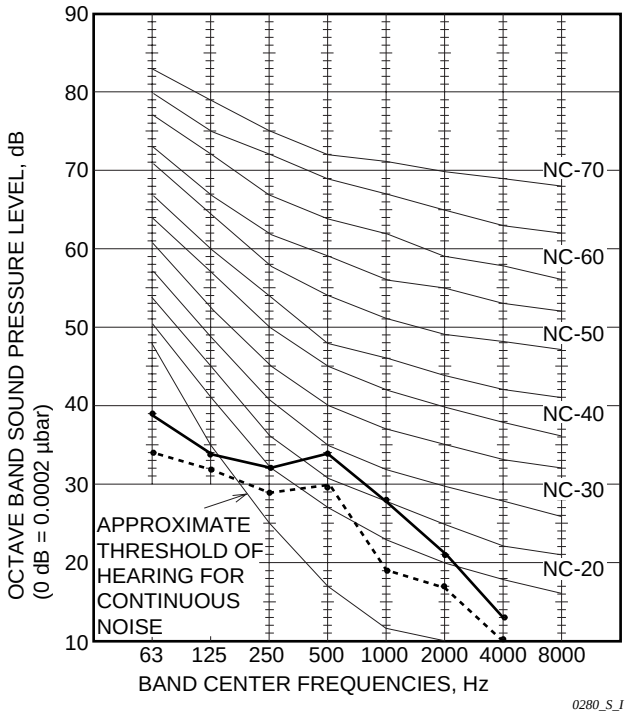
1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

NOTE To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

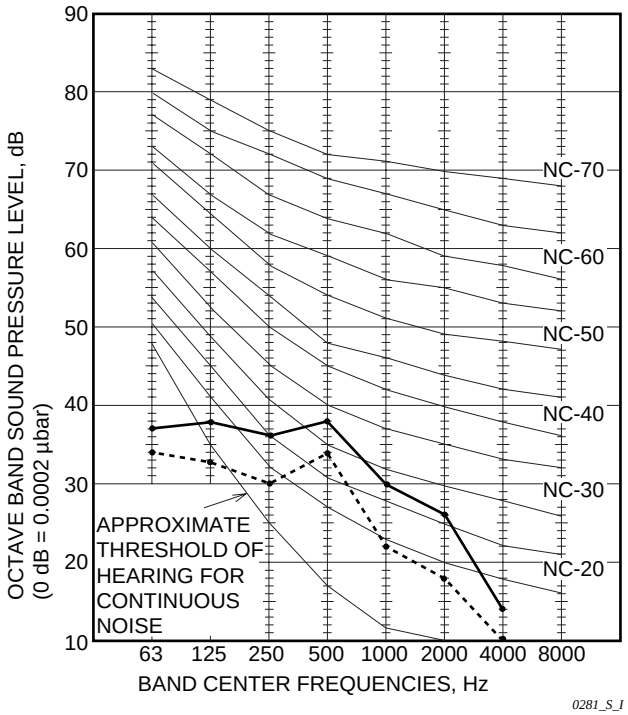
3. 2-Way Air Discharge Semi-concealed Type

1

MODEL	: SPW-S183GH56
SOUND LEVEL	: HIGH 34 dB(A), NC 29
	LOW 27 dB(A), NC 24
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-S253GH56
SOUND LEVEL	: HIGH 37 dB(A), NC 33
	LOW 30 dB(A), NC 29
CONDITION	: Distance 1 m, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



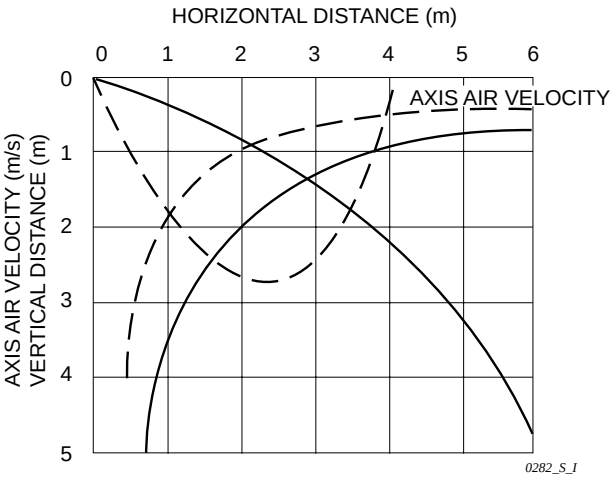
REMARKS :

1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

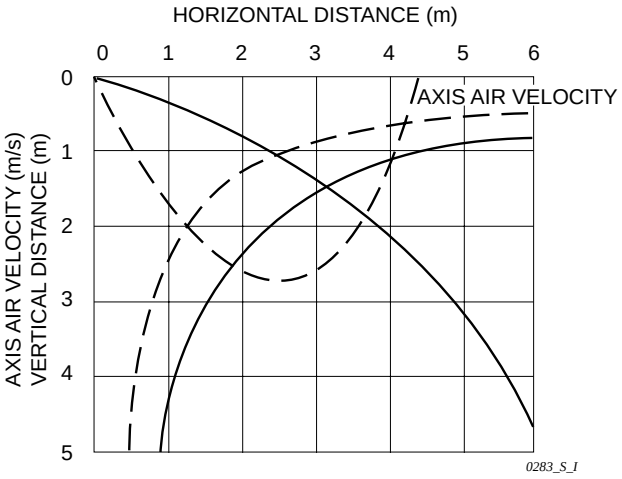
NOTE To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

3-6. Air throw distance chart

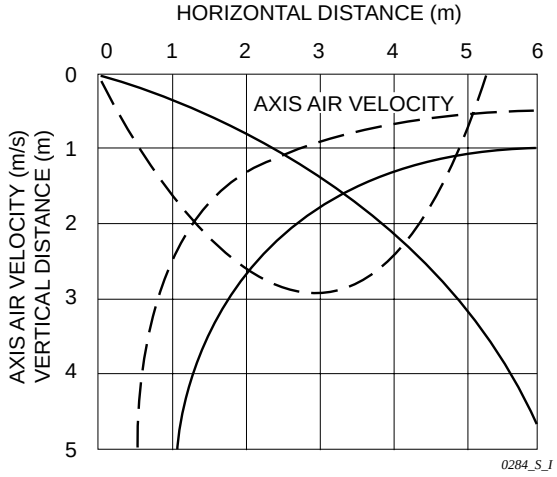
Model: 9, 12 Type



Model: 18 Type



Model: 25 Type



——————— : LOUVER ANGLE 20˚ in Cooling mode

— — — — — : LOUVER ANGLE 60˚ in Heating mode

Condition Fan Speed : Hi

Room air temp. : 27˚C DB in cooling mode

20˚C DB in heating mode

4. 1-Way Air Discharge Semi-concealed Type

4-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit			SPW-AS93GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	2.8 9,600	3.2 11,000
Air circulation (Hi / Me / Lo)			m^3 / h	480 / 420 / 360	
Moisture removal (High)			Liters / h	1.1	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.36 - 0.37 - 0.38	0.28 - 0.29 - 0.30
Power input			W	65 - 70 - 75	50 - 55 - 60
Power factor			%	82 - 82 - 82	81 - 82 - 83
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	34 / 32 / 30	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in.)	9.52 (3 / 8)	
	Wide tube		mm (in.)	12.7 (1 / 2)	
Drain connection				25 A, OD32 mm	
Drain pump				Max. head 25 cm above drain connection	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)				Unit dimensions	Package dimensions
Dimensions	Height		mm (in.)	370 (14 - 5 / 8)	485 (19 - 1 / 8)
	Width		mm (in.)	810 (31 - 7 / 8)	918 (38 - 1 / 8)
	Depth		mm (in.)	620 (24 - 3 / 8)	728 (28 - 5 / 8)
Net weight			kg (lbs.)	28 (62)	
Shipping weight			kg (lbs.)	40 (88)	
Shipping volume			m^3 (cu. ft)	0.324 (11.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

4. 1-Way Air Discharge Semi-concealed Type

Unit specifications (B)

MODEL No.	Indoor Unit			SPW-AS123GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	3.6 12,000	4.2 14,000
Air circulation (Hi / Me / Lo)			m^3 / h	580 / 520 / 450	
Moisture removal (High)			Liters / h	1.5	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.34 - 0.35 - 0.36	0.27 - 0.28 - 0.29
Power input			W	70 - 75 - 80	55 - 60 - 65
Power factor			%	93 - 93 - 93	93 - 93 - 93
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	38 / 35 / 31	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in.)	9.52 (3 / 8)	
	Wide tube		mm (in.)	12.7 (1 / 2)	
Drain connection				25 A, OD32 mm	
Drain pump				Max. head 25 cm above drain connection	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT (include ceiling panel)				Unit dimensions	Package dimensions
Dimensions	Height		mm (in.)	370 (14 - 5 / 8)	485 (19 - 1 / 8)
	Width		mm (in.)	810 (31 - 7 / 8)	918 (38 - 1 / 8)
	Depth		mm (in.)	620 (24 - 3 / 8)	728 (28 - 5 / 8)
Net weight			kg (lb.)	30 (66)	
Shipping weight			kg (lb.)	42 (93)	
Shipping volume			m^3 (cu. ft)	0.324 (11.6)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

4-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-AS93GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 190)
Fan motor			
Model…Nominal output		W	UE6Q-21B3P … 20 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6P … 696
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 290.0 ORG – YEL : 241.2 WHT – VLT : 117.4 WHT – PNK : 45.74 VLT – ORG : 39.32
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 0.6 μF
Electronic refrigerating control valve			
Solenoid control model			LAM-MDI2ST-1
Coil resistance (at 20 °C)		Ω	ORG – GRY : 48 , YEL – GRY : 48 RED – GRY : 48 , BLK – GRY : 48
Solenoid control valve model			LAM-B30YHST1
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 2.0
Face area		m^2	0.144
Panel			
Model No.			PNR-AS123GY
Drain Pump			WP20SL-14
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

Indoor unit (B)

MODEL No.			SPW-AS123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 190)
Fan motor			
Model…Nominal output		W	UE6Q-21B3P … 20 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6P … 771
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 290.0 ORG – YEL : 241.2 WHT – VLT : 117.4 WHT – PNK : 45.74 VLT – ORG : 39.32
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 1.0 μF
Electronic refrigerating control valve			
Solenoid control model			LAM-MDI2ST-1
Coil resistance (at 20 °C)		Ω	ORG – GRY : 48 , YEL – GRY : 48 RED – GRY : 48 , BLK – GRY : 48
Solenoid control valve model			LAM-B30YHST1
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.144
Panel			
Model No.			PNR-AS123GY
Drain Pump			WP20SL-14
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

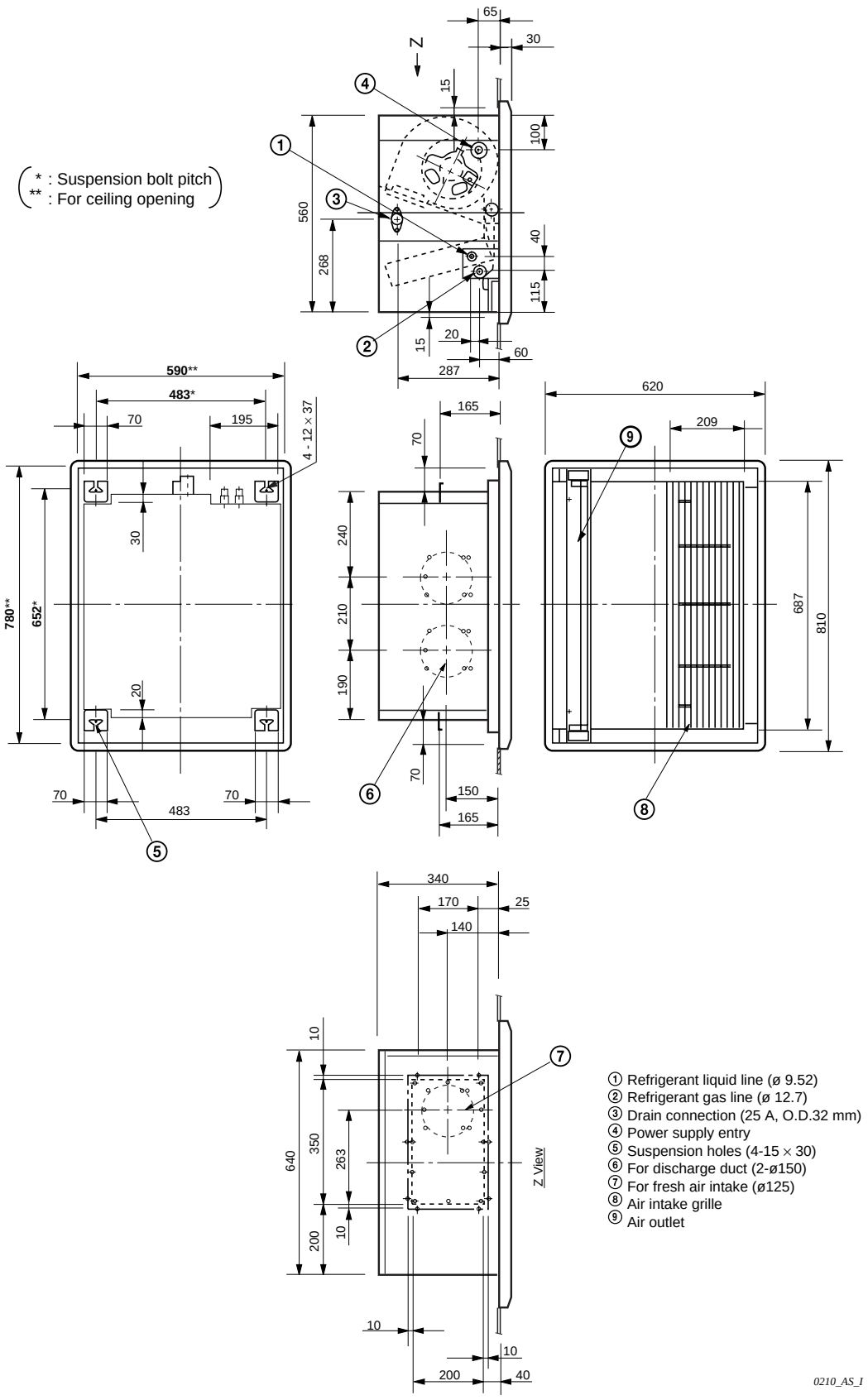
1

4-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-AS93 · 123GH56
Power Transformer			ATR-II215TB
Rated			
	Primary	V, Hz	AC 230 V, 50 Hz
	Secondary		10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		℃	145
Thermistor (Coil sensor)			PBC-41E-S14 , PBC-41E-S25
Coil resistance		KΩ	-10˚C : 23.7 ±5 % , 20˚C : 6.5 ±5 % -5˚C : 18.8 ±5 % , 30˚C : 4.4 ±5 % 0˚C : 15.0 ±5 % , 40˚C : 3.1 ±5 % 5˚C : 12.1 ±5 % , 45˚C : 2.6 ±5 % 10˚C : 9.7 ±5 %
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			LAM-B30YHST1
Solenoid coil			LAM-MDI2ST-1
Drain pump			WP20SL-14
Rated			AC 230 V, 14.7 W
Float switch			FS-0218-102
Rated (Contact rated)			AC 230 V, 50 W

4-4. Dimensional data

Indoor unit : 9, 12 Type

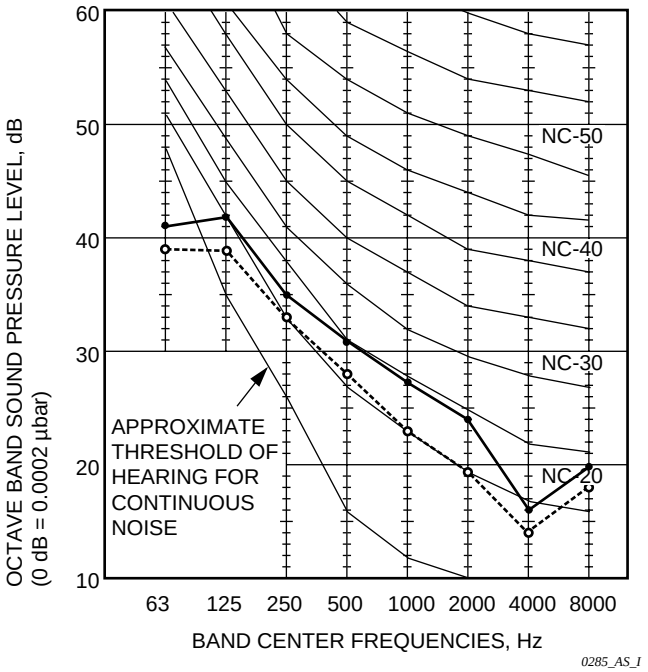


① Refrigerant liquid line (ø 9.52)
② Refrigerant gas line (ø 12.7)
③ Drain connection (25 A, O.D.32 mm)
④ Power supply entry
⑤ Suspension holes (4-15 × 30)
⑥ For discharge duct (2-ø150)
⑦ For fresh air intake (ø125)
⑧ Air intake grille
⑨ Air outlet

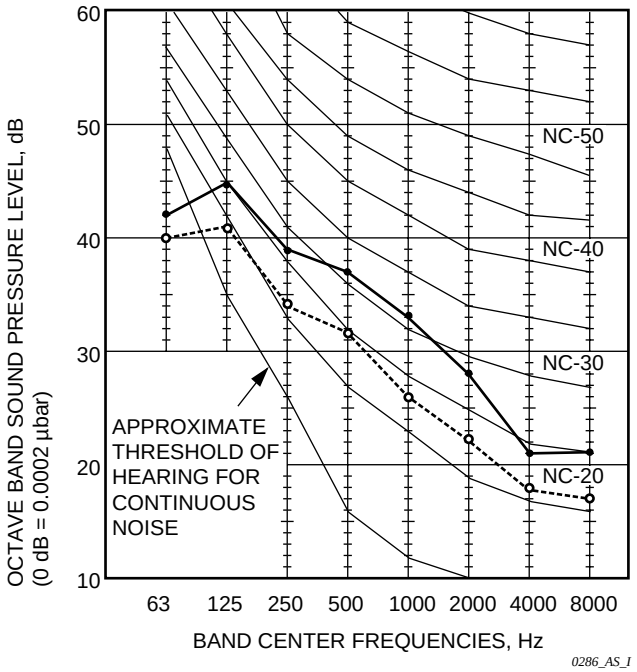
1

4-5. Noise criterion curves

MODEL	: SPW-AS93GH56
SOUND LEVEL	: HIGH 34 dB(A), NC 25
	LOW 30 dB(A), NC 22
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-AS123GH56
SOUND LEVEL	: HIGH 38 dB(A), NC 32
	LOW 31 dB(A), NC 25
CONDITION	: Center, Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz

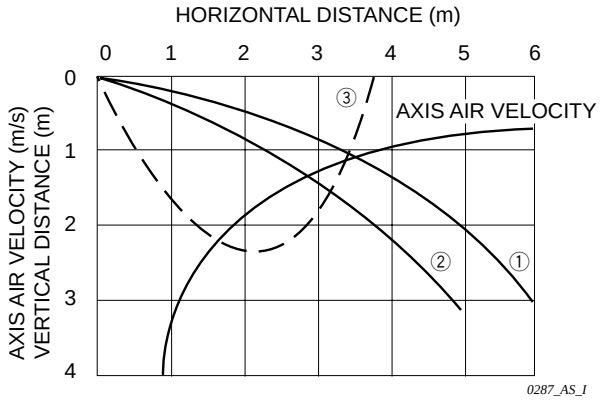


REMARKS :
1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

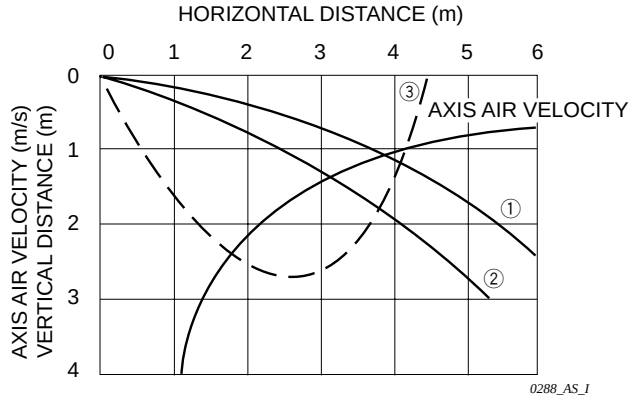
NOTE To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

4-6. Air throw distance chart

Model: 9 Type



Model: 12 Type



①: LOUVER ANGLE 10˚ in cooling mode
②: LOUVER ANGLE 20˚ in cooling mode
③: LOUVER ANGLE 60˚ in heating mode

Condition Fan Speed : Hi
Room air temp. : 27 ˚C DB in cooling mode
20 ˚C DB in heating mode

5. Wall Mounted Type

5-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit			SPW-K93GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	2.8 9,600	3.2 11,000
Air circulation (Hi / Me / Lo)			m^3 / h	450 / 390 / 340	
Moisture removal (High)			Liters / h	1.1	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.22 - 0.22 - 0.23	0.22 - 0.22 - 0.23
Power input			W	47 - 50 - 54	47 - 50 - 54
Power factor			%	97 - 98 - 98	97 - 98 - 98
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	38 / 33 / 30	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	12.7 (1 / 2)	
Drain connection				20 A, OD26 mm	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / Hanging wall bracket	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions		Height	mm (in)	360 (14 - 1 / 8)	282 (11 - 1 / 8)
		Width	mm (in)	1,000 (39 - 3 / 8)	1,080 (42 - 1 / 2)
		Depth	mm (in)	205 (8 - 1 / 16)	443 (17 - 1 / 2)
Net weight			kg (lb)	15 (33)	
Shipping weight			kg (lb)	19 (42)	
Shipping volume			m^3 (cu. ft)	0.135 (4.8)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

Unit specifications (B)

MODEL No.	Indoor Unit			SPW-K123GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
	Capacity		kW BTU / h	3.6 12,000	4.2 14,000
	Air circulation (Hi / Me / Lo)		m^3 / h	630 / 490 / 430	
	Moisture removal (High)		Liters / h	1.5	—
ELECTRICAL RATINGS					
	Voltage rating		V	220 - 230 - 240	
	Available voltage range		V	198 – 264	
	Running amperes		A	0.24 - 0.24 - 0.25	0.24 - 0.24 - 0.25
	Power input		W	51 - 54 - 59	51 - 54 - 59
	Power factor		%	97 - 98 - 98	97 - 98 - 98
	Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES					
	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Timer			ON / OFF Timer (Max. 72 hr)	
	Fan speeds (Indoor unit)			3 and Automatic control	
	Air filter			Washable, easy access	
	Refrigerant control			Electronic refrigerant control valve	
	Operation sound (Hi / Me / Lo)		dB-A	40 / 37 / 34	
	Refrigerant tubing connections			Flare type	
	Refrigerant tube diameter	Narrow tube	mm (in)	9.52 (3 / 8)	
		Wide tube	mm (in)	12.7 (1 / 2)	
	Drain connection			20 A, OD26 mm	
	Remote Controller			Optional (RCS-SH80TG)	
	Refrigerant tubing kit / Accessories			Optional / Hanging wall bracket	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
	Dimensions	Height	mm (in)	360 (14 - 1 / 8)	282 (11 - 1/ 8)
		Width	mm (in)	1,000 (39 - 3 / 8)	1,080 (42 - 1 / 2)
		Depth	mm (in)	205 (8 - 1 /16)	443 (17 - 1 / 2)
	Net weight		kg (lb)	15 (33)	
	Shipping weight		kg (lb)	19 (42)	
	Shipping volume		m^3 (cu. ft)	0.135 (4.8)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

Unit specifications (C)

MODEL No.	Indoor Unit			SPW-K183GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	5.0 17,000	6.0 20,000
Air circulation (Hi / Me / Lo)			m^3 / h	800 / 660 / 520	
Moisture removal (High)			Liters / h	2.7	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.35 - 0.35 - 0.36	0.35 - 0.35 - 0.36
Power input			W	75 - 80 - 85	75 - 80 - 85
Power factor			%	97 - 97 - 98	97 - 97 - 98
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	46 / 42 / 37	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	15.88 (5 / 8)	
Drain connection				20 A, OD26 mm	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / Hanging wall bracket	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions		Height	mm (in)	360 (14 - 1 / 8)	282 (11 - 1 / 8)
		Width	mm (in)	1,000 (39 - 3 / 8)	1,080 (42 - 1 / 2)
		Depth	mm (in)	205 (8 - 1 / 16)	443 (17 - 1 / 2)
Net weight			kg (lb)	15 (33)	
Shipping weight			kg (lb)	19 (42)	
Shipping volume			m^3 (cu. ft)	0.135 (4.8)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

5-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-K93GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Cross-flow (1 … ø 81 / L 610)
Fan motor			
Model…Nominal output		W	UF2Q-21C5P … 20 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	2 … 1,160
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 208.5 ORG – YEL : 72.32 WHT – VLT : 84.20 YEL – PNK : 44.89 VLT – ORG : 17.59
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 0.8 μF
Electronic refrigerating control valve			
Elec. magnetic coil model			LAM-MD12ST-1
Coil resistance (at 20 °C)		Ω	ORG – RED : 48 , YEL – BRN : 48 RED – WHT : 48 , BRN – BLU : 48
Solenoid control valve model			LAM-B30YHST1
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.172
Auto louver motor			M2LJ24ZE31
Rated			AC 230 V-50 Hz
No. of pole…r.p.m.		rpm.	8P – 2.5
Nominal output		W	3
Coil resistance (at 25 °C)		Ω	16,450 Ω ± 15 %

Indoor unit (B)

MODEL No.			SPW- K123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Cross-flow (1 … ø 81 / L 610)
Fan motor			
Model…Nominal output		W	UF2Q – 21C5P … 20 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	2 … 1,280
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 208.5 ORG – YEL : 72.32 WHT – VLT : 84.20 YEL – PNK : 44.89 VLT – ORG : 17.59
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, µF		440 V, 1.0 µF
Electronic refrigerating control valve			
Elec. magnetic coil model			LAM-MD12ST-1
Coil resistance (at 20 °C)		Ω	ORG – RED : 48 , YEL – BRN : 48 RED – WHT : 48 , BRN – BLU : 48
Solenoid control valve model			LAM-B30YHST1
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.172
Auto louver motor			M2LJ24ZE31
Rated			AC 230 V – 50 Hz
No. of pole…r.p.m.		rpm.	8P – 2.5
Nominal output		W	3
Coil resistance (at 25 °C)		Ω	16,450 Ω ± 15 %

Indoor unit (C)

MODEL No.			SPW-K183GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Cross-flow (1 … ø 81/L610)
Fan motor			
Model…Nominal output		W	UF2Q-21B3P ... 20 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	2 … 1,810 rpm (at 220 V, 1,750 rpm)
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 137.4 ORG – YEL : 47.60 WHT – VLT : 39.27 YEL – PNK : 17.81 VLT – ORG : 12.81
Safety device			
Operating temperature	Open °C		145 ± 2 °C
	Close °C		
Run capacitor		VAC, μF	440 V, 2.5 μF
Electronic refrigerating control valve			
Elec. magnetic coil model			LAM-MD12ST-1
Coil resistance (at 20 °C)		Ω	ORG – RED : 48 , YEL – BRN : 48 RED – WHT : 48 , BRN – BLU : 48
Solenoid control valve model			LAM-B30YHST1
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.172
Auto louver motor			M2LJ24ZE31
Rated			AC 230 V – 50 Hz
No. of pole…r.p.m.		rpm.	8P – 2.5
Nominal output		W	3
Coil resistance (at 25 °C)		Ω	16,450 Ω ± 15%

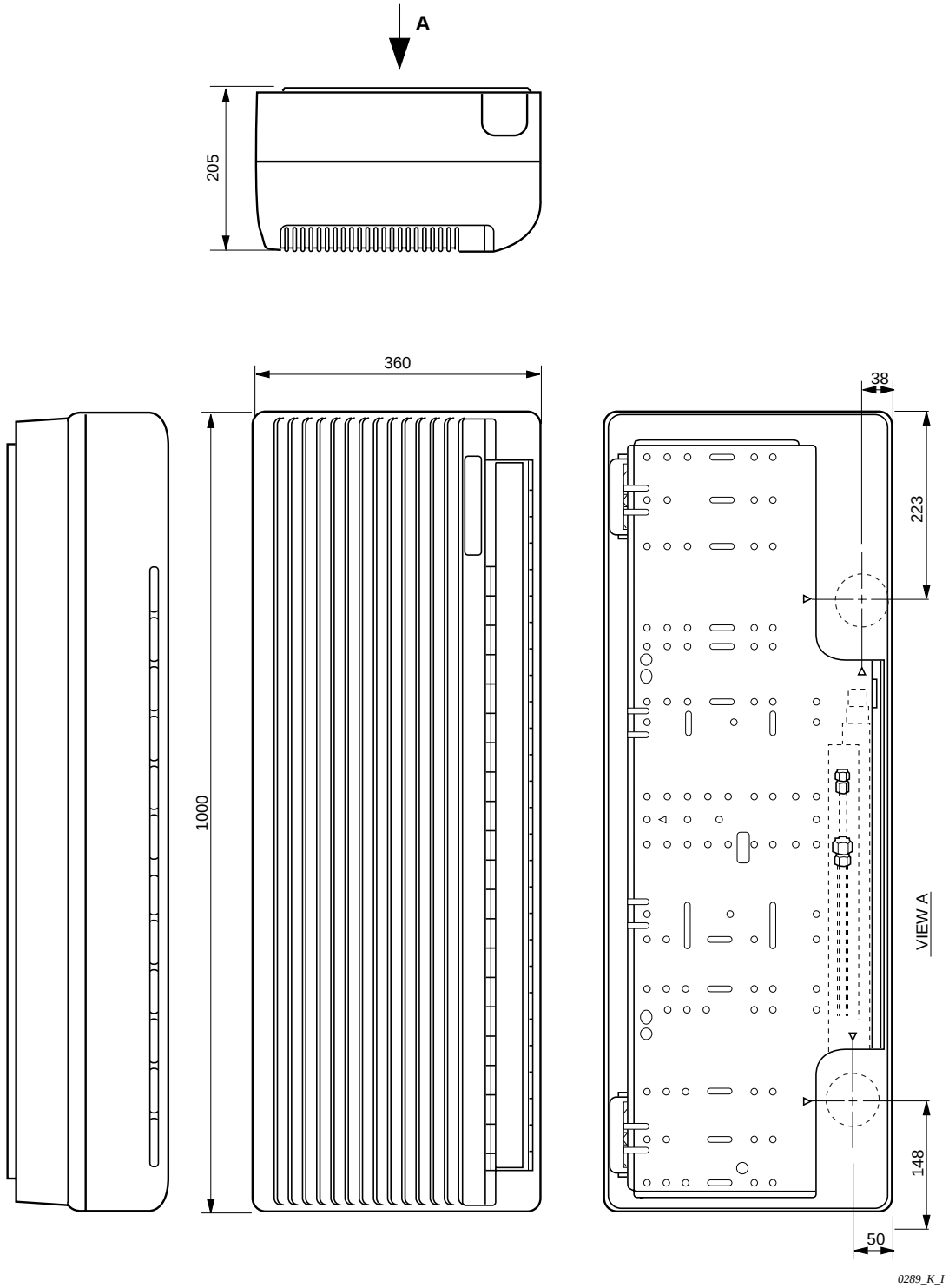
1

5-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-K93 ~ 183GH56
Power Transformer			ATR-II215TB
Rated			
Primary		V, Hz	AC 230 V, 50 Hz
Secondary			10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		℃	145
Thermistor (Coil sensor)			PBC-41E-S25 , PBC-41E-S4
Coil resistance		KΩ	-10˚C : 23.7 ±5 % , 20˚C : 6.5 ±5 % -5˚C : 18.8 ±5 % , 30˚C : 4.4 ±5 % 0˚C : 15.0 ±5 % , 40˚C : 3.1 ±5 % 5˚C : 12.1 ±5 % , 45˚C : 2.6 ±5 % 10˚C : 9.7 ±5 %
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			LAM-B30YHST1
Solenoid coil			LAM-MD12ST-1

5-4. Dimensional data

Indoor unit : 9, 12, 18 Type

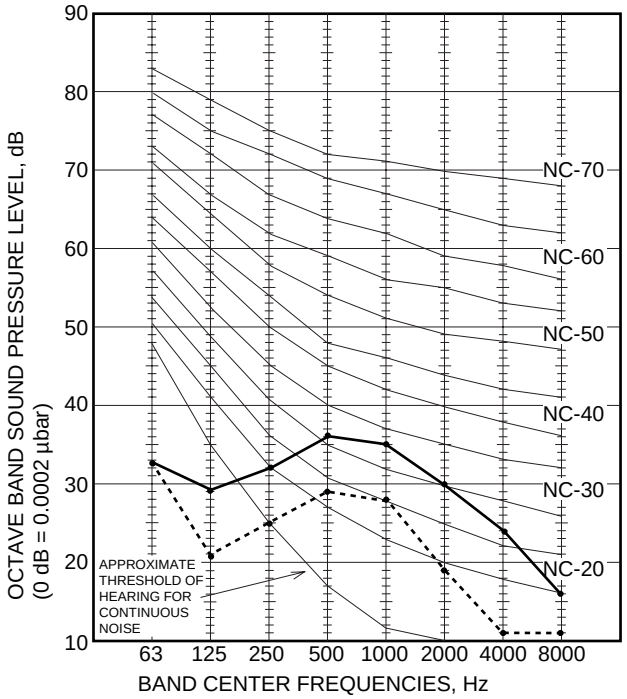


TYPE OF COPPER TUBE

TUBE	OUTER DIAMETER	NOTES
NARROW	9.52 mm (3 / 8 inch)	9, 12, 18 type
WIDE	12.7 mm (1 / 2 inch)	9, 12 type
	15.88 mm (5 / 8 inch)	18 type

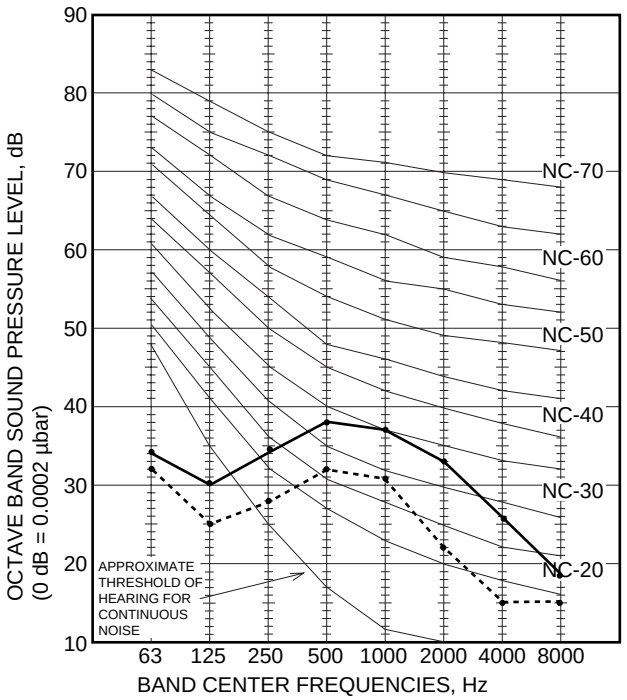
5-5. Noise criterion curves

MODEL	: SPW-K93GH56
SOUND LEVEL	: HIGH 38 dB(A), NC 33
	LOW 30 dB(A), NC 25
CONDITION	: Distance 1 m, Under the unit 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



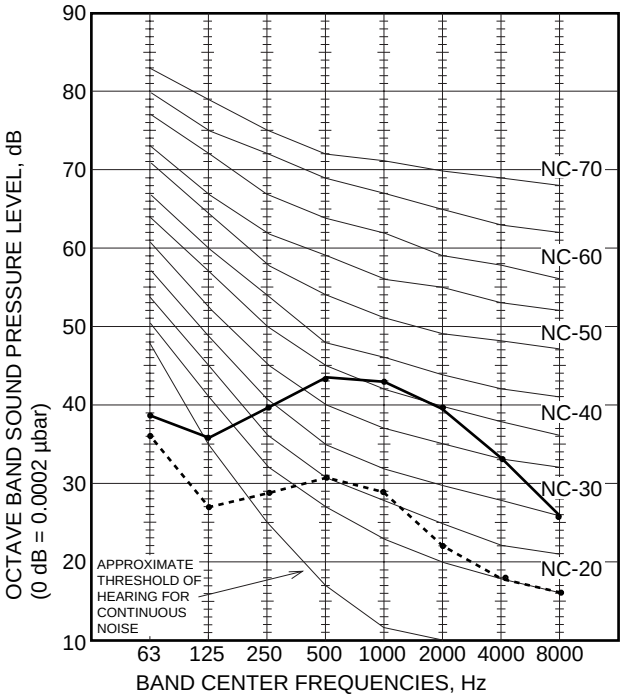
0290_K_I

MODEL	: SPW-K123GH56
SOUND LEVEL	: HIGH 40 dB(A), NC 35
	LOW 34 dB(A), NC 29
CONDITION	: Distance 1 m, Under the unit 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



0291_K_I

MODEL	: SPW-K183GH56
SOUND LEVEL	: HIGH 46 dB(A), NC 41
	LOW 37 dB(A), NC 32
CONDITION	: Distance 1 m, Under the unit 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



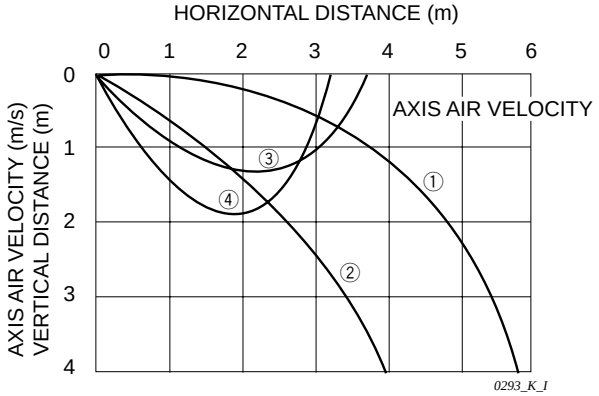
0292_K_I

REMARKS:
1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

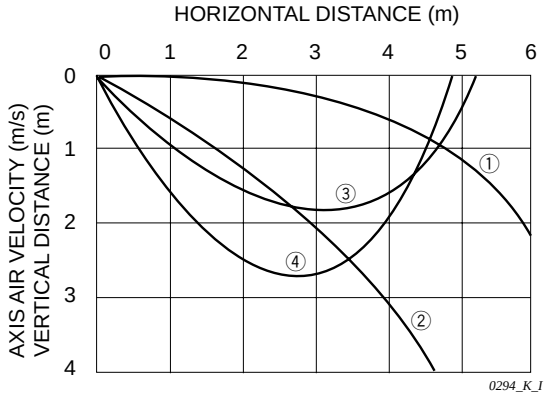
NOTE To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

5-6. Air throw distance chart

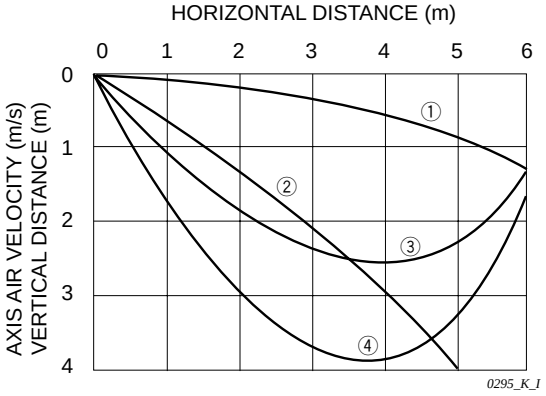
Model: 9 Type



Model: 12 Type



Model: 18 Type



Condition Fan Speed : Hi
Room air temp. : 27˚C DB in cooling mode
20˚C DB in heating mode

①: LOUVER ANGLE 0˚ in cooling mode
②: LOUVER ANGLE 30˚ in cooling mode
③: LOUVER ANGLE 45˚ in heating mode
④: LOUVER ANGLE 60˚ in heating mode

6. Ceiling Mounted Type

6-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-T183GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	5.6 19,000	6.3 21,000
Air circulation (Hi / Me / Lo)		m^3 / h	900 / 780 / 660	
Moisture removal (High)		Liters / h	3.0	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.40 - 0.40 - 0.40	0.30 - 0.30 - 0.31
Power input		W	84 - 88 - 93	64 - 68 - 73
Power factor		%	95 - 96 - 97	97 - 98 - 98
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)			3 and Automatic control	
Air filter			Washable, easy access	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	42 / 39 / 36	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in)	9.52 (3 / 8)	
	Wide tube	mm (in)	15.88 (5 / 8)	
Drain connection			20 A, OD26 mm	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT			Unit dimensions	Package dimensions
Dimensions	Height	mm (in)	185 (7 - 1 / 4)	271 (10 - 5 / 8)
	Width	mm (in)	1,073 (42 - 1 / 4)	1,173 (46 - 1 / 8)
	Depth	mm (in)	670 (26 - 3 / 8)	782 (30 - 3 / 4)
Net weight		kg (lb)	25 (55)	
Shipping weight		kg (lb)	31 (68)	
Shipping volume		m^3 (cu. ft)	0.255 (9.0)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

6. Ceiling Mounted Type

Unit specifications (B)

MODEL No.	Indoor Unit			SPW-T253GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	7.3 25,000	8.0 27,000
Air circulation (Hi / Me / Lo)			m^3 / h	1,140 / 1,020 / 840	
Moisture removal (High)			Liters / h	3.4	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.43 - 0.43 - 0.43	0.33 - 0.34 - 0.34
Power input			W	90 - 95 - 100	70 - 75 - 80
Power factor			%	95 - 96 - 97	96 - 96 - 98
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	45 / 41 / 37	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)*	
	Wide tube		mm (in)	15.88 (5 / 8)	
Drain connection				20 A, OD26 mm	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions		Height	mm (in)	185 (7 - 1 / 4)	271 (10 - 5 / 8)
		Width	mm (in)	1,270 (50)	1,370 (54)
		Depth	mm (in)	670 (26 - 3 / 8)	782 (30 - 3 / 4)
Net weight			kg (lb)	28 (62)	
Shipping weight			kg (lb)	36 (79)	
Shipping volume			m^3 (cu. ft)	0.290 (10.3)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Use the “Tube connector” (accessory part with unit).

Unit specifications (C)

MODEL No.	Indoor Unit			SPW-T363GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	10.6 36,000	11.4 39,000
Air circulation (Hi / Me / Lo)			m^3 / h	1,680 / 1,410 / 1,200	
Moisture removal (High)			Liters / h	4.8	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.95 - 0.96 - 0.98	0.86 - 0.88 - 0.90
Power input			W	200 - 210 - 220	180 - 190 - 200
Power factor			%	96 - 95 - 94	95 - 94 - 93
Fan motor locked rotor amperes			A	2 - 2 - 2	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	47 / 43 / 39	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	19.05 (3 / 4)	
Drain connection				20 A, OD26 mm	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions		Height	mm (in)	250 (9 - 7 / 8)	336 (13 - 1 / 4)
		Width	mm (in)	1,570 (61- 3 / 4)	1,670 (65 - 3 / 4)
		Depth	mm (in)	670 (26 - 3 / 8)	782 (30 - 3 / 4)
Net weight			kg (lb)	41 (90)	
Shipping weight			kg (lb)	51 (112)	
Shipping volume			m^3 (cu. ft)	0.439 (15.5)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

6. Ceiling Mounted Type

Unit specifications (D)

MODEL No.	Indoor Unit			SPW-T483GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	14.0 47,800	16.0 54,600
Air circulation (Hi / Me / Lo)			m^3 / h	1,920 / 1,610 / 1,320	
Moisture removal (High)			Liters / h	7.1	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.95 - 0.96 - 0.98	0.86 - 0.88 - 0.90
Power input			W	200 - 210 - 220	180 - 190 - 200
Power factor			%	96 - 95 - 94	95 - 94 - 93
Fan motor locked rotor amperes			A	2 - 2 - 2	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds (Indoor unit)				3 and Automatic control	
Air filter				Washable, easy access	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	48 / 44 / 40	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	19.05 (3 / 4)	
Drain connection				20 A, OD26 mm	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions		Height	mm (in)	250 (9 - 7 / 8)	336 (13 - 1 / 4)
		Width	mm (in)	1,570 (61 - 3 / 4)	1,670 (65 - 3 / 4)
		Depth	mm (in)	670 (26 - 3 / 8)	782 (30 - 3 / 4)
Net weight			kg (lb)	41 (90)	
Shipping weight			kg (lb)	51 (112)	
Shipping volume			m^3 (cu. ft)	0.439 (15.5)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

6-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-T183GH56
Source			220 - 230 - 240 V / 1 phase / 50 Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (3 … ø 130)
Fan motor			
Model…Nominal output		W	SR4Q-31A5P … 30 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,111
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 159.4 ORG – YEL : 75.8 WHT – VLT : 26.6 YEL – PNK : 26.6 VLT – ORG : 23.9
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor		VAC, μF	440 V, 1.8 μF
Electronic refrigerating control valve			
Solenoid control model			DKV - MOZS550E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.145
Auto louver motor			MC8 D
Auto louver motor…Rated		V, Hz, W, rpm.	220 – 240 VAC, 50 Hz, 3 W, 3.3 rpm., 8 P
Coil resistance (at 25 °C)		Ω	14,900 Ω ± 8 %
Dew proof heater		V, W	240 V, 12 W

6. Ceiling Mounted Type

Indoor unit (B)

MODEL No.			SPW-T253GH56
Source			220 - 230 - 240 V / 1 phase / 50 Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (4 … ø 130)
Fan motor			
Model…Nominal output		W	KFG4Q-41A5P … 40 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,198
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 175.1 ORG – YEL : 70.9 WHT – VLT : 43.6 YEL – PNK : 15.6 VLT – ORG : 27.0
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor		VAC, μF	440 V, 2.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV - MOZS550E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 1.7
Face area		m^2	0.170
Auto louver motor			MC8 D
Auto louver motor…Rated	V, Hz, W, rpm.		220 – 240 VAC, 50 Hz, 3 W, 3.3 rpm. 8 P
Coil resistance (at 25 °C)		Ω	14,900 Ω ± 8 %
Dew proof heater		V, W	240 V, 15 W

6. Ceiling Mounted Type

Indoor unit (C)

MODEL No.			SPW-T363GH56
Source			220 - 230 - 240 V / 1 phase / 50 Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (4 … ø 150)
Fan motor			
Model…Nominal output		W	KFG4Q-101D5P…100 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4…1,194
Coil resistance (Ambient temperature 20 °C)		Ω	BRN – WHT : 43.3 ORG – YEL : 349.3 WHT – VLT : 16.6 VLT – PNK : 40.8 VLT – ORG : 24.5
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, µF		440 V, 4.0 µF
Electronic refrigerating control valve			
Solenoid control model			EKV - MOZS559E0
Coil resistance (at 20 °C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV - 30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 1.7
Face area		m^2	0.34
Auto louver motor			MC8 D
Auto louver motor…Rated	V, Hz, W, rpm.		220 – 240 VAC, 50 Hz, 3 W, 3.3 rpm., 8 P
Coil resistance (at 25 °C)	Ω		14,900 Ω ± 8 %
Dew proof heater	V, W		240 V, 17 W

Indoor unit (D)

MODEL No.			SPW-T483GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (4…ø150)
Fan motor			
Model…Nominal output		W	KFG4Q-101D5P…100 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4…1,212
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 43.3 ORG – YEL : 349.3 WHT – VLT : 16.6 VLT – PNK : 40.8 VLT – ORG : 24.5
Safety device			
Operating temperature	Open °C		130 ± 5°C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 4.5 μF
Electronic refrigerating control valve			
Solenoid control model			EKV - MOZS559E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV - 30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3…1.7
Face area		m^2	0.34
Auto louver motor			MC8 D
Auto louver motor…Rated	V, Hz, W, rpm.		220 – 240 VAC, 50Hz, 3 W, 3.3 rpm. 8 P
Coil resistance (at 25°C)	Ω		14,900 Ω ± 8 %
Dew proof heater	V, W		240 V, 17 W

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6-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-T183 ~ 483GH56
Power Transformer			ATR-II215TB
Rated			
Primary		V, Hz	AC 230 V, 50 Hz
Secondary			10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		℃	145
Thermistor (Coil sensor)			PB3M-41E-S4 , PBC-41E-S25 , PBC-41E , PBC-41E-S36
Coil resistance		KΩ	-10˚C : 23.7 ±5% , 20˚C : 6.5 ±5% -5˚C : 18.8 ±5% , 30˚C : 4.4 ±5% 0˚C : 15.0 ±5% , 40˚C : 3.1 ±5% 5˚C : 12.1 ±5% , 45˚C : 2.6 ±5% 10˚C : 9.7 ±5%
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12 (SPW-T183 · 253GH56) HKV-30D16 (SPW-T363 · 483GH56)
Solenoid coil			DKV-MOZS550E0 (SPW-T183 · 253GH56) EKV-MOZS559E0 (SPW-T363 · 483GH56)

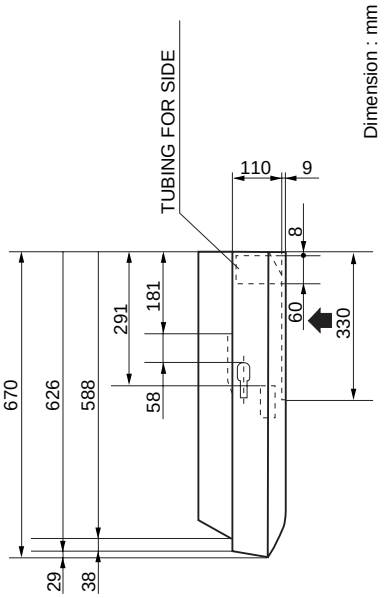
6-4. Dimensional data

Indoor unit : 18, 25, 36, 48 Type

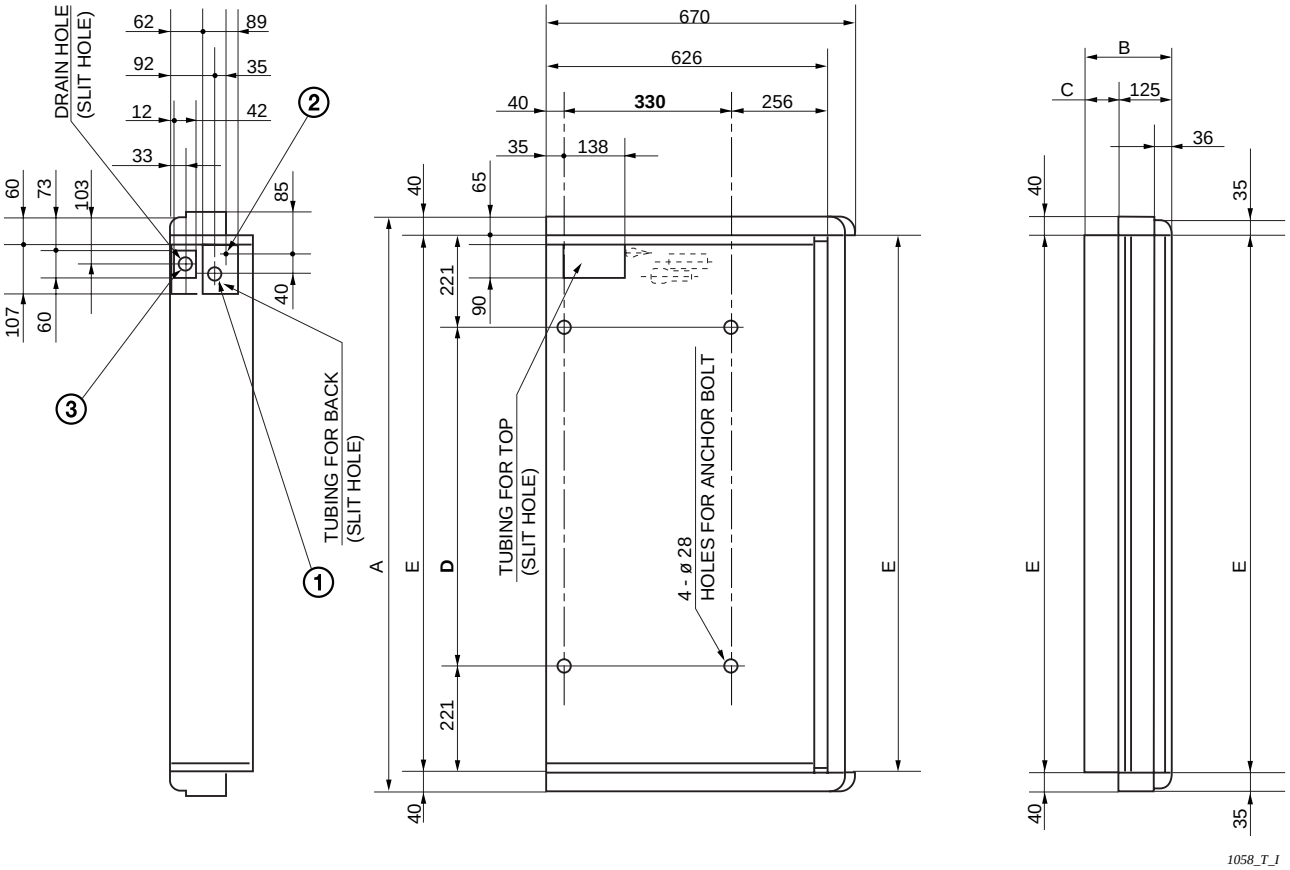
	18 type	25 type	36, 48 type
A	1073	1270	1570
B	185	185	250
C	60	60	125
D	**551**	**748**	**1048**
E	993	1190	1490
Ref. gas line	ø 15.88	ø 15.88	ø 19.05
Ref. liquid line	ø 9.52	ø 9.52*	ø 9.52

* In case of 25 type, use the tube connector.

Dimension : mm



① Refrigerant gas line (Wide tube)
② Refrigerant liquid line (Narrow tube)
③ Drain connection (20A, O.D. 26mm)



6-5. Noise criterion curves

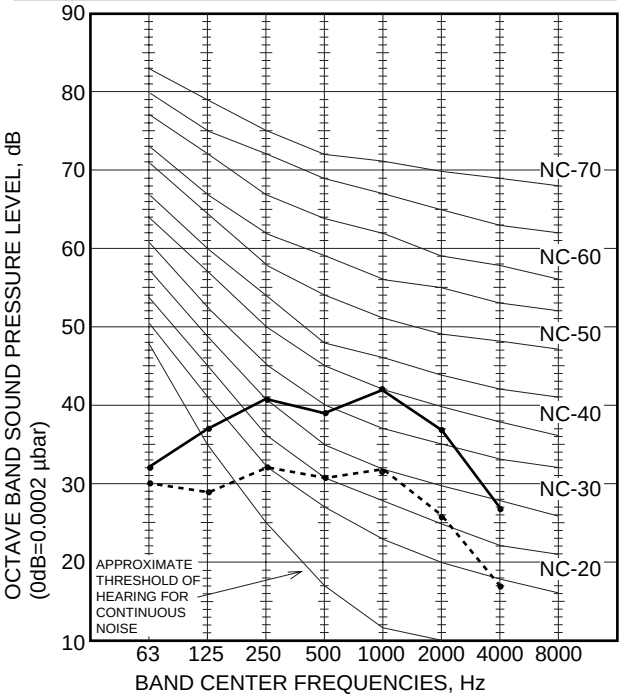
MODEL : SPW-T183GH56

SOUND LEVEL : HIGH 42 dB(A), NC 40

LOW 36 dB(A), NC 30

CONDITION : Distance 1 m, Under the unit 1 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



0297_T_I

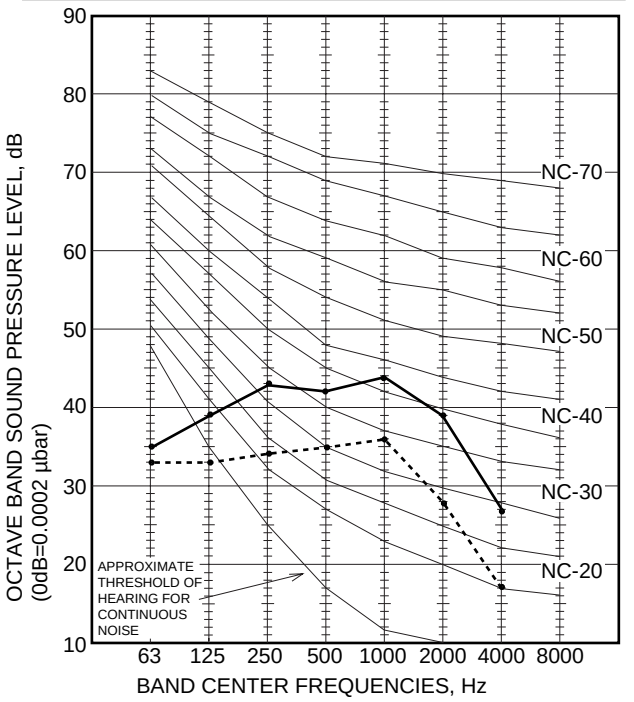
MODEL : SPW-T253GH56

SOUND LEVEL : HIGH 45 dB(A), NC 43

LOW 37 dB(A), NC 34

CONDITION : Distance 1 m, Under the unit 1 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



0298_T_I

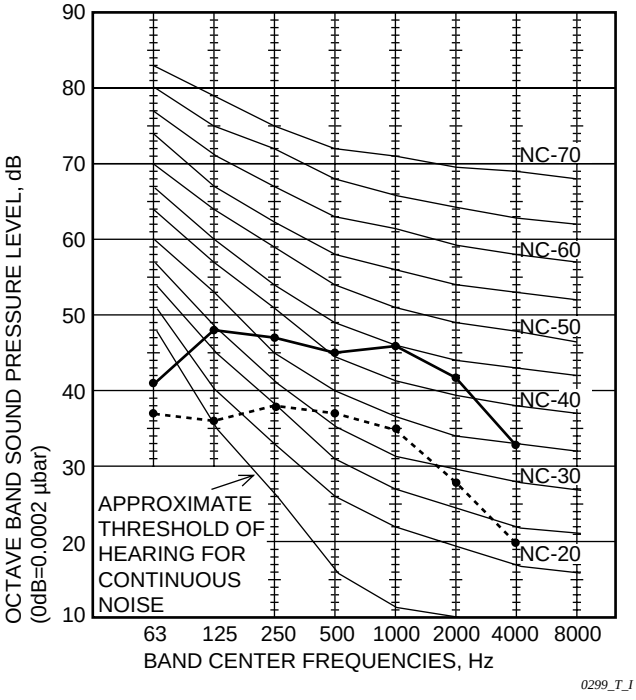
MODEL : SPW-T363GH56

SOUND LEVEL : HIGH 47 dB(A), NC 45

LOW 39 dB(A), NC 34

CONDITION : Distance 1 m, Under the unit 1 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



0299_T_I

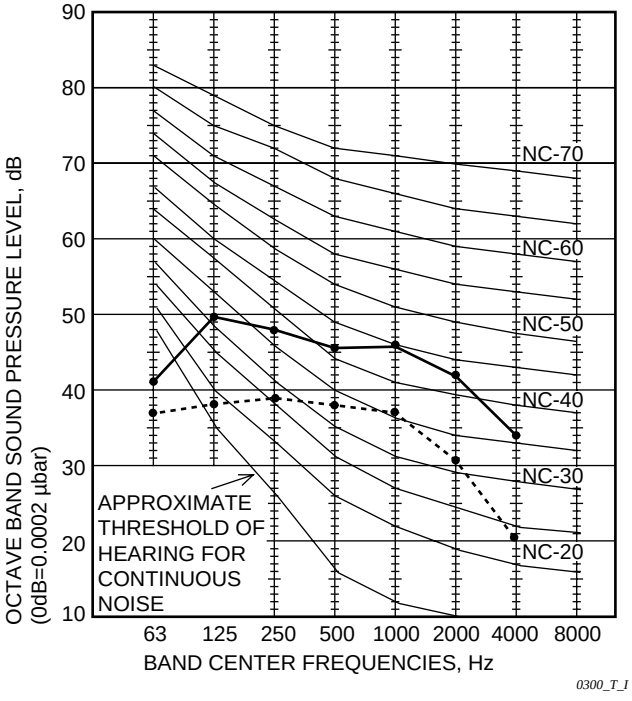
MODEL : SPW-T483GH56

SOUND LEVEL : HIGH 48 dB(A), NC 46

LOW 40 dB(A), NC 36

CONDITION : Distance 1 m, Under the unit 1 m

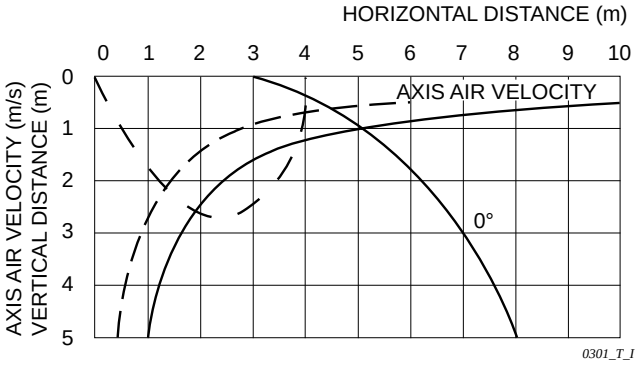
SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



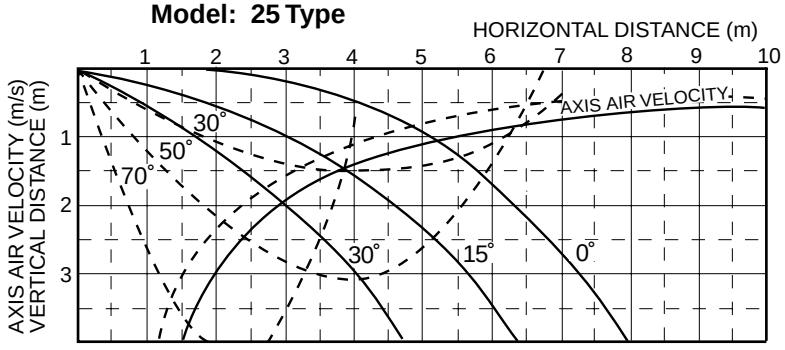
0300_T_I

6-6. Air throw distance chart

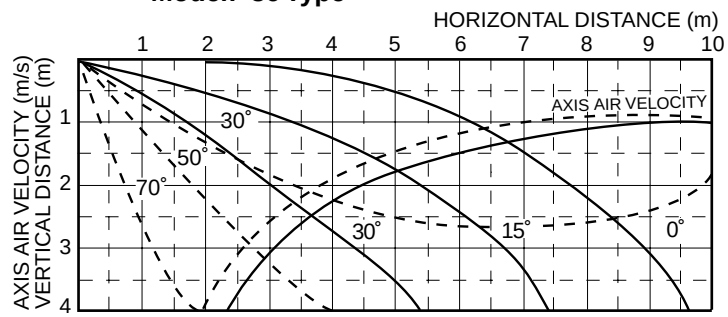
Model: 18 Type



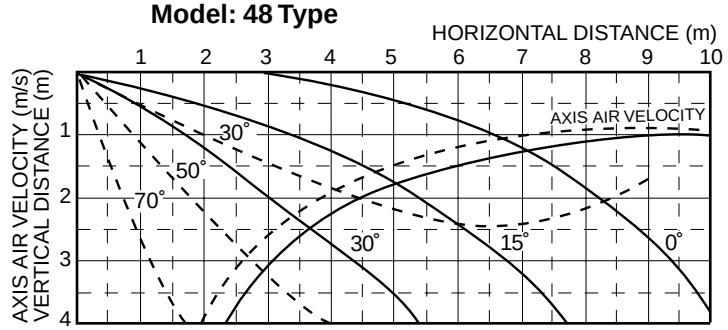
Model: 25 Type



Model: 36 Type



Model: 48 Type



	COOLING	HEATING
FAN SPEED	HIGH	HIGH
ROOM AIR TEMP.	27˚	21˚
LOUVER ANGLE	0˚, 15˚, 30˚	30˚, 50˚, 70˚

——————— : COOLING

- - - - - - - - - - - - : HEATING

0302_T_I

7. Concealed Duct Type

7-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-U93GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	2.8			3.2		
		BTU / h	9,600			11,000		
Air circulation (Hi / Me / Lo)		m^3 / h	480 / 440 / 330					
Moisture removal (High)		Liters / h	1.1			—		
External static pressure (High)			5 (49): at shipment, 10 (98): using the booster cable					
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264					
Running amperes*		A	0.37	0.4	0.43	0.37	0.4	0.43
Power input		W	80	90	100	80	90	100
Power factor		%	98.3	97.8	96.9	98.3	97.8	96.9
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max. 72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Field supply					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	30 / 26 / 22					
using the booster cable (Hi / Me / Lo)		dB-A	36 / 33 / 28					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	12.7 (1 / 2)					
Drain pump (drain connection)			Max. head 25 cm above drain connection (25A, OD32mm)					
Remote controller (option)			Optional (RCS-SH80TG)					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	310 (12 - 7 /32)			380 (14 - 31/32)		
	Width	mm (in)	829 (32 - 20 /32)			949 (37 - 12/32)		
	Depth	mm (in)	665 (26 - 6 /32)			866 (34 - 3 /32)		
Net weight		kg (lb)	31 (68)					
Shipping weight		kg (lb)	37 (82)					
Shipping volume		m^3 (cu. ft)	0.312 (11)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :
Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB
Full load conditions(**) : Indoor air temperature 35 °C DB / 25 °C WB, Outdoor air temperature 45 °C DB
Heating :
Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB
Full load conditions(**) : Indoor air temperature 24 °C DB, Outdoor air temperature 24°C DB / 15.5°C WB

Unit specifications (B)

MODEL No.	Indoor Unit			SPW-U123GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	3.6 12,000	4.2 14,000
Air circulation (Hi / Me / Lo)			m^3 / h	600 / 490 / 400	
External static pressure (High)			mmAq (Pa)	5 (49): at shipment, 10 (98): using the booster cable	
Moisture removal (High)			Liters / h	1.5	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	0.56 - 0.58 - 0.60	0.56 - 0.58 - 0.60
Power input			W	120 - 130 - 140	120 - 130 - 140
Power factor			%	97 - 97 - 97	97 - 97 - 97
Fan motor locked rotor amperes			A	1 - 1 - 1	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds				3 and Automatic control	
Air filter				Field supply	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	32 / 28 / 23	
using the booster cable (Hi / Me / Lo)			dB-A	37 / 34 / 31	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	12.7 (1 / 2)	
Drain connection				25 A, OD32 mm	
Drain pump				Max. head 25 cm above drain connection	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / Booster cable	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions		Height	mm (in)	310 (12 - 1 / 4)	380 (15)
		Width	mm (in)	829 (32 - 5 / 8)	949 (37 - 3 / 8)
		Depth	mm (in)	665 (26 - 1 / 4)	866 (34 - 1 / 16)
Net weight			kg (lb)	31 (68)	
Shipping weight			kg (lb)	37 (82)	
Shipping volume			m^3 (cu. ft)	0.312 (11.0)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

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7. Concealed Duct Type

Unit specifications (C)

MODEL No.	Indoor Unit		SPW-U183GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	5.6 19,000	6.3 21,000
Air circulation (Hi / Me / Lo)		m^3 / h	840 / 680 / 540	
External static pressure (High)		mmAq (Pa)	5 (49): at shipment, 10 (98): using the booster cable	
Moisture removal (High)		Liters / h	3.0	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	0.56 - 0.56 - 0.56	0.56 - 0.56 - 0.56
Power input		W	120 - 125 - 130	120 - 125 - 130
Power factor		%	97 - 97 - 97	97 - 97 - 97
Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Field supply	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	34 / 30 / 26	
using the booster cable (Hi / Me / Lo)		dB-A	39 / 36 / 32	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in)	9.52 (3 / 8)	
	Wide tube	mm (in)	15.88 (5 / 8)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / Booster cable	
DIMENSIONS & WEIGHT			Unit dimensions	Package dimensions
Dimensions	Height	mm (in)	310 (12 - 1 / 4)	380 (15)
	Width	mm (in)	829 (32 - 5 / 8)	949 (37 - 3 / 8)
	Depth	mm (in)	665 (26 - 1 / 4)	866 (34 - 1 /16)
Net weight		kg (lb)	32 (71)	
Shipping weight		kg (lb)	38 (84)	
Shipping volume		m^3 (cu. ft)	0.312 (11.0)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

7. Concealed Duct Type

Unit specifications (D)

MODEL No.	Indoor Unit			SPW-U253GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
	Capacity		kW BTU / h	7.3 25,000	8.0 27,000
	Air circulation (Hi / Me / Lo)		m^3 / h	1,260 / 1,080 / 780	
	External static pressure (High)		mmAq (Pa)	5 (49): at shipment, 10 (98): using the booster cable	
	Moisture removal (High)		Liters / h	3.2	—
ELECTRICAL RATINGS					
	Voltage rating		V	220 - 230 - 240	
	Available voltage range		V	198 – 264	
	Running amperes		A	0.84 - 0.89 - 0.90	0.84 - 0.89 - 0.90
	Power input		W	180 - 200 - 210	180 - 200 - 210
	Power factor		%	97 - 98 - 97	97 - 98 - 97
	Fan motor locked rotor amperes		A	1 - 1 - 1	
FEATURES					
	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Timer			ON / OFF Timer (Max. 72 hr)	
	Fan speeds			3 and Automatic control	
	Air filter			Field supply	
	Refrigerant control			Electronic refrigerant control valve	
	Operation sound (Hi / Me / Lo)		dB-A	36 / 31 / 26	
	using the booster cable (Hi / Me / Lo)		dB-A	41 / 38 / 35	
	Refrigerant tubing connections			Flare type	
	Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)*	
	diameter	Wide tube	mm (in)	15.88 (5 / 8)	
	Drain connection			25 A, OD32 mm	
	Drain pump			Max. head 25 cm above drain connection	
	Remote Controller			Optional (RCS-SH80TG)	
	Refrigerant tubing kit / Accessories			Optional / Booster cable	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
	Dimensions	Height	mm (in)	310 (12 - 1 / 4)	380 (15)
		Width	mm (in)	1,050 (41 - 3 / 8)	1,249 (49 - 1 / 4)
		Depth	mm (in)	665 (26 - 1 / 4)	866 (34 - 1 /16)
	Net weight		kg (lb)	41 (90)	
	Shipping weight		kg (lb)	50 (110)	
	Shipping volume		m^3 (cu. ft)	0.411 (14.5)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Use the “Tube connector” (accessory part with unit).

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7. Concealed Duct Type

Unit specifications (E)

MODEL No.	Indoor Unit		SPW-U363GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	10.6 36,000	11.4 39,000
Air circulation (Hi / Me / Lo)		m^3 / h	1,920 / 1,440 / 1,200	
External static pressure (High)		mmAq (Pa)	7 (69): at shipment, 12 (118): using the booster cable	
Moisture removal (High)		Liters / h	3.9	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	1.43 - 1.47 - 1.54	1.43 - 1.47 - 1.54
Power input		W	290 - 310 - 340	290 - 310 - 340
Power factor		%	92 - 92 - 92	92 - 92 - 92
Fan motor locked rotor amperes		A	2 - 2 - 2	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Field supply	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	42 / 36 / 30	
using the booster cable (Hi / Me / Lo)		dB-A	46 / 42 / 38	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in)	9.52 (3 / 8)	
	Wide tube	mm (in)	19.05 (3 / 4)	
Drain connection			25 A, OD32 mm	
Drain pump			Max. head 25 cm above drain connection	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / Booster cable	
DIMENSIONS & WEIGHT			Unit dimensions	Package dimensions
Dimensions	Height	mm (in)	310 (12 - 1 / 4)	380 (15)
	Width	mm (in)	1,480 (58 - 1 / 4)	1,679 (66 - 3 / 32)
	Depth	mm (in)	665 (26 - 1 / 4)	866 (34 - 1 / 4)
Net weight		kg (lb)	64 (141)	
Shipping weight		kg (lb)	71 (157)	
Shipping volume		m^3 (cu. ft)	0.55 (19.5)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

Unit specifications (F)

MODEL No.	Indoor Unit			SPW-U483GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
	Capacity		kW BTU / h	14.0 47,800	16.0 54,600
	Air circulation (Hi / Me / Lo)		m^3 / h	1,920 / 1,440 / 1,200	
	External static pressure (High)		mmAq (Pa)	7 (69): at shipment, 12 (118): using the booster cable	
	Moisture removal (High)		Liters / h	6.8	—
ELECTRICAL RATINGS					
	Voltage rating		V	220 - 230 - 240	
	Available voltage range		V	198 – 264	
	Running amperes		A	1.48 - 1.51 - 1.58	1.48 - 1.51 - 1.58
	Power input		W	310 - 330 - 360	310 - 330 - 360
	Power factor		%	95 - 95 - 95	95 - 95 - 95
	Fan motor locked rotor amperes		A	2 - 2 - 2	
FEATURES					
	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Timer			ON / OFF Timer (Max. 72 hr)	
	Fan speeds			3 and Automatic control	
	Air filter			Field supply	
	Refrigerant control			Electronic refrigerant control valve	
	Operation sound (Hi / Me / Lo)		dB-A	42 / 36 / 30	
	using the booster cable (Hi / Me / Lo)		dB-A	46 / 42 / 38	
	Refrigerant tubing connections			Flare type	
	Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)	
	diameter	Wide tube	mm (in)	19.05 (3 / 4)	
	Drain connection			25 A, OD32 mm	
	Drain pump			Max. head 25 cm above drain connection	
	Remote Controller			Optional (RCS-SH80TG)	
	Refrigerant tubing kit / Accessories			Optional / Booster cable	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
	Dimensions	Height	mm (in)	310 (12 - 1 / 4)	380 (15)
		Width	mm (in)	1,480 (58 - 1 / 4)	1,679 (66 - 1 / 4)
		Depth	mm (in)	665 (26 - 1 / 4)	866 (34 - 1 / 4)
	Net weight		kg (lb)	64 (141)	
	Shipping weight		kg (lb)	71 (157)	
	Shipping volume		m^3 (cu. ft)	0.55 (19.5)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

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7-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-U93GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 190)
Fan motor			
Model…Nominal output		W	KFG4X-31A3P … 30 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 834
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 101.9 ORG – YEL : 56.57 WHT – VLT : 17.67 YEL – BLK : 366.4 VLT – ORG : 7.86 ORG – PNK : 38.84
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		(79 ± 15°C)
Run capacitor	VAC, μF		440 V, 2.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.126
Drain pump			WP20SL-9
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

7. Concealed Duct Type

Indoor unit (B)

MODEL No.			SPW-U123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 190)
Fan motor			
Model…Nominal output		W	KFG4X-71A5P … 70 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,009
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 81.1 ORG – YEL : 51.4 WHT – VLT : 12.7 YEL – BLK : 20.6 VLT – ORG : 36.8 VLT – PNK : 44.2
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 4.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	2 … 1.7
Face area		m^2	0.126
Drain pump			WP20SL-9
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

7. Concealed Duct Type

Indoor unit (C)

MODEL No.			SPW-U183GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 190)
Fan motor			
Model…Nominal output		W	KFG4X-101B5P … 100 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,191
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 75.8 ORG – YEL : 44.3 WHT – VLT : 18.6 YEL – BLK : 310.5 VLT – ORG : 21.2 ORG – PNK : 42.1
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 4.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 1.7
Face area		m^2	0.126
Drain pump			WP20SL-9
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

7. Concealed Duct Type

Indoor unit (D)

MODEL No.			SPW-U253GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 … ø 190)
Fan motor			
Model…Nominal output		W	KFC4X-101B5P … 100 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,021
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 48.8 ORG – YEL : 37.1 WHT – VLT : 10.3 YEL – BLK : 90.0 VLT – ORG : 8.7 ORG – PNK : 30.6
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, µF		440 V, 4.5 µF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 1.7
Face area		m^2	0.202
Drain pump			WP20SL-9
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

7. Concealed Duct Type

Indoor unit (E)

MODEL No.			SPW-U363GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (3 … ø 190)
Fan motor			
Model…Nominal output		W	KFG4X-101B5PA…100 W / KFC4X-161B5P…160 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,191 / 4 … 1,182
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 75.8 / BRN – WHT : 44.4 WHT – VLT : 18.6 / WHT – VLT : 9.6 VLT – ORG : 21.2 / VLT – ORG : 33.1 ORG – YEL : 44.3 / ORG – YEL : 32.0 YEL – BLK : 310.5 / YEL – BLK : 74.0 PNK – ORG : 42.1 / PNK – ORG : 35.7
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor		VAC, μF	440 V, 3.5 μF / 440 V, 6 μF
Electronic refrigerating control valve			
Solenoid control model			EKV-MOZS559E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV-30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	4 … 1.7
Face area		m^2	0.310
Drain pump			WP20SL-9
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

Indoor unit (F)

MODEL No.			SPW-U483GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (3 … ø 190)
Fan motor			
Model…Nominal output		W	KFG4X-101B5PA … 100 W / KFC4X-161B5P … 160 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,191 / 4 … 1,182
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 75.8 BRN – WHT : 44.4 WHT – VLT : 18.6 WHT – VLT : 9.6 VLT – ORG : 21.2 VLT – ORG : 33.1 ORG – YEL : 44.3 ORG – YEL : 32.0 YEL – BLK : 310.5 YEL – BLK : 74.0 ORG – PNK : 42.1 ORG – PNK : 35.7
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, µF		440 V, 3.5 µF / 440 V, 6 µF
Electronic refrigerating control valve			
Solenoid control model			EKV-MOZS559E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV-30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	4 … 1.7
Face area		m^2	0.310
Drain pump			WP20SL-9
Rated		V, W	AC 230 V, 50 Hz, 14.7 W
Total head & capacity			400 mm, 600 cc/min

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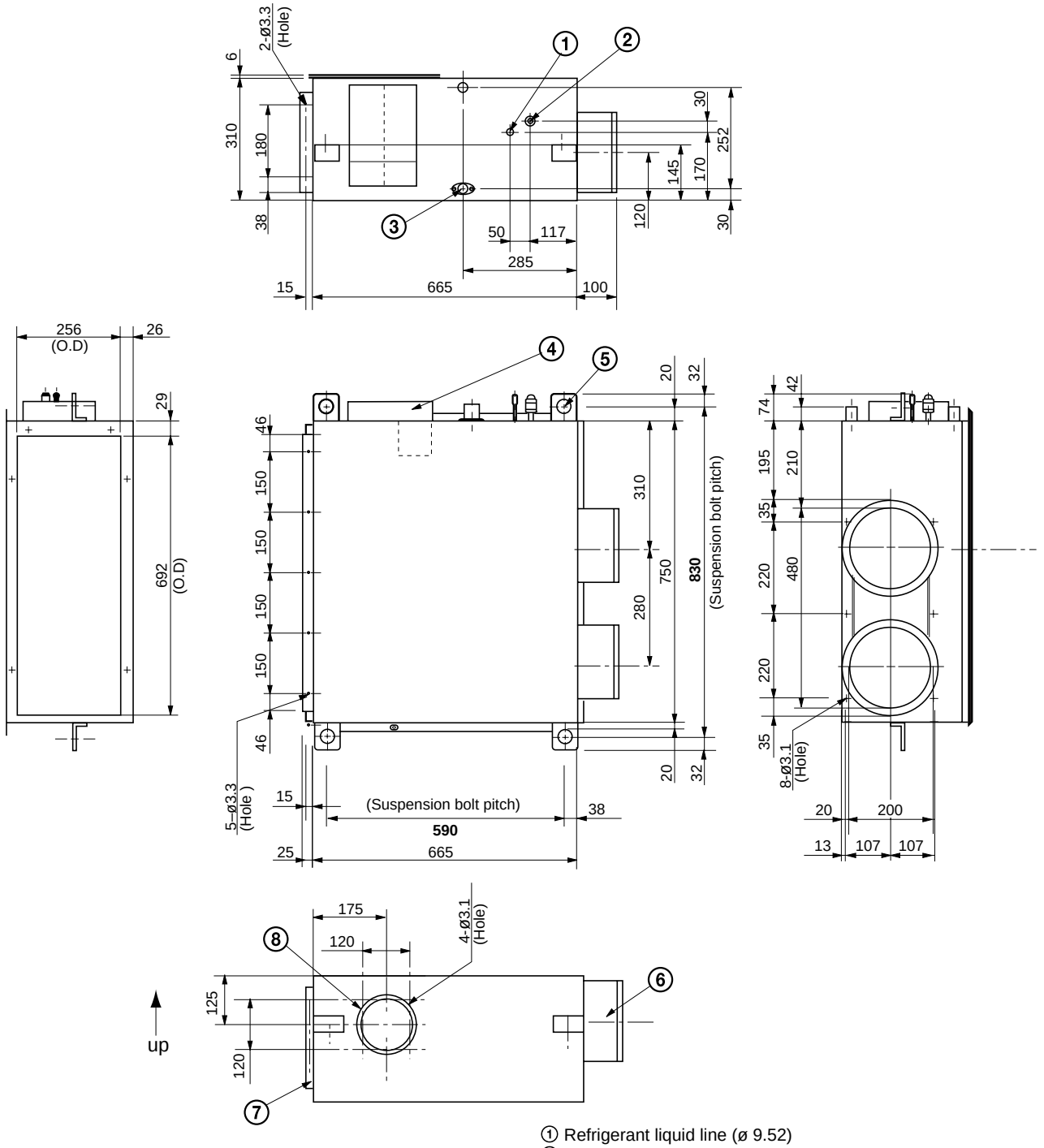
7-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-U93 ~ 483GH56
Power Transformer			ATR-II215TB
Rated			
	Primary	V, Hz	AC 230 V, 50 Hz
	Secondary		10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		˚C	145
Thermistor (Coil sensor)			PBC-41E-S36 , PBC-41E-S25
Coil resistance		KΩ	-10˚C : 23.7 ±5 % , 20˚C : 6.5 ±5 % -5˚C : 18.8 ±5 % , 30˚C : 4.4 ±5 % 0˚C : 15.0 ±5 % , 40˚C : 3.1 ±5 % 5˚C : 12.1 ±5 % , 45˚C : 2.6 ±5 % 10˚C : 9.7 ±5 %
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12 (SPW-U93 ~ 253GH56) HKV-30D16 (SPW-U363 · 483GH56)
Solenoid coil			DKV-MOZS550E0 (SPW-U93 ~ 253GH56) EKV-MOZS559E0 (SPW-U363 · 483GH56)
Drain pump			WP20SL-9
Rated			AC 230 V, 14.7 W
Float switch			FS-3502-202
Rated (Contact rated)			AC 230 V, 50 W

7-4. Dimensional data

Indoor unit : 9, 12, 18 Type



① Refrigerant liquid line (ø 9.52)
② Refrigerant gas line (9,12: ø 12.7, 18: ø 15.88)
③ Drain connection (25 A, O.D.32 mm)
④ Electrical junction box
⑤ Mounting for suspension
⑥ Duct connection for discharge (12: ø 150, 18: ø 200)
⑦ Duct connection for suction
⑧ Fresh air intake (ø 150)

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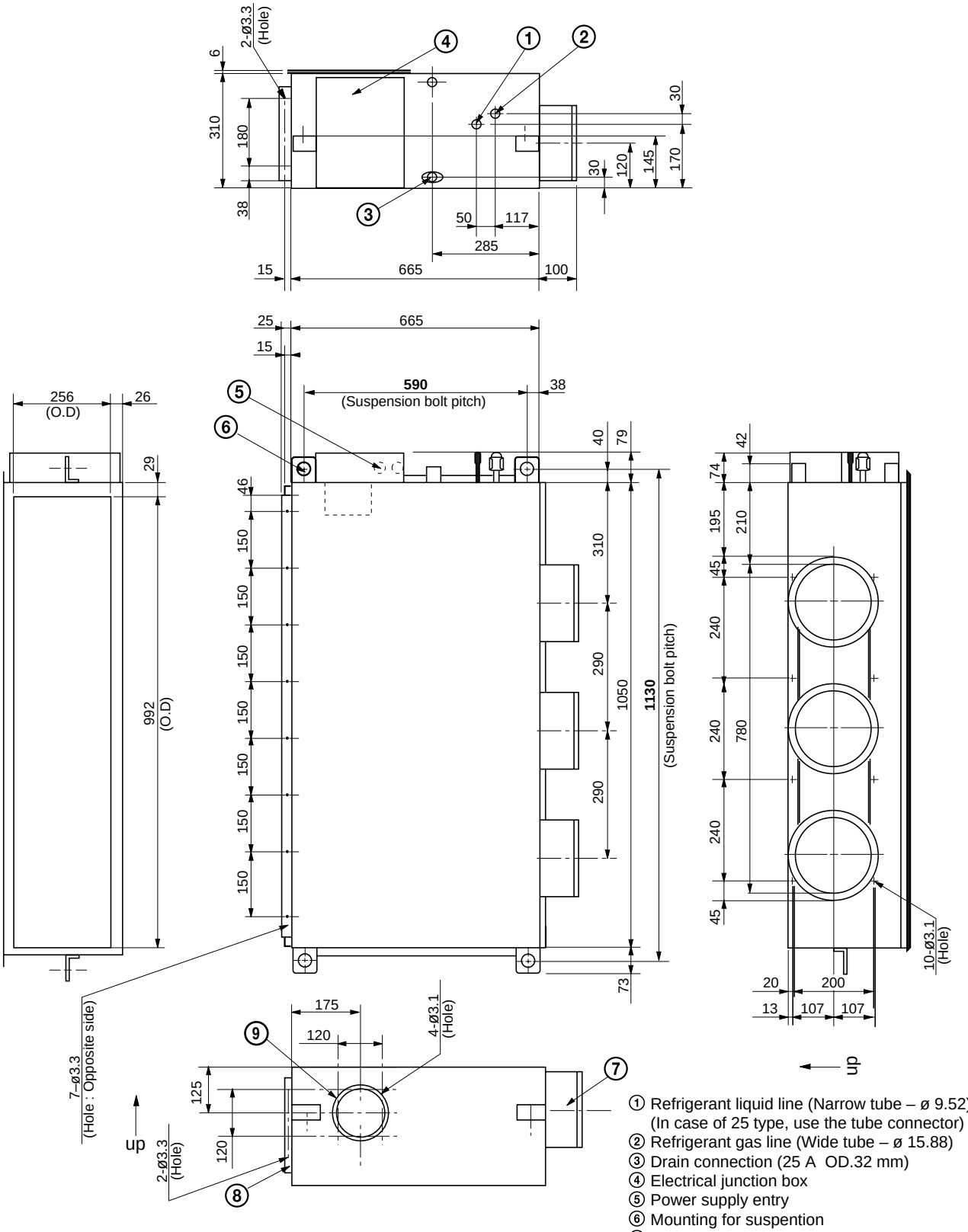
7. Concealed Duct Type

Indoor unit: 25 Type



① Refrigerant liquid line (Narrow tube – ø 9.52)
(In case of 25 type, use the tube connector)
② Refrigerant gas line (Wide tube – ø 15.88)
③ Drain connection (25 A OD.32 mm)
④ Electrical junction box
⑤ Power supply entry
⑥ Mounting for suspention
⑦ Duct connection for discharge (ø200)
⑧ Duct connection for suction
⑨ Fresh air intake (ø150)

Dimension: mm

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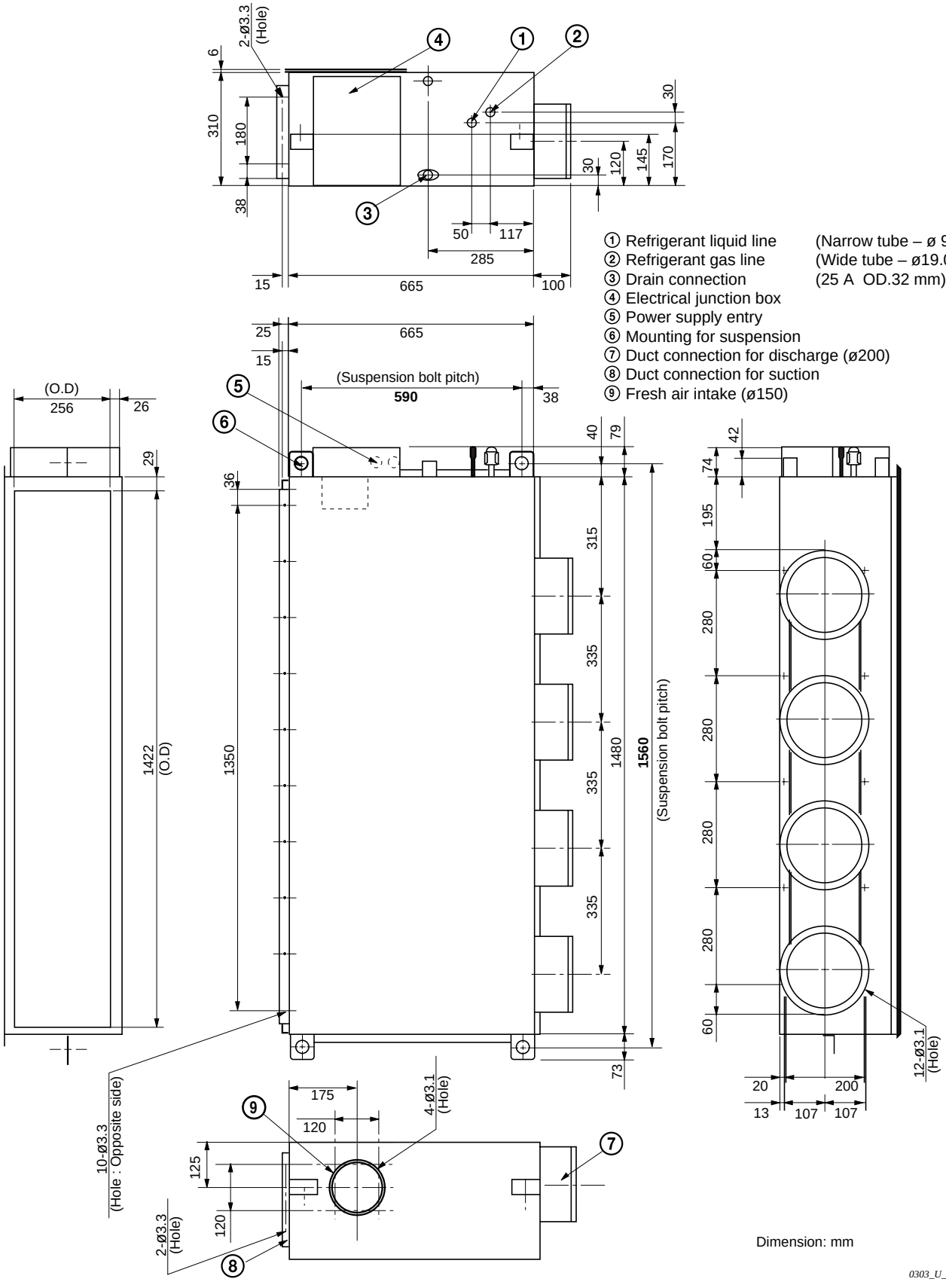
Indoor unit: 36, 48 Type



① Refrigerant liquid line (Narrow tube – ø 9.52)
② Refrigerant gas line (Wide tube – ø19.05)
③ Drain connection (25 A OD.32 mm)
④ Electrical junction box
⑤ Power supply entry
⑥ Mounting for suspension
⑦ Duct connection for discharge (ø200)
⑧ Duct connection for suction
⑨ Fresh air intake (ø150)

Dimension: mm

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7-5. Noise criterion curves

MODEL : SPW-U93GH56

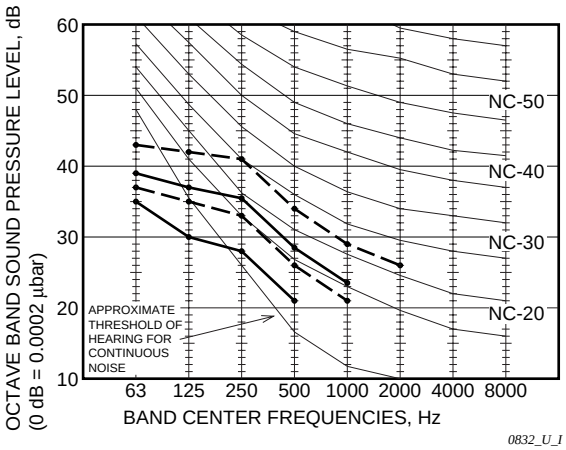
SOUND LEVEL : HIGH 30 dB(A), NC 23 / LOW 22 dB(A), NC 15

(HIGH 36 dB(A), NC 30 / LOW 28 dB(A), NC 20)

( ) : when Booster cable connected

CONDITION : Under the unit 1.5 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL : SPW-U123GH56

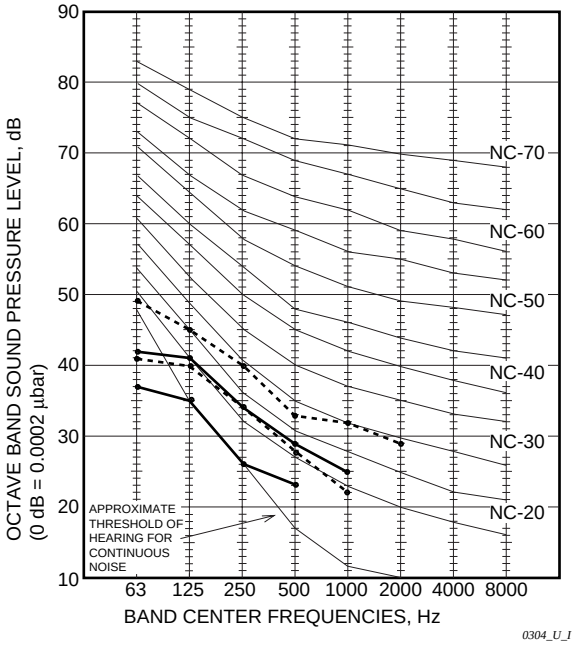
SOUND LEVEL : HIGH 32 dB(A), NC 23 / LOW 23 dB(A), NC 15

(HIGH 37 dB(A), NC 30 / LOW 31 dB(A), NC 14)

( ) : when Booster cable connected

CONDITION : Under the unit 1.5 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL : SPW-U183GH56

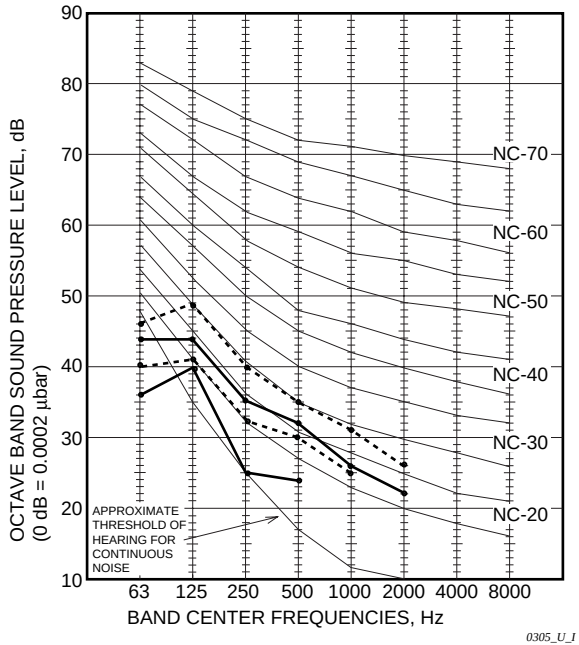
SOUND LEVEL : HIGH 34 dB(A), NC 26 / LOW 26 dB(A), NC 18

(HIGH 39 dB(A), NC 30 / LOW 32 dB(A), NC 24)

( ) : when Booster cable connected

CONDITION : Under the unit 1.5 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL : SPW-U253GH56

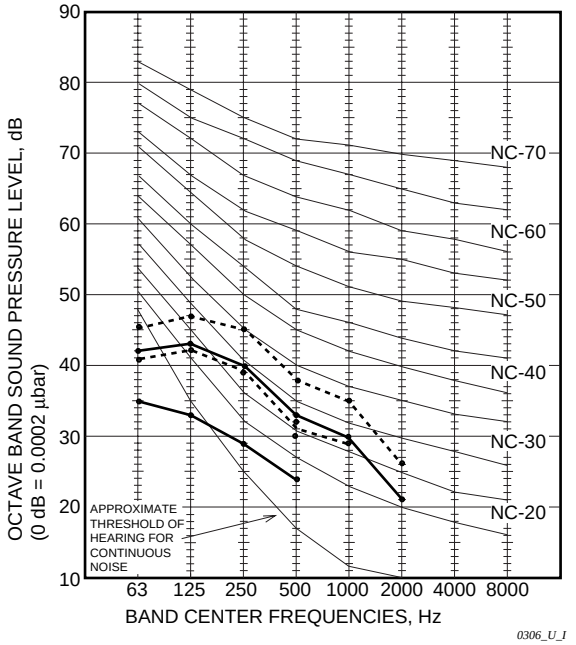
SOUND LEVEL : HIGH 36 dB(A), NC 29 / LOW 26 dB(A), NC 18

(HIGH 41 dB(A), NC 34 / LOW 35 dB(A), NC 28)

( ) : when Booster cable connected

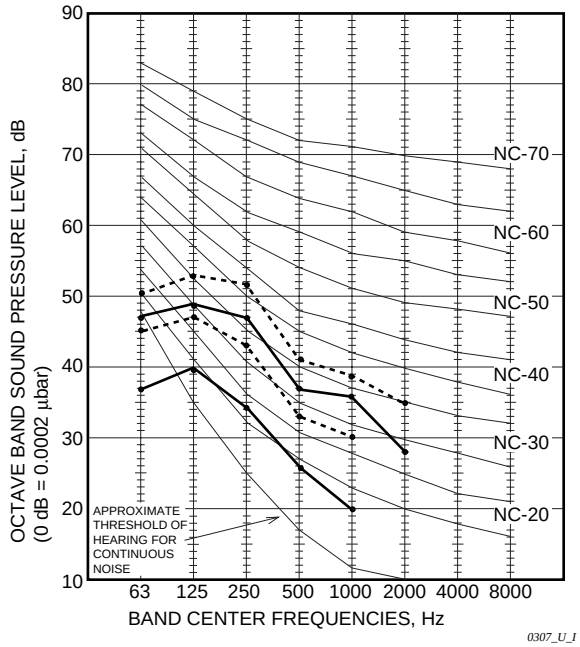
CONDITION : Under the unit 1.5 m

SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



7. Concealed Duct Type

MODEL	: SPW-U363GH56, U483GH56
SOUND LEVEL	: HIGH 42 dB(A), NC 37 / LOW 30 dB(A), NC 23
	(HIGH 46 dB(A), NC 41 / LOW 38 dB(A), NC 32)
	( ) : when Booster cable connected
CONDITION	: Under the unit 1.5 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



REMARKS: 1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

NOTE

To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

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7-6. Increasing the Fan Speed

If external static pressure is too great (due to long extension of ducts, for example), the air flow volume may drop too low at each air outlet. This problem may be solved by increasing the fan speed using the following procedure:

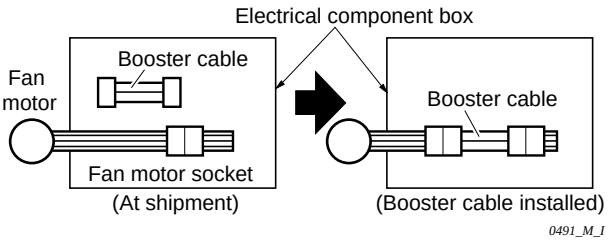
(1) Remove 4 screws on the electrical component box and remove the cover plate.

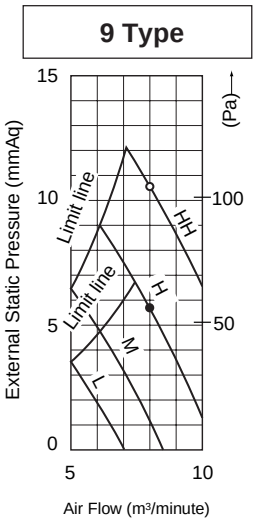
(2) Disconnect the fan motor sockets in the box.

(3) Take out the booster cable (sockets at both ends) clamped in the box.

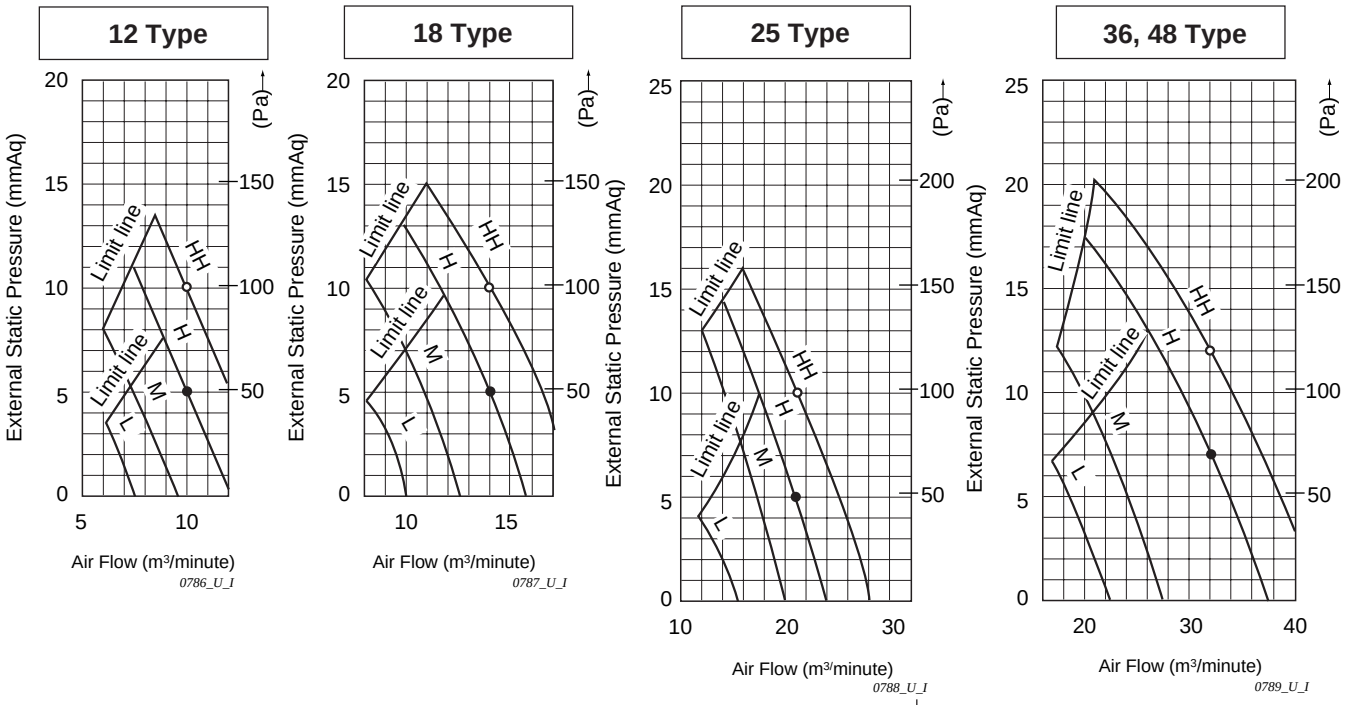
(4) Securely connect the booster cable sockets between the disconnected fan motor sockets in step 2 as shown.

(5) Place the cable neatly in the box and reinstall the cover plate.





Indoor Fan Performance



NOTE HH : Using the booster cable

H : At shipment

■ How to read the diagram

The vertical axis is the external static pressure (mmAq) while the horizontal axis represents the AIR FLOW (m^3/minute). The characteristic curves for “HH,” “H,” “Med,” and “Low” fan speed control are shown.

The nameplate values are shown based on the “H” air flow. For the 25 type, the air flow is 21 m^3/minute, while the external static pressure is 5 mmAq at “H” position. If external static pressure is too great (due to long extension of duct, for example), the air flow volume may drop too low at each air outlet.

This problem may be solved by increasing the fan speed as explained above.

8. Concealed Duct High Static Pressure Type

8-1. Specification

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-D253GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	7.3 25,000	8.0 27,000
Air circulation (Hi / Me / Lo)		m^3 / h	1,380 / 1,320 / 1,260	
External static pressure (High)		mmAq (Pa)	19 (186)	
Moisture removal (High)		Liters / h	3.1	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	2.29 - 2.30 - 2.31	2.29 - 2.30 - 2.31
Power input		W	480 - 505 - 530	480 - 505 - 530
Power factor		%	95 - 95 - 96	95 - 95 - 96
Fan motor locked rotor amperes		A	3 - 3 - 3	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Field supply	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	44 / 43 / 42	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in)	9.52 (3 / 8)*	
	Wide tube	mm (in)	15.88 (5 / 8)	
Drain connection			20 A, OD26 mm	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT			Unit dimensions	Package dimensions
Dimensions	Height	mm (in)	420 (16 - 1 / 2)	513 (20 - 1 / 4)
	Width	mm (in)	1,065 (41 - 7 / 8)	1,148 (45 - 1 / 4)
	Depth	mm (in)	620 (24 - 3 / 8)	713 (28 - 1 / 8)
Net weight		kg (lb)	47 (104)	
Shipping weight		kg (lb)	61 (134)	
Shipping volume		m^3 (cu. ft)	0.42 (14.8)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

* Use the “Tube connector” (accessory part with unit).

8. Concealed Duct High Static Pressure Type

Unit specifications (B)

MODEL No.	Indoor Unit		SPW-D363GH56	
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE			Cooling	Heating
Capacity		kW BTU / h	10.6 36,000	11.4 39,000
Air circulation (Hi / Me / Lo)		m^3 / h	1,800 / 1,680 / 1,500	
External static pressure (High)		mmAq (Pa)	18 (176)	
Moisture removal (High)		Liters / h	4.5	—
ELECTRICAL RATINGS				
Voltage rating		V	220 - 230 - 240	
Available voltage range		V	198 – 264	
Running amperes		A	2.46 - 2.46 - 2.47	2.46 - 2.46 - 2.47
Power input		W	520 - 545 - 570	520 - 545 - 570
Power factor		%	96 - 96 - 96	96 - 96 - 96
Fan motor locked rotor amperes		A	4 - 4 - 4	
FEATURES				
Controls / Temperature control			Microprocessor / I.C. thermostat	
Timer			ON / OFF Timer (Max. 72 hr)	
Fan speeds			3 and Automatic control	
Air filter			Field supply	
Refrigerant control			Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)		dB-A	45 / 44 / 42	
Refrigerant tubing connections			Flare type	
Refrigerant tube diameter	Narrow tube	mm (in)	9.52 (3 / 8)	
	Wide tube	mm (in)	19.05 (3 / 4)	
Drain connection			20 A, OD26 mm	
Remote Controller			Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories			Optional / —	
DIMENSIONS & WEIGHT			Unit dimensions	Package dimensions
Dimensions	Height	mm (in)	420 (16 - 1 / 2)	513 (20 - 1 / 4)
	Width	mm (in)	1,065 (41 - 7 / 8)	1,148 (45 - 1 / 4)
	Depth	mm (in)	620 (24 - 3 / 8)	713 (28 - 1 / 8)
Net weight		kg (lb)	50 (110)	
Shipping weight		kg (lb)	64 (141)	
Shipping volume		m^3 (cu. ft)	0.42 (14.8)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

8. Concealed Duct High Static Pressure Type

Unit specifications (C)

MODEL No.	Indoor Unit			SPW-D483GH56	
POWER SOURCE				220 - 230 - 240 V / 1 phase / 50Hz	
PERFORMANCE				Cooling	Heating
Capacity			kW BTU / h	14.0 47,800	16.0 54,600
Air circulation (Hi / Me / Lo)			m^3 / h	2,160 / 2,100 / 1,980	
External static pressure (High)			mmAq (Pa)	17 (167)	
Moisture removal (High)			Liters / h	6.6	—
ELECTRICAL RATINGS					
Voltage rating			V	220 - 230 - 240	
Available voltage range			V	198 – 264	
Running amperes			A	2.80 - 2.90 - 3.00	2.80 - 2.90 - 3.00
Power input			W	600 - 660 - 710	600 - 660 - 710
Power factor			%	99 - 99 - 99	99 - 99 - 99
Fan motor locked rotor amperes			A	4 - 4 - 4	
FEATURES					
Controls / Temperature control				Microprocessor / I.C. thermostat	
Timer				ON / OFF Timer (Max. 72 hr)	
Fan speeds				3 and Automatic control	
Air filter				Field supply	
Refrigerant control				Electronic refrigerant control valve	
Operation sound (Hi / Me / Lo)			dB-A	47 / 46 / 44	
Refrigerant tubing connections				Flare type	
Refrigerant tube diameter	Narrow tube		mm (in)	9.52 (3 / 8)	
	Wide tube		mm (in)	19.05 (3 / 4)	
Drain connection				20 A, OD26 mm	
Remote Controller				Optional (RCS-SH80TG)	
Refrigerant tubing kit / Accessories				Optional / —	
DIMENSIONS & WEIGHT				Unit dimensions	Package dimensions
Dimensions	Height		mm (in)	450 (17 - 3 / 4)	513 (20 - 1 / 4)
	Width		mm (in)	1,065 (41 - 7 / 8)	1,148 (45 - 1 / 4)
	Depth		mm (in)	620 (24 - 3 / 8)	713 (28 - 1 / 8)
Net weight			kg (lb)	54 (119)	
Shipping weight			kg (lb)	69 (152)	
Shipping volume			m^3 (cu. ft)	0.42 (14.8)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions

Cooling: Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating: Indoor air temperature 20 °C DB , Outdoor air temperature 7 °C DB / 6 °C WB

1

8-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-D253GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 220)
Fan motor			
Model…Nominal output		W	KFC4X-201B5P … 200 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,004
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 13.75 ORG – YEL : 2.21 WHT – VLT : 4.47 YEL – BLK : 10.33 VLT – ORG : 1.20 BLK – PNK : 12.90
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ± 15 °C
Run capacitor		VAC, μF	440 V, 5.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.233

8. Concealed Duct High Static Pressure Type

Indoor unit (B)

MODEL No.			SPW-D363GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253YH5 (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 220)
Fan motor			
Model…Nominal output		W	KFC4X-201B5P … 200 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,134
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 13.75 ORG – YEL : 2.21 WHT – VLT : 4.47 YEL – BLK : 10.33 VLT – ORG : 1.20 BLK – PNK : 12.90
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ± 15 °C
Run capacitor	VAC, μF		440 V, 7.0 μF
Electronic refrigerating control valve			
Solenoid control model			EKV-MOZS559E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV-30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	4 … 2.0
Face area		m^2	0.273

8. Concealed Duct High Static Pressure Type

Indoor unit (C)

MODEL No.			SPW-D483GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH5 (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 250)
Fan motor			
Model…Nominal output		W	KFC4Q-401A5P … 400 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,077
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 11.05 ORG – YEL : 4.57 WHT – VLT : 1.80 YEL – PNK : 7.70 VLT – ORG : 1.00
Safety device			
Operating temperature	Open °C		130 ± 8 °C
	Close °C		79 ± 15 °C
Run capacitor	VAC, μF		440 V, 7 μF x 2
Electronic refrigerating control valve			
Solenoid control model			EKV-MOZS559E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			HKV-30D16
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	4 … 2.0
Face area		m^2	0.273

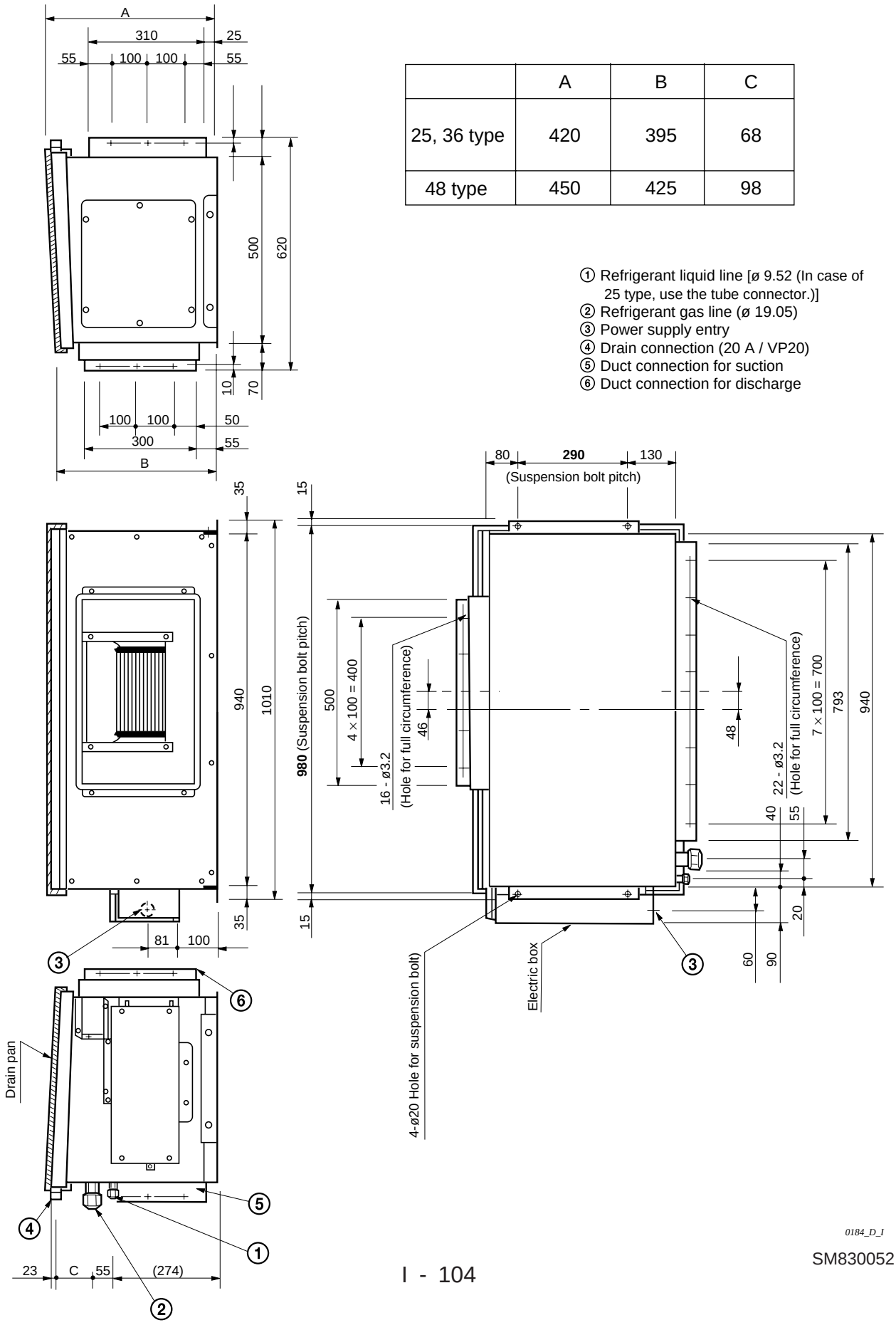
8-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-D253 ~ 483GH56
Power Transformer			ATR-II215TB
Rated			
Primary		V, Hz	AC 230 V, 50 Hz
Secondary			10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		℃	145
Thermistor (Coil sensor)			PBC-41E-S36 , PBC-41E-S25
Coil resistance		KΩ	-10˚C : 23.7 ±5 % , 20˚C : 6.5 ±5 % -5˚C : 18.8 ±5 % , 30˚C : 4.4 ±5 % 0˚C : 15.0 ±5 % , 40˚C : 3.1 ±5 % 5˚C : 12.1 ±5 % , 45˚C : 2.6 ±5 % 10˚C : 9.7 ±5 %
Thermistor (Room or coil sensor)			KTEC-35-S2
Coil resistance		KΩ	0˚C : 16.5 ± 5 % , 40˚C : 2.7 ± 5 % 5˚C : 12.8 ± 5 % , 45˚C : 2.2 ± 5 % 10˚C : 10.0 ± 5 % , 50˚C : 1.8 ± 5 % 20˚C : 6.3 ± 5 % , 55˚C : 1.5 ± 5 % 30˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12 (SPW-D253GH56) HKV-30D16 (SPW-D363 · 483GH56)
Solenoid coil			DKV-MOZS550E0 (SPW-D253GH56) EKV-MOZS559E0 (SPW-D363 · 483GH56)
Float switch			FS-3502-204
Rated (Contact rated)			AC 230 V, 50 W

1

8-4. Dimensional data

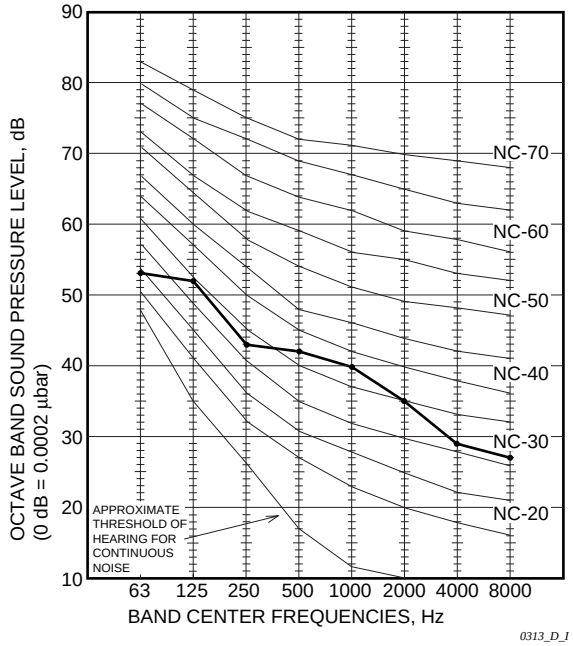
Indoor unit : 25, 36, 48 Type



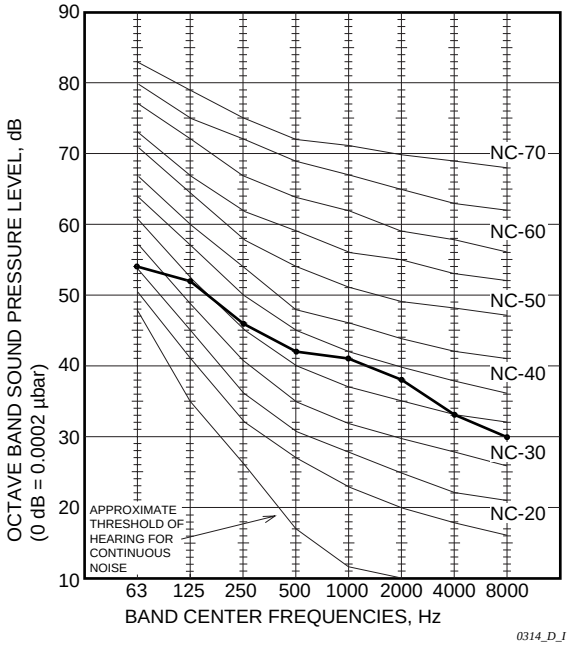
	A	B	C
25, 36 type	420	395	68
48 type	450	425	98

8-5. Noise criterion curves

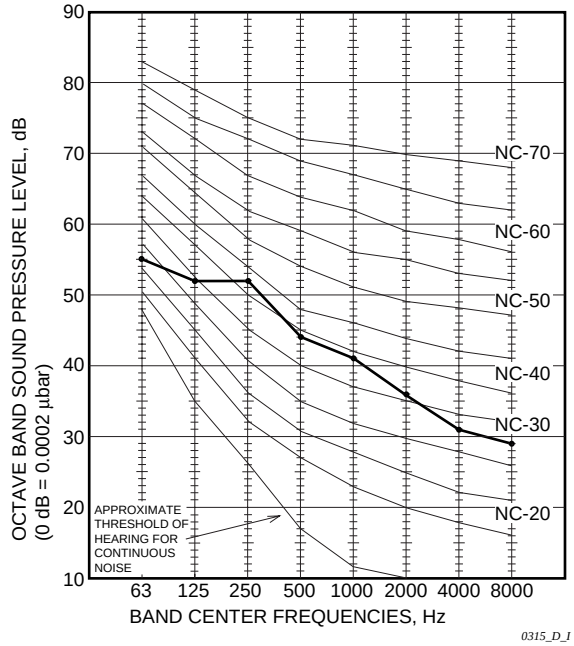
MODEL : SPW-D253GH56
SOUND LEVEL : HIGH 44 dB(A), NC 38
CONDITION : Under the unit 1.5 m
SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL : SPW-D363GH56
SOUND LEVEL : HIGH 45 dB(A), NC 39
CONDITION : Under the unit 1.5 m
SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL : SPW-D483GH56
SOUND LEVEL : HIGH 47 dB(A), NC 42
CONDITION : Under the unit 1.5 m
SOURCE : 220 - 230 - 240 V, 1 Phase, 50 Hz



REMARKS:
1. Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
2. The test results were obtained from an anechoic room.

NOTE

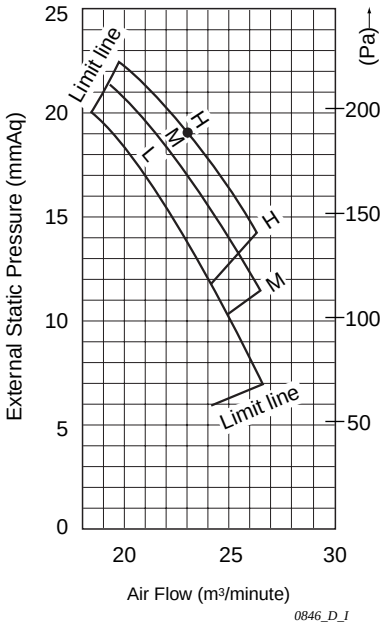
To evaluate “Noise level” the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

8-6. Indoor fan performance

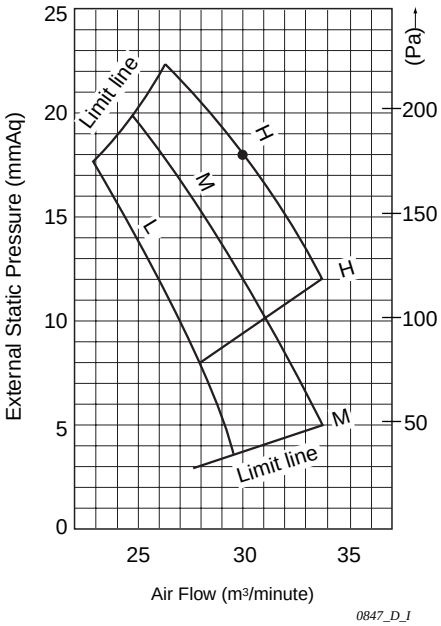
How to Read the Diagram

The vertical axis is the EXTERNAL STATIC PRESSURE (mmAq) while the horizontal axis represents the AIR FLOW (m^3/minute). The characteristic curve for the “H”, “Med”, and “Lo” fan speed control.
The name plate values are shown based on the “H” air flow. Therefore in the case of the SPW-D253GH56 the flow is 23 m^3/minute, while the EXTERNAL STATIC PRESSURE is 19 mmAq at “H” position. If the external static pressure is too great (due to long extention of duct, for example), the air flow volume may drop too low at each air outlet.

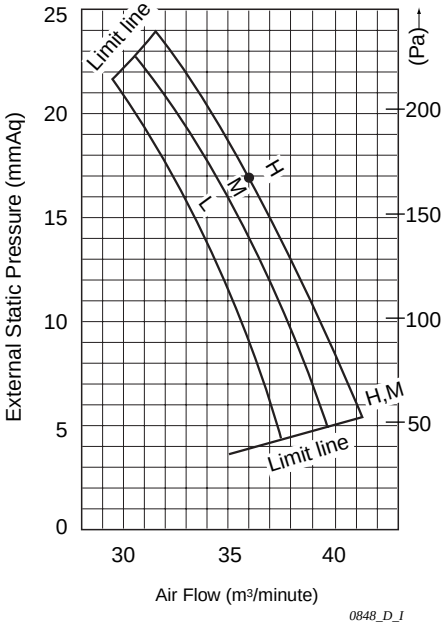
25, 27 Type



36 Type



48 Type



9. Floor-Standing Type (F Type)

9-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-F93GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	2.8			3.2		
		BTU / h	9,600			11,000		
Air circulation (Hi / Me / Lo)		m^3 / h	420 / 360 / 300					
Moisture removal (High)		Liters / h	1.1			—		
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264			198 – 242		
Running amperes*		A	0.24	0.25	0.26	0.17	0.18	0.19
Power input		W	51	56	61	36	40	45
Power factor		%	96.6	97.4	97.8	96.3	96.6	98.7
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max.72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Washable, easy access					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	33 / 30 / 28					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	12.7 (1 / 2)					
Drain connection			20A, OD26mm					
Drain pump			–					
Drain pump (drain connection)			Optional (RCS-SH80TG)					
Remote controller (option)			Optional / drain hose					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	615 (24 - 7 /32)			694 (27 - 10/32)		
	Width	mm (in)	1065 (41 - 30 /32)			1157 (45 - 18/32)		
	Depth	mm (in)	230 (9 - 2 /32)			312 (12 - 9 /32)		
Net weight		kg (lb)	29 (64)					
Shipping weight		kg (lb)	64 (68)					
Shipping volume		m^3 (cu. ft)	0.251 (8.9)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

9. Floor-Standing Type (F Type)

Unit specifications (B)

MODEL No.	Indoor Unit		SPW-F123GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	3.6			4.2		
		BTU / h	12,000			14,000		
Air circulation (Hi / Me / Lo)		m^3 / h	540 / 420 / 360					
Moisture removal (High)		Liters / h	1.5			—		
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264			198 – 242		
Running amperes*		A	0.37	0.38	0.39	0.3	0.31	0.32
Power input		W	79	85	91	64	70	76
Power factor		%	97.1	97.3	97.2	97	98.2	99
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max.72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Washable, easy access					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	39 / 35 / 29					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	12.7 (1 / 2)					
Drain connection			20A, OD26mm					
Drain pump			–					
Drain pump (drain connection)			Optional (RCS-SH80TG)					
Remote controller (option)			Optional / drain hose					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	615 (24 - 7 /32)			694 (27 - 10/32)		
	Width	mm (in)	1065 (41 - 30 /32)			1157 (45 - 18/32)		
	Depth	mm (in)	230 (9 - 2 /32)			312 (12 - 9 /32)		
Net weight		kg (lb)	29 (64)					
Shipping weight		kg (lb)	31 (68)					
Shipping volume		m^3 (cu. ft)	0.251 (8.9)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

9. Floor-Standing Type (F Type)

Unit specifications (C)

MODEL No.	Indoor Unit		SPW-F183GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	5.6			6.3		
		BTU / h	19,000			21,000		
Air circulation (Hi / Me / Lo)		m^3 / h	900 / 780 / 660					
Moisture removal (High)		Liters / h	3			—		
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264			198 – 242		
Running amperes*		A	0.54	0.56	0.58	0.37	0.41	0.43
Power input		W	116	126	136	79	91	101
Power factor		%	97.6	97.8	97.7	97.1	96.5	97.9
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max.72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Washable, easy access					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	39 / 36 / 31					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	15.88 (5 / 8)					
Drain connection			20A, OD26mm					
Drain pump			–					
Drain pump (drain connection)			Optional (RCS-SH80TG)					
Remote controller (option)			Optional / drain hose					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	615 (24 - 7 /32)			694 (27 - 10/32)		
	Width	mm (in)	1380 (54 - 11 /32)			1472 (57 - 30/32)		
	Depth	mm (in)	230 (9 - 2 /32)			312 (12 - 9 /32)		
Net weight		kg (lb)	39 (86)					
Shipping weight		kg (lb)	41 (90)					
Shipping volume		m^3 (cu. ft)	0.319 (11.3)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

9. Floor-Standing Type (F Type)

Unit specifications (D)

MODEL No.	Indoor Unit		SPW-F253GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	7.1			8		
		BTU / h	24,000			27,000		
Air circulation (Hi / Me / Lo)		m^3 / h	1,020 / 840 / 720					
Moisture removal (High)		Liters / h	3.6			—		
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264			198 – 242		
Running amperes*		A	0.7	0.72	0.73	0.52	0.54	0.56
Power input		W	150	160	170	110	120	130
Power factor		%	97.4	96.6	97	96.2	96.6	96.7
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max.72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Washable, easy access					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	41 / 38 / 35					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	15.88 (5 / 8)					
Drain connection			20A, OD26mm					
Drain pump			–					
Drain pump (drain connection)			Optional (RCS-SH80TG)					
Remote controller (option)			Optional / drain hose					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	615 (24 - 7 /32)			694 (27 - 10/32)		
	Width	mm (in)	1380 (54 - 11 /32)			1472 (57 - 30/32)		
	Depth	mm (in)	230 (9 - 2 /32)			312 (12 - 9 /32)		
Net weight		kg (lb)	39 (86)					
Shipping weight		kg (lb)	41 (90)					
Shipping volume		m^3 (cu. ft)	0.319 (11.3)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

9-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-F93GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 153)
Fan motor			
Model…Nominal output		W	KFT6Q-11A3P … 15 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 831
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 370.2 ORG – YEL : 168.0 WHT – VLT : 105.4 YEL – PNK : 92.16 VLT – ORG : 67.05
Safety device			
Operating temperature	Open °C		148 $^{+0}_{-5}$ °C
	Close °C		—
Run capacitor	VAC, μF		440 V, 1.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.102

9. Floor-Standing Type (F Type)

Indoor unit (B)

MODEL No.			SPW-F123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 153)
Fan motor			
Model…Nominal output		W	KFT4Q-21B3P … 30 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,102
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 217.7 ORG – YEL : 37.88 WHT – VLT : 37.33 YEL – PNK : 21.82 VLT – ORG : 22.48
Safety device			
Operating temperature	Open °C		148 $^{+0}_{-5}$ °C
	Close °C		—
Run capacitor	VAC, μF		440 V, 2.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.102

9. Floor-Standing Type (F Type)

Indoor unit (C)

MODEL No.			SPW-F183GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 … ø 153)
Fan motor			
Model…Nominal output		W	KFG4Q-61C3P … 60 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,066
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 67.62 ORG – YEL : 17.36 WHT – VLT : 18.47 YEL – PNK : 5.18 VLT – ORG : 10.10
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 2.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.165

9. Floor-Standing Type (F Type)

Indoor unit (D)

MODEL No.			SPW-F253GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 … ø 153)
Fan motor			
Model…Nominal output		W	KFG4Q-61C3P … 60 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,066
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 67.62 ORG – YEL : 17.36 WHT – VLT : 18.47 YEL – PNK : 5.18 VLT – ORG : 10.10
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 3.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.165

9-3. Other component specifications

MODEL NO.	Indoor Unit		SPW-F93 ~ 253GH56
Power Transformer			ATR-II215TB
Rated			
	Primary	V, Hz	AC 230 V, 50 Hz
	Secondary		10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		˚C	145
Thermistor (Coil sensor)			PBC-41E-S25 , PBC-41E-S35
Coil resistance		KΩ	-10 ˚C : 23.7 ± 5 % , 20 ˚C : 6.5 ± 5 % -5 ˚C : 18.8 ± 5 % , 30 ˚C : 4.4 ± 5 % 0 ˚C : 15.0 ± 5 % , 40 ˚C : 3.1 ± 5 % 5 ˚C : 12.1 ± 5 % , 45 ˚C : 2.6 ± 5 % 10 ˚C : 9.7 ± 5 %
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0 ˚C : 16.5 ± 5 % , 40 ˚C : 2.7 ± 5 % 5 ˚C : 12.8 ± 5 % , 45 ˚C : 2.2 ± 5 % 10 ˚C : 10.0 ± 5 % , 50 ˚C : 1.8 ± 5 % 20 ˚C : 6.3 ± 5 % , 55 ˚C : 1.5 ± 5 % 30 ˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12 (SPW-F93 ~ 253GH56)
Solenoid coil			DKV-MOZS550E0 (SPW-F93 ~ 253GH56)

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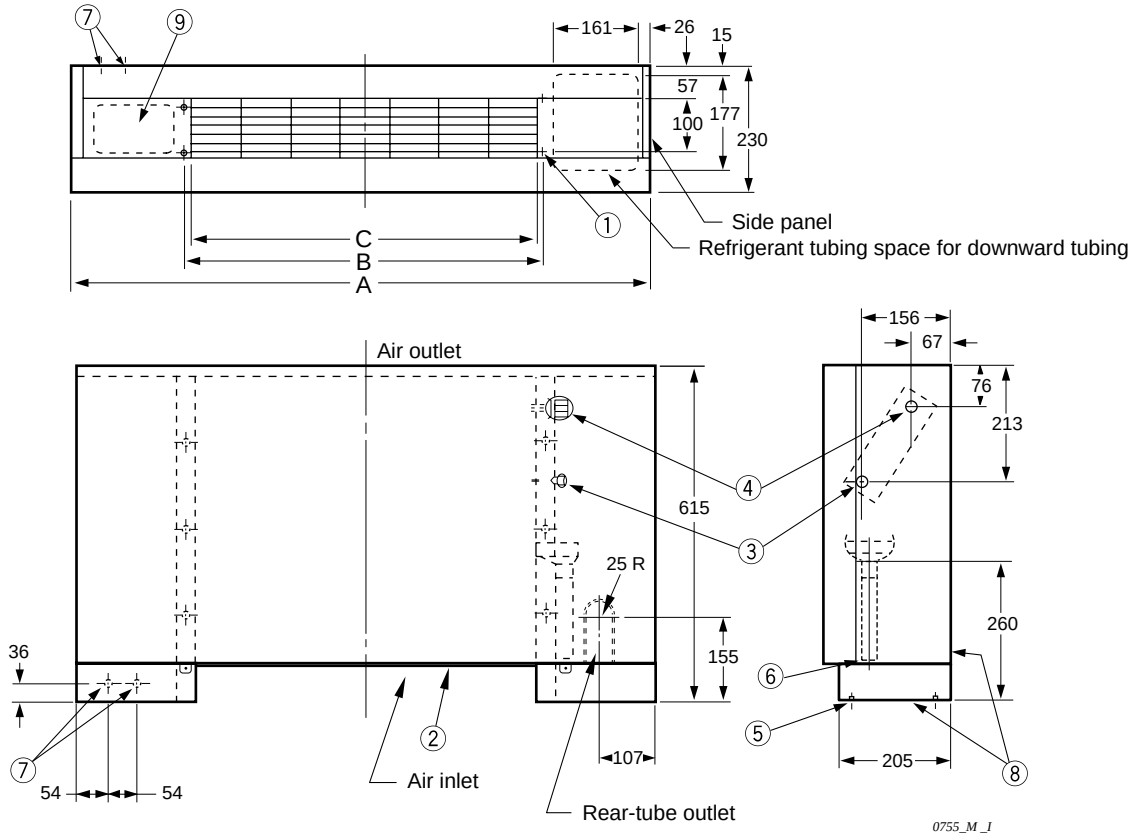
9-4. Dimensional data

Indoor unit : 9, 12, 18, 25 Type

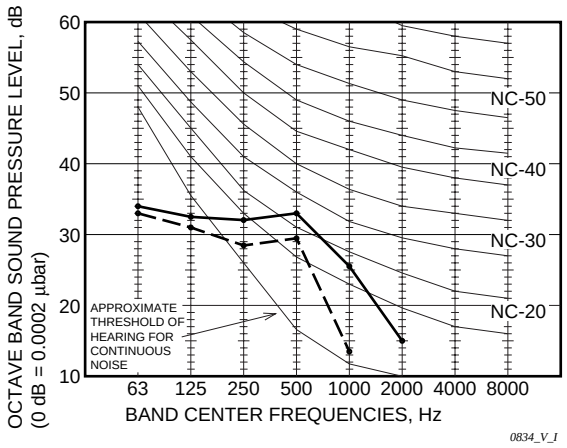
Type \ Size	A	B	C	Narrow tube	Wide tube
9, 12	1065	665	632	9.52	12.7
18,25	1380	980	947	9.52	15.88



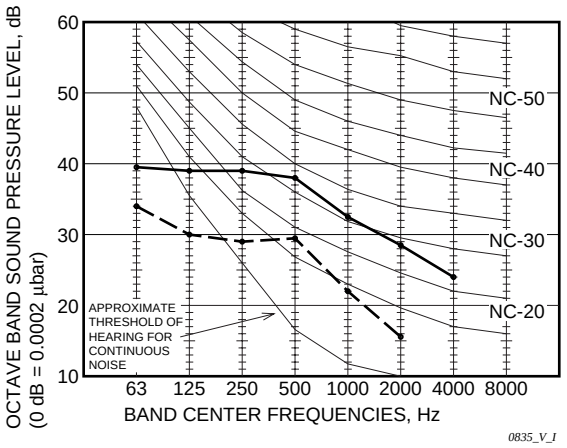
① 4-Ø12 hole (For fastening the indoor unit to the floor by screws.)
② Air filter
③ Refrigerant connection outlet (narrow tube)
④ Refrigerant connection outlet (wide tube)
⑤ Level adjusting bolt
⑥ Drain outlet (20 A)
⑦ Power cord outlet (downward, rear)
⑧ Refrigerant tubing outlet (downward, rear)
⑨ Location for mounting the remote controller (remote controller is attachable in the room)

9-5. Noise criterion curves

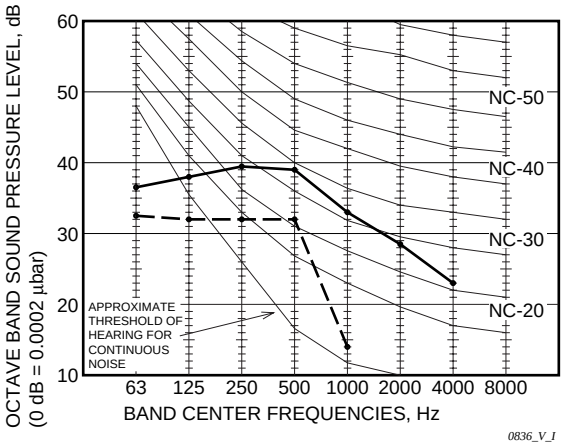
MODEL	: SPW-F93GH56
SOUND LEVEL	: HIGH 33 dB(A), NC 27
	LOW 28 dB(A), NC 23
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



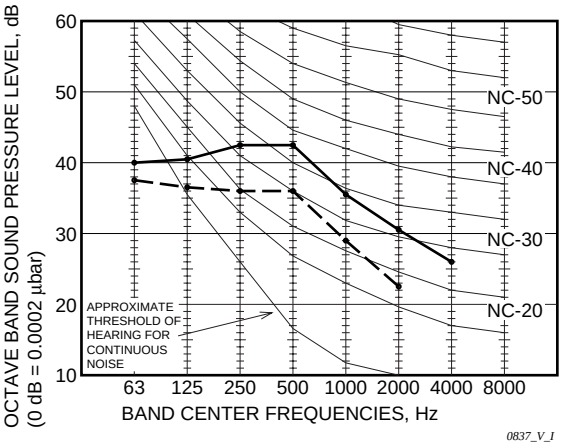
MODEL	: SPW-F123GH56
SOUND LEVEL	: HIGH 39 dB(A), NC 33
	LOW 29 dB(A), NC 23
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-F183GH56
SOUND LEVEL	: HIGH 39 dB(A), NC 34
	LOW 31 dB(A), NC 26
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-F253GH56
SOUND LEVEL	: HIGH 41 dB(A), NC 37
	LOW 35 dB(A), NC 30
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



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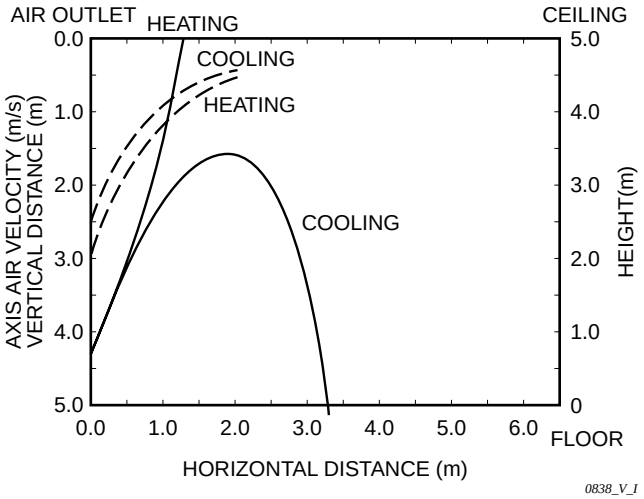
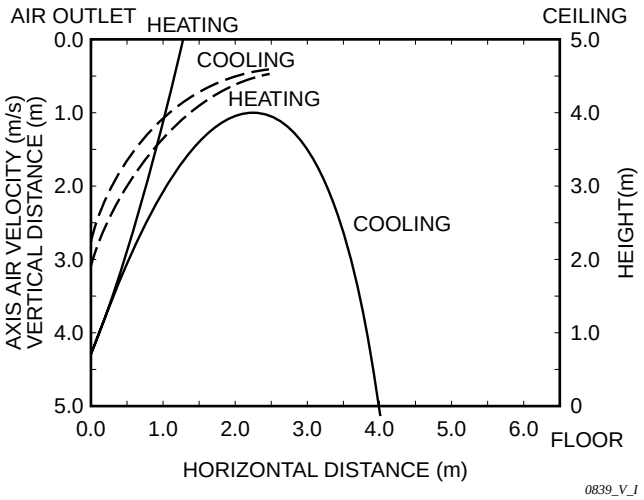
9-6. Air throw distance chart

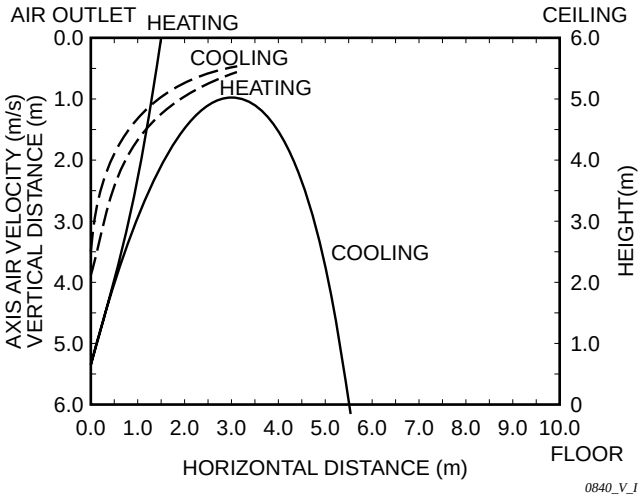
Model: 9 Type



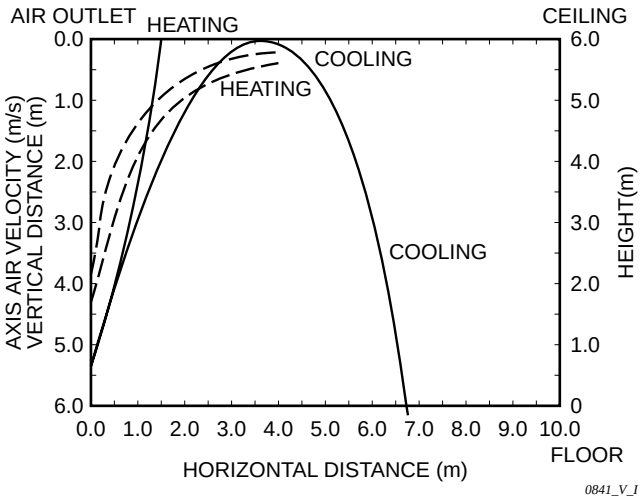
Model: 12 Type



Model: 18 Type



Model: 25 Type



Condition Fan Speed : Hi
Room air temp. : 27 ˚C DB in cooling mode
20 ˚C DB in heating mode

10. Conceal Floor-Standing Type (FM Type)

10-1. Specifications

Unit specifications (A)

MODEL No.	Indoor Unit		SPW-FM93GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	2.8			3.2		
		BTU / h	9,600			11,000		
Air circulation (Hi / Me / Lo)		m^3 / h	420 / 360 / 300					
Moisture removal (High)		Liters / h	1.1			—		
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264			198 – 242		
Running amperes*		A	0.24	0.25	0.26	0.17	0.18	0.19
Power input		W	51	56	61	36	40	45
Power factor		%	96.6	97.4	97.8	96.3	96.6	98.7
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max.72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Washable, easy access					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	33 / 30 / 28					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	12.7 (1 / 2)					
Drain connection			20A, OD26mm					
Drain pump			–					
Drain pump (drain connection)			Optional (RCS-SH80TG)					
Remote controller (option)			Optional / drain hose					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	616 (24 - 8 /32)			679 (26 - 23/32)		
	Width	mm (in)	904 (35 - 19 /32)			976 (38 - 14/32)		
	Depth	mm (in)	229 (9 - 1 /32)			312 (12 - 9 /32)		
Net weight		kg (lb)	21 (46)					
Shipping weight		kg (lb)	23 (51)					
Shipping volume		m^3 (cu. ft)	0.207 (7.3)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

10. Concealed Floor-Standing Type (FM Type)

Unit specifications (B)

MODEL No.	Indoor Unit		SPW-FM123GH56						
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz						
PERFORMANCE			Cooling			Heating			
Capacity		kW	3.6			4.2			
		BTU / h	12,000			14,000			
Air circulation (Hi / Me / Lo)		m^3 / h	540 / 420 / 360						
Moisture removal (High)		Liters / h	1.5			—			
ELECTRICAL RATINGS									
Voltage rating		V	220	230	240	220	230	240	
Available voltage range		V	198 – 264			198 – 242			
Running amperes*		A	0.37	0.38	0.39	0.3	0.31	0.32	
Power input		W	79	85	91	64	70	76	
Power factor		%	97.1	97.3	97.2	97	98.2	99	
Max. starting amperes		A	1	1	1	1	1	1	
FEATURES									
Controls / Thermostat control			Microprocessor / I.C. thermostat						
Timer			ON / OFF Timer (Max.72 hr)						
Fan speeds			3 and Automatic control						
Air filter			Washable, easy access						
Refrigerant control			Electronic refrigerant control valve						
Operation sound (Hi / Me / Lo)		dB-A	39 / 35 / 29						
Refrigerant tubing connections			Flare type						
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)						
outer diameter	Wide tube	mm (in)	12.7 (1 / 2)						
Drain connection			20A, OD26mm						
Drain pump			–						
Drain pump (drain connection)			Optional (RCS-SH80TG)						
Remote controller (option)			Optional / drain hose						
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions			
Dimensions	Height	mm (in)	616 (24 - 8 /32)			679 (26 - 23/32)			
	Width	mm (in)	904 (35 - 19 /32)			976 (38 - 14/32)			
	Depth	mm (in)	229 (9 - 1 /32)			312 (12 - 9 /32)			
Net weight		kg (lb)	21 (64)						
Shipping weight		kg (lb)	23 (51)						
Shipping volume		m^3 (cu. ft)	0.207 (7.3)						

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

10. Concealed Floor-Standing Type (FM Type)

Unit specifications (C)

MODEL No.	Indoor Unit		SPW-FM183GH56						
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz						
PERFORMANCE			Cooling			Heating			
Capacity		kW	5.6			6.3			
		BTU / h	19,000			21,000			
Air circulation (Hi / Me / Lo)		m^3 / h	900 / 780 / 660						
Moisture removal (High)		Liters / h	3			—			
ELECTRICAL RATINGS									
Voltage rating		V	220	230	240	220	230	240	
Available voltage range		V	198 – 264			198 – 242			
Running amperes*		A	0.54	0.56	0.58	0.37	0.41	0.43	
Power input		W	116	126	136	79	91	101	
Power factor		%	97.6	97.8	97.7	97.1	96.5	97.9	
Max. starting amperes		A	1	1	1	1	1	1	
FEATURES									
Controls / Thermostat control			Microprocessor / I.C. thermostat						
Timer			ON / OFF Timer (Max.72 hr)						
Fan speeds			3 and Automatic control						
Air filter			Washable, easy access						
Refrigerant control			Electronic refrigerant control valve						
Operation sound (Hi / Me / Lo)		dB-A	39 / 36 / 31						
Refrigerant tubing connections			Flare type						
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)						
outer diameter	Wide tube	mm (in)	15.88 (5 / 8)						
Drain connection			20A, OD26mm						
Drain pump			–						
Drain pump (drain connection)			Optional (RCS-SH80TG)						
Remote controller (option)			Optional / drain hose						
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions			
Dimensions	Height	mm (in)	616 (24 - 8 /32)			679 (26 - 23/32)			
	Width	mm (in)	1219 (47 - 32 /32)			1291 (50 - 26/32)			
	Depth	mm (in)	229 (9 - 1 /32)			312 (12 - 9 /32)			
Net weight		kg (lb)	28 (62)						
Shipping weight		kg (lb)	31 (68)						
Shipping volume		m^3 (cu. ft)	0.273 (9.6)						

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

10. Concealed Floor-Standing Type (FM Type)

Unit specifications (D)

MODEL No.	Indoor Unit		SPW-FM253GH56					
POWER SOURCE			220 - 230 - 240 V / 1 phase / 50Hz					
PERFORMANCE			Cooling			Heating		
Capacity		kW	7.1			8		
		BTU / h	24,000			27,000		
Air circulation (Hi / Me / Lo)		m^3 / h	1,020 / 840 / 720					
Moisture removal (High)		Liters / h	3.6			—		
ELECTRICAL RATINGS								
Voltage rating		V	220	230	240	220	230	240
Available voltage range		V	198 – 264			198 – 242		
Running amperes*		A	0.7	0.72	0.73	0.52	0.54	0.56
Power input		W	150	160	170	110	120	130
Power factor		%	97.4	96.6	97	96.2	96.6	96.7
Max. starting amperes		A	1	1	1	1	1	1
FEATURES								
Controls / Thermostat control			Microprocessor / I.C. thermostat					
Timer			ON / OFF Timer (Max.72 hr)					
Fan speeds			3 and Automatic control					
Air filter			Washable, easy access					
Refrigerant control			Electronic refrigerant control valve					
Operation sound (Hi / Me / Lo)		dB-A	41 / 38 / 35					
Refrigerant tubing connections			Flare type					
Refrigerant tube	Narrow tube	mm (in)	9.52 (3 / 8)					
outer diameter	Wide tube	mm (in)	15.88 (5 / 8)					
Drain connection			20A, OD26mm					
Drain pump			–					
Drain pump (drain connection)			Optional (RCS-SH80TG)					
Remote controller (option)			Optional / drain hose					
DIMENSIONS & WEIGHT			Unit dimensions			Package dimensions		
Dimensions	Height	mm (in)	616 (24 - 8 /32)			679 (26 - 23/32)		
	Width	mm (in)	1219 (47 - 32 /32)			1291 (50 - 26/32)		
	Depth	mm (in)	229 (9 - 1 /32)			312 (12 - 9 /32)		
Net weight		kg (lb)	28 (62)					
Shipping weight		kg (lb)	31 (68)					
Shipping volume		m^3 (cu. ft)	0.273 (9.6)					

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Cooling :

Rating conditions(*) : Indoor air temperature 27 °C DB / 19 °C WB, Outdoor air temperature 35 °C DB

Heating :

Rating conditions(*) : Indoor air temperature 20 °C DB, Outdoor air temperature 7°C DB / 6°C DB

10-2. Major component specifications

Indoor unit (A)

MODEL No.			SPW-FM93GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 153)
Fan motor			
Model…Nominal output		W	KFT6Q-11A3P … 15 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	6 … 831
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 370.2 ORG – YEL : 168.0 WHT – VLT : 105.4 YEL – PNK : 92.16 VLT – ORG : 67.05
Safety device			
Operating temperature	Open °C		148 $^{+0}_{-5}$ °C
	Close °C		—
Run capacitor	VAC, μF		440 V, 1.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.102

10. Concealed Floor-Standing Type (FM Type)

Indoor unit (B)

MODEL No.			SPW-FM123GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (1 … ø 153)
Fan motor			
Model…Nominal output		W	KFT4Q-21B3P … 30 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,102
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 217.7 ORG – YEL : 37.88 WHT – VLT : 37.33 YEL – PNK : 21.82 VLT – ORG : 22.48
Safety device			
Operating temperature	Open °C		148 $^{+0}_{-5}$ °C
	Close °C		—
Run capacitor	VAC, μF		440 V, 2.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.102

10. Concealed Floor-Standing Type (FM Type)

Indoor unit (C)

MODEL No.			SPW-FM183GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 … ø 153)
Fan motor			
Model…Nominal output		W	KFG4Q-61C3P … 60 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,066
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 67.62 ORG – YEL : 17.36 WHT – VLT : 18.47 YEL – PNK : 5.18 VLT – ORG : 10.10
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor		VAC, μF	440 V, 2.0 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.165

10. Concealed Floor-Standing Type (FM Type)

Indoor unit (D)

MODEL No.			SPW-FM253GH56
Source			220 - 230 - 240 V / 1 phase / 50Hz
Controller P.C.B. Ass'y			CR-X253GH (Microprocessor)
Fan (Number…diameter)		mm	Centrifugal (2 … ø 153)
Fan motor			
Model…Nominal output		W	KFG4Q-61C3P … 60 W
Source			220 - 230 - 240 V / 1 phase / 50 Hz
No. of pole…r.p.m. (230 V, High)		rpm.	4 … 1,066
Coil resistance (Ambient temperature 20°C)		Ω	BRN – WHT : 67.62 ORG – YEL : 17.36 WHT – VLT : 18.47 YEL – PNK : 5.18 VLT – ORG : 10.10
Safety device			
Operating temperature	Open °C		130 ± 5 °C
	Close °C		Differential 15 deg. (min.)
Run capacitor	VAC, μF		440 V, 3.5 μF
Electronic refrigerating control valve			
Solenoid control model			DKV-MOZS550E0
Coil resistance (at 20°C)		Ω	ORG – GRY : 46 , YEL – GRY : 46 RED – GRY : 46 , BLK – GRY : 46
Solenoid control valve model			IKV-24D12
Heat exchanger			
Coil			Aluminum plate fin / Copper tube
Rows…fin pitch		mm	3 … 2.0
Face area		m^2	0.165

10-3. Other component specifications

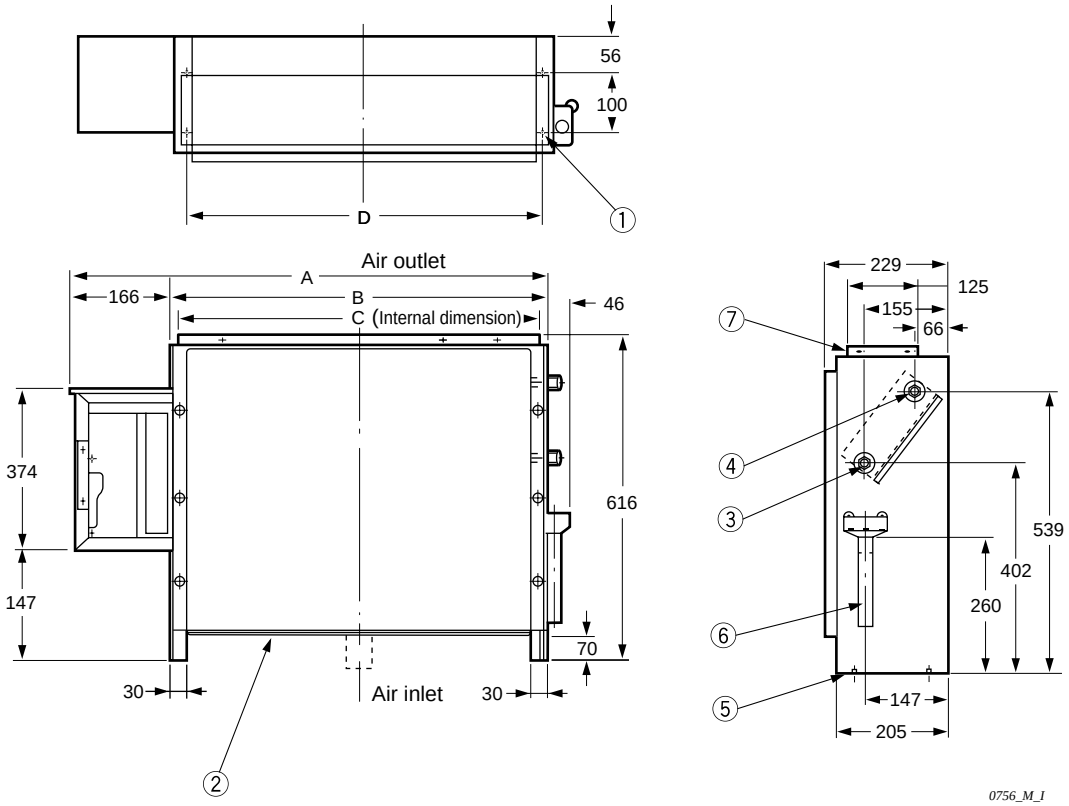
MODEL NO.	Indoor Unit		SPW-FM93 ~ 253GH56
Power Transformer			ATR-II215TB
Rated			
Primary		V, Hz	AC 230 V, 50 Hz
Secondary			10.2 V 1.4 A
			14 V 0.5 A
Coil resistance		Ω	WHT –WHT : 110 , BRN – BRN : 0.5 RED – RED : 2.3
Thermal cut off temperature		˚C	145
Thermistor (Coil sensor)			PBC-41E-S25 , PBC-41E-S35
Coil resistance		KΩ	-10 ˚C : 23.7 ± 5 % , 20 ˚C : 6.5 ± 5 % -5 ˚C : 18.8 ± 5 % , 30 ˚C : 4.4 ± 5 % 0 ˚C : 15.0 ± 5 % , 40 ˚C : 3.1 ± 5 % 5 ˚C : 12.1 ± 5 % , 45 ˚C : 2.6 ± 5 % 10 ˚C : 9.7 ± 5 %
Thermistor (Room or coil sensor)			KTEC-35-S6
Coil resistance		KΩ	0 ˚C : 16.5 ± 5 % , 40 ˚C : 2.7 ± 5 % 5 ˚C : 12.8 ± 5 % , 45 ˚C : 2.2 ± 5 % 10 ˚C : 10.0 ± 5 % , 50 ˚C : 1.8 ± 5 % 20 ˚C : 6.3 ± 5 % , 55 ˚C : 1.5 ± 5 % 30 ˚C : 4.0 ± 5 %
Solenoid control valve or coil			
Solenoid control valve			IKV-24D12 (SPW-FM93 ~ 253GH56)
Solenoid coil			DKV-MOZS550E0 (SPW-FM93 ~ 253GH56)

10. Concealed Floor-Standing Type (FM Type)

10-4. Dimensional data

Indoor unit : 9, 12, 18, 25 Type

Type \ Size	A	B	C	D	Narrow tube	Wide tube
9, 12	858	692	672	665	9.52	12.7
18,25	1173	1007	1002	980	9.52	15.88

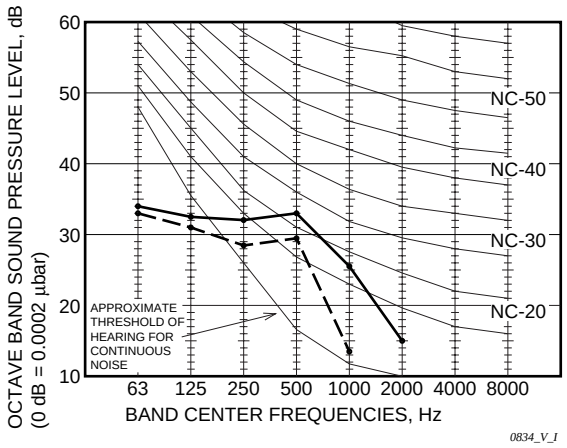


① 4-Ø12 hole (For fastening the indoor unit to the floor by screws.)
② Air filter
③ Refrigerant connection outlet (narrow tube)
④ Refrigerant connection outlet (wide tube)
⑤ Level adjusting bolt
⑥ Drain outlet (20 A)
⑦ Flange for the air-outlet duct

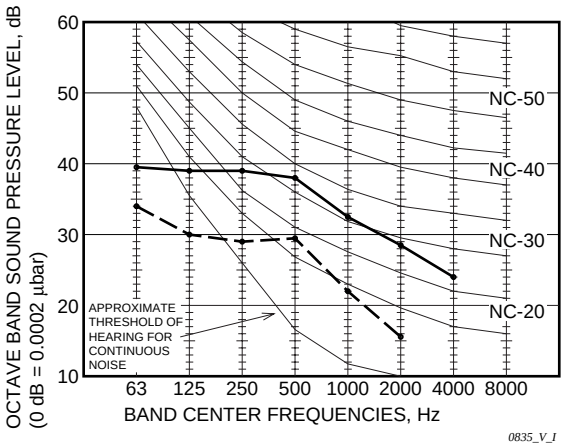
10. Concealed Floor-Standing Type (FM Type)

10-5. Noise criterion curves

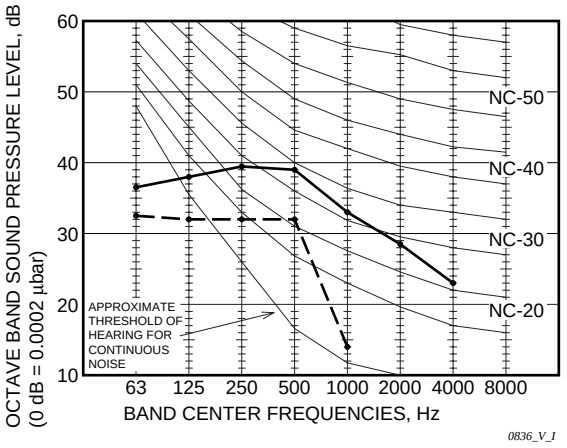
MODEL	: SPW-FM93GH56
SOUND LEVEL	: HIGH 33 dB(A), NC 27
	LOW 28 dB(A), NC 23
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



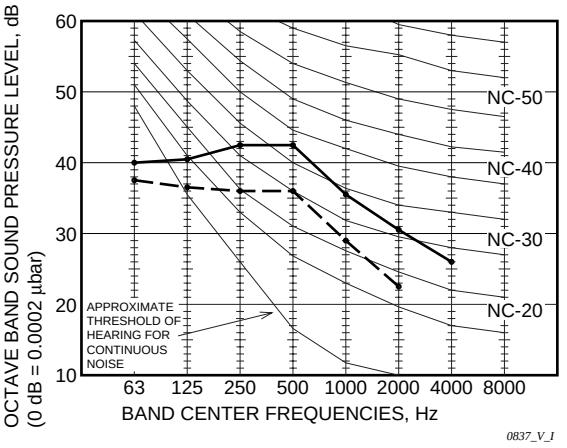
MODEL	: SPW-FM123GH56
SOUND LEVEL	: HIGH 39 dB(A), NC 33
	LOW 29 dB(A), NC 23
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



MODEL	: SPW-FM183GH56
SOUND LEVEL	: HIGH 39 dB(A), NC 34
	LOW 31 dB(A), NC 26
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



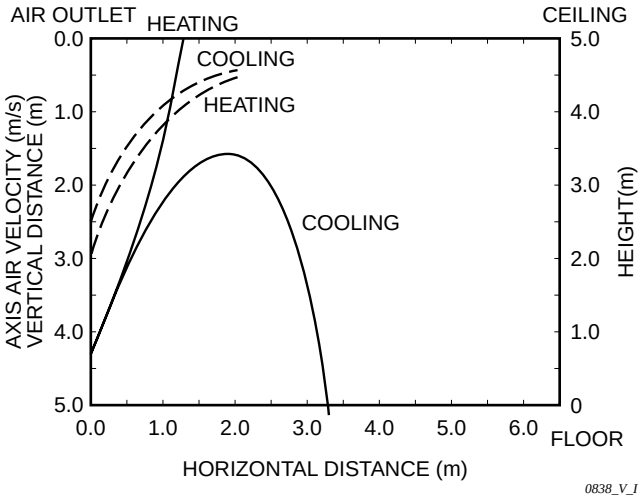
MODEL	: SPW-FM253GH56
SOUND LEVEL	: HIGH 41 dB(A), NC 37
	LOW 35 dB(A), NC 30
CONDITION	: In front of the unit 1 m, HEIGHT 1 m
SOURCE	: 220 - 230 - 240 V, 1 Phase, 50 Hz



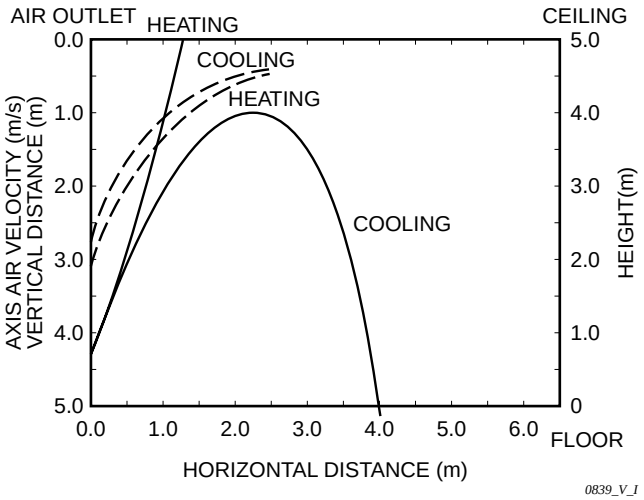
1

10-6. Air throw distance chart

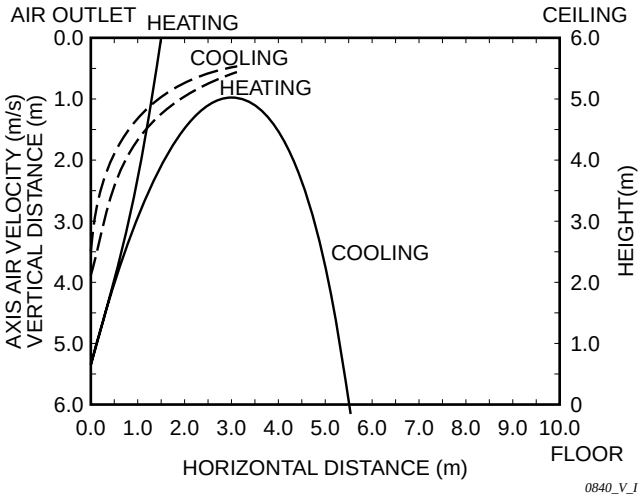
Model: 9 Type



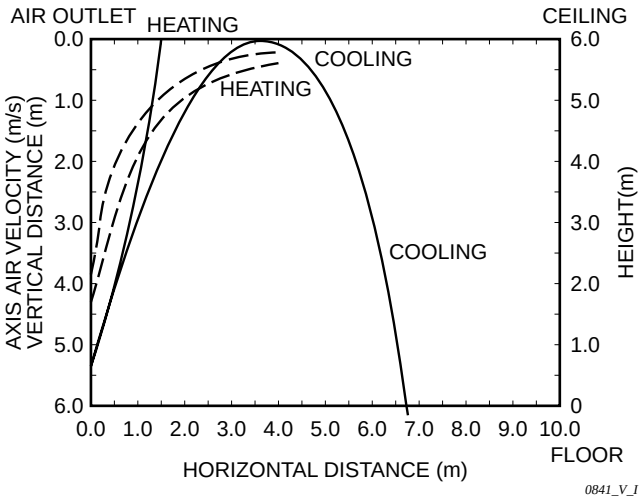
Model: 12 Type



Model: 18 Type



Model: 25 Type



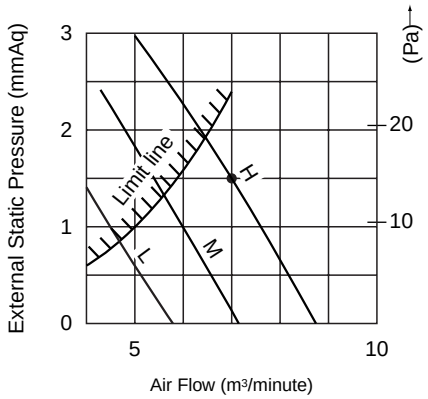
Condition Fan Speed : Hi
Room air temp. : 27 ˚C DB in cooling mode
20 ˚C DB in heating mode

10-7. Indoor fan performance

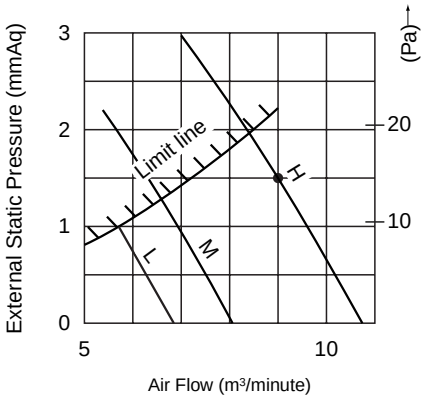
How to Read the Diagram

The vertical axis is the EXTERNAL STATIC PRESSURE (mmAq) while the horizontal axis represents the AIR FLOW (m^3/minute). The characteristic curve for the “H”, “Med”, and “Lo” fan speed control.
The name plate values are shown based on the “H” air flow. Therefore in the case of the 25 type the flow is 17 m^3/minute, while the EXTERNAL STATIC PRESSURE is 1.5 mmAq at “H” position. If the external static pressure is too great (due to long extention of duct, for example), the air flow volume may drop too low at each air outlet.

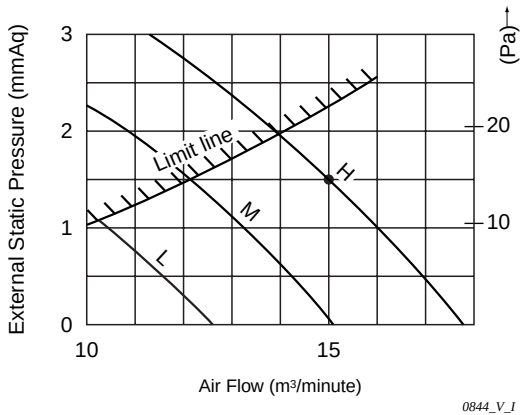
9 Type



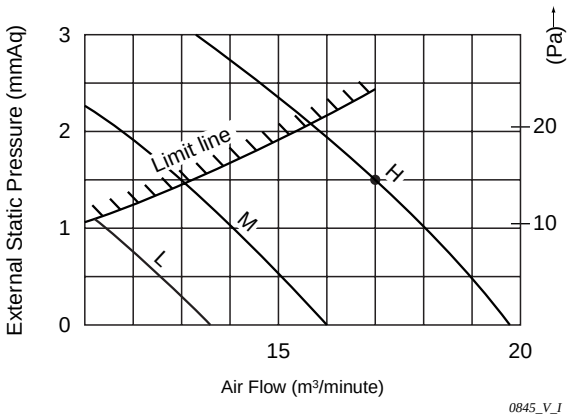
12 Type



18 Type



25 Type



Contents

2. Processes and Functions

2

1. Compressor Control

1-1. Compressor capacity control

(1) Compressor usage by model

Outdoor unit capacity	28 kw outdoor unit		22.4 kw outdoor unit		14 kw outdoor unit
Type of compressor	P/C compressor	AC compressor	P/C compressor	AC compressor	P/C compressor
Compressor capacity	14 kw	14 kw	11.2 kw	11.2 kw	14 kw

(2) Compressor capacity control
The compressor capacity control is achieved by switching on and off the P/C compressor, AC compressor, low-pressure valve, high-pressure valve, and external save valve following the current capacity obtained through the calculation procedure below.

- Serial capacity calculation (calculated from indoor unit capacity with thermo-on and the difference between temperature setting and room temperature)
  ↓
- Aid-capacity calculation (Calculation from operating condition)
  ↓
- Upper limit capacity (= serial capacity + aid-capacity)
  ↓
- Calculation of current capacity (protective control, etc., added)
  ↓
- The compressor electromagnetic contactor (52 C), low-pressure valve, high-pressure valve, and save valve output are set according to the current capacity.
  Occasionally, some special-purpose control is added.

(3) Relationship between current capacity and outputs

① 50-Hz 14 kw outdoor unit (SPW-C483GYH8, SPW-C483GY8)

Current capacity (kw)		0	3.5	7	10.5	14
14 kw compressor (P/C)	52C	OFF	ON	ON	ON	ON
	Low-pressure valve	ON	ON	ON	OFF	OFF
	High-pressure valve	OFF	OFF	OFF	ON	ON
Save valve		ON	ON	OFF	ON	OFF

② 50-Hz 22.4 kw outdoor unit (SPW-C703GYH8, SPW-C703GY8)

Current capacity (kw)		0	2.8	5.6	8.4	11.2	14	16.8	19.6	22.4
11.2 kw compressor (P/C)	52C	OFF	ON	ON	ON	ON	ON	ON	ON	ON
	Low-pressure valve	ON	ON	ON	OFF	OFF	ON	ON	OFF	OFF
	High-pressure valve	OFF	OFF	OFF	ON	ON	OFF	OFF	ON	ON
11.2 kw compressor (AC)		OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Save valve		ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF

③ 50-Hz 28 kw outdoor unit (SPW-C903GYH8, SPW-C903GY8)

Current capacity (kw)		0	3.5	7	10.5	14	17.5	21	24.5	28
14 kw compressor (P/C)	52C	OFF	ON	ON	ON	ON	ON	ON	ON	ON
	Low-pressure valve	ON	ON	ON	OFF	OFF	ON	ON	OFF	OFF
	High-pressure valve	OFF	OFF	OFF	ON	ON	OFF	OFF	ON	ON
14 kw compressor (AC)		OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Save valve		ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF

(4) AC compressor start delay (for outdoor units)
When two compressors are to be started, the AC compressor is started 15 seconds after the P/C compressor. (22.4 kw, 28 kw outdoor units)

(5) For compressors, when a compressor is stopped, it is not restarted for 3 minutes. During this period, the current capacity does not increase. However, stops before and after reverse-cycle starting and reverse-cycle defrosting are excluded from this rule.

(6) For outdoor units, when one compressor is running, the other compressor starts after the high-pressure valve is held off, the low-pressure valve held on, and the save valve held on, all for 30 seconds. (22.4 kw, 28 kw outdoor units)

(7) The control in (3) ~ (6) above takes precedence over all other control.

(8) After cumulative number of minutes (180 min. – number of indoor units connected) of continuous compressor operation, the unit stops operation for 3 minutes to detect outdoor temperature by thermo sensor located at heat exchanger.

(9) Current capacity speed increase
The microcomputer selects the optimum value for the speed at which the current capacity increases according to the operating conditions. In the fastest case, the current capacity immediately increases to the maximum; in the slowest case, the current capacity increases at 1 step / 90 seconds.

1-2. Protection control

(1) Main principles
If the current capacity decreases, it does not increase again for 3 minutes.

(2) Evaporation temperature control

① Of the E1 and E2 indoor coil temperature of all the thermo-on indoor unit operating in cooling mode. The lowest is taken as the minimum evaporation temperature (=Te) and the control indicated below is performed every 30 seconds.

Minimum evaporation temperature (Te)	Control
↑ 7.0˚C	Current capacity increase allowed
6.5˚C | 3.0˚C	Current capacity increase inhibited
2.5˚C ↓	Current capacity decreases 1 step

② When TEST RUN selected for even one of the indoor units operating in cooling mode, the current capacity is always allowed to increase.

③ For 3 minutes after the compressor start, the current capacity decrease is the current capacity increase inhibited.

④ At the minimum current capacity, if evaporation temperature control requires further current capacity decrease, it is treated as current capacity increase inhibited for 10 minutes and the unit does not stop operation.

(3) Condensing temperature control

① Of the E1 and E2 indoor coil temperatures of all the connected indoor units, the highest is taken as the maximum condensing temperature (=Tc) and the control in the table below is performed. This control is performed every 30 seconds.

Minimum condensing temperature (Tc)	Control
↑ 63.5˚C	Thermo-off
63.0˚C | 57.5˚C	Current capacity decreases 1 step
57.0˚C | 50.0˚C	Current capacity increase inhibited
49.0˚C ↓	Current capacity increase allowed

② At the minimum current capacity, if condensing temperature control requires further current capacity decrease, it is treated as current capacity increase inhibited for 10 minutes and the unit does not stop operation. When this 10 minutes is up, if the condensation control is still on current capacity decrease, the unit stops operation. However, if the maximum condensing temperature is 63.5 ˚C or higher, the unit stops operation immediately. The 10-minute timer is cleared if the control is moved into any area other than current capacity decrease or if all the compressors are stopped.

(4) When heating, if outdoor fan ≠ H , current capacity increase allowed is treated as current capacity increase inhibited.

(5) If the compressor maximum discharge temperature ≥ 98 ˚C, the current capacity increase allowed is treated as current capacity increase inhibited.

(6) Compressor discharge temperature protection control
If the discharge temperature of a compressor increases to abnormally high (about 108 ˚C) during operation , the unit stops operation by thermo-off or an alarm message appears. For each of the compressors, if the unit stops operation by thermo-off due to abnormally high discharge temperature 4 times within 5 minutes of starting, an alarm message appears.

(7) Compressor current control
The current for the 2 compressors is controlled separately.

① Lock current control
If the current for an operating compressor increases to above the corresponding value in the table below, an alarm message appears.

Compressor capacity	Lock current
50 Hz, 11.2 kw compressor	14.7 A
50 Hz, 14 kw compressor	20.4 A

② Overload current
If the current for an operating compressor remains above the corresponding value in the below table for 30 seconds, an alarm message appears.

Compressor capacity	Lock current
50 Hz, 11.2 kw compressor	12.3 A
50 Hz, 14 kw compressor	17.1 A

(8) Warm up operation control
In initial operation after microcomputer initialization, and after reverse-cycle start control (explained in Section 3) and 4-way valve switching control (explained in Section 5), the AC compressor occasionally takes as long as 20 minutes to start.

(9) Outdoor coil temperature control in cooling

① Each area is monitored constantly, and if control moves into the thermo-off area, the unit stops immediately. For the capacity decrease area, if it has been decreased once, it is not decreased again for 30 seconds.

② This control is not performed during test operation.

③ Even if the thermostat is switched off, this control does not result in an alarm.

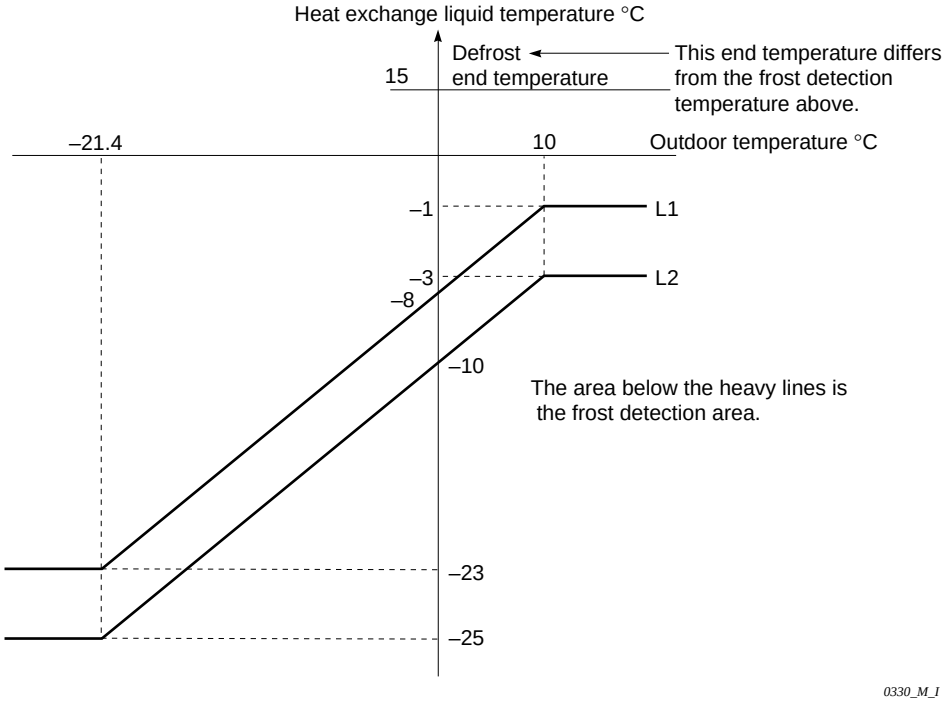
Outdoor heat exchange coil temperature	Control
↑ 66˚C	Thermo-off
65˚C	Current capacity decrease 3 steps
64˚C | 63˚C	Current capacity increase inhibited
62˚C ↓	Current capacity increase allowed

2. Reverse Cycle Defrosting

- Defrost is accomplished through a compressor reverse-cycle.
- During defrost operation, the outdoor fan is stopped and the indoor fan is either stopped or run at L or LL.

2-1. Frost detection

(1) Frost is not monitored for the first 5 minutes of operation.
(2) The frost detection conditions are:
Condition 1 = heat exchanger liquid temp. is 8 minutes continuously below the L2 line
Condition 2 = heat exchanger liquid temp. is 60 minutes, cumulative, below the L1 line



2-2. Defrost execution condition

(1) 35 minutes or less, cumulative, for heating operation

2-3. Defrost end conditions

(1) Outdoor heat exchanger liquid temperature ≥ 15 ˚C

(2) Defrost operation is 12 minutes maximum.

(3) Reverse-cycle defrost control

		1 minute	12 minutes max.	1 minute
P/C compressor		OFF	Compressor capacity control	OFF
AC compressor		OFF	↑	OFF
4-way valve	ON	OFF	OFF	ON
Outdoor fan		STOP	STOP	H
Low-pressure valve		ON	Compressor capacity control	ON
High-pressure valve		OFF	↑	OFF
Save valve		ON	Save valve control	ON

3. Reverse Cycle Starting Control

At the start of heating operation, the cooling cycle operates for 50 seconds. During this time, the outdoor and indoor fans are stopped.

Reverse-Cycle start conditions:

(1) When starting heating operation after 60 minutes of stop operation
(2) When starting heating operation for the first time after switching on the power
(3) Reverse-cycle start control details
After 50 seconds of reverse-cycle (cooling) operation, the outdoor unit stops for 20 seconds, then starts normal operation.

		50 seconds	20 seconds	
P/C compressor	OFF	Compressor capacity control	OFF	
AC compressor	OFF	↑	OFF	
4-way valve	?	OFF	OFF	On after start
Outdoor fan	STOP	STOP	H	
Low-pressure valve	ON	Compressor capacity control	ON	
High-pressure valve	OFF	↑	OFF	
Save valve	ON	Save valve control	ON	

4. Outdoor Fan Control

(1) Outdoor fan mode

Mode	Fan
3	H
2	M
1	L
0	STOP

(2) Initial control
For the first 30 seconds after operation start, outdoor fans are controlled according to the outdoor temperature as shown below.
When the fans are started, they rotate at high speed for 12 seconds.

Cooling	Heating
Outdoor temperature ↑ 16 H (M) 11 M (L) L (STOP)	Outdoor temperature ↑ 21 H (M · L · STOP) 16 H (M · L) H (M)

* The outdoor fans rotate at the mode in the parentheses ( ) according to the operating capacity.

(3) The fan mode is then switched up or down according to the operating conditions.

(4) In order to detect the outdoor temperature, the fans rotate at high speed under the conditions below.
- 12 seconds immediately before compressor starts.
- For 1 minute after compressor stopps due to thermo-cycle

5. 4-way Valve Switching Control

(1) In normal operation, the 4-way valve is off for cooling and on for heating.

(2) When the outdoor unit is stopped, the previous mode is maintained.

6. Save Valve Control

(1) The save valve is switched on according to the tables shown in Section 1. “Compressor Control.”

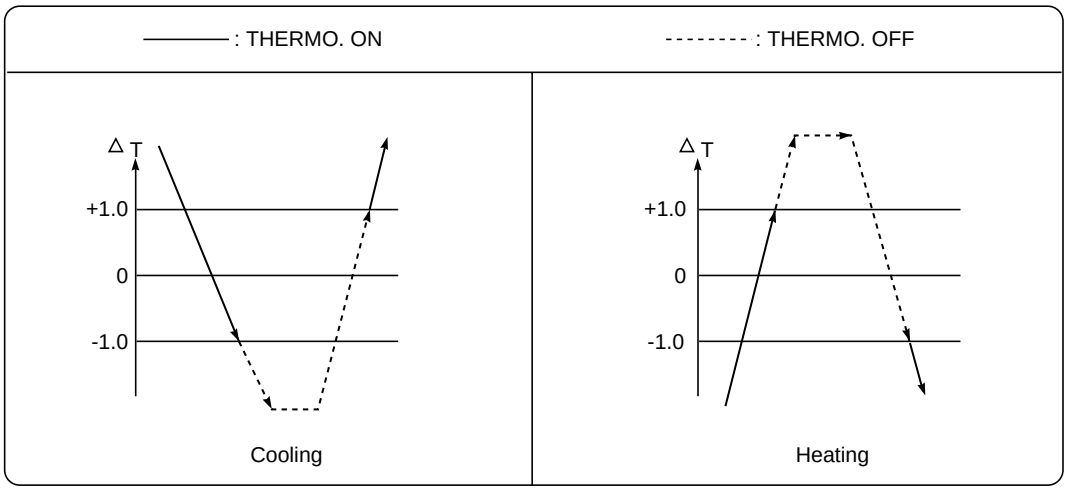
(2) The save valve is on when the outdoor unit is stopped.

7. Room Temperature Control

The thermostat is switched on/off by ΔT as follows.

ΔT = (Room temperature) – (Set temperature)	
Remote control thermostat	Room temperature = remote control sensor
Body thermostat	Room temperature = (Body sensor) – (Shift temperature*)

* Shift temperature (valid only for heating)
0 ˚C ~ 10 ˚C can be selected with the remote controller simple setting mode.
(Factory settings: floor standing type ----- 0 deg; wall-mounted type ----- 2 deg; other types ----- 4 deg)



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Supplement:

(1) After thermo.-on, it will not thermo.-off for 3 minutes due to ΔT .
However, for heating, if the indoor coil E2 temperature ≥ 64 ˚C, it will thermo.-off within 5 minutes (over load protection).

(2) After thermo.-off, it will not thermo.-on for 1 minute.
For cooling or dehumidifying, it will not thermo.-on if the indoor coil E1 or E2 temperature < 6 ˚C.

(3) At the start of operation, the slope is down (thermo.-on).

(4) When the system is set for test operation, it will not thermo.-off for 60 minutes (forced thermo.-on).

8. Automatic Cooling Control

- Valid only for connection of one indoor unit (or one group).
- Cooling and heating operations are selected automatically so that the room temperature is equal to set temperature plus shift temperature.

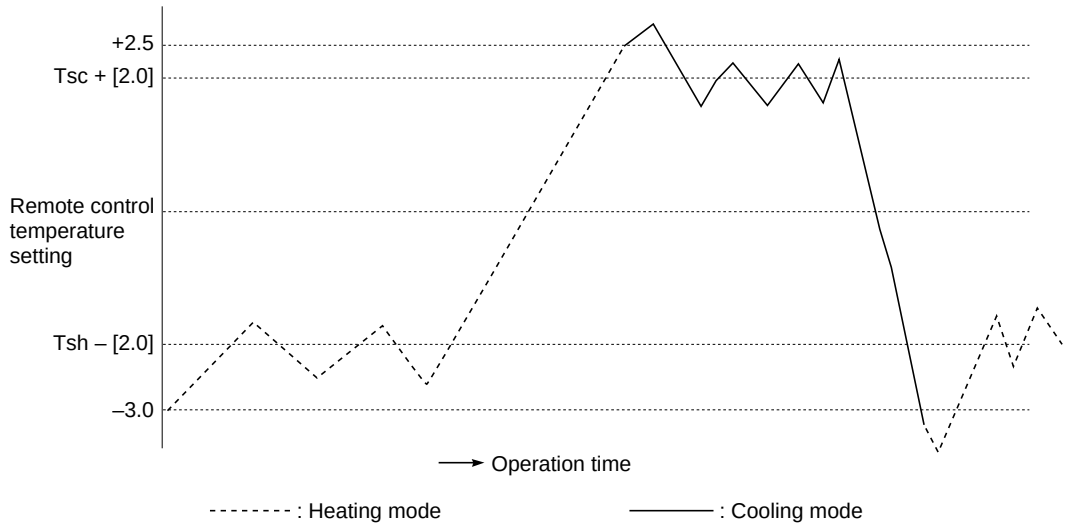
(1) At the start of operation, the mode is determined by the body sensor and the remote control temperature setting.
- Body sensor temperature ≥ remote control temperature setting ➡ cooling operation
- Body sensor temperature < remote control temperature setting ➡ heating operation

(2) Then, operation is controlled so that the room temperature is the temperature below (Tsc, Tsh).
- Cooling mode ➡ Tsc = remote control temperature setting + [2.0] *
- Heating mode ➡ Tsh = remote control temperature setting – [2.0] *

* The values in brackets are the factory settings. These values can be set within the range of 0 to 10 ˚C with the remote controller detailed setting mode.

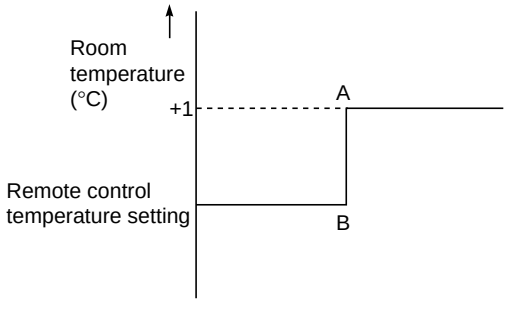
(3) Operation mode change
- In cooling mode, when room temperature falls below [Tsc – 1.0] ˚C ➡ changes to heating mode
- In heating mode, when room temperature rises above [Tsh + 0.5] ˚C ➡ changes to cooling mode

The mode does not change during the first 10 minutes after the start of operation.



0320_M_I

9. Dehumidifying Control



A: Normal cooling operation

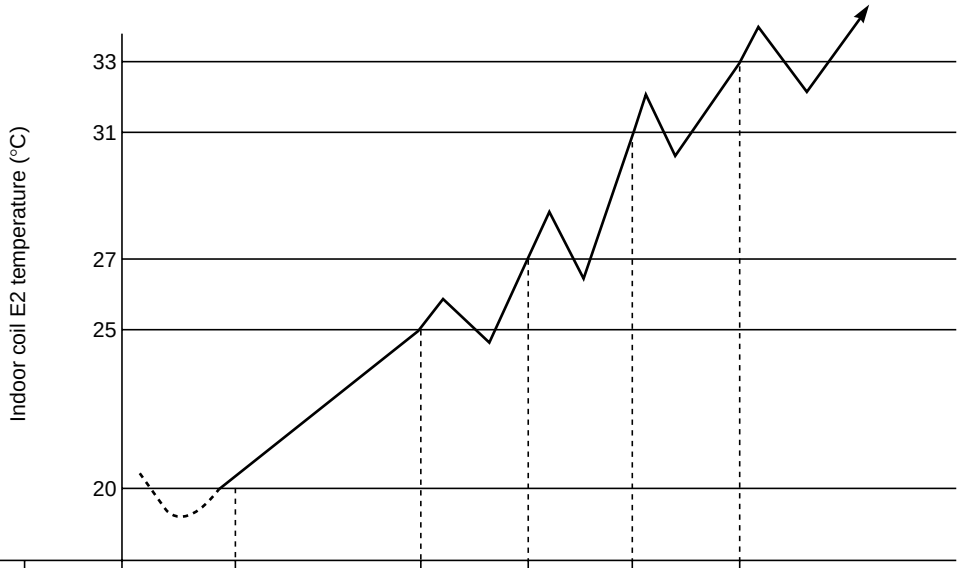
B: Thermostat on • • • • • L : Low fan speed
Thermostat off • • • • • LL : Very low fan speed

0321_M_I

10. Heating Preparations

(1) After thermo.-on, until the set fan speed is reached, cool air is output (emanates) from this beginning heating operation and the indoor fan speed is controlled as shown below to prevent cold draft.

- When the fan speed is LL or off, “STAND BY” is displayed at the remote controller.
  - Room temperature thermostat off
  - Condensation elimination operation
  - After heating operation start, until the indoor coil E2 temperature is 27 ˚C or higher (6 minutes max.)
- After heating operation start, the fan speed approaches the set fan speed as the indoor coil E2 temperature rises.



Fan speed setting							
	* H	LL	LL/none	LL	L	M	H
	M	LL	LL/none	LL	L	M	M
	L	LL	LL/none	LL	L	L	L

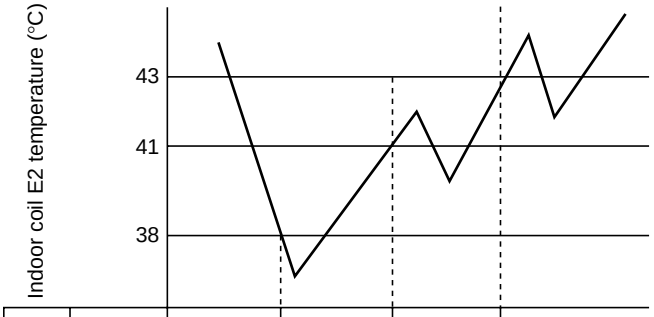
H: High L : Low
M: Middle LL: Very low

* Same for automatic fan speed setting
• The dotted lines are fan off. (When the indoor coil E2 temperature is 20°C or lower, the fan does not operate.)

0322_M_I

(2) Fan speed control after set fan speed is reached

- Indoor coil E2 temperature ≥ 43 ˚C, the control below is performed.
- Indoor coil E2 temperature ≤ 38 ˚C, until indoor coil E2 temperature ≥ 43 ˚C, the fan speed accelerates in a rising slope.
- When the fan speed changes, it does not change again for 1 minute.



Fan speed setting					
	H	H	L	M	H
	M	M	L	M	M
	L	L			

H: High L : Low
M: Middle LL : Very low

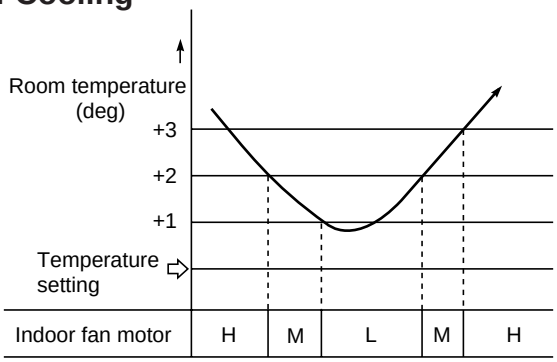
0323_M_I

11. Automatic Fan Speed Control

(1) When automatic fan speed is selected with the remote controller, the indoor fan motor is controlled as shown below.

(2) The fan speed is not switched more than once per 3-minute period for cooling or 1-minute period for heating.

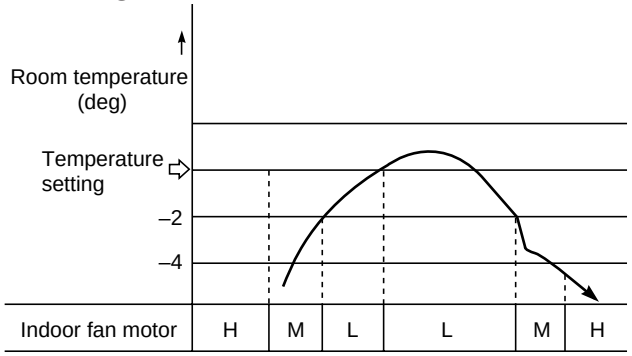
11-1. Cooling



H : High L : Low
M : Middle LL: Very low

0324_M_I

11-2. Heating



H : High L : Low
M : Middle LL: Very low

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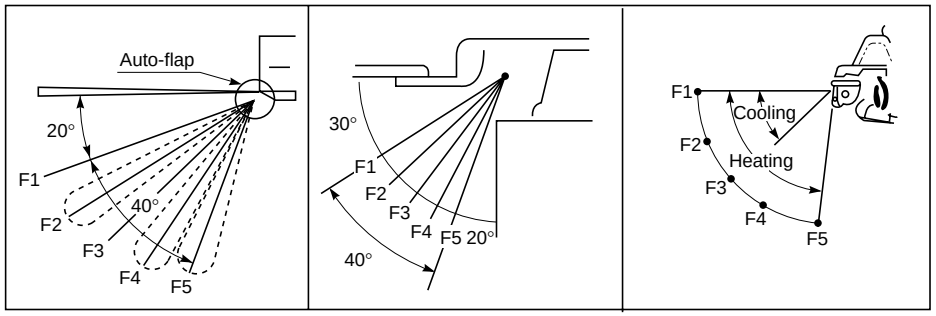
12. Auto-flap Control

12-1. X, S, T Type

The auto-flap controls the air flow to one of the five vertical levels.

X type (4-way) S type (2-way) T type



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Operation mode	Flap position	
	Automatic setting	Manual setting
Cooling / drying	F2	F1 · F2 · F3 · swing
Fan	F2	F1 · F2 · F3 · F4 · F5 · swing
Heating	F4	F1 · F2 · F3 · F4 · F5 · swing
Heating preparation	F2 (Original position after release)	

(1) When the unit is stopped, the auto-flap returns to the F5 position.

(2) When the airflow direction is set manually (optional setting), the auto and swing settings will be released. To return to automatic airflow direction, change the operation mode.

(3) Once auto-flap is set, it is input into the microcomputer memory.

(4) When the operation mode is changed, the unit begins a sensing operation. (If a search for sensing points does not succeed in one minute, only the flap moves.)

Remote controller configuration	Wired remote controller (RCS-SH80TG)		Wireless remote controller (RCS-SH80TGWL)		System controller (SHA-KC64TG)
System / Auto-flap	Single	Group control	Single	Group control	
Swing	○	○	○	○	△ (*1)
Air direction setting	○	○	○	○	△ (*1)

*1: Only possible when remote control unit is not used.
For group control, the settings are for the complete group.

12-2. K Type

When the “SWEEP” button is pressed, swing starts and when it is pressed again, the flap stops in place.

13. Drain Pump Control

(Does not include K, T, D, F type)

(1) Drain pump control activates when the cooling or dehumidifying thermostat is on.

(2) Drain pump control operates for 20 minutes after the thermostat deactivates due to freeze prevention control.

(3) When the indoor protection device float switch activates, drain pump control operates for 5 minutes. Then, operation continues until the float switch recovers.

14. Indoor Electronic Control Valve

- However, when the compressor is stopped, there still occur 20 pulses. When the power is first switched on until the ON / OFF operation button is pressed, the valve is open at 480 pulses.
- From then on, control is accomplished as shown below.

14-1. Cooling and dehumidifying operation

(1) When operation is stopped and thermo.-off, operation is still at 20 pulses. However, the electronic control valve may be opened for about 3 minutes to recover oil in the pipes.

(2) When the thermostat is active, the valve is controlled in the range of 70 to 480 pulses.

(3) When the compressor maximum discharge temperature ≥ 98 ˚C, the degree of electronic control valve opening increases.

(4) When the super-heat of indoor unit (E3 temperature – E1 temperature) is low, the degree of electronic control valve opening is reduced. However, (3) has priority.

(5) When the super-heat at the indoor unit outlet is high, the degree of the electronic control valve opening increases.

14-2. Heating operation

(1) When operation is stopped and the thermostat is inactive, the electronic expansion valve opens and closes so that the refrigerant does not accumulate excessively in the indoor unit.

(2) When thermo.-on, the valve is controlled within the range of 70 to 480 pulses.

(3) When the compressor maximum discharge temperature ≥ 98 ˚C, the degree of electronic control valve opening.

(4) When the degree of heat at the outdoor heat exchanger (coil temperature – liquid temperature) is high, the degree of electronic control valve opening increases.

(5) When the sub-cool of indoor unit (E2 temperature – E1 temperature) is low, the degree of electronic expansion valve opening reduces. However, (4) above takes precedence.

(6) When the degree of overcooling at the indoor unit outlet (E2 temperature – E1 temperature) is high, the degree of electronic expansion valve opening is increased.

(7) When the indoor heat exchanger temperature ≤ 30 ˚C, the electronic control valve returns to its initial pulse control.

Contents

3. Service Procedures

3

1. Troubleshooting

This section explains:

- ❏ What the LED codes mean
- ❏ What the remote controller display (screen) messages mean
- ❏ How to use the flow charts to find and solve problems
- ❏ How to use the self-diagnostic tests to find parts which don't work right

This unit is made to be trouble free, and not need much service. However, with time, moving parts wear out, electronic components break down, and sometimes misuse damages the unit.
The purpose of this section is to help you when the unit does not work properly.
Sometimes your experience will tell you right away where to look for a problem, and when you find it you will know how to fix it at once.
Often, however, all you have is a *symptom* like "poor cooling" or "outside fan doesn't come on." Now you must find out the cause of the problem, and then how to fix it. This section provides several ways to help you go from the symptom to the cause and then the solution.
The first chart, **General Troubleshooting Flow Chart** is divided into two sections: Poor heating and Poor Cooling. Under each heading you will find the main things that can go wrong and cause either of these problems. Sometimes you can start with this chart and find the problem right away, but often you will come here for more suggestions after you have looked at the error code on the remote controller display. This chart gives you the "big picture" of problems and solutions.
The other main tool we explain here is the use of the **Alarm Messages**. When a certain part fails or a safety device has shut the unit down, any alpha-numeric codes appear on the display to guide you to the problem.
By understanding the code you can often go right to the problem area and then, with this manual and your knowledge of air conditioning, find the solution.

1-1. Check before and after troubleshooting

Many problems may happen because of wiring or power supply problems, so you should check these areas first. Problems here can cause false results in some of the following tests, and so should be corrected first.

WARNING

- **Since the check of interior of outdoor unit is very hazardous, always cut off its power supply at first. Begin the inspection more than 3 minutes after cutting off the power supply, and after ensuring that the unit has halted completely and that the LED of outdoor unit's P.C.B. Ass'y has turned OFF.**
- **This is because a condenser of massive capacity is used inside the outdoor unit; and a charging load remains inside it even after the power has been cut off, and it takes about 3 minutes for it to get discharged.**
- **While in usual state, do not disconnect the white connector of outdoor controller which is marked "CN1"; because it may cause malfunctioning.**

(1) Check power supply wiring
- Check that power supply wires are correctly connected to terminal plate in the outdoor unit.
- Check the power supply wires are correctly connected between the terminal plate in the indoor unit and terminal plate in the outdoor unit.

(2) Check inter-unit wiring
- Check that inter-unit control wiring (DC low voltage) is correctly connected between the indoor unit and outdoor unit.

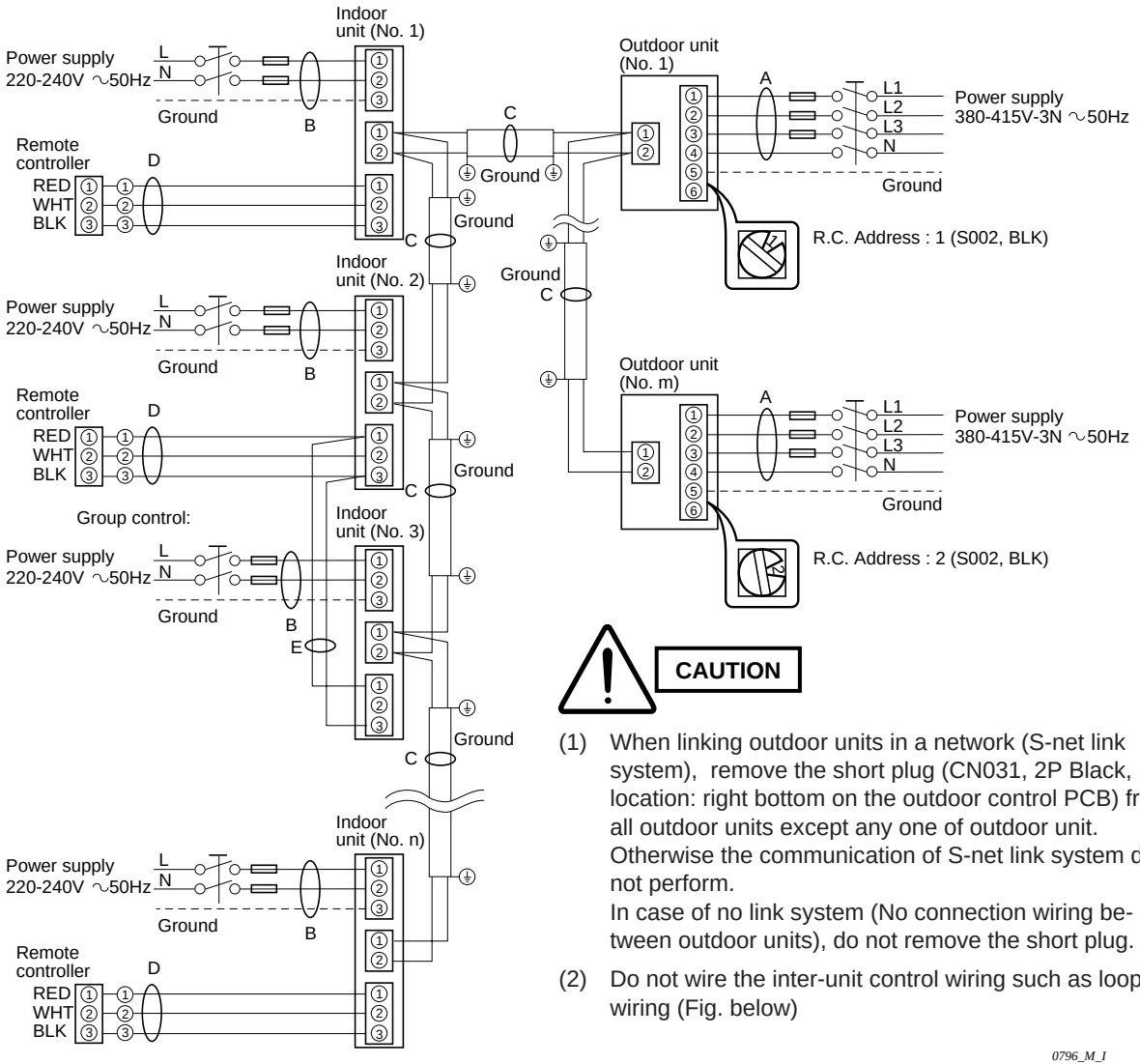
(3) Check power supply
- Check that voltage is within the specified range (±10 % of the rating).
- Check that power is being supplied.

WARNING

If the following troubleshooting must be done with power being supplied, be careful not to touch any uninsulated live part that can cause ELECTRIC SHOCK.

(4) Check the lead wires and connectors in indoor and outdoor units.
- Check that the sheath of lead wires is not damaged.
- Check that the lead wires are firmly connected at the terminal plate.
- Check that the wiring is correct.

Wiring system diagram



CAUTION

(1) When linking outdoor units in a network (S-net link system), remove the short plug (CN031, 2P Black, location: right bottom on the outdoor control PCB) from all outdoor units except any one of outdoor unit. Otherwise the communication of S-net link system does not perform.
In case of no link system (No connection wiring between outdoor units), do not remove the short plug.

(2) Do not wire the inter-unit control wiring such as loop wiring (Fig. below)

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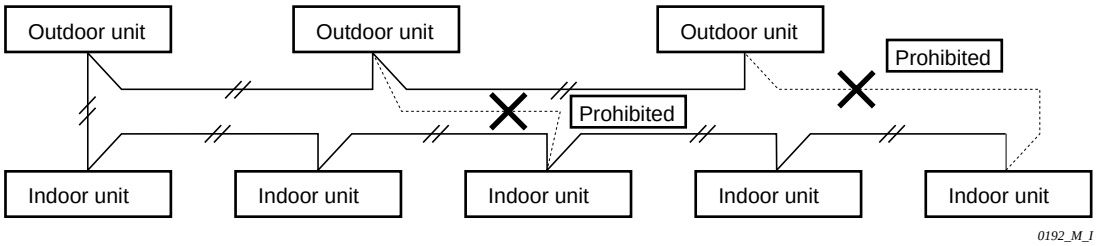

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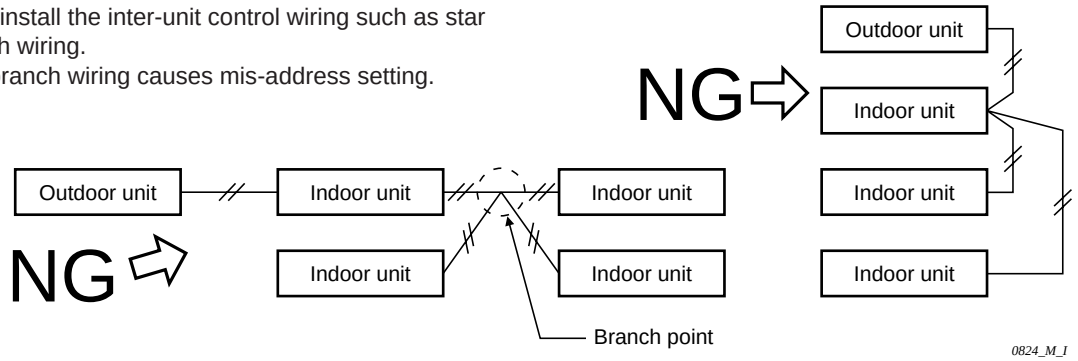
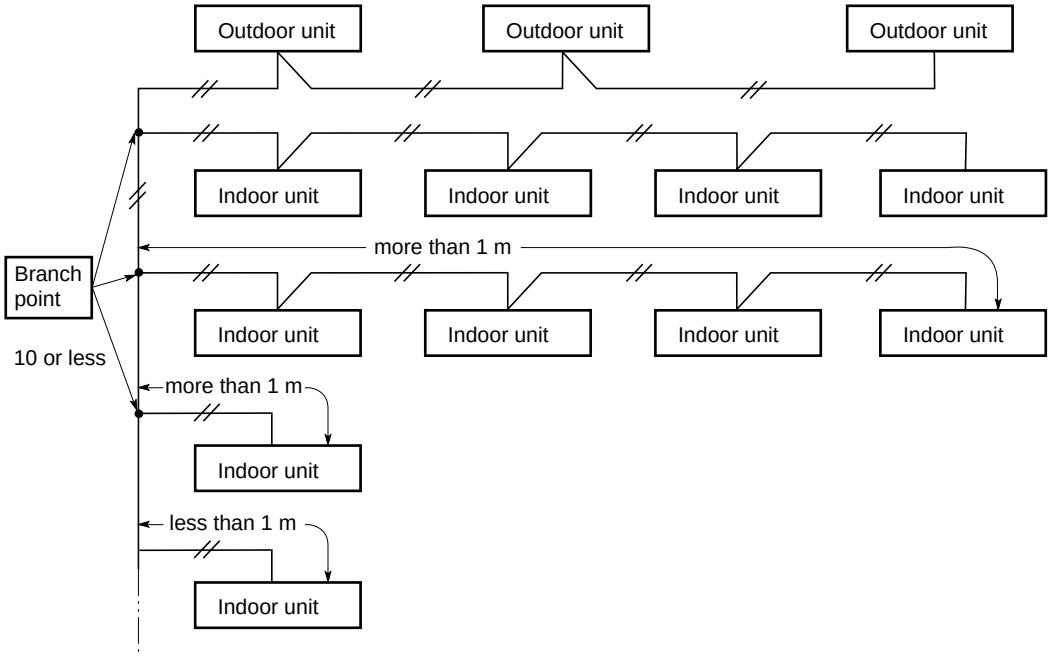
CAUTION

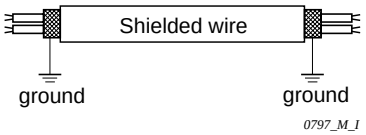
(3) Don't install the inter-unit control wiring such as star branch wiring.
Star branch wiring causes mis-address setting.



(4) If branching the inter-unit control wiring, the number of branch points should be 10 or less. (Branches less than 1 m are not included in the total branch number.)



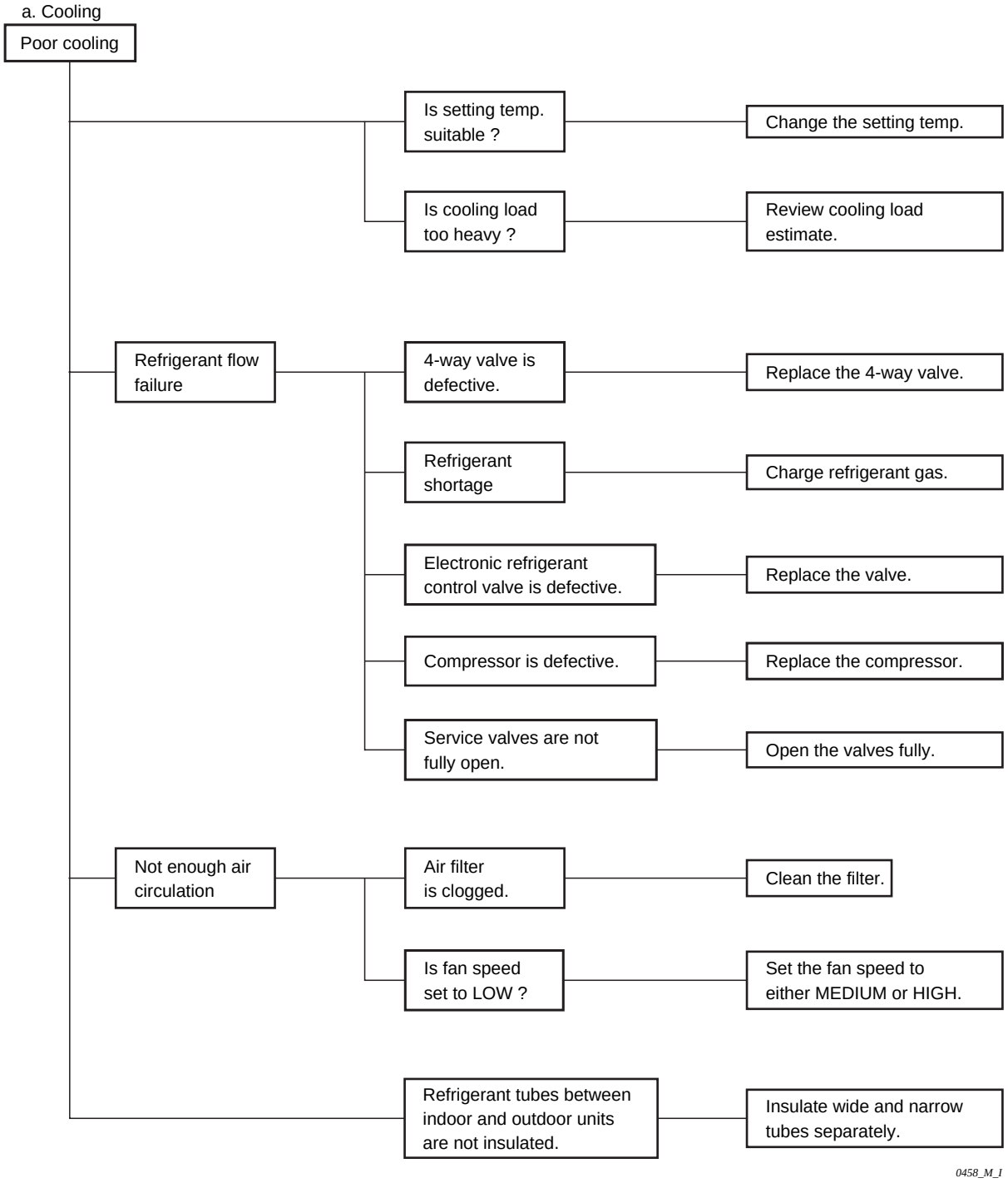
(5) Use shielded wires for inter-unit control wiring (c) and ground the shielded on both sides, otherwise misoperation from noise may occur.
All wiring except inter-unit control wiring (c) has polarity.



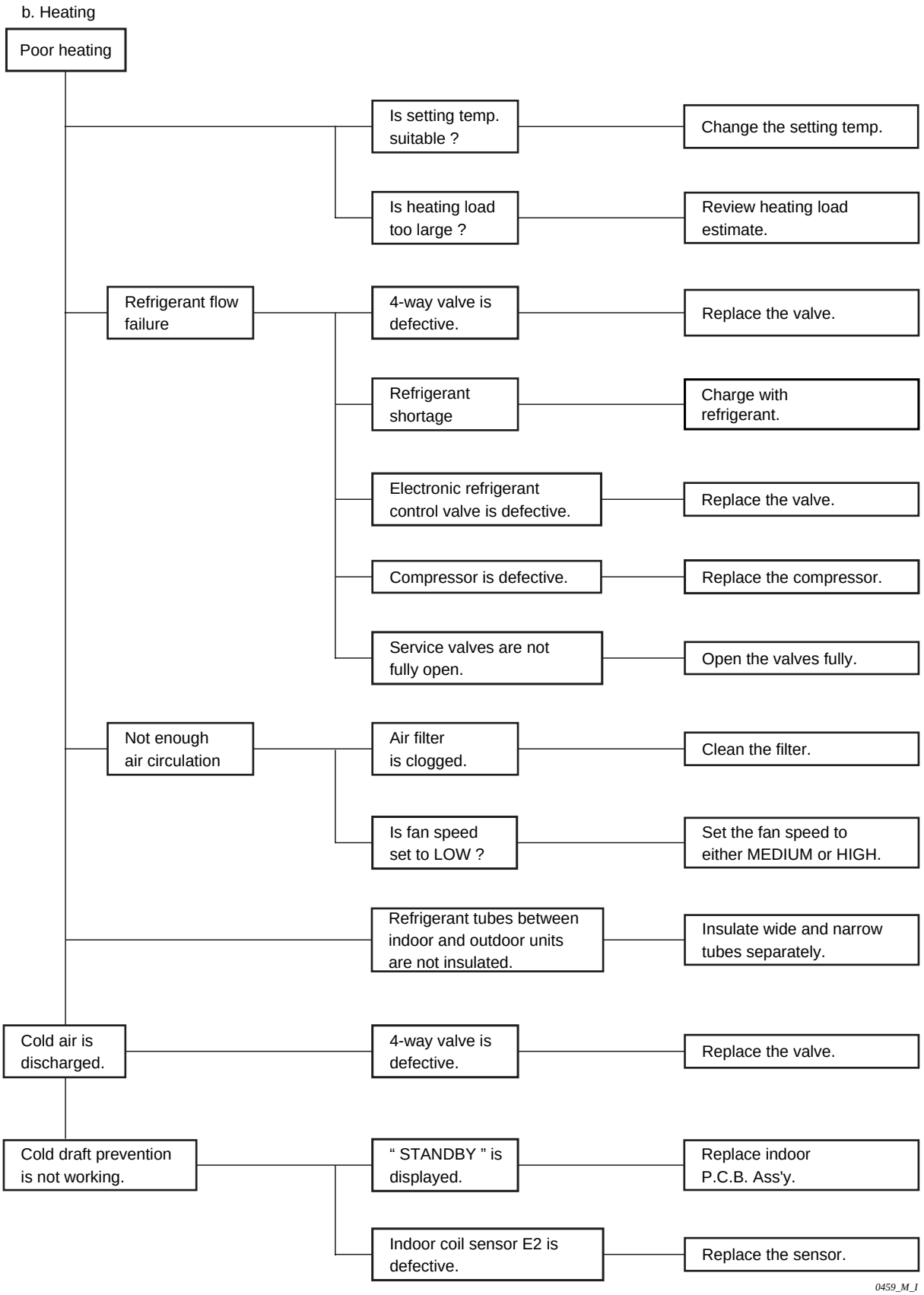
1-2. General troubleshooting flow chart: diagnosis and remedy

When you have found a major problem, such as refrigerant not flowing in the system or reduced air circulation, come to this section and find the box listing the problem.
Connected to the box are the main causes of the problem and their remedies. To find out which malfunction is happening in your case, check the remote controller for an Alarm Message, and follow the steps in section 1-4).

(A) Cooling



(B) Heating


b. Heating
Poor heating
Is setting temp. suitable ?
Change the setting temp.
Is heating load too large ?
Review heating load estimate.
Refrigerant flow failure
4-way valve is defective.
Replace the valve.
Refrigerant shortage
Charge with refrigerant.
Electronic refrigerant control valve is defective.
Replace the valve.
Compressor is defective.
Replace the compressor.
Service valves are not fully open.
Open the valves fully.
Not enough air circulation
Air filter is clogged.
Clean the filter.
Is fan speed set to LOW ?
Set the fan speed to either MEDIUM or HIGH.
Refrigerant tubes between indoor and outdoor units are not insulated.
Insulate wide and narrow tubes separately.
Cold air is discharged.
4-way valve is defective.
Replace the valve.
Cold draft prevention is not working.
" STANDBY " is displayed.
Replace indoor P.C.B. Ass'y.
Indoor coil sensor E2 is defective.
Replace the sensor.
0459_M_I

1-3. Explanation of Alarm Messages

Possible Cause of Malfunction			Alarm message
• Serial communication errors • Mis-setting	Remote controller is detecting error signal from indoor unit.	Error in receiving serial communications signal.	E1
		Error in transmitting serial communications signal.	E2
	• Indoor unit is detecting error signal from the remote controller. (No serial communications signal)		E3
	Indoor unit is detecting error signal from outdoor unit.	Error in receiving serial communications signal.	E4
		Error in transmitting serial communications signal.	E5
	Outdoor unit is detecting error signal from indoor unit.	Error in receiving serial communications signal.	E6
	Indoor unit is not working correctly.	• Indoor unit is damaged. • Power is not supplied.	
	Outdoor unit is transmitting error signal.	Error in transmitting serial communications signal.	E7
	Improper setting of indoor unit or remote controller.	Indoor unit address setting is duplicated.	E8
		Remote controller address (RCU.ADR) switch is duplicated.	E9
		Do not press Auto. address button S001: (A. ADD) of another R.C. line during Auto. address operation.	E12
	• Error of the indoor unit in transmitting serial communications signal to remote controller.		E13
	When using group control, main indoor unit address setting is duplicated. (For single heat pump type.)		E14
	Error in Auto. address setting. (No. or capacity of judged indoor unit is small.)		E15
	Error in Auto. address setting. (No. or capacity of judged indoor unit is large.)		E16
	Indoor unit is transmitting error signal to another indoor unit.		E17
	Indoor unit is detecting error signal from another indoor unit.		E18
Activation of protective device	Protective device in indoor unit is activated.	• Thermal protector in indoor fan motor is activated.	P1
	Protective device in outdoor unit is activated.	• Thermal protector in outdoor fan motor is activated. • PC or AC Compressor thermal protector is activated. • Power supply voltage is unusual. (The voltage is more than 260 V or less than 160 V between L and N phase.)	P2
		Incorrect discharge gas temp. of PC comp.	P3
		High-pressure switch is activated.	P4
		Incorrect power supply voltage . Negative phase, defective phase or voltage drop.	P5
		Incorrect discharge gas temp. of AC comp.	P17
	Protective device in indoor unit is activated.	Improper wiring connections of ceiling panel.	P9
		Float switch is activated.	P10
Oxygen sensor (field supply) is activated.			P14

NOTE

- RCU : Remote Control Unit (remote controller)
- R.C. : Refrigerant Circuit
- PC : Power Control
- AC : Standard
- comp. : Compressor
- temp. : Temperature
- PCB : Printed Circuit Board

1. Troubleshooting

Possible Cause of Malfunction			Alarm message
Thermistor failure	Indoor thermistor is either open or damaged.	Indoor coil temp. (E1=TH1) cannot be detected.	F1
		Indoor coil temp. (E2 = TH2) cannot be detected.	F2
		Indoor coil temp. (E3 = TH3) cannot be detected.	F3
		Indoor room (air-intake) temp. can not be detected.	F10
	Outdoor thermistor is either open or damaged.	Discharge gas temp. A (PC comp. =TH0A) cannot be detected.	F4
		Discharge gas temp. B (AC comp. =TH0B) cannot be detected.	F5
		Outdoor coil gas temp. (C2 = TH0C) cannot be detected.	F25
		Outdoor coil liquid temp. (C1 = TH0D) cannot be detected.	F7
EEPROM (ICB of PCB) failure			F29
Fault with comp. and its circuit	Protective device for PC comp. is activated.	PC comp. motor is overloaded.	H1
		PC comp. motor is locked.	H2
		Current of PC comp. cannot be detected when it is turned on.	H3
		Current of PC comp. is detected when it is not operated.	F27
		PC comp. contactor (Mg SW) is chattering.	H9
		Power supply voltage between phases is unbalanced.	H10
	Protective device for AC comp. is activated.	AC comp. motor is overloaded.	H11
		AC comp. motor is locked.	H12
		Current of AC comp. cannot be detected when it is turned on.	H13
		Current of AC comp. is detected when it is not operated.	F28
		AC comp. contactor (Mg SW) is chattering.	H19

Possible cause of Malfunction	Alarm message
Main indoor unit address is not set.	L1
Model setting of indoor unit is not matching the outdoor unit.	L2
When using group control, main indoor unit address setting is duplicated. (Judging by indoor unit.)	L3
Outdoor unit address (R.C. No.) is duplicated.	L4
Priority setting of indoor unit is duplicated.	L5
—	L6
Improper wiring between indoor units. (There is group connection wiring in case of individual control.)	L7
Indoor unit address (or group address) is not set.	L8
Capacity code of indoor unit is not set.	L9
Capacity code of outdoor unit is not set.	L10
Improper wiring of group control wiring.	L11

Possible Cause of Malfunction (The following messages are displayed only for the system controller.)			Alarm message
• Serial commu-nication errors • Mis-setting	System controller is transmitting incorrect signal.	• Indoor or outdoor unit is not working correctly. • Control lines between indoor unit, outdoor unit, and system controller are not wired correctly.	C05
	System controller is detecting incorrect signal.	• Same as for C05, above. • Connector CN1 is not connected correctly.	C06
Activation of protective device	Protective device of the sub-indoor unit is activated in group contorl.	When using wireless remote controller or system controller, connect wired remote controller with the indoor unit temporarily to check the alarm message in detail.	P30

NOTE

- PC : Power Control
- AC : Standard
- comp. : Compressor
- temp. : Temperature

1-4. Alarm Messages on the Outdoor PCB

(In ordinary use, the outdoor alarm LED (yellow) is off and the LED (red), which indicates the number of connected indoor units, is turned on.)

Alarm messages indicated by the LED (red) on the outdoor PCB.

- When the outdoor alarm LED (yellow) is OFF, the LED (red) lamps blink ⟶ Thermostat OFF run, with no alarm display on the remote controller.
- When the outdoor alarm LED (yellow) is ON, LED (red) lamps light up ⟶ An alarm message is also displayed on the remote controller.

☼ : light - up / blink

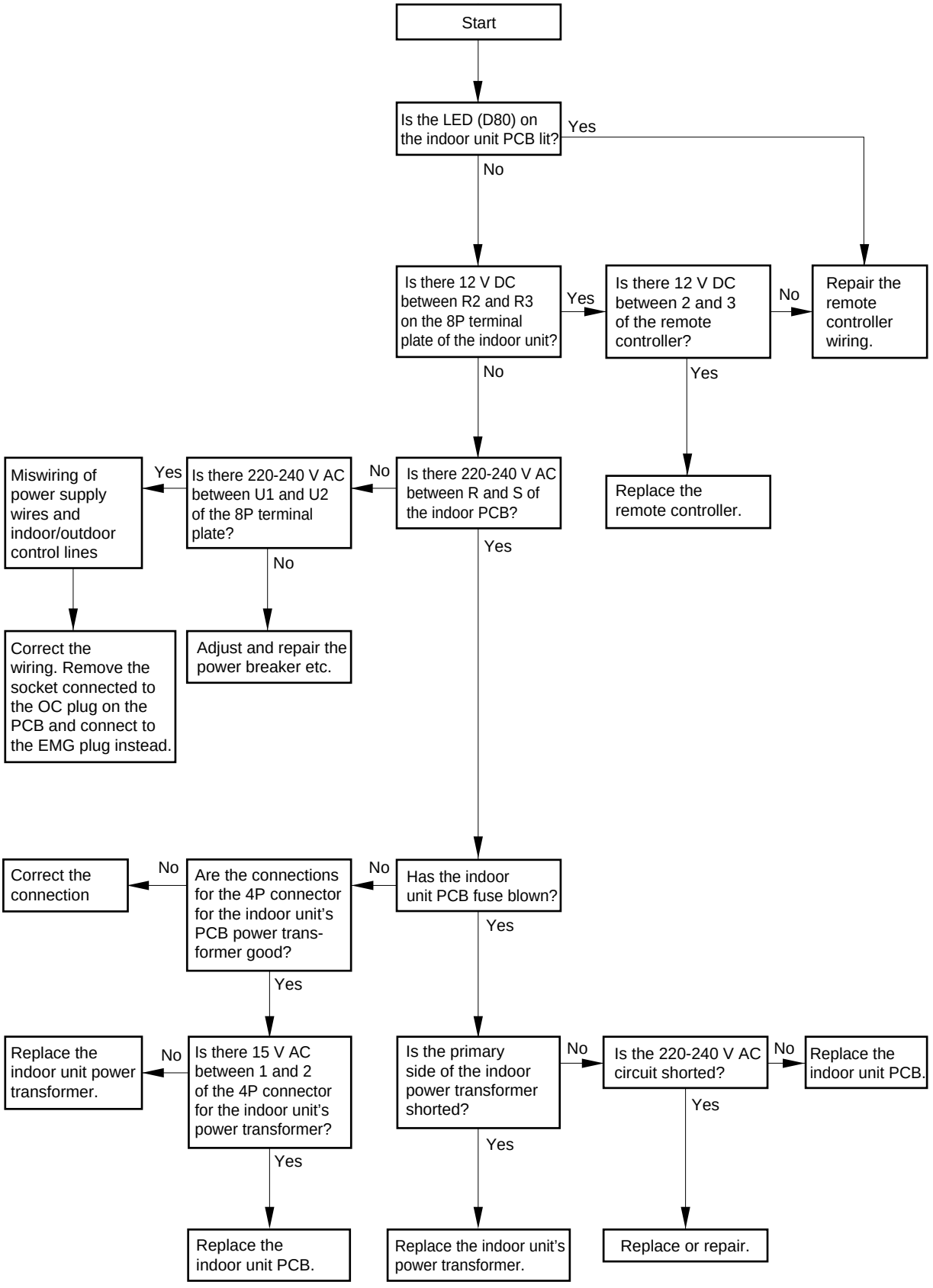
Remote controller display	LED (red) 8	7	6	5	4	3	2	1	Possible cause of fault	
E4	Connected indoor units' No. of LED (red) lamps blink or all lamps turned off								When turning on the power supply, No. of indoor units connected is not correspond with set No. of S004 (except R.C. No. setting is 0).	
E6		☼				☼	☼		Serial signal receiving	Serial signal receiving fault Indoor/outdoor unit combination fault (incorrect indoor unit count : S004 setting)
E7		☼				☼	☼	☼	Serial signal sending fault	Serial signal sending fault
E15		☼			☼	☼	☼	☼	The number of connected indoor units are less than the set number in the outdoor PCB.	During Auto. address setting, alarm LED (yellow) lamp lights up. The LED (red) lamps light up or blink when CN25 (2 pin plug, white) is shortened.
E16		☼		☼					The number of connected indoor units are more than the set number in the outdoor PCB.	
P2	☼	☼	☼				☼		Protective device activated	Fan motor protection thermostat PC comp. protection thermostat AC comp. thermostat Defective phase
P3	☼	☼	☼				☼	☼	Incorrect discharge temp.	PC comp.
P4	☼	☼	☼			☼			High-pressure switch	PC comp. or AC comp.
P5	☼	☼	☼			☼		☼	Protective device activated	Negative phase protector or defective phase protector, or Voltage drop protector
F4		☼	☼			☼			Sensor fault	Discharge temp. A (PC comp.)
F5		☼	☼			☼		☼		Discharge temp. B (AC comp.)
F7		☼	☼			☼	☼	☼		Outdoor coil liquid temp. (C1)
F25		☼	☼	☼	☼			☼		Outdoor coil gas temp. (C2)
F17	☼	☼	☼	☼				☼	Incorrect discharge gas temp. of AC comp.	
H1	☼							☼	PC comp. CT detection current	Error in Current value (overload)
H2	☼						☼			Error in Current value (lock)
H11	☼				☼		☼	☼	AC comp. CT detection current	Error in Current value (overload)
H12	☼				☼	☼				Error in Current value (lock)
H9	☼				☼			☼	Comp. contactor protection	PC (AC) comp. contactor is chattering.
H10	☼				☼		☼		Voltage unbalance protection	Power supply voltage between phases is unbalanced.
H19	☼			☼			☼	☼	Comp. contactor protection	AC comp. contactor is chattering.
L4	☼	☼				☼			Outdoor unit address (R.C. No.) is duplicated.	

NOTE

- PC comp. : Power Control Compressor
- AC comp. : Standard Compressor
- temp. : Temperature

1-5. Symptoms and parts to inspect

(1) Symptom: LCD on the remote controller does not display and remote controller does not operate.



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(2) Symptom: LCD on the remote controller displays “CHECK E01”. (Unusual communication between remote controller and indoor unit, or R.C. address, indoor unit address, or group address in indoor unit non-volatile memory are not set.

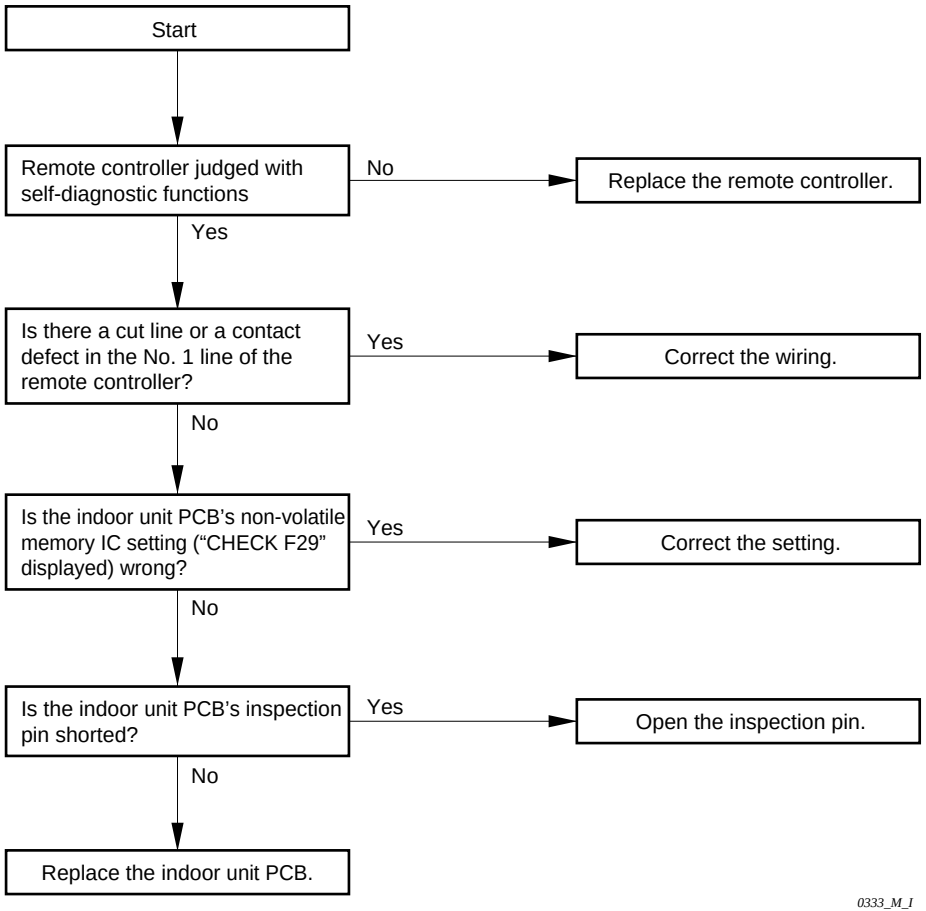
① For only 1 system (outdoor unit system address 0)

- The first time you switch on the power for the outdoor units after installation, “SETTING” blinks on the remote controller and the system enters automatic address operation, but if the outdoor unit power is not on or the indoor / outdoor operation line is not connected, the automatic operation can not be executed, so the indoor unit non-volatile memory system address, indoor unit address, or group address remains unset (0099). If you press the remote controller ON / OFF operation button with the system in this state, “Fan speed” is displayed and an alarm is displayed.

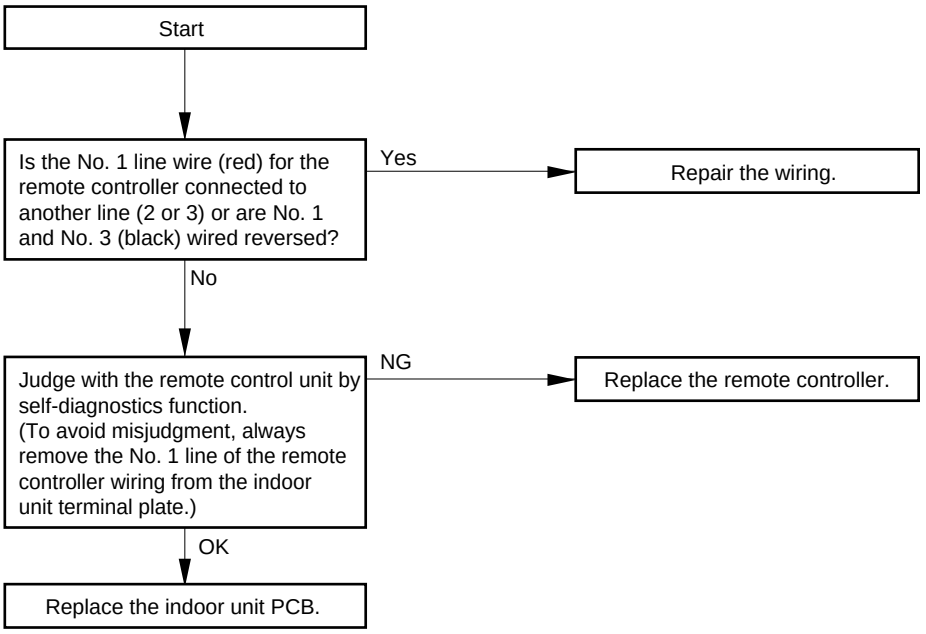
② For multiple systems with the indoor/outdoor operation lines linked (outdoor unit system address other than 0)

- After the indoor and outdoor unit power is switched on, if you do not carry out the automatic address setting operation with the remote controller or the outdoor unit, the same alarm is displayed.

③ After the automatic address setting has been completed



(3) Symptom: LCD on the remote controller displays “CHECK E02”. (Unusual communication between remote controller and indoor unit)



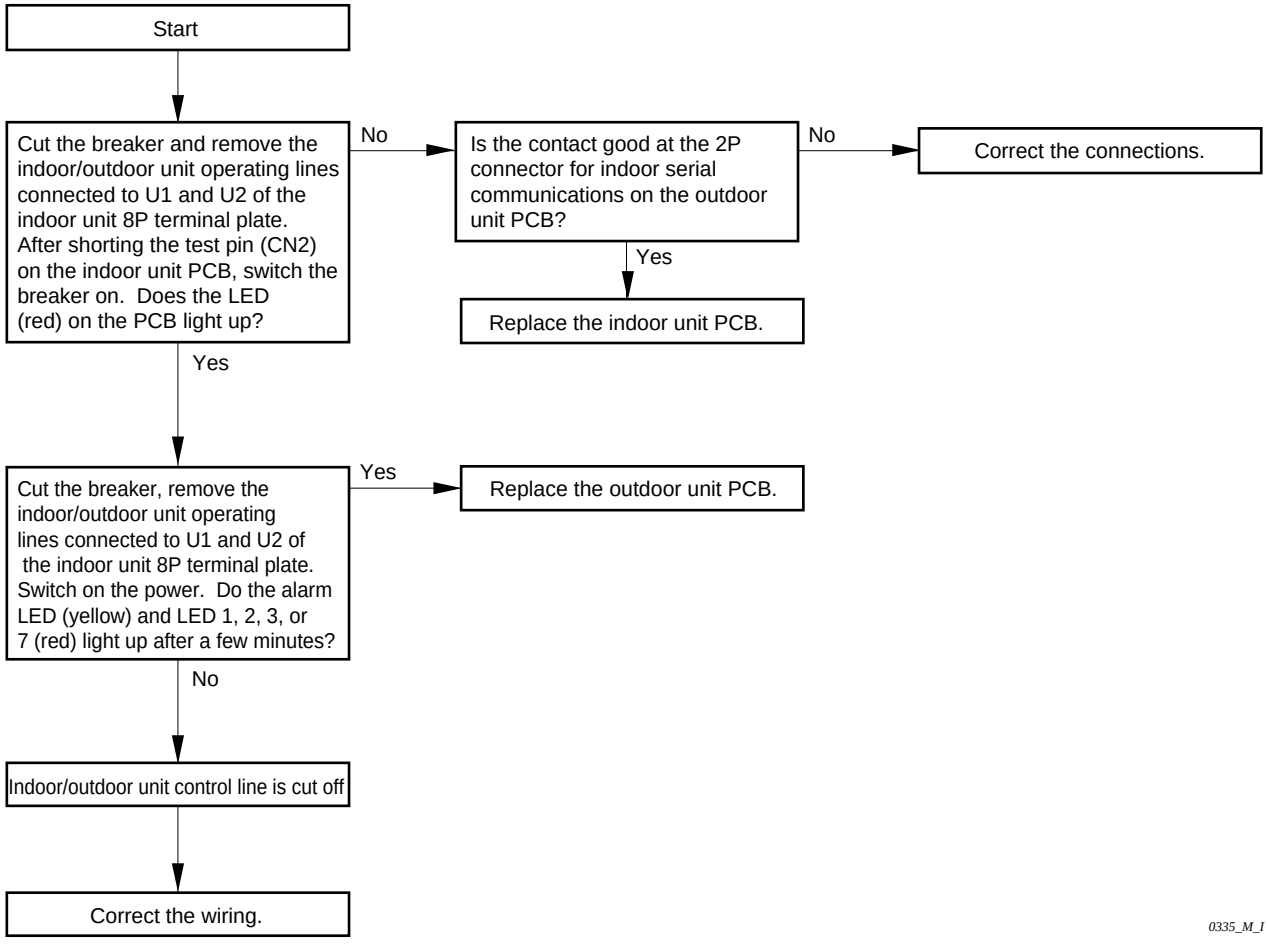
(4) Symptom: LCD on the remote controller is displaying “CHECK E04”. (Unusual communication between the indoor and outdoor units or inappropriate combination of indoor and outdoor units)

① The outdoor unit cannot communicate with the indoor unit. Or the power supply to the outdoor unit is off.

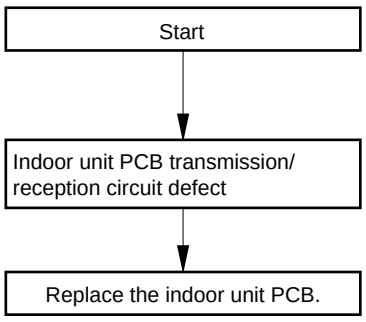
② When the power is switched on for an indoor unit for which the outdoor unit and indoor unit addresses etc. have been set, the number of units connected to the indoor unit and the number of units set for the outdoor side do not match (other than when the outdoor system address is 0).

NOTE

When the outdoor system address is 0, if the indoor unit judges that the combination of indoor unit and outdoor unit is inappropriate, the system starts automatic address setting operations and the remote controller displays the “CHECK E15” or “CHECK E16” alarm.

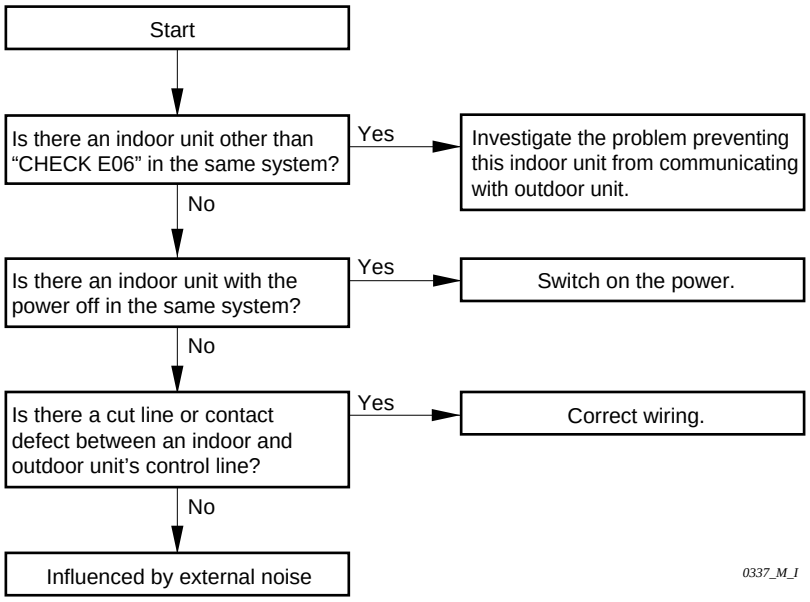


(5) Symptom: LCD on the remote controller is displaying “CHECK E05”. (Unusual communication between the indoor and outdoor units)

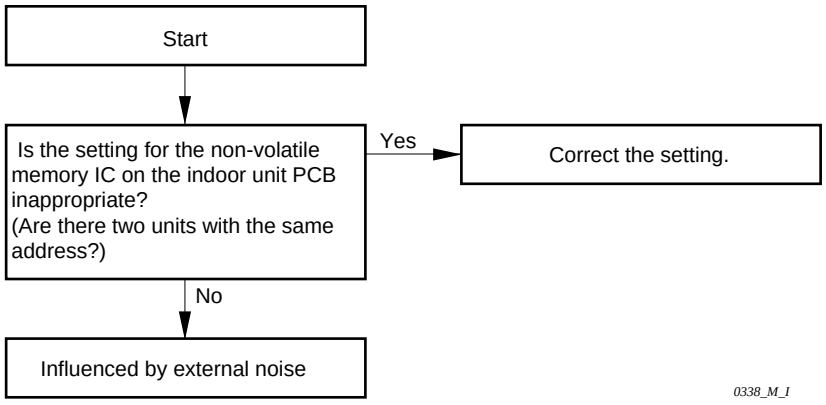


(6) Symptom: LCD on the remote controller is displaying “CHECK E06”. (Unusual communication between the indoor and outdoor units)

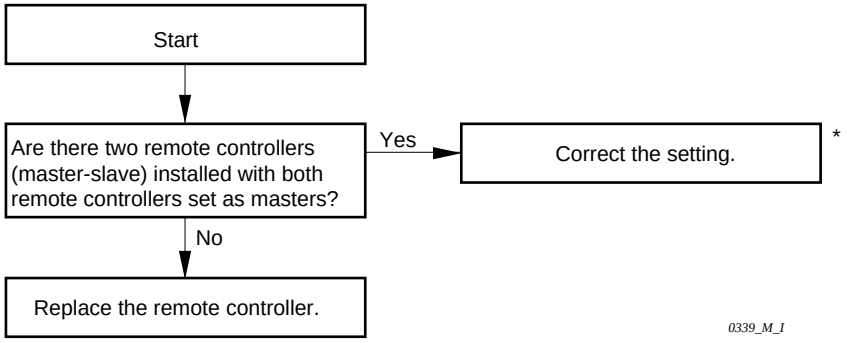
① This message is displayed when the power was switched on for the indoor and outdoor units, the combination of indoor and outdoor units matches, but afterwards a problem occurred in the indoor unit disabling transmission to the outdoor unit.



(7) Symptom: LCD on the remote controller is displaying “CHECK E08”. (Duplicate indoor unit address setting)



(8) Symptom: LCD on the remote controller is displaying “CHECK E09”. (Duplicate setting of RCU address switch of remote controllers)



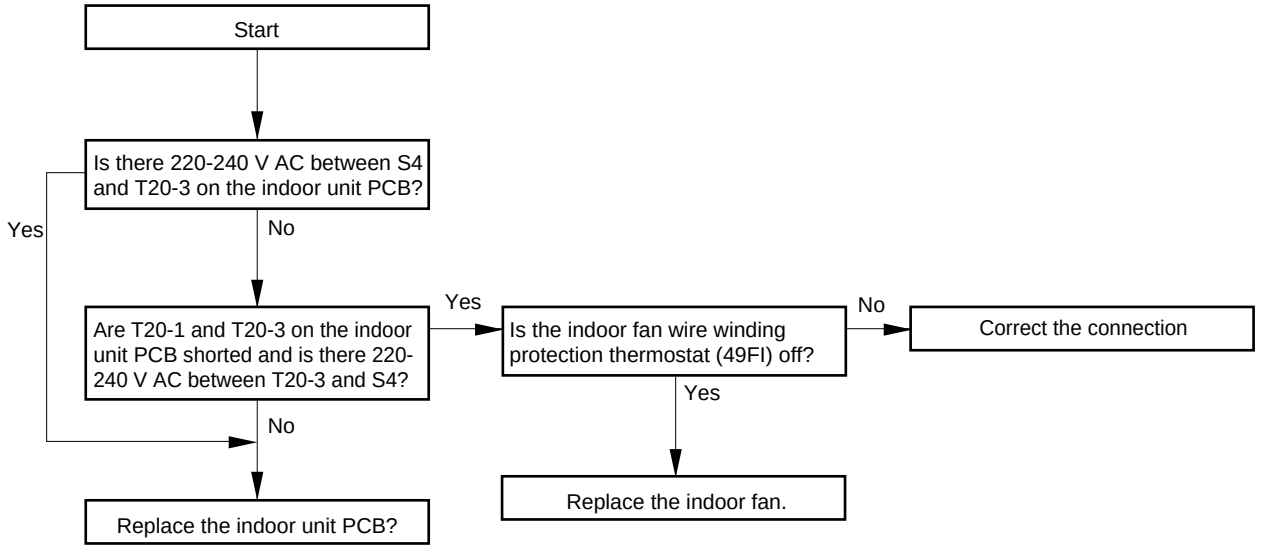
* See the section of ENGINEERING MANUAL and INSTALLATION INSTRUCTION concerning with controlling remote controller switches when there are two remote controllers.

(9) Symptom: LCD on the remote controller is displaying “CHECK E15” or “CHECK E16”. (Inappropriate indoor combination)

① When the outdoor unit judges a mismatch between the number of connected indoor units and the mumber of indoor units set at the outdoor unit (S004) after automatic address setting operation, the outdoor unit sends the indoor unit the alarm signal and displays “CHECK E15” or “CHECK E16” on the remote controller.

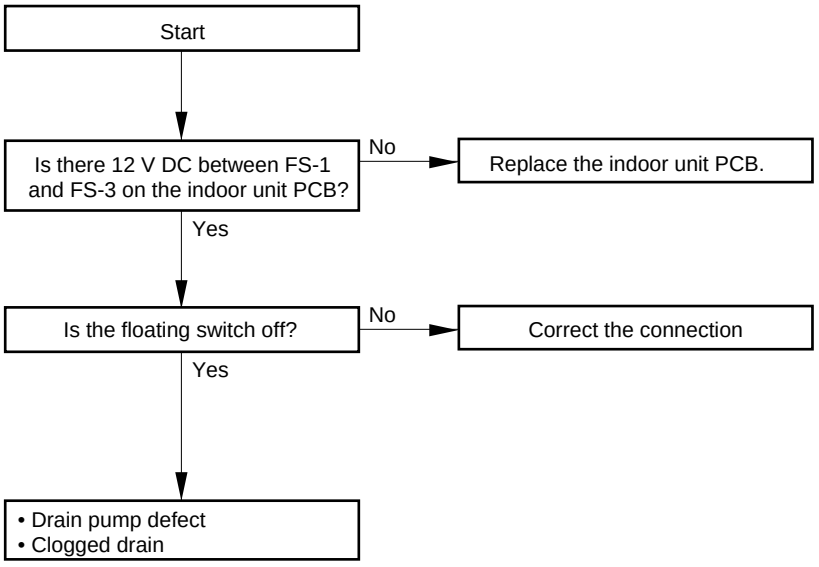
② When the power is switched on when the outdoor and indoor unit addresses have already been set, if the number of indoor units connected and the number set at the outdoor unit do not match, the outdoor unit starts automatic address operations again. As a result, if the outdoor unit judges that there is an inappropriate indoor/outdoor combination, it displays “CHECK E15” or “CHECK E16” on the remote controller. (But only if the outdoor system address is 0)

(10) Symptom: LCD on the remote controller displays “CHECK P01”. (Indoor fan protection thermostat)



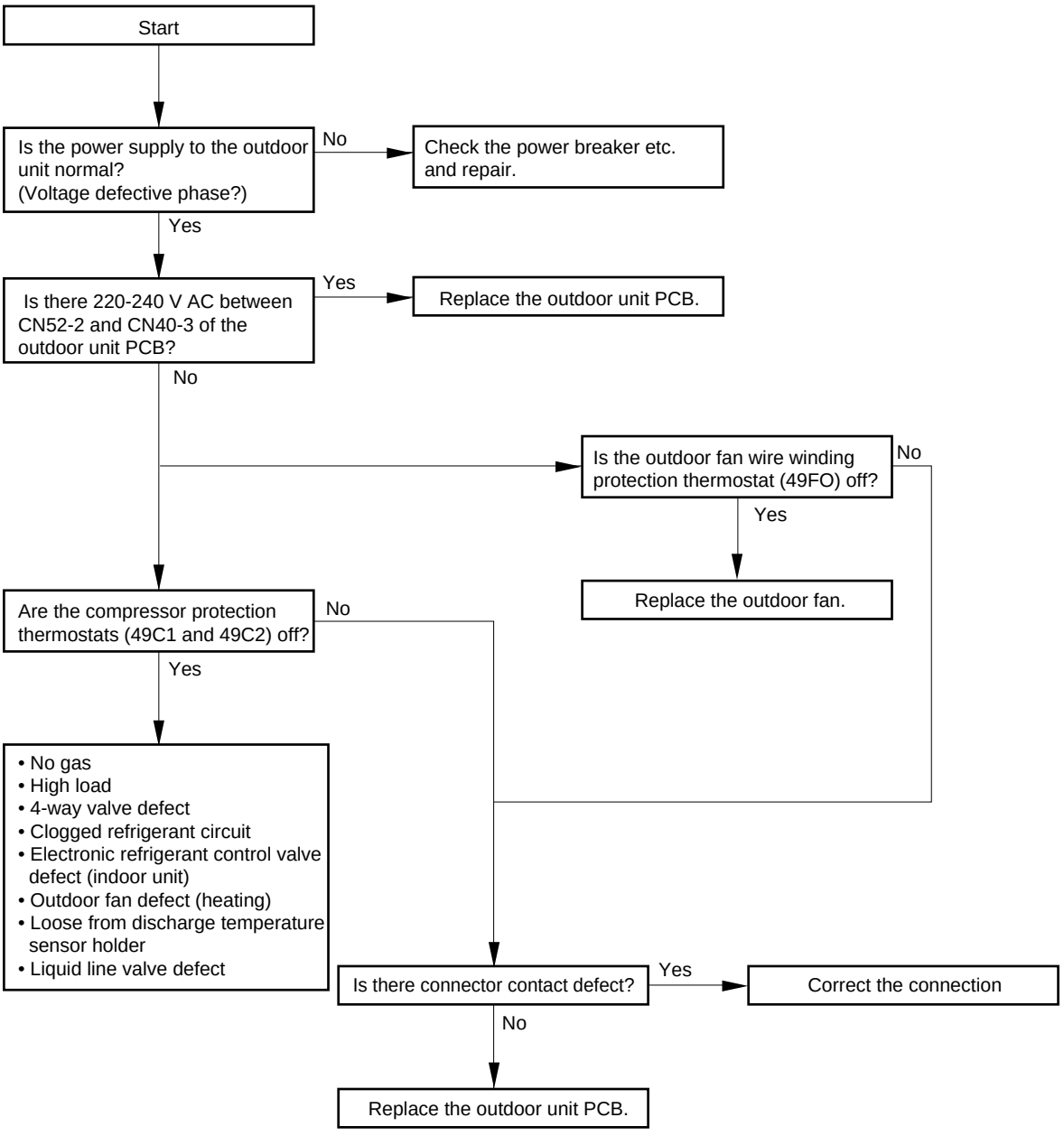
0340_M_I

(11) Symptom: The remote controller LCD displays “CHECK P10”. (Indoor floating switch operation)



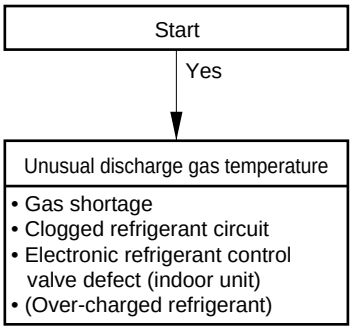
0341_M_I

(12) Symptom: LCD on the remote controller displays “CHECK P02”. (Compressor / outdoor fan protection thermostat)



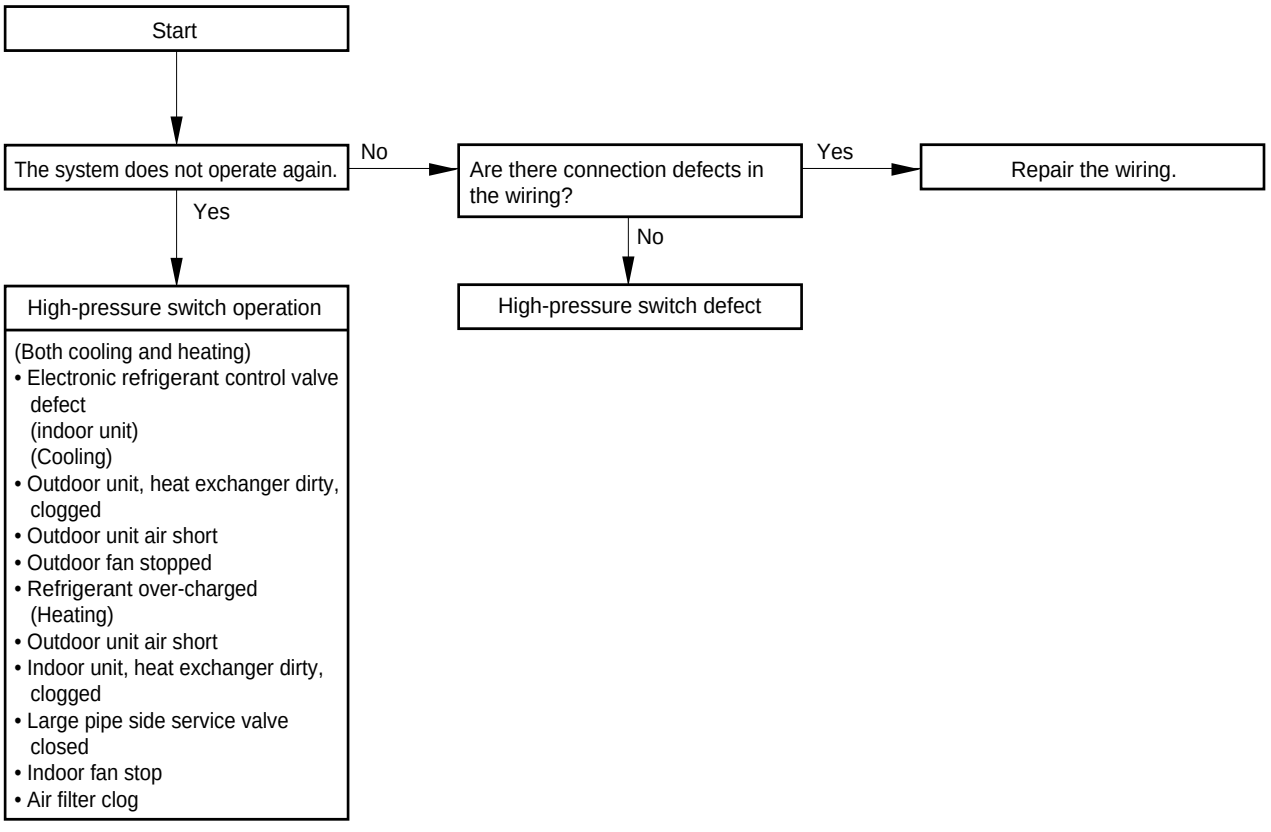
0342_M_I

(13) Symptoms: LCD on the remote controller displays “CHECK P03”.
(Alarm for unusual PC comp, discharge temp.)
The remote controller LCD displays “CHECK P17”.
(Alarm for unusual PC comp, discharge temp.)



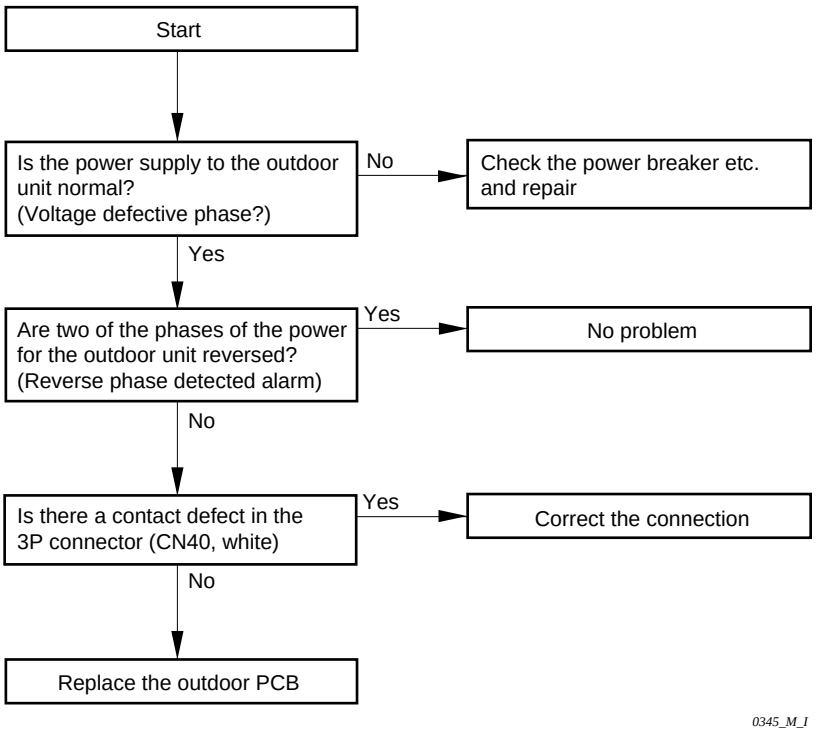
0343_M_I

(14) Symptom: LCD on the remote controller displays “CHECK P04”. (High-pressure switch operation)

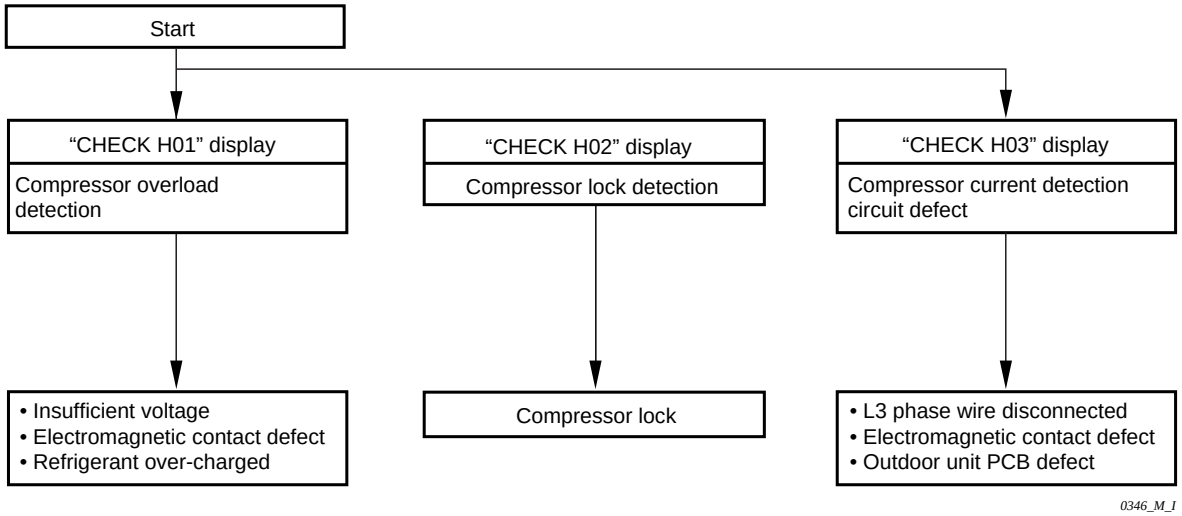


0344_M_I

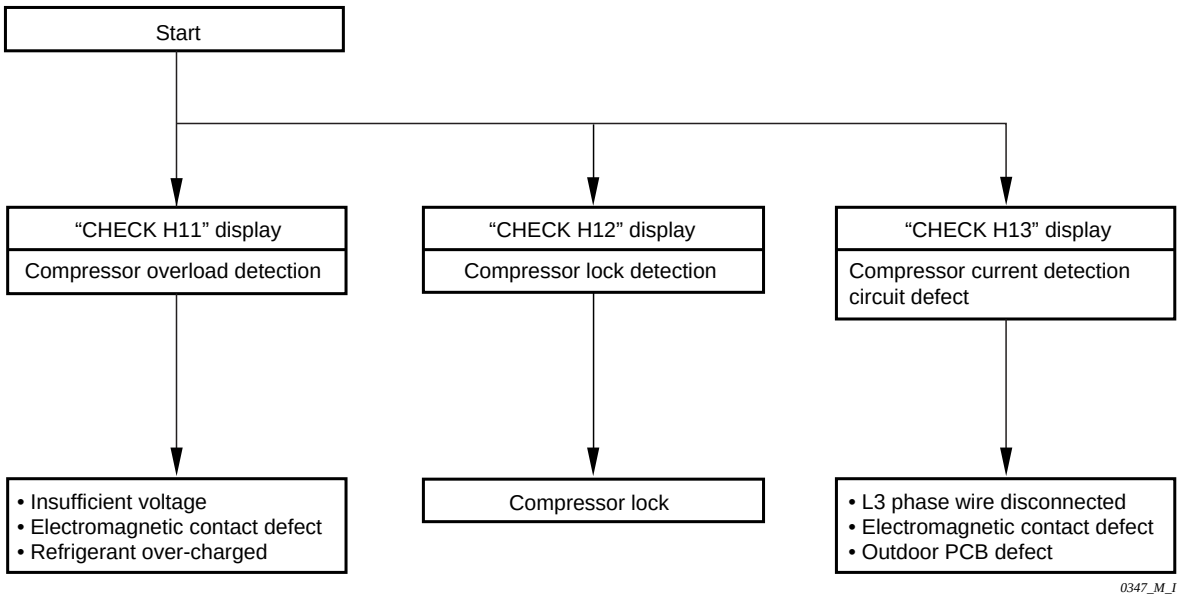
(15) Symptom: LCD on the remote controller displays “CHECK P05”. (Reversed phase detection)



(16) Symptom: LCD on the remote controller displays “CHECK H01, H02, H03”. (PC compressor current detection)



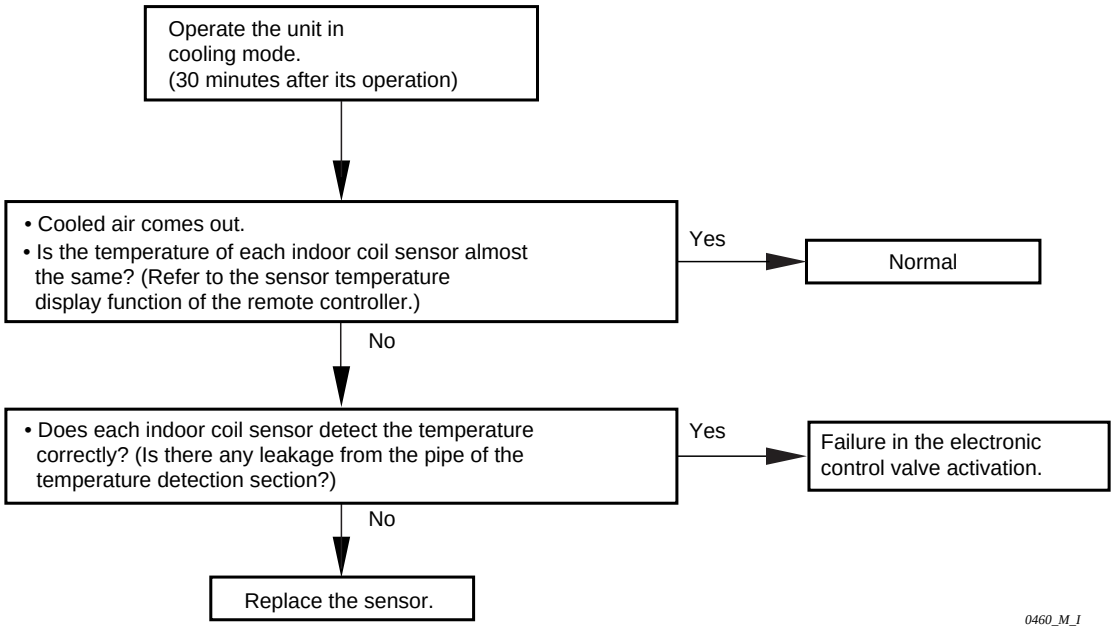
(17) Symptom: LCD on the remote controller displays “CHECK H11, H12, H13”. (AC compressor current detection)



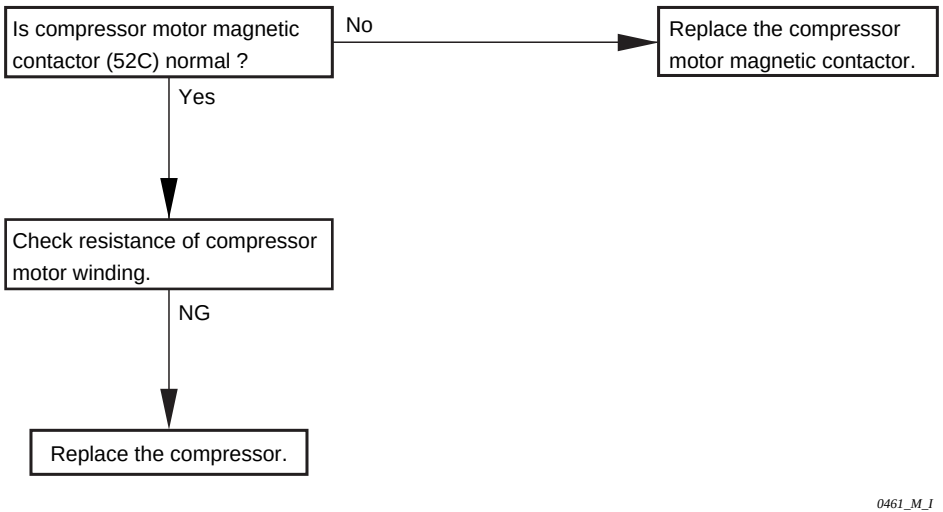
1-6. Procedures when a specific component does not work at all

(1) Check the indoor unit (When the alarm of transmission failure is not activated)

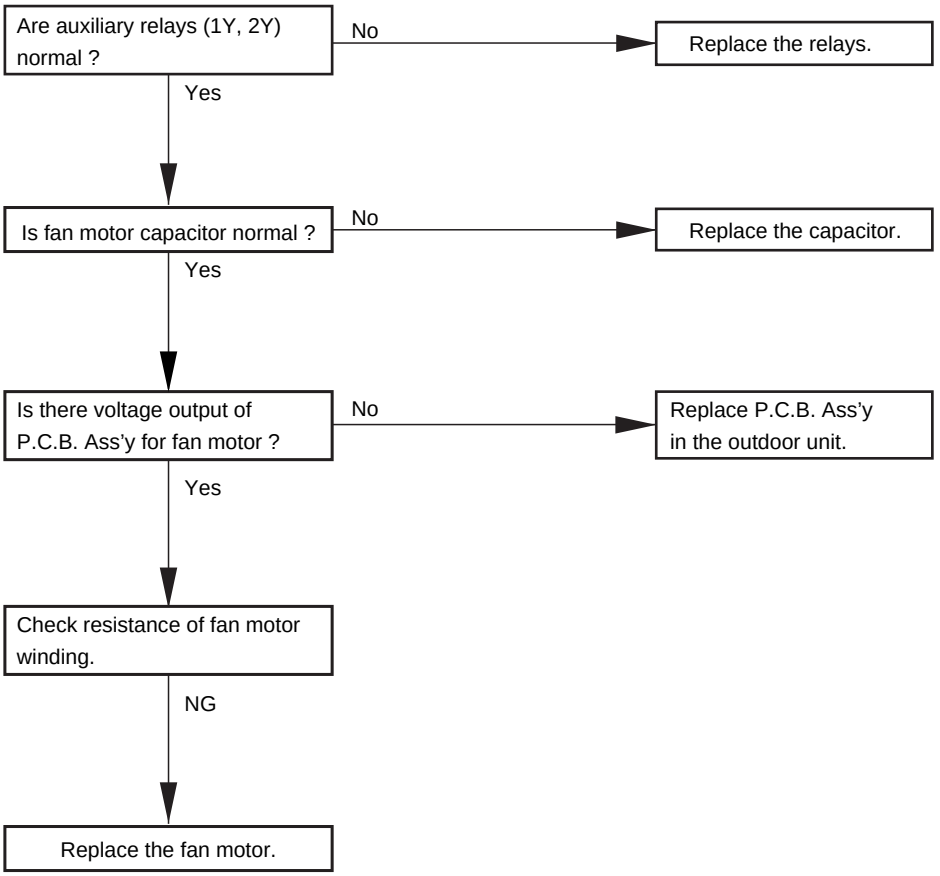
- In case that the unit is controlled by Flexible Combination, an electronic control valve failure has occurred or one of the units cannot be controlled due to electronic control valve circuit failure, and other units do not operate normally either. Due to this, try to detect the troubled unit and correct it.



(2) Compressor motor is not running at all.



(3) Outdoor fan is not running at all.



0462_M_I

1-7. Service functions of remote controller

From the remote controller you can control both the operation and settings of the unit as well as perform several useful service checks. This section explains how to use the remote controller on the following items from (A) to (J).

(A) Set service check switches.

(B) Use the test run procedure.

(C) Check the sensor temperature readings.

(D) Find out about past service problems.

(E) Check the remote controller itself for correct operation.

(F) Excute the auto. address operation.

(G) Confirm and change the indoor unit address.

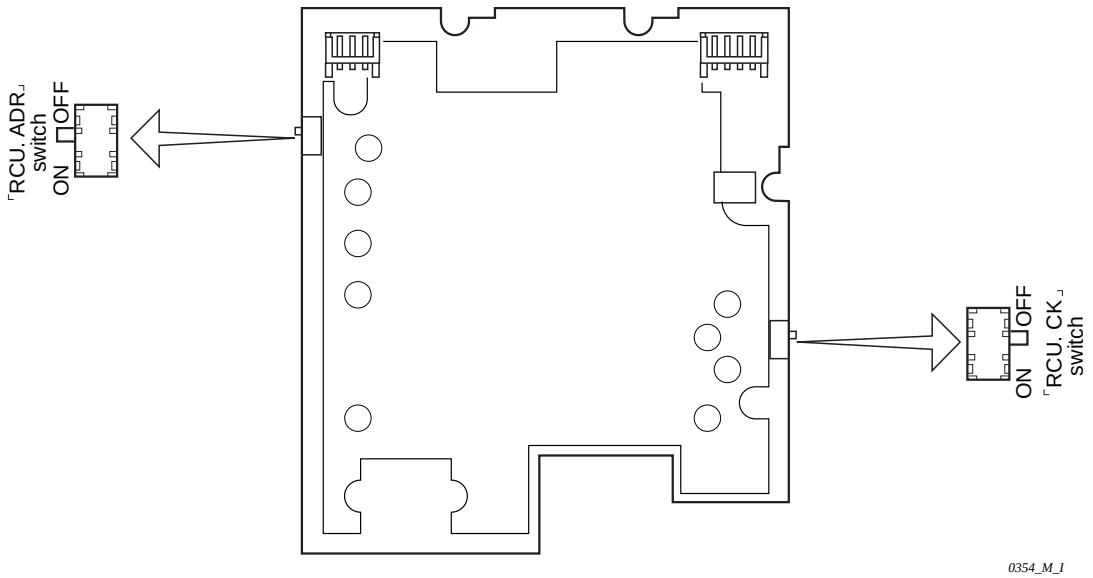
(H) Change the shift temperature in heating mode

(I) Set the indoor unit address.

(J) Change the period of the filter timer

(A) Set service check switches

The service check switches are located on the back of the remote controller's P.C.B. Ass'y as follows :



The followings are the correct switch settings for ordinary use of the unit. Only change the settings temporarily for making service checks. When you have changed the settings, **be sure to return them to the standard settings** shown here.

- ❑ **RCU.CK** switch - Refer to section **(E)** " **Checking the remote controller for correct operation**" (Remote Control Unit, Check)
- ❑ **RCU.ADR** switch - Keep the switch **OFF** all the time except in case of sub remote controller (Remote Control Unit, Address)

(B) Use the test run procedure

- ❑ The purpose of the test run function is to let you control the operation of the unit directly without turning the unit on or off by thermostat. As indicated in the following procedure, be sure to stop test run operation when you finish the procedure, or the air conditioner may be damaged because it won't turn on and off normally.
- ❑ To protect the air conditioner from overloading, the outdoor unit will not start running for 3 minutes after power is applied or the unit is turned OFF.

ⓐ Press the **TEST / CHK** button at the bottom right on the remote controller.

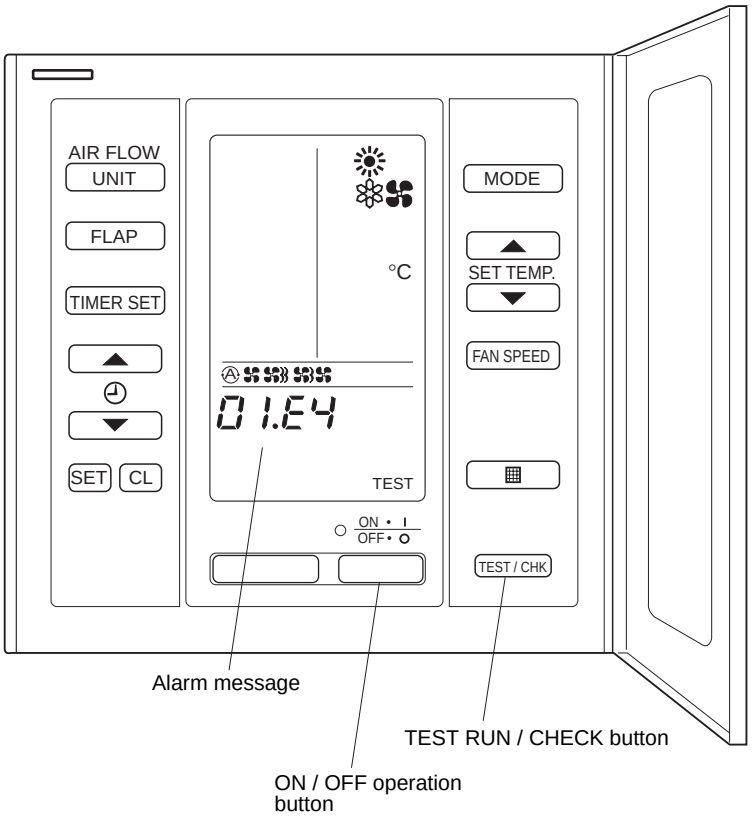
ⓑ Press the ON / OFF operation button to start the test run.

ⓒ Press the **MODE** button to select either COOLING or HEATING mode.

ⓓ When the test run starts, "TEST" shows on the remote controller's display.

ⓔ During the test run, the air conditioner runs continuously and the thermostat does not control the system.

ⓕ After the test run, be sure to press the **TEST / CHK** button once again to finish this mode and be sure "TEST" is not shown on the display.



CAUTION

The TEST RUN button is used **only for servicing** the air conditioner. **Do not** press this button in normal operation, or the system may be damaged.

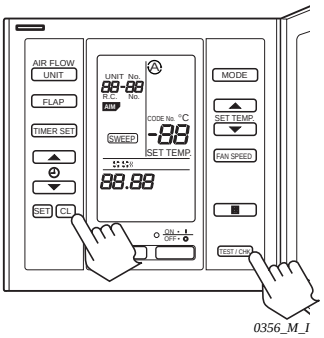
(C) Check the sensor temperature readings

The air conditioner has thermo sensors which are used to control the unit.

- ❑ Each sensor has an address which is made up of the indoor unit address, and the sensor address. The indoor unit address is used only when several units are hooked up to one remote controller (group control). If there is only one unit, made up of one indoor and one outdoor unit, then only the sensor address should be put in, as shown in the procedure below.

Follow this procedure to display the temperature of each sensor:

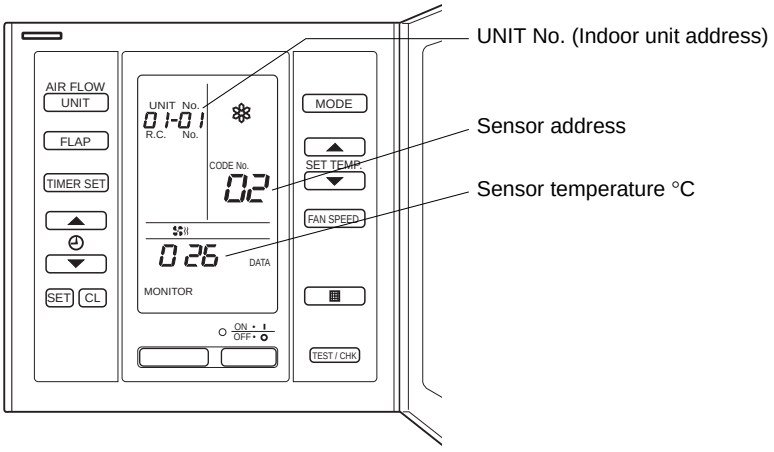
ⓐ On the remote controller, press both **TEST / CHK** and **CL** buttons at the same time for more than 4 seconds.



0356_M_I

ⓑ The UNIT No., the address and temperature of the sensors instead of its usual information will flash on the display.

- ❑ Following example shows the UNIT No. (Indoor unit address) is fixed at **01– 01**.
- ❑ In case of group control, select the UNIT NO. (Indoor unit address) which you want to check with **UNIT** button.
- ❑ Each time you press the ▲, ▼ (SET TEMP.) button you can select a different sensor, and the display shows the sensor address and temperature as shown below.



0357_M_I

NOTE

Do not press **TIMER SET** button during the procedure.

Refer to the table below for the relationship between the sensor address and the location of the sensor.

Relationship between the sensor address and the location of sensor

Sensor Address (CODE No.)		Location of Sensor (Themistor)
Indoor Unit	01	—
	02	TH1 Indoor air suction Temp.
	03	TH2 Indoor coil Temp. (E1)
	04	TH3 Indoor coil Temp. (E2)
	05	TH4 Indoor coil Temp. (E3)
Outdoor Unit	06	—
	07	—
	08	Indoor Electronic Control Valve Open (pulse)
	09	—
	0A	TH0A Discharge gas Temp. A (PC Compressor)
	0B	TH0B Discharge gas Temp. B (AC Compressor)
	0C	TH0C Outdoor coil Temp. (C2)
	0D	TH0D Outdoor coil liquid Temp. (C1)
	0E	—
	0F	—
	10	—
	11	—
	12	—
	13	PC Compressor Current
	14	AC Compressor Current

(PC or PC Comp. or Compressor : Power Control Compressor
AC Comp. or AC Compressor : Standard Compressor

NOTE
In case there are no sensor equipped with the unit, - - - is shown on the display.

ⓒ Resetting the remote controller display to previous mode.

❑ To reset the display when you are finished, press **TEST / CHK** button, then the remote controller will return to previous mode.

(D) Find out about past service problems

The remote controller can memorize the **max. 4 most recent alarm messages**, so you can see problems the unit has had, if any. Knowing what has already occurred and been fixed helps you know what to check at present.

❑ This function is usable even if the unit is not working.

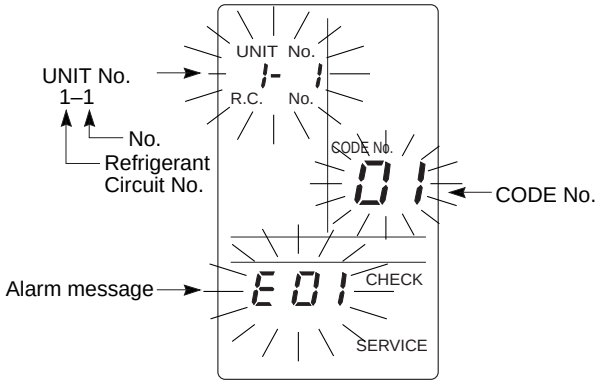
❑ To display the past error codes, follow the procedure below.

Procedure:

ⓐ On the remote controller, press both **TEST / CHK** and **SET** buttons at the same time for more than 4 seconds.
ⓑ Once in this mode, display changes from the normal display to service check display as shown in the table below:

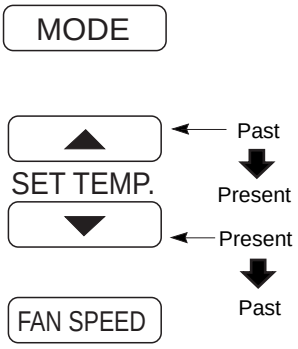
NORMAL DISPLAY	Display Change (➔)	SERVICE CHECK DISPLAY
Set temp.	➔	Code No.
UNIT No.	➔	UNIT No. (Indoor unit address)
Hours, Minutes	➔	Alarm Message

This picture shows the service check display.



0358_M_I

ⓒ. A maximum of 4 alarm messages can be accessed by pressing either **SET TEMP** button ▲ or ▼ as follows.



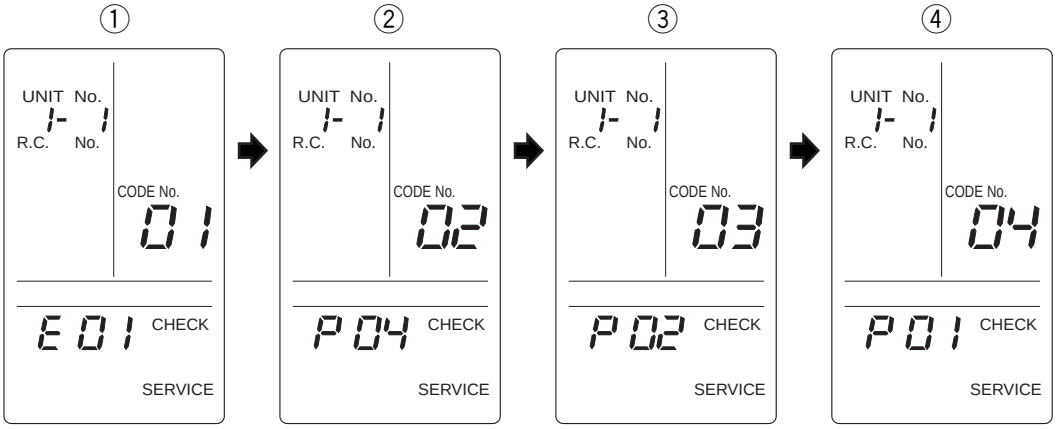
0359_M_I

NOTE Pressing **CL** (Clear) button will clear all the service history.

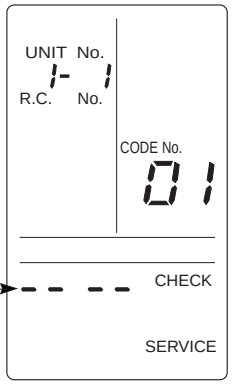
▲ ... accessed in order of "Past ➔ Present".

▼ ... accessed in order of "Present ➔ Past".

For example, if the last four alarm messages were, in order of occurrence from oldest to most recent, **P01**, **P02**, **P04**, and most recently **E01**, then the display will be shown as below when you press ▼ button four times. The 5th time you press ▼ button you can repeat the display, then the first message will be shown again.



If there are no alarm messages, the display shows:



0360_M_I

Important

Never press **CL** (clear) button unless you want to erase the accessed data in memory. Follow the procedure below only when erasing is necessary.

- ❏ To erase accessed data, press the **CL** button.
- ❏ When erasing is finished,"----" mark appears on the controller's display.

CAUTION

After checking the alarm messages, be sure to press the **TEST / CHK** button.

(E) Check the remote controller itself for correct operation

The remote controller has a **self-diagnostic** function to check if it works properly. Use this procedure to find out if the remote controller itself is in trouble.

ⓐ Turn ON the **RCU.CK** switch on the back of the **P.C.B.** Ass'y in the remote controller. See section **(A)** for exact location.

ⓑ The appearance of the display will tell you whether or not the remote controller is working correctly or not.

- ❏ **Normal condition** – All displays appear for 10 seconds, then disappear.
- ❏ **Unusual condition** – All displays flash ON and OFF for 10 seconds, then disappear.

CAUTION

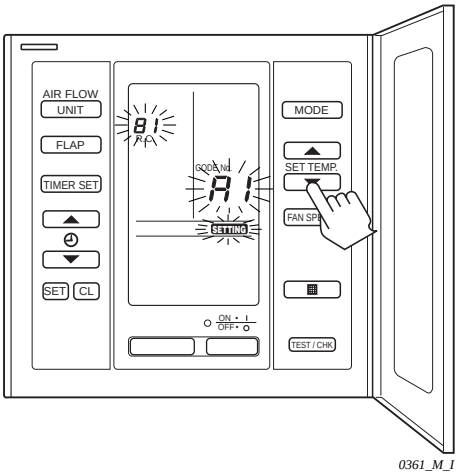
After checking the panel, be sure to set the RCU.CK switch to this original OFF position.

(F) Execute the auto. address operation

❑ Auto. address operation is executed by pressing the A. ADD button of outdoor unit's PCB usually (See "Test Run" V-2 ~).
For your convenient it can be executed by remote controller also.

ⓐ Press the **TEST / CHK** and ▲ **(** ◴ **)** buttons at the same time for more than 4 seconds.

ⓑ Set CODE No. A1 with ▲ , ▼ **(SET TEMP)** button.



0361_M_I

In this mode, the auto. address operation is executed at each R.C. (Refrigerant Circuit) line one by one.

ⓒ Select R.C. No. which you want to execute the auto. address operation with **UNIT** button.

ⓓ Press the **SET** button. The auto. address operation will start. CODE No. changes from flashing to ON state.

ⓔ If an error occurs during operation, the alarm message will be displayed. Check and remove the cause. If you want to stop the operation, press the **CL** button then the unit stands in waiting mode (Press the **SET** button again.)

ⓕ If the automatic address operation finishes, the display will disappear.

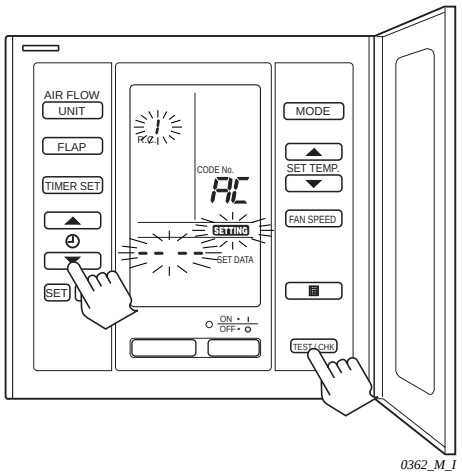
ⓖ Execute the operation of the other R.C. line in the same way by following the above steps ⓒ to ⓓ .

ⓗ Complete the automatic address operation by pressing the **TEST / CHK** button.

(G) Confirm and change the indoor unit address

❑ The purpose of the above function is to let you confirm the indoor unit address after the auto. address operation, and change the indoor unit address if it is needed.

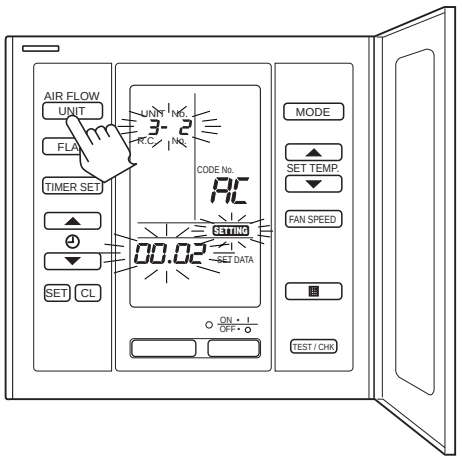
ⓐ Press the **TEST / CHK** and ▼ **(** ◴ **)** buttons at the same time for more than 4 seconds.



0362_M_I

ⓑ Select the R.C. No. which you want to change with the **UNIT** (up) or **FLAP** (down) buttons.

ⓒ Press the SET button (to confirm the R.C. No.).
The smallest registered indoor No. and the selected R.C. No. will be displayed.

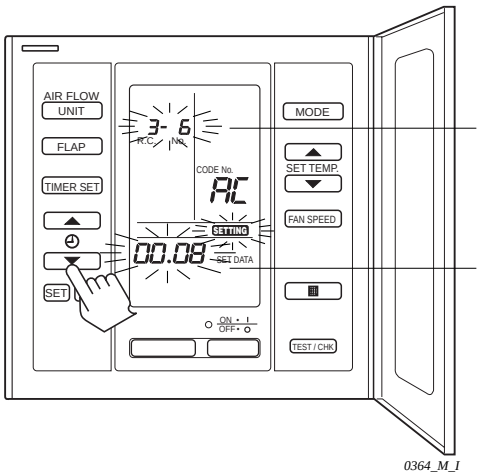


0363_M_I

Ex:
R.C. No. 3 is selected.
Indoor No. 2 is the smallest indoor No. of the R.C. No. 3.

ⓓ Select the indoor No. which you want to change with **UNIT** button. Once in this mode, **the fan motor of selected indoor unit will turn on and let you confirm the indoor unit address.**

ⓔ Set the required new indoor unit's No. by pressing the ▲ , ▼ **(** ◴ **)** button.



Ex: UNIT No. 3-6: currently registered indoor unit address

Required new indoor No.8: SET DATA

✱ In this case, UNIT No. 3 – 6 (current)
≠
3 – 8 (NEW : after pressing the **TEST / CHK** button)

ⓕ Press the SET button.
UNIT No, SET DATA (0008) and **SETTING** changes from flashing to ON state.

ⓖ If you make mistake press the **CL** button.

ⓗ Finally, press the **TEST / CHK** button.

ⓘ If you want to change the indoor unit address of the other R.C. No., follow the step ⓐ to ⓗ in the same way.

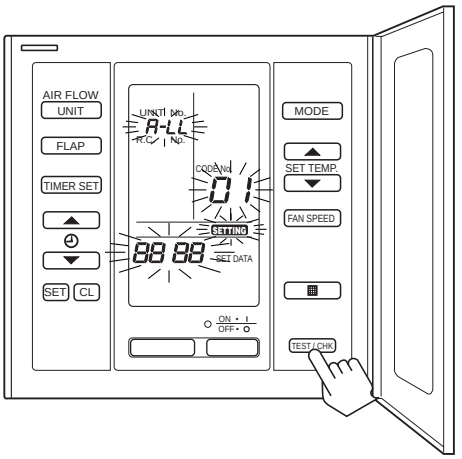
3

(H) Change the shift temperature in heating mode

- ❑ If the indoor unit is installed at high location (ex. ceiling level), the thermostat tends to turn off at heating mode because of the hot air temperature around ceiling level. In order to solve the problem, the shift temp. (valid while heating only) is set when shipped from factory.

- ❑ If the shift temp. is not enough (ex. the indoor unit is installed at position higher than 3 m), the shift temp. can be set with remote controller from +1 to +10 deg. manually as follows:

ⓐ Press the **TEST / CHK** button for more than 4 seconds.

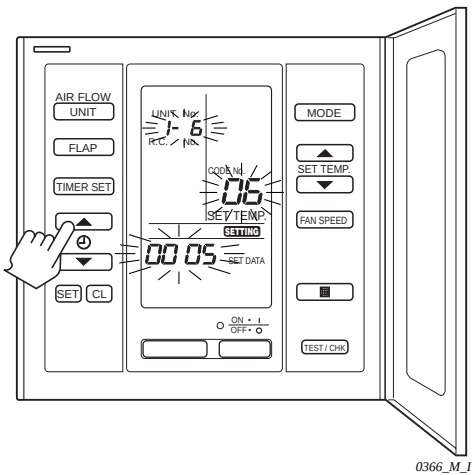


0365_M_I

ⓑ In case of group control, if you want to change all units in group control collectively, proceed next step remaining ALL displayed.
If you want to change a unit individually, select the indoor unit address (UNIT No.) with **UNIT** button.

ⓒ Select the CODE No. 06 with ▲ , ▼ **(SET TEMP)** button.

ⓓ Choose the shift temp with ▲ , ▼ **(◴)** button.



0366_M_I

EX:
UNIT No. 1–6
CODE No. 06
Shift temp. +5 deg

ⓔ Press the SET button.
CODE No. 06, SET DATA and **SETTING** change from flashing to ON state.

ⓕ If you made mistake, press the **CL** button.

ⓖ Finally, press the **TEST / CHK** button.

(I) Set the indoor unit address

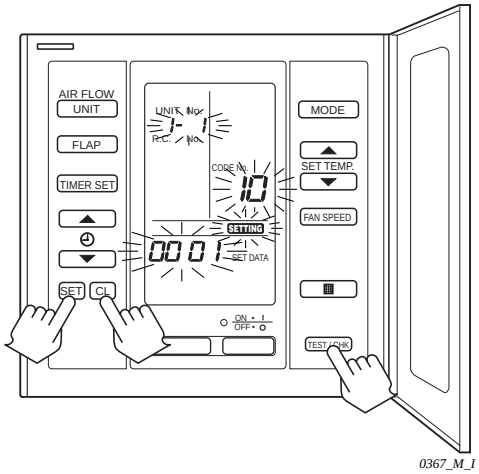
❑ This function is usable if the auto. address operation is not available.
Indoor unit address can be set one by one by remote controller in such case.

NOTE

1) In case of group control, branch wiring for group control should be removed temporarily.
2) In case of remote controllerless system, remote controller should be connected with the indoor unit temporarily.

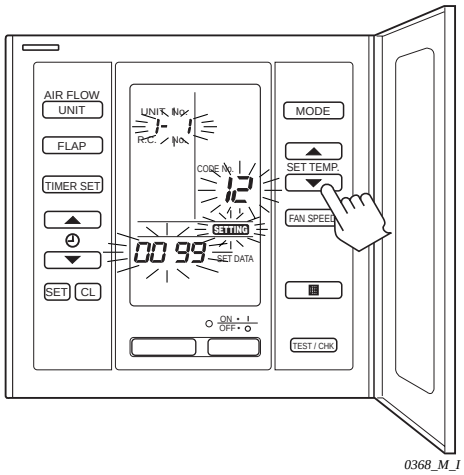
ⓐ Short the two terminals of DISP PIN on indoor unit PCB.
(DISP PIN : Refer to P. VI–2)

ⓑ Press the **TEST / CHK** , **SET** and **CL** buttons at the same time for more than 4 seconds.



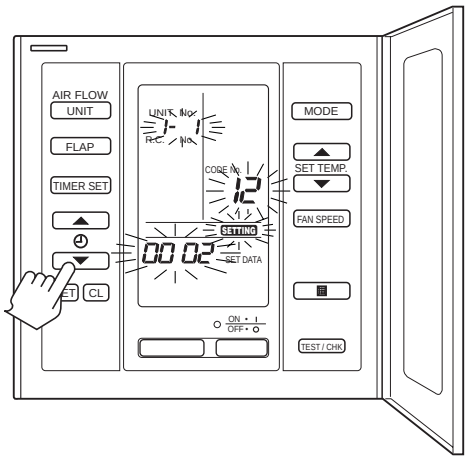
0367_M_I

ⓒ Set the CODE No. 12 to set the No. of R. C. with the ▲ , ▼ **(SET TEMP)** button.



0368_M_I

ⓓ Set the No. of R. C. which you want to set with ▲ , ▼ **(** ◴ **)** button.



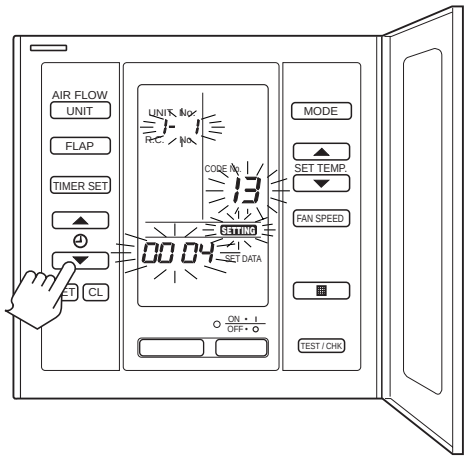
0369_M_I

Ex. No. of R. C. will be set 2.

ⓔ Press the **SET** button.
UNIT No., CODE No. 12, **SETTING** and SET DATA (0002) change from flashing to ON state.

ⓕ Select the CODE No. 13 to set the indoor unit No. with the ▲ , ▼ **(SET TEMP)** button.

ⓖ Set the indoor unit No. which you want to set with the ▲ , ▼ **(** ◴ **)** button.



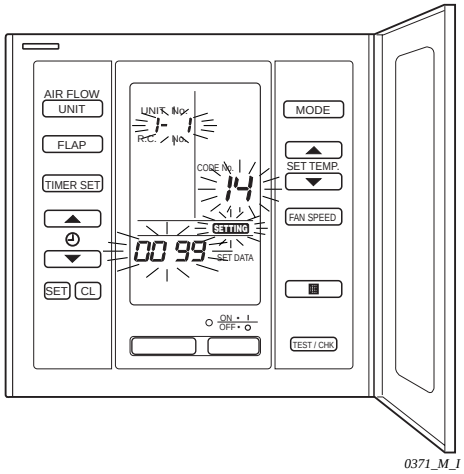
0370_M_I

Ex. Indoor unit No. 4 will be set.
In this example, indoor unit address (UNIT No.) will be set 2–4.

ⓗ Press the **SET** button.
UNIT No., CODE No. 13, **SETTING** and SET DATA (0004) change from flashing to ON state.

ⓘ Select the code No. 14 to set group setting with the ▲ , ▼ **(SET TEMP)** button.

ⓙ Set the No. of group setting as shown below with the ▲ , ▼ **(** ◴ **)** button.



0371_M_1

Nos. of group setting.

0 : Standard system (except group control)

1 : Main indoor unit in case of group control

2 : Sub indoor unit in case of group control

99 : No setting (at factory shipment)

ⓚ Press the **SET** button.
UNIT No., CODE No. 14, **SETTING** and SET DATA change from flashing to ON state.

ⓛ If you made mistake, press the **CL** button so that setting returns to the initial state.

ⓜ Press the **TEST / CHK** button to finish this mode.
The display is disappeared.

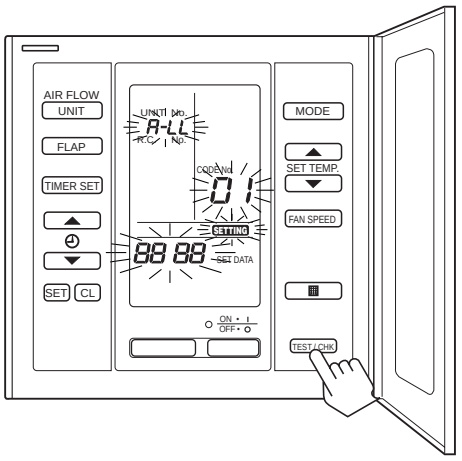
ⓝ Confirm the indoor unit address (UNIT No.) with the **UNIT** button after pressing the **ON / OFF** button.

ⓞ Finally, remove the short circuit of DISP PIN.
And in case of group control, be sure to restore the branch wiring to its original wiring. In case of remote controller–less system, remove the remote controller.

(J) Change the period of the filter timer

❑ If the period of filter timer is not suitable (for example in case of dirty environment), the period can be shortened to half as follows:

ⓐ Press the **TEST / CHK** button for more than 4 seconds.

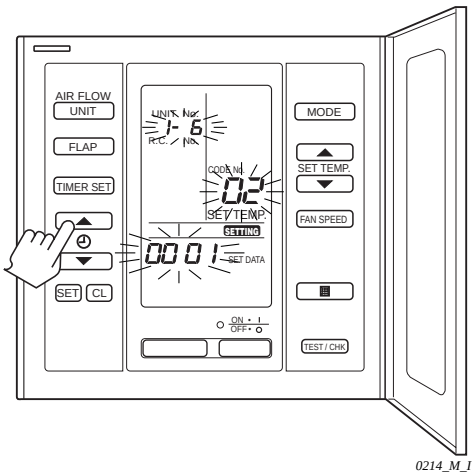


0213_M_I

ⓑ In case of group control, if you want to change all units in group control collectively, proceed next step remaining "ALL" displayed.
If you want to change a unit individually, select the indoor unit address (UNIT No.) with **UNIT** button.

ⓒ Select the CODE No. 02 with ▲ , ▼ **(SET TEMP)** button.

ⓓ Change the No. from 0 to 1 with ▲ , ▼ **(** ◴ **)** button.



0214_M_I

EX:
UNIT No. 1–6
CODE No. 02

X, S type	2,500 hr	→	1,250 hr
AS, T, K type	150 hr	→	75 hr

ⓔ Press the SET button.
CODE No. 06, SET DATA and **SETTING** change from flashing to ON state.

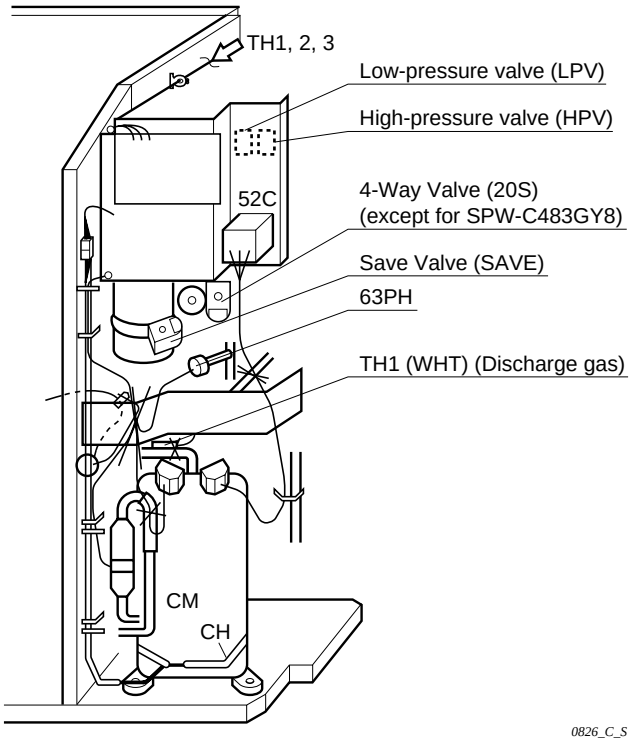
ⓕ If you make mistake, press the **CL** button.

ⓖ Finally, press the **TEST / CHK** button.

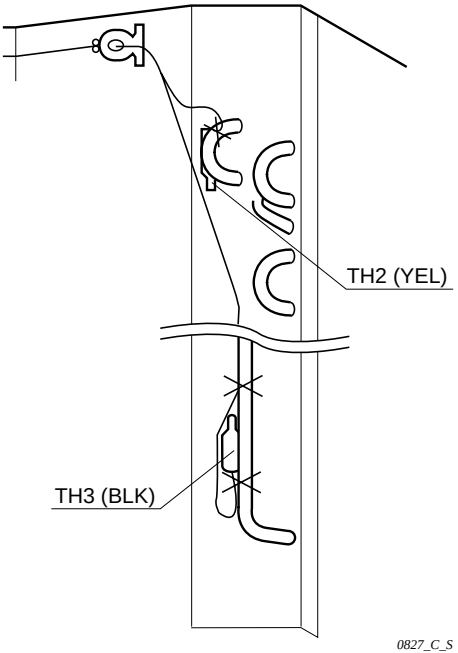
2. Sensor and Solenoid Layout Diagram

2-1. Outdoor unit

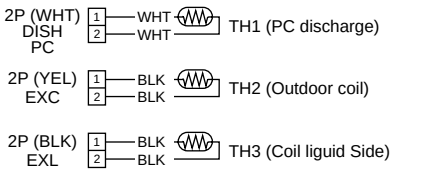
■ **SPW-C483GYH8 , SPW-C483GY8**



0826_C_S

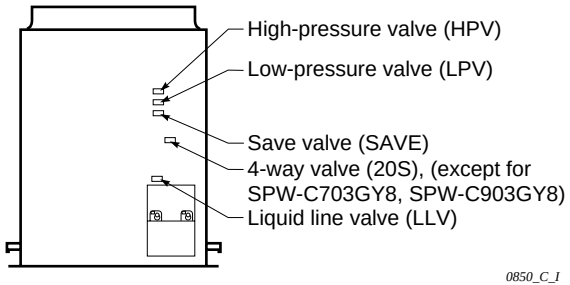


0827_C_S

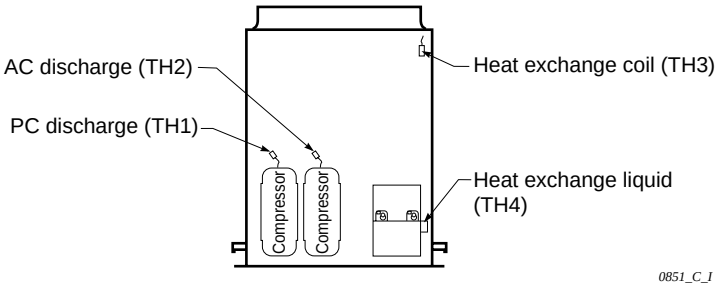


0849_C_I

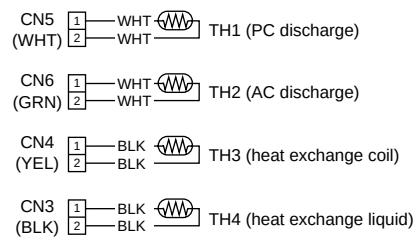
■ **SPW-C703GYH8 , SPW-C903GYH8**
SPW-C703GY8 , SPW-C903GY8



0850_C_I



0851_C_I

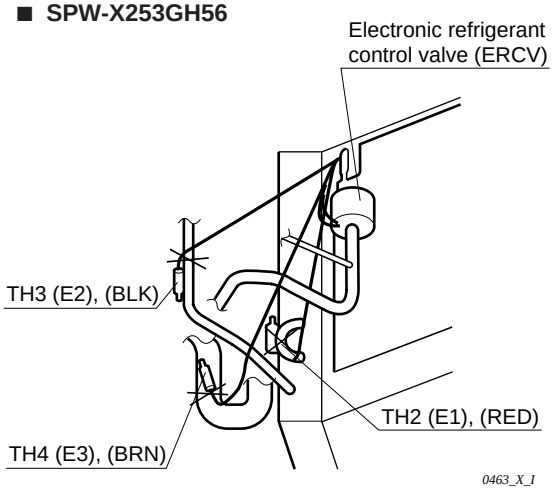


0852_C_I

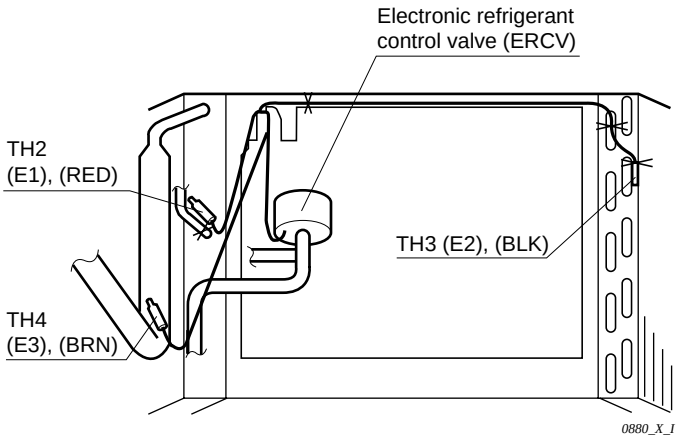
3

2-2. Indoor unit

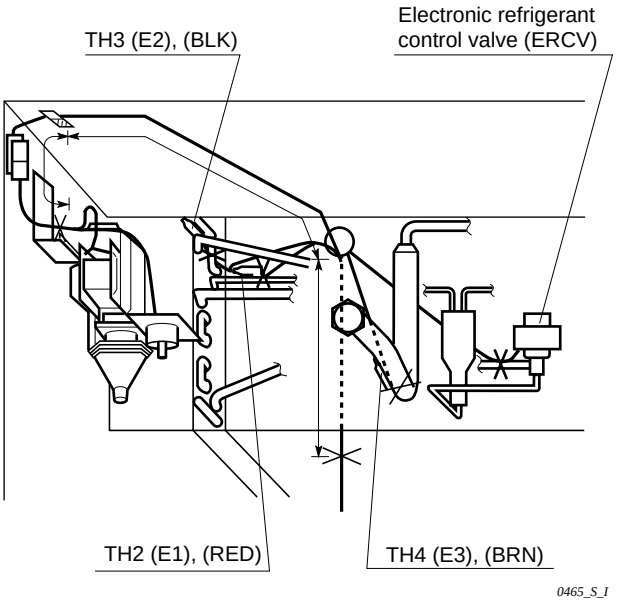
- **SPW-X123GH56**
- **SPW-X183GH56**
- **SPW-X253GH56**



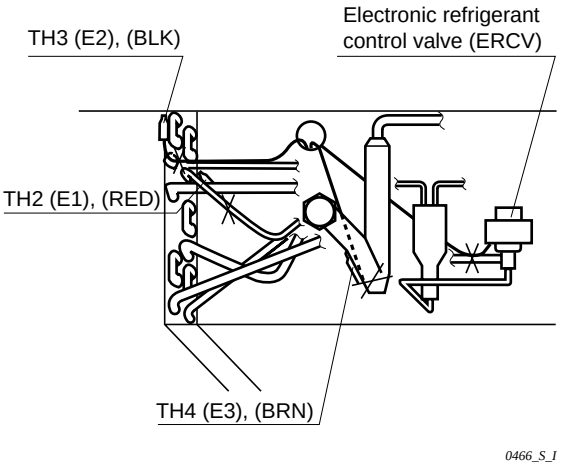
- **SPW-X363GH56**
- **SPW-X483GH56**



- **SPW-S93GH56**
- **SPW-S123GH56**
- **SPW-S183GH56**

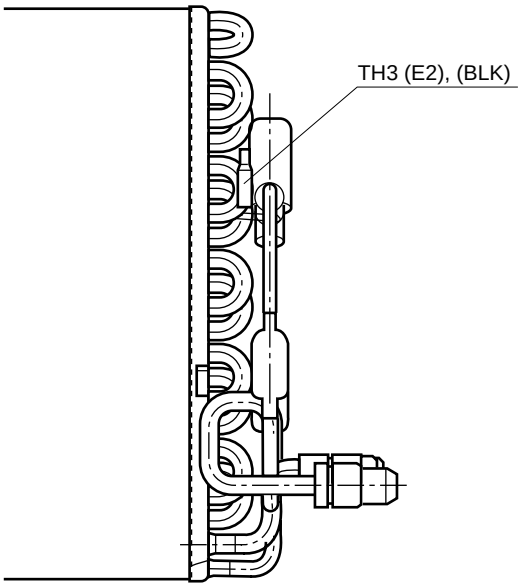


- **SPW-S253GH56**

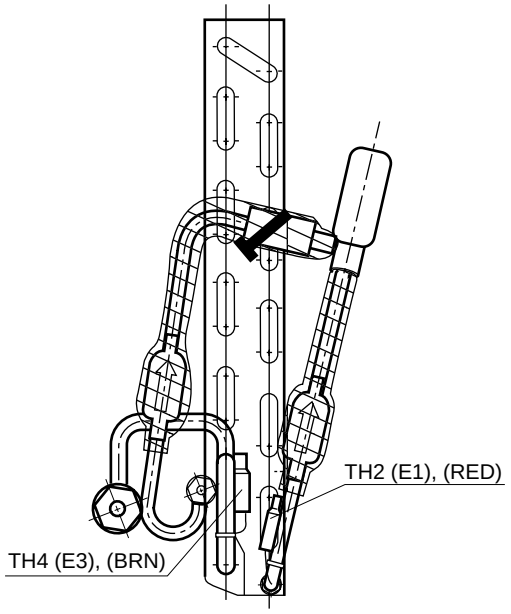


2. Sensor and Solenoid Layout Diagram

■ **SPW-AS93GH56**

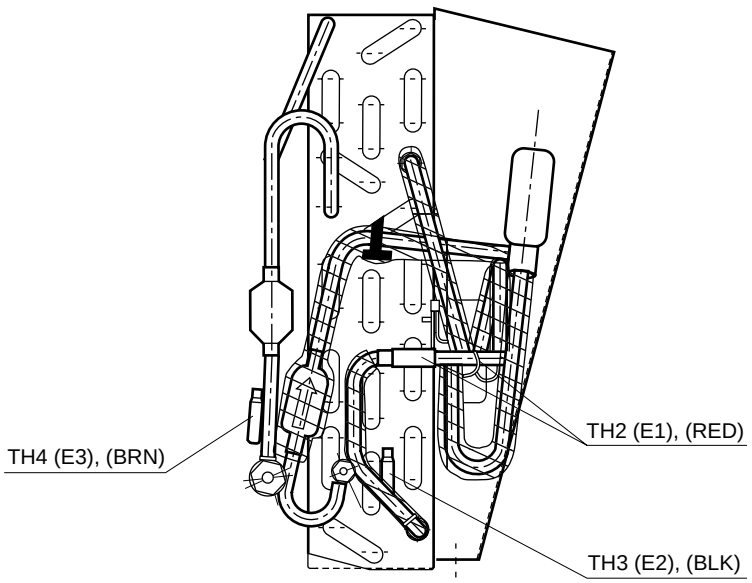


0467_AS_I



0468_AS_I

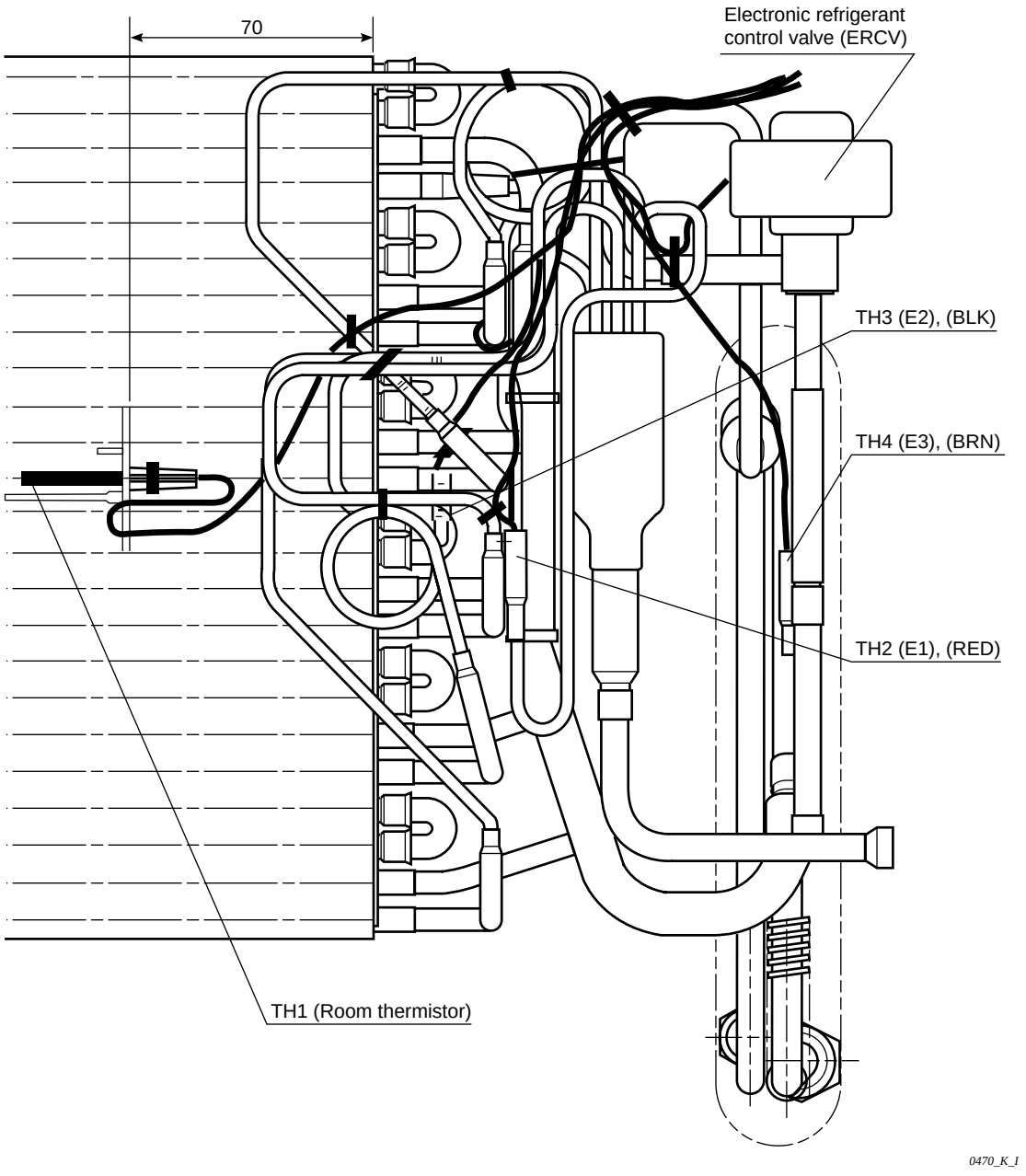
■ **SPW-AS123GH56**



0469_AS_I

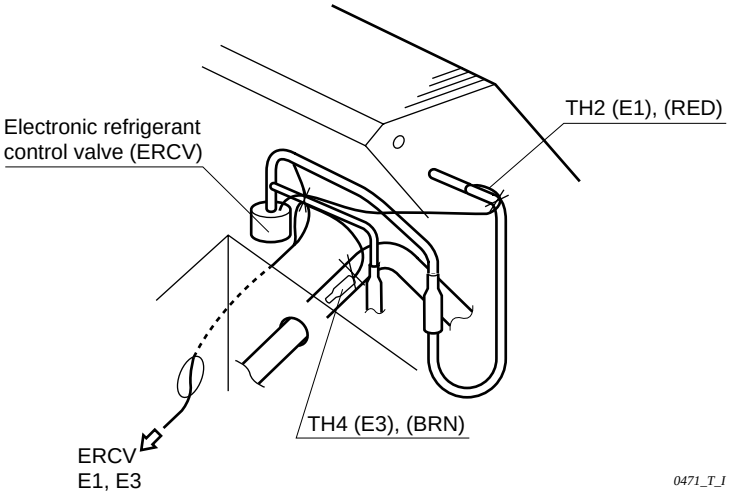
2. Sensor and Solenoid Layout Diagram

- **SPW-K93GH56**
- **SPW-K123GH56**
- **SPW-K183GH56**

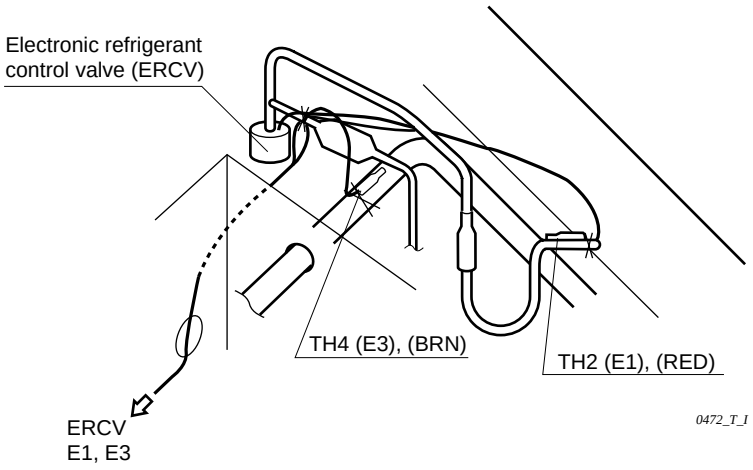


2. Sensor and Solenoid Layout Diagram

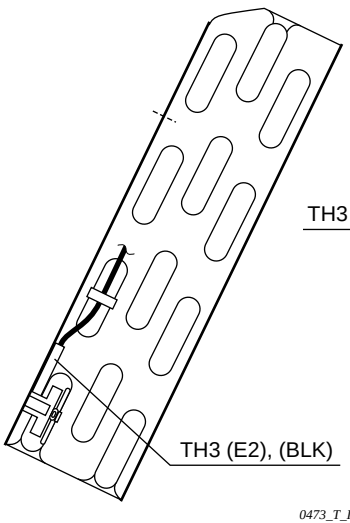
■ **SPW-T183GH56**
■ **SPW-T253GH56**



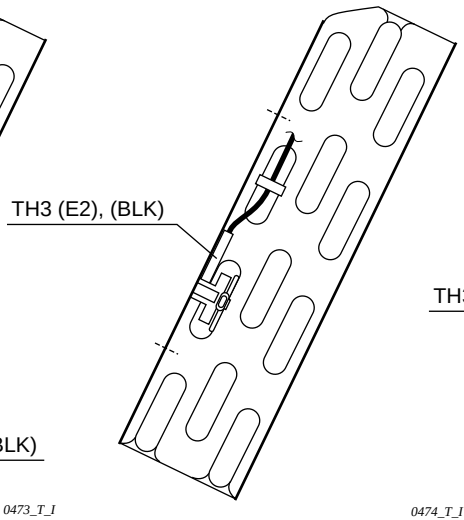
■ **SPW-T363GH56**
■ **SPW-T483GH56**



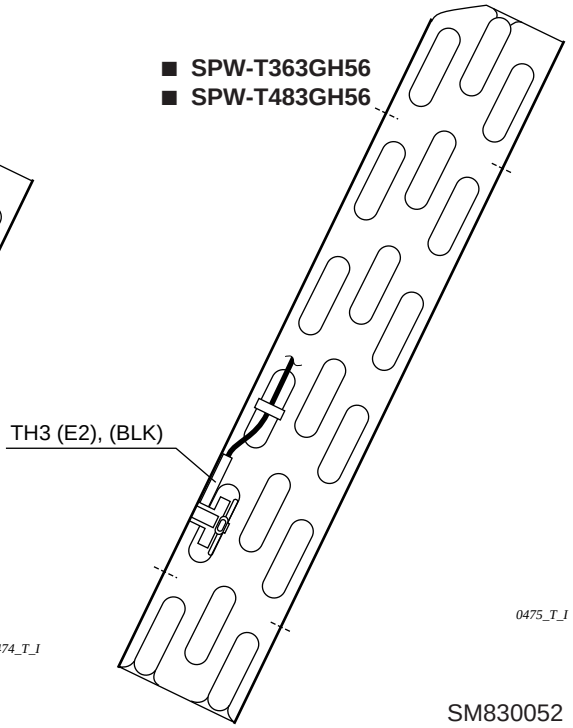
■ **SPW-T183GH56**



■ **SPW-T253GH56**



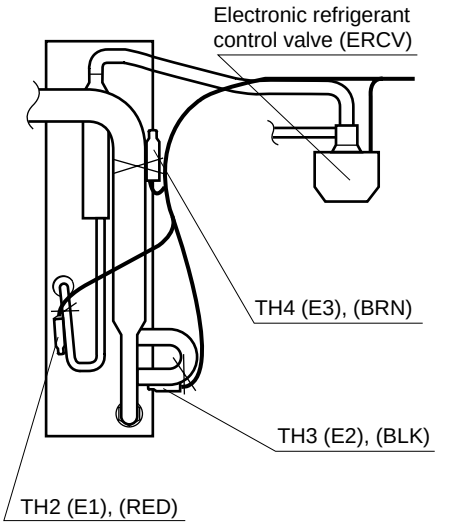
■ **SPW-T363GH56**
■ **SPW-T483GH56**



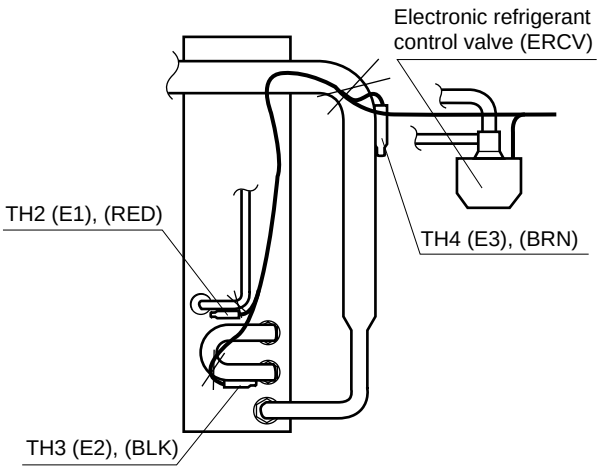
SM830052

2. Sensor and Solenoid Layout Diagram

■ **SPW-D253GH56**

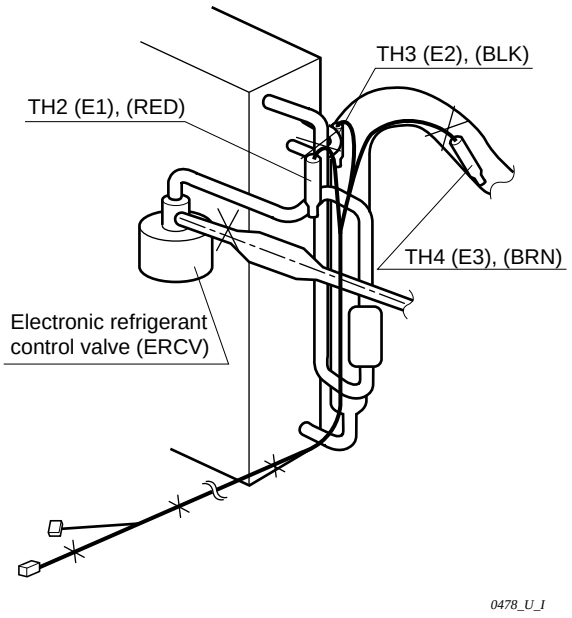


■ **SPW-D363GH56**
■ **SPW-D483GH56**

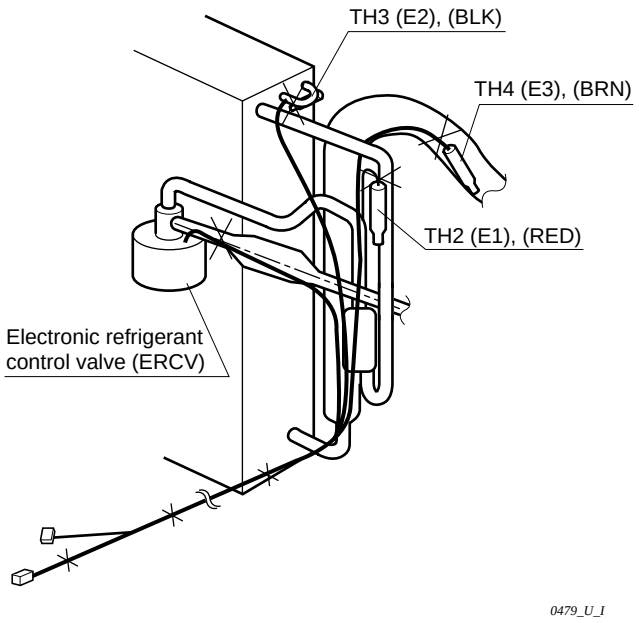


3

■ **SPW-U93GH56**
■ **SPW-U123GH56**
■ **SPW-U183GH56**
■ **SPW-U253GH56**

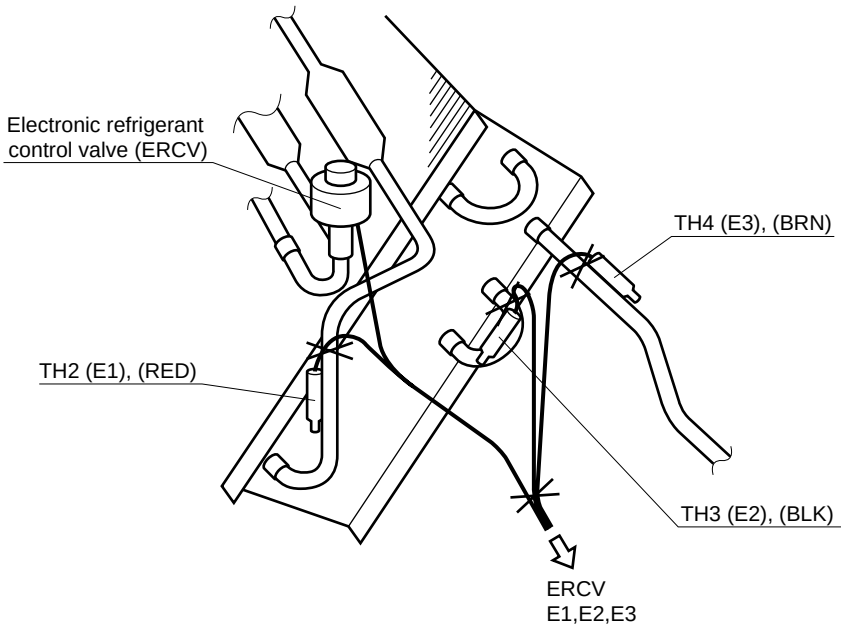


■ **SPW-U363GH56**
■ **SPW-U483GH56**

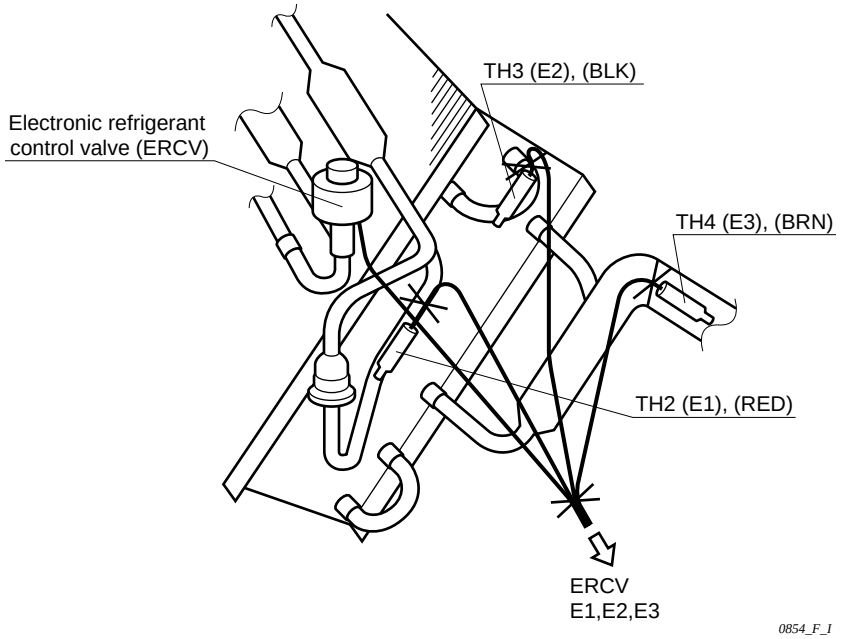


2. Sensor and Solenoid Layout Diagram

- **SPW-F93GH56, SPW-F123GH56**
- **SPW-FM93GH56, SPW-FM123GH56**



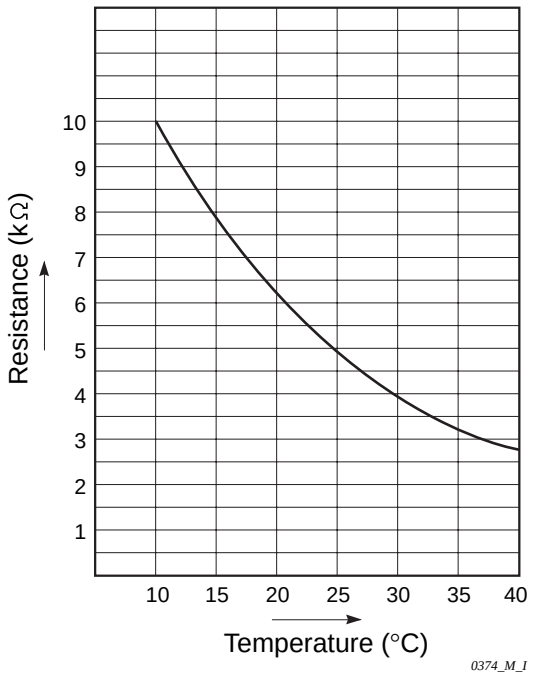
- **SPW-F183GH56, SPW-F253GH56**
- **SPW-FM183GH56, SPW-FM253GH56**



3

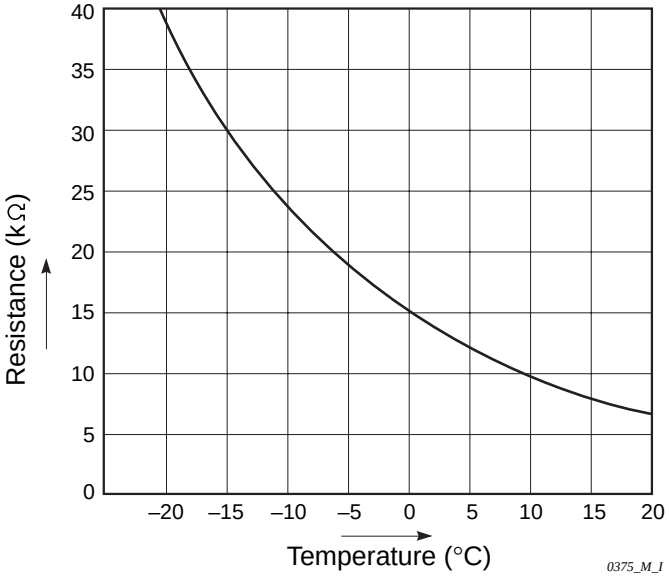
3. Thermistor Characteristic Curve

(1) Room temp. sensor : TH1 (KTEC-35)
(Indoor air temp. sensor)

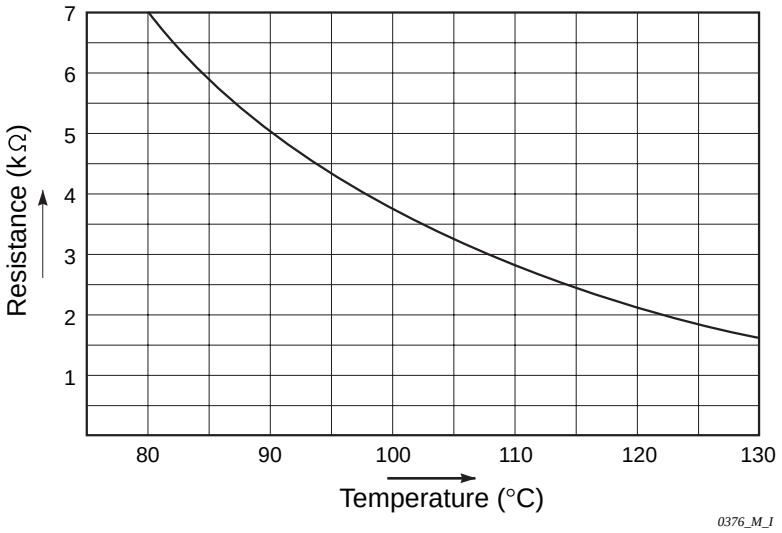


(2) Indoor heat exch. coil sensor : TH2(E1), TH3(E2), TH4(E3)
Outdoor heat exch. coil sensor : TH2, TH3 (48 Type)
TH3, TH4 (70, 90 Type)

(PBC-41E) (PB3M-41E)



(3) Compressor discharge gas temp. sensor : TH1 (PC Compressor) (48 Type)
Compressor discahrge gas temp. sensor : TH1 (PC Compressor), TH2 (AC Compressor) (70, 90 Type)
(PTC-51H)



4. Test Run

4-1. PCB Setting & Test Run

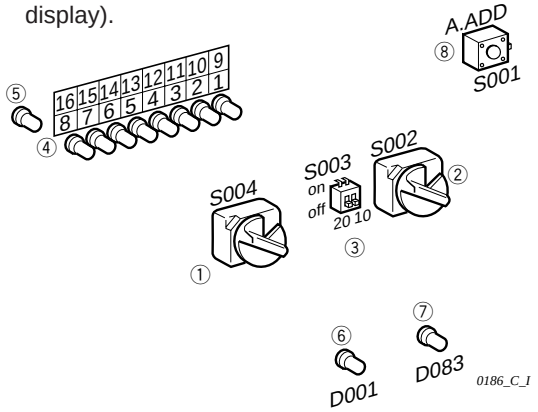
- **Setting of outdoor control PCB**

(A) Set the number of indoor units which are connected to the outdoor unit in S004.

ⓐ For example in the case of 13, set “D” in S004.

ⓑ If the number of indoor units and the number of set switches are identical, the LED: 1 to 8 (9~16) light up matching the number of indoor units.

ⓒ If the outdoor alarm LED (yellow) and LED: 2, 3, 6 light up when operating the indoor unit, it is a combination fault. Check the number of connected indoor units.
*(Remote controller shows the alarm of display).



①S004 (RED) :	Setting SW for number of indoor units (0~16 or 1~10).
②S002 (BLK) :	Setting SW for R.C. address of the outdoor unit (0~9).
③S003 :	Setting SW for R.C. address of the outdoor unit (10, 20).
④RED LED 1 ~ 8 :	Message lamp
⑤RED LED (9 ~ 10) :	Message lamp (only for 70, 90 type)
⑥D001 (RED) :	Power lamp
⑦D083 (Yellow) :	Outdoor unit alarm lamp
⑧S001 :	A. ADD (Auto. address) button

(B) When linking outdoor units in a network (S-net link system).

ⓐ Set the R.C. address number of the outdoor unit in S002 and S003.
R.C. address : Refrigerant circuit address 1~30.

ⓑ Remove the short plug (CN031, 2P Black, location: right bottom on the outdoor control PCB) from all outdoor units except one.

For a system without link, set the R.C. address number to 1 and retain the short plug CN031.

Example,

R.C. address	S002	S003		CN031
		20	10	
1	1	off	off	short (In case of No-link system)
12	2	off	on	open (In case of link system)
23	3	on	off	open (In case of link system)

- **Setting the indoor control PCB**

No setting necessary.
Each indoor unit address (UNIT No: R.C. - No.) is decided after auto. address operation.

└ Indoor unit No.
└ Refrigerant Circuit No. (R.C. address)

Manual setting for indoor unit address can be performed also by remote controller.

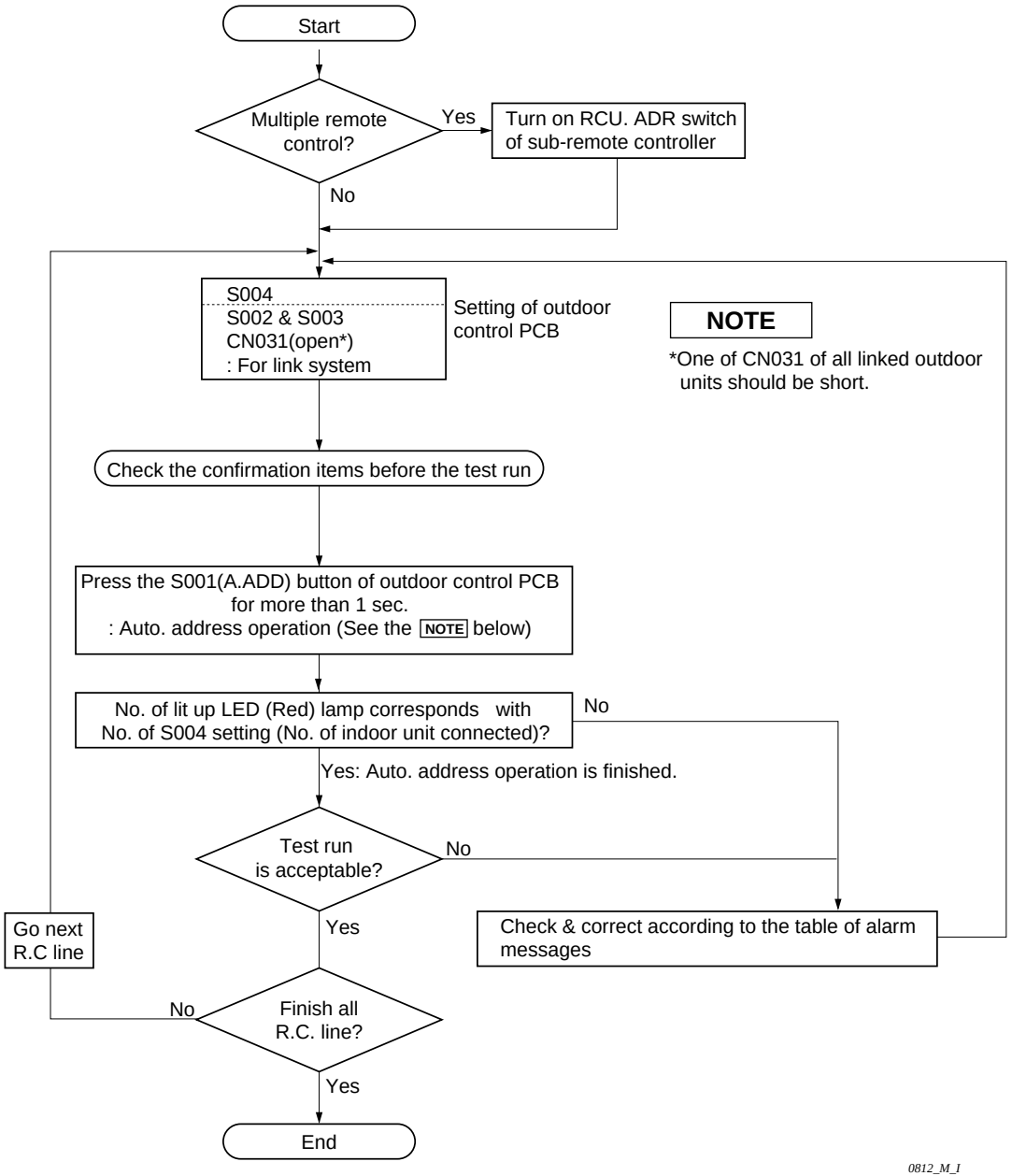
- **Check items before the test run**

① Turn on all power supply switches more than 5 hours before in order to charge the crank-case heater.

② Fully open the outdoor service valve after making the leak inspection of field connected tubing, vacuuming, and gas charging.

4. Test Run

● **Test run procedure**



NOTE

1) Auto. address operation decides each indoor unit address to the indoor unit connected to the refrigerant circuit individually.
   The required time of operation depends on the temperature.
   It takes a maximum of 20 minutes for a link system.
   It takes a maximum of about 3 minutes without turning on the compressor, for a system without link.
2) When linking outdoor units in a network (link system), Auto. address operation should be performed by each refrigerant circuit (outdoor unit) individually. If you start Auto. address operation of another refrigerant circuit during Auto. address operation, the alarm message (E12) will be displayed.
3) Indoor unit address can be changed manually with the remote controller when required.
4) The selected indoor unit address is memorized in EEPROM even after power failure.
5) When using a system controller, zone registration is required after finishing the test run.

4-2. Main Alarm Messages which Indicate Mis-Wiring & Mis-Setting

Remote controller display	Cause		
	• Individual Remote Control	Group Control	Multiple Remote Control
Nothing displayed	• Remote controller not properly connected. • Power supply not ON.		
E1	• Remote controller not properly connected.		
E4	• Wiring connection fault of indoor/outdoor units	• Wiring connection fault of some indoor/outdoor units inside the group	
	• Power supply of outdoor unit not ON.		
E6	• Combination of indoor/outdoor units is wrong. * Incorrect setting of No. of indoor unit on outdoor control PCB. (S004 setting) * Power supply of some indoor units not ON.		
E9	—	—	• 2 main remote controllers set.
P9 (*)	• Improper wiring connections of ceiling panel		

* Ref: Alarm “P9” is not generated if the remote controller is set at test run.

4-3. Main Alarm Messages Indicating Unit Malfunction

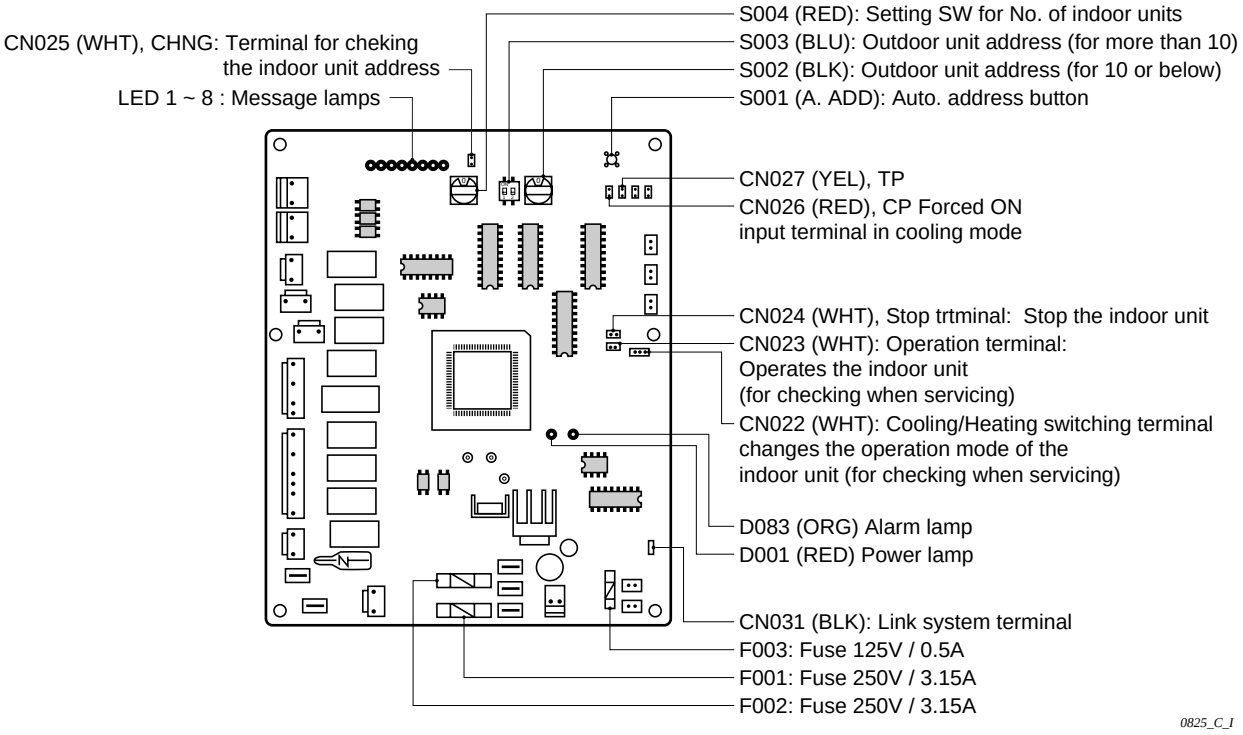
Fault detected		Remote controller display
Indoor protection	Fan motor protection thermostat	P1
Outdoor protection	Fan motor protection thermostat Compressor protection thermostat	P2
	Incorrect discharge temp of PC (AC) comp.	P3 (P17)
	High-pressure switch	P4
Indoor protection	Float switch	P10
Indoor sensor	Open/or damaged	F1-F3, F10
Outdoor sensor	Open/or damaged	F4, F5, F7, F25
Compressor protection	PC comp. motor is overloaded.	H1
	PC comp. motor is locked.	H2
	AC comp. motor is overloaded.	H11
	AC comp. motor is locked.	H12

NOTE

- comp.: Compressor
- temp.: Temperature
- PC: Power Control
- AC: Standard

5. PCBs and Their Location

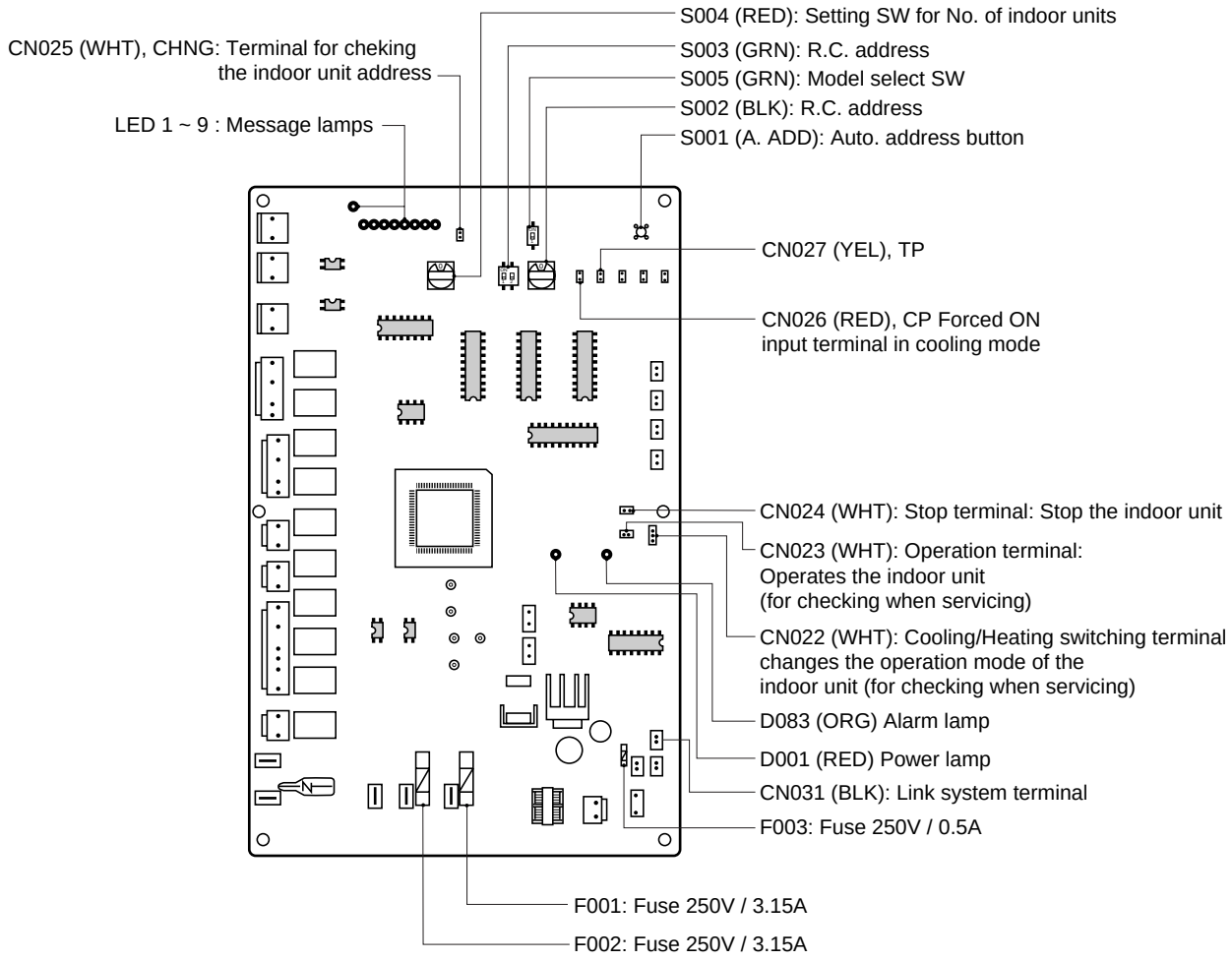
■ Outdoor unit control PCB (CR-C483GYH)



3

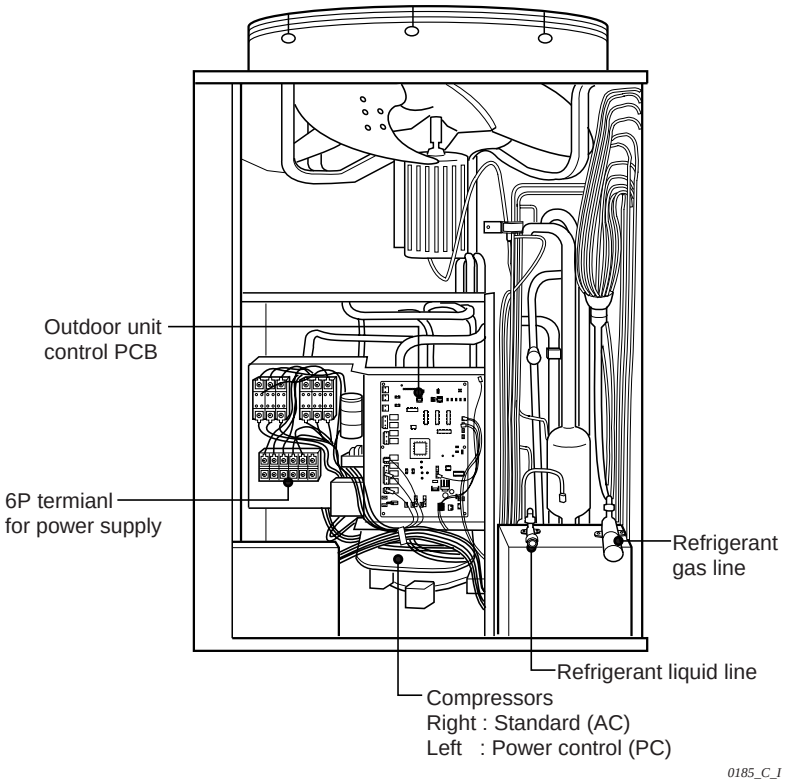
5. PCBs and Their Location

■ Outdoor unit control PCB (CR-C703GYH)



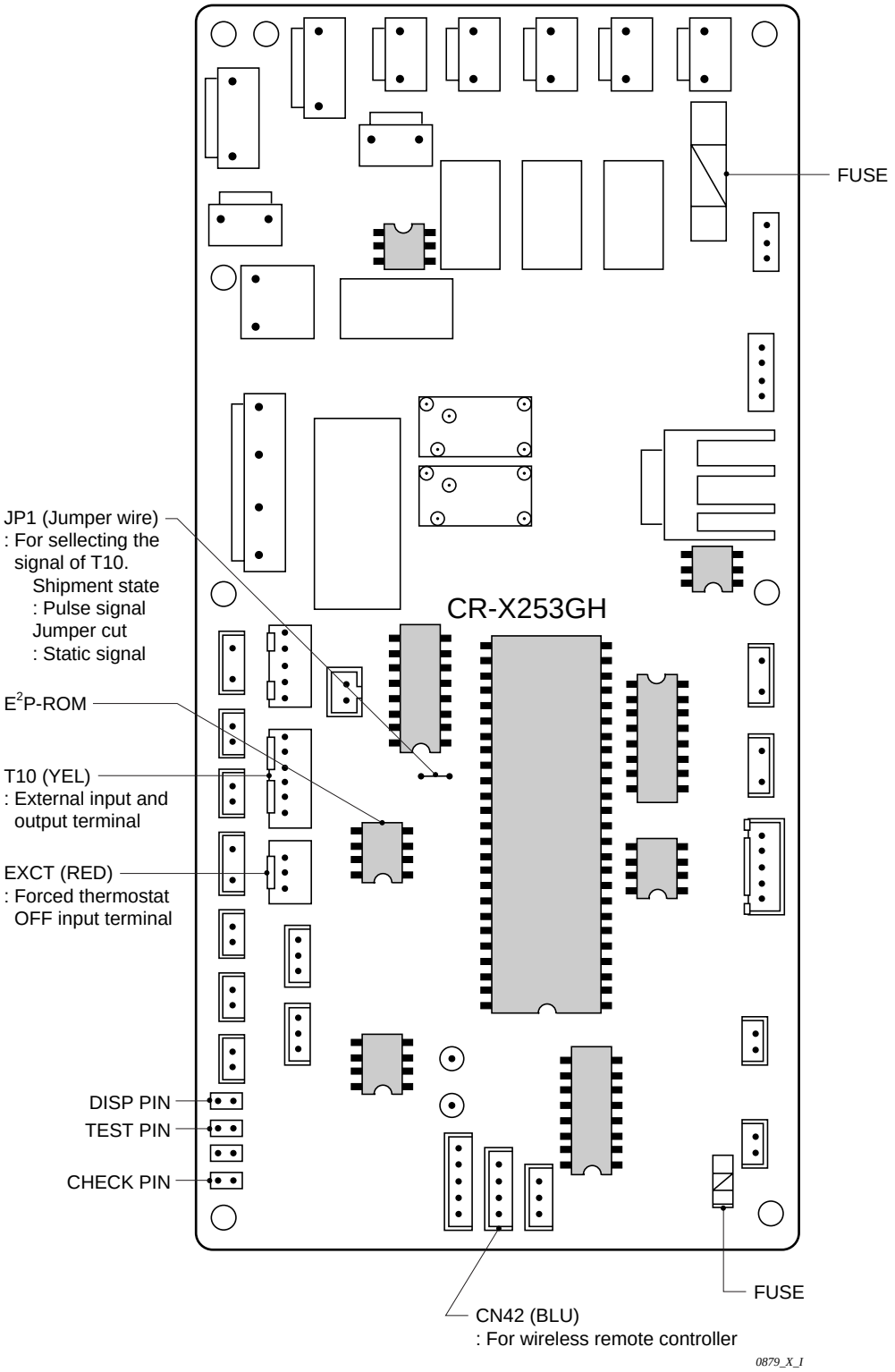
0221_C_I

■ OUTDOOR UNIT



0185_C_I

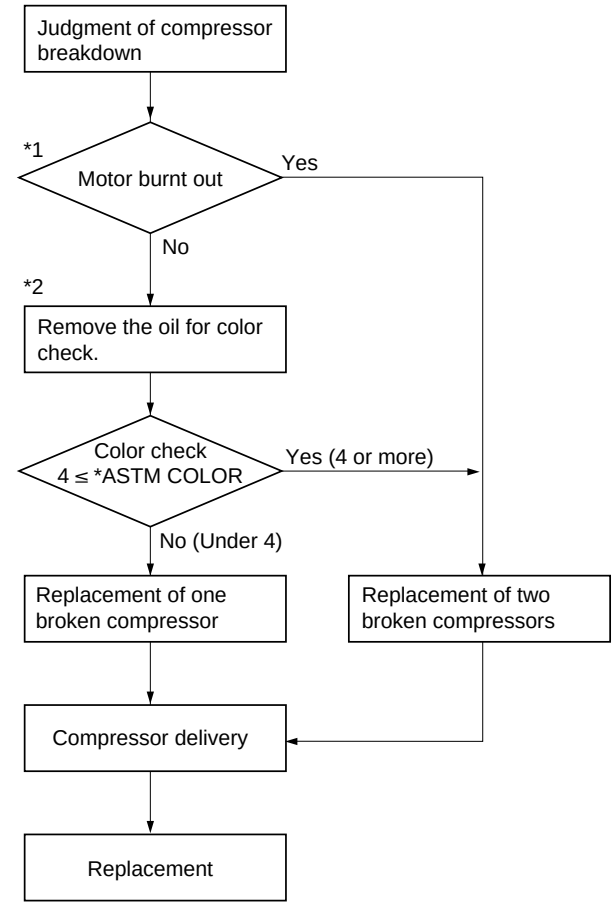
■ PCB (CR-X253GH) FOR INDOOR UNITS



6. Compressor Defects

6-1. Diagnosing and verifying compressor breakdowns (See the items for Symptom and inspection location according to the alarm messages P2, P7, H2.)

6-2. Judgment of 2 compressors replacement



(See the “Operation procedure for replacing the compressor”.)

*American Standard Testing Method

0331_M_I

* 1. Judgment with resistance value
See the winding resistance in the product specifications.

* 2. Loosen the oil balancing pipe flare nut section and remove.

NOTE

If the motor is burnt out , be sure to clean the inside of the refrigerant tubing.

3

7. Operation Procedure for Replacing the Compressor

Operate correctly according to the procedure below.

(1) Turn off the indoor and outdoor unit switches. Turn on the indoor switch again, and after 1 minute, turn off.
(This is to completely open the electronic refrigerant control valve of the indoor unit.)

(2) Collect all the refrigerant from the service valve service port with the refrigerant collection device. From the fully open state, turn each spindle 1 / 2 to the right.

Removal:

(1) Remove the fan guard shown in Fig. 1 (4 screws).

(2) Remove the cover in front of the compressor cover ceiling plate (2 screws).

(3) Remove the compressor cover ceiling plate (2 screws). Lift up the left side of the ceiling plate and with the ceiling plate tilted, pull it out.

(4) Remove the electrical units and control lines from the terminal plates.

(5) Disconnect the connector connected to the outdoor unit PCB from inside the unit. (Solenoid, thermistor, fan motor, crank case heater, etc.)

(6) Remove the electrical component box (4 screws).

(7) Remove the screws holding the compressor cover main unit and shift it to the rear.
(3 locations at the bottom plate and 2 locations at the left / right side plates)

(8) Remove the noise absorbing material packed around the compressor.

(9) Remove the compressor terminal section cap and disconnect the power terminals and internal terminals.

(10) Remove the crank case heater.

(11) Remove the 2 bolts (front side) shown in Fig. 2 and the 1 nut with washer (rear side).

(12) Prepare to remove the welded section in Fig. 3.
- Protect the sensor section, surrounding metal plates, rubber pieces, leads, clampers, etc.

(13) Disconnect the welded section shown in Fig. 3.
- Compressor with power save — 5 locations
- Fixed-speed compressor — 3 locations

(14) Pull the compressor forward.
(Be careful not to damage the bottom plate.)

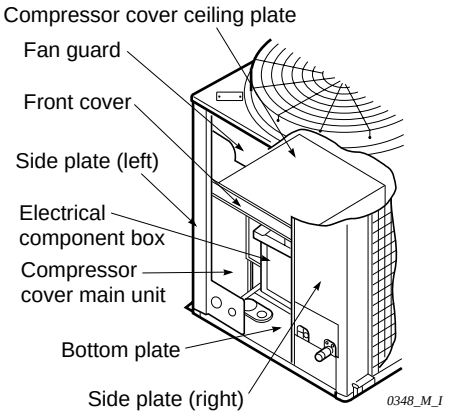


Fig. 1

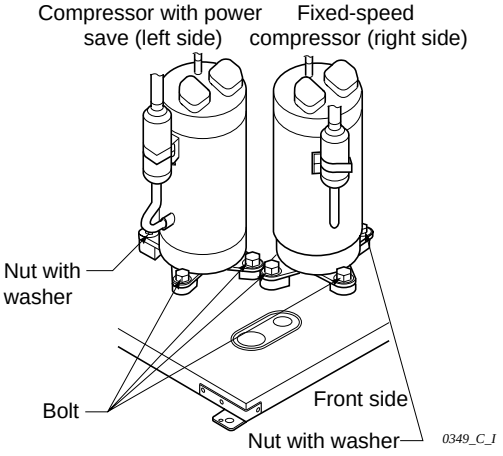


Fig. 2

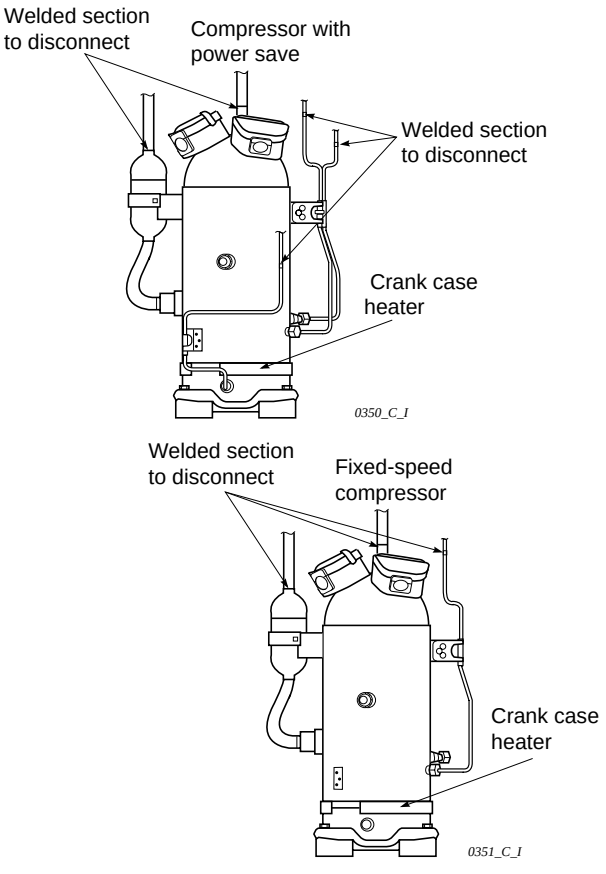
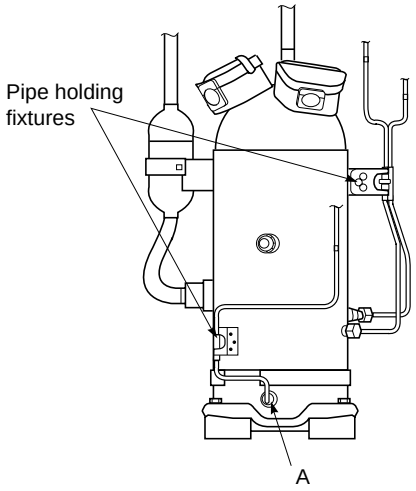


Fig. 3

7. Operation Procedure for Replacing the Compressor

Installation:

(1) Installation preparations
- Remove the rubber plug and intake pipe cap (welding) from the new compressor.
- Disconnect the pipe holding fixtures, flared pipes and unions (for compressor with power save).
- Install the parts removed from the old compressor on the new compressor. (Install in the same state as the original state.)
  For a compressor with power save, tilt so that there are no oil leaks from the new and old compressors, and install the A section flared pipe and union. Always wrap the unions with sealing tape.



(2) Install the crank case heater on the compressor.

(3) Put the compressor rubber cushion on the prescribed position of the bottom plate.

(4) Set the compressor on the unit. The left side is the compressor with power save. (Install in the same state as the original state.)

(5) Form the pipes and insert in the welding location.

(6) Replace the internal nitrogen and attach the copper port at each section.

(7) Raise the air-tight test pressure to 2.94 MPa (30 kg/cm^{2}G) with nitrogen and check that there are no leaks.

(8) When you install the removed parts, also install the electrical component box in its original state.

(9) After completing the air-tight test, reduce the vacuum pressure in the indoor/outdoor units and pipes to 133 Pa (1 mmHg).

(10) After establishing the vacuum, charge with refrigerant.
Charge the sum of the “factory refrigerant amount” and “additional charging refrigerant amount” which are mentioned on the nameplate and the CAUTION label.

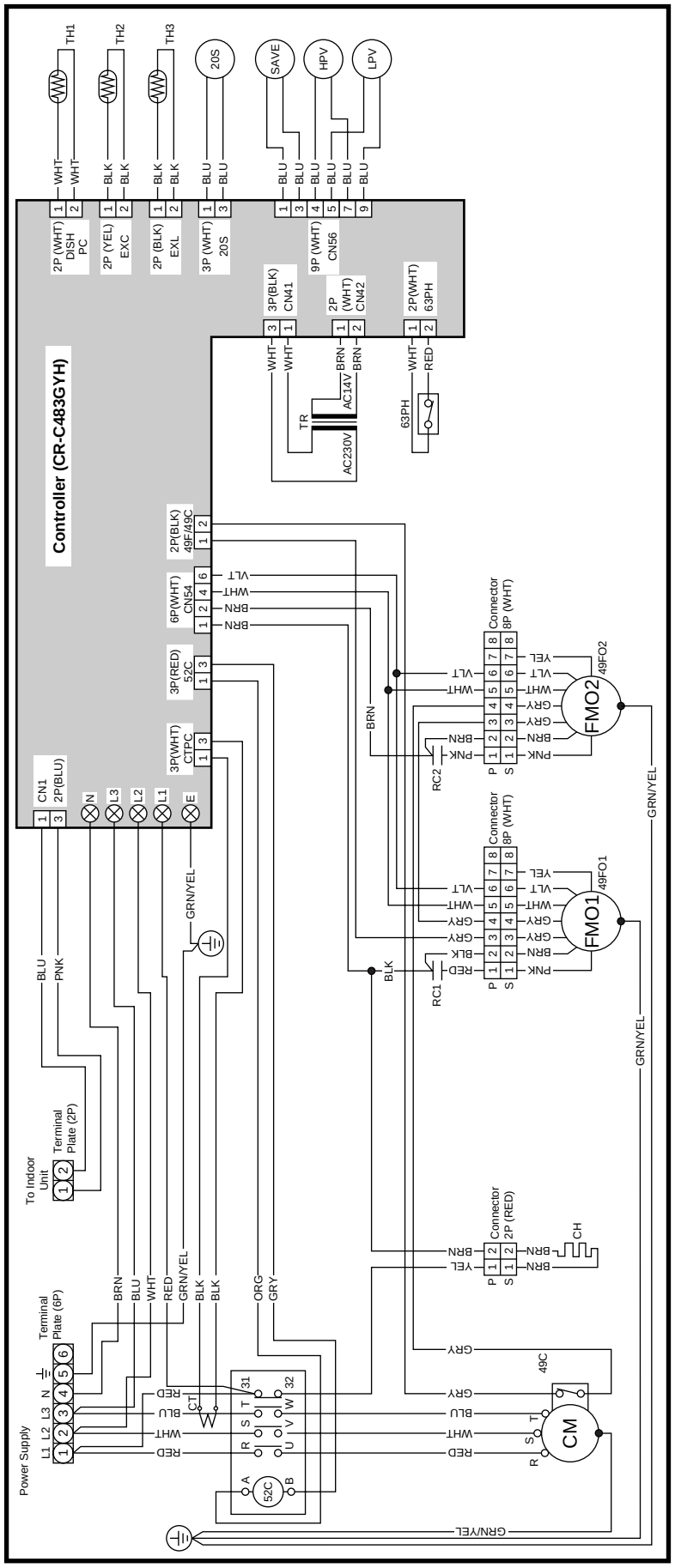
(11) This completes the compressor replacement.

Contents

4. Electrical Data

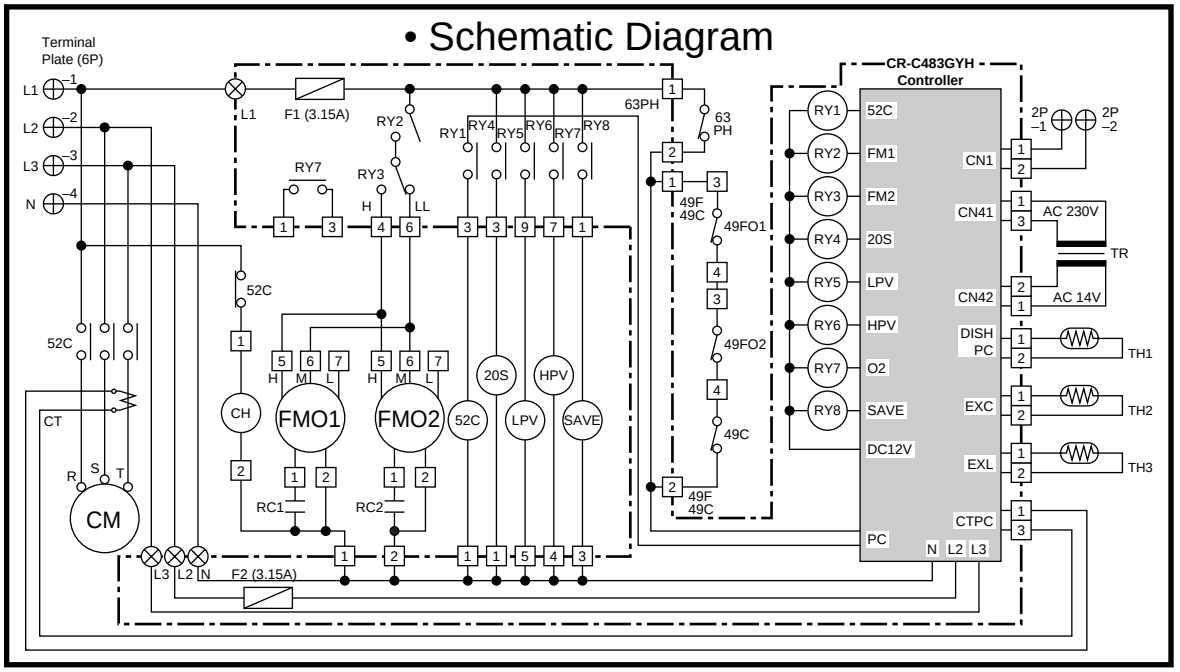
1. Outdoor Unit

(1) SPW-C483GYH8



Ⓦ 854-2-5268-553-00-1 (C483GYH8)

(1) SPW-C483GYH8



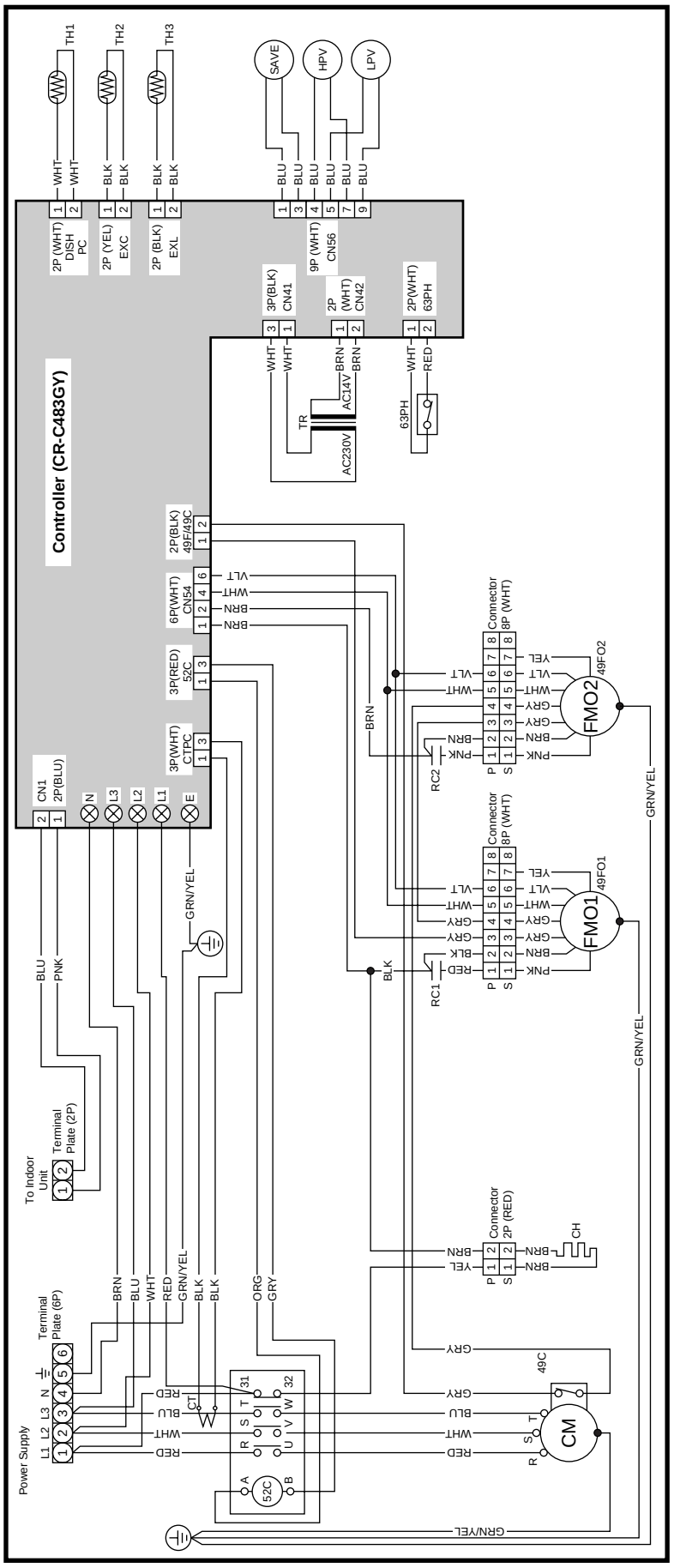
Symbols	Description
CM	Compressor Motor
FMO1, 2	Outdoor Fan Motor
CH	Crank Case Heater
52C	Compressor Motor Magnetic Contactor
49C	Cpmpressor Motor Thermal Protector
49FO1, 2	Fan Motor Thermal Protector
RC1, 2	Running Capacitor
20S	Four Way Valve
SAVE	Save Valve
HPV	High Pressure Valve
LPV	Low Pressure Valve
CT	Current Transmitter
63PH	High Pressure Switch
F1, 2	Fuse
TH1	Thermistor (Discharge PC)
TH2	Thermistor (Outdoor Coil)
TH3	Thermistor (Coil Liquid Side)
TR	Power Transformer
RY1-8	Auxiliary Relay
□	Connector
⊕	Terminal
⊗	Terminal
CR-C483GYH	Outdoor Controller

Ⓢ 854-2-5268-553-00-1 (C483GYH8)

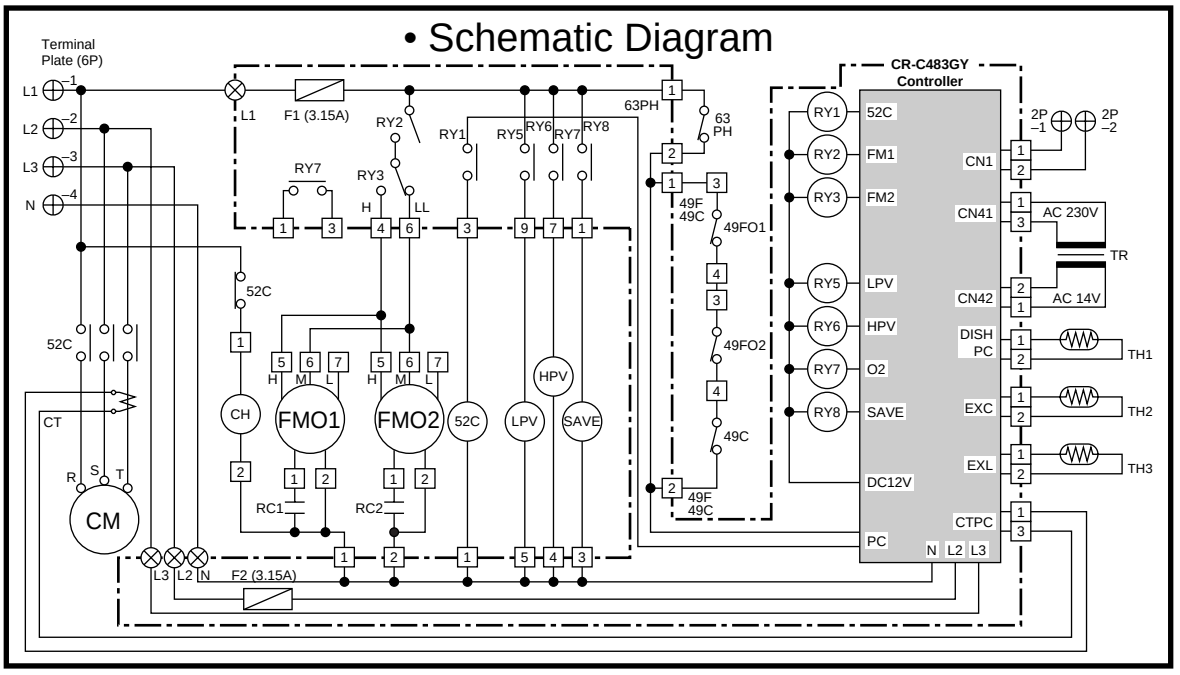
4

(2) SPW-C483GY8

• Electric Wiring Diagram



(2) SPW-C483GY8



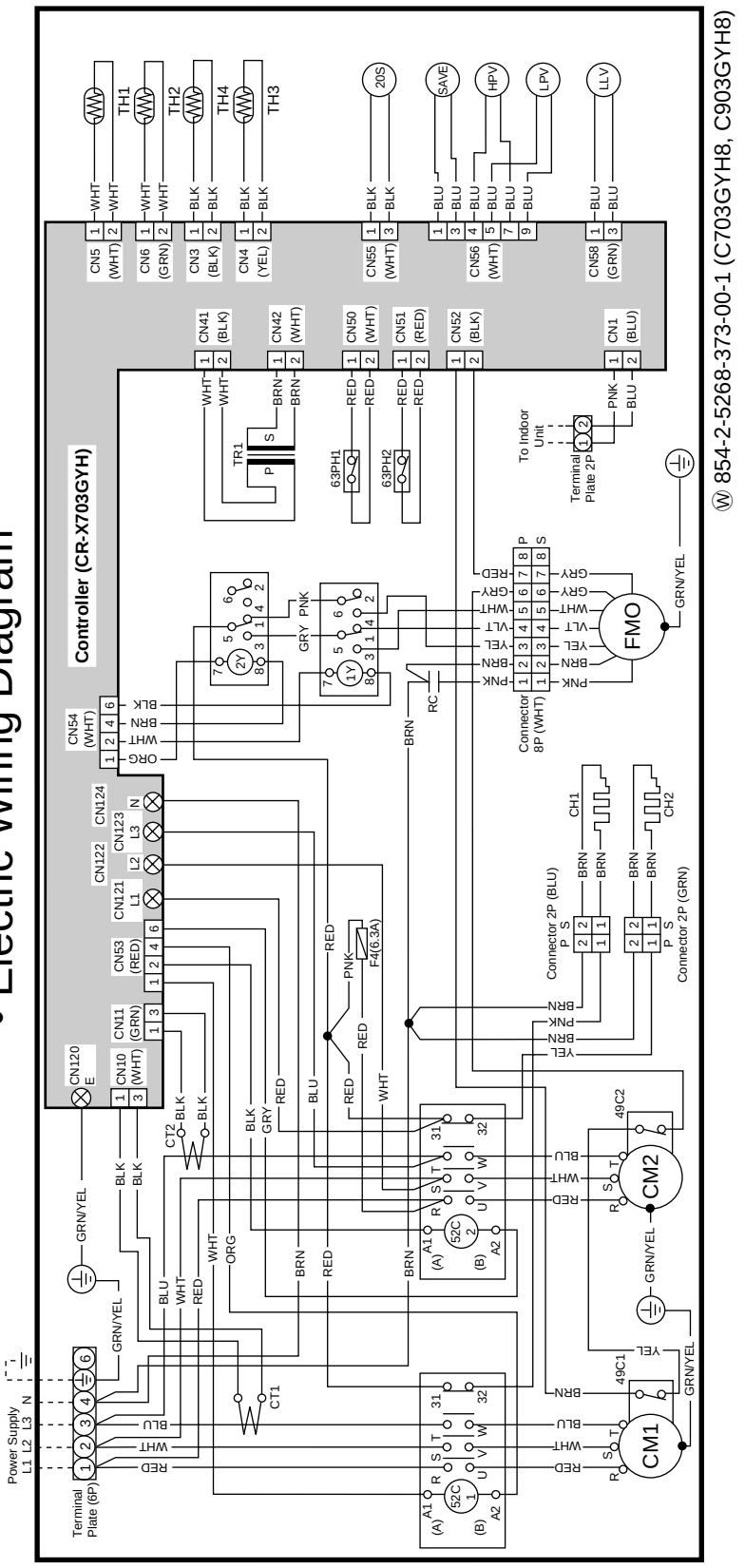
Symbols	Description
CM	Compressor Motor
FMO1, 2	Outdoor Fan Motor
CH	Crank Case Heater
52C	Compressor Motor Magnetic Contactor
49C	Cpmpressor Motor Thermal Protector
49FO1, 2	Fan Motor Thermal Protector
RC1, 2	Running Capacitor
SAVE	Save Valve
HPV	High Pressure Valve
LPV	Low Pressure Valve
CT	Current Transmitter
63PH	High Pressure Switch
F1, 2	Fuse
TH1	Thermistor (Discharge PC)
TH2	Thermistor (Outdoor Coil)
TH3	Thermistor (Coil Liquid Side)
TR	Power Transformer
RY1-3, 5-8	Auxiliary Relay
□	Connector
⊕	Terminal
⊗	Terminal
CR-C483GY	Outdoor Controller

Ⓢ 854-2-5268-554-00-0 (C483GY8)

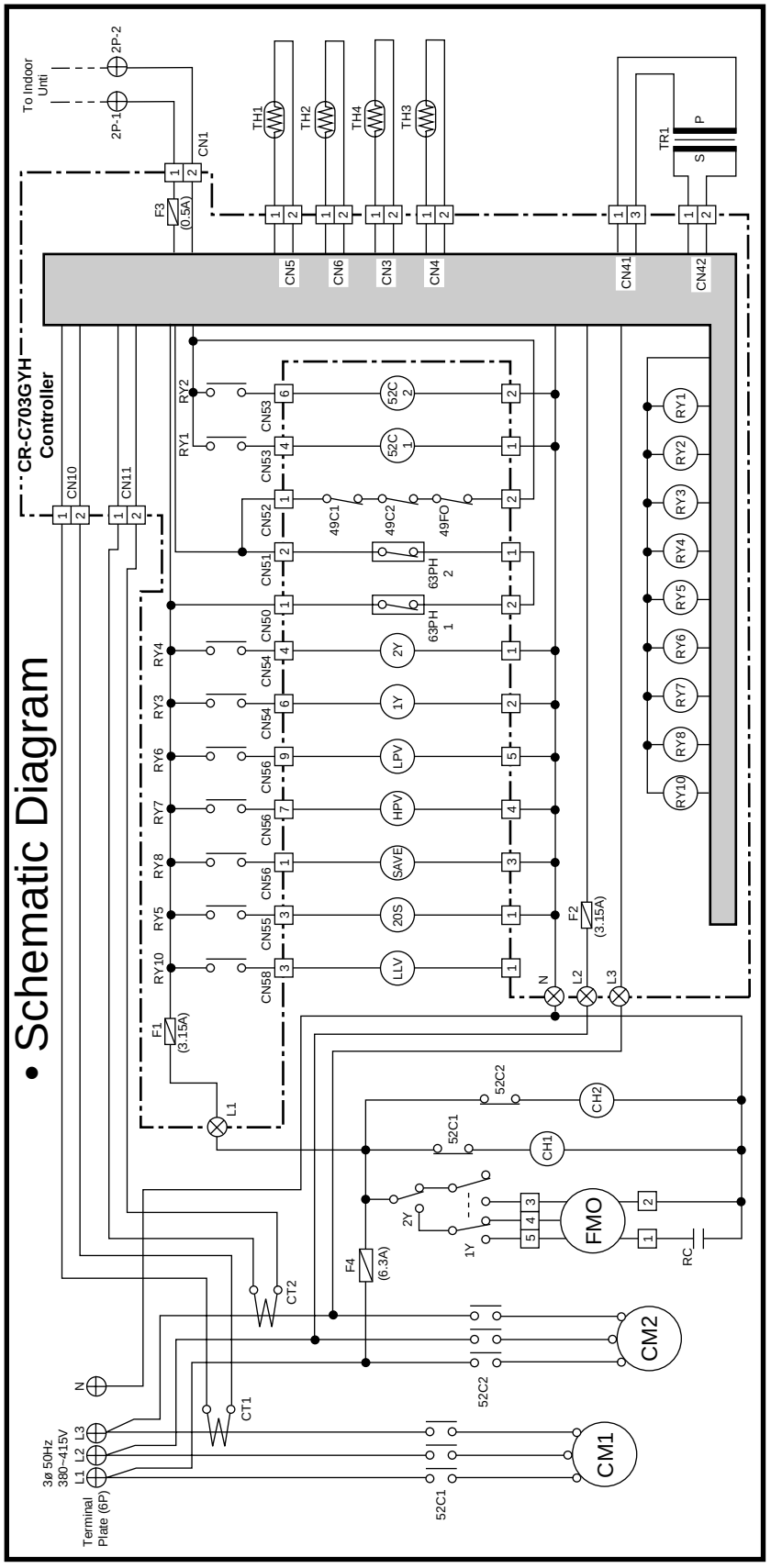
4

4

(3) SPW-C703GYH8, SPW-C903GYH8



(3) SPW-C703GYH8, SPW-C903GYH8



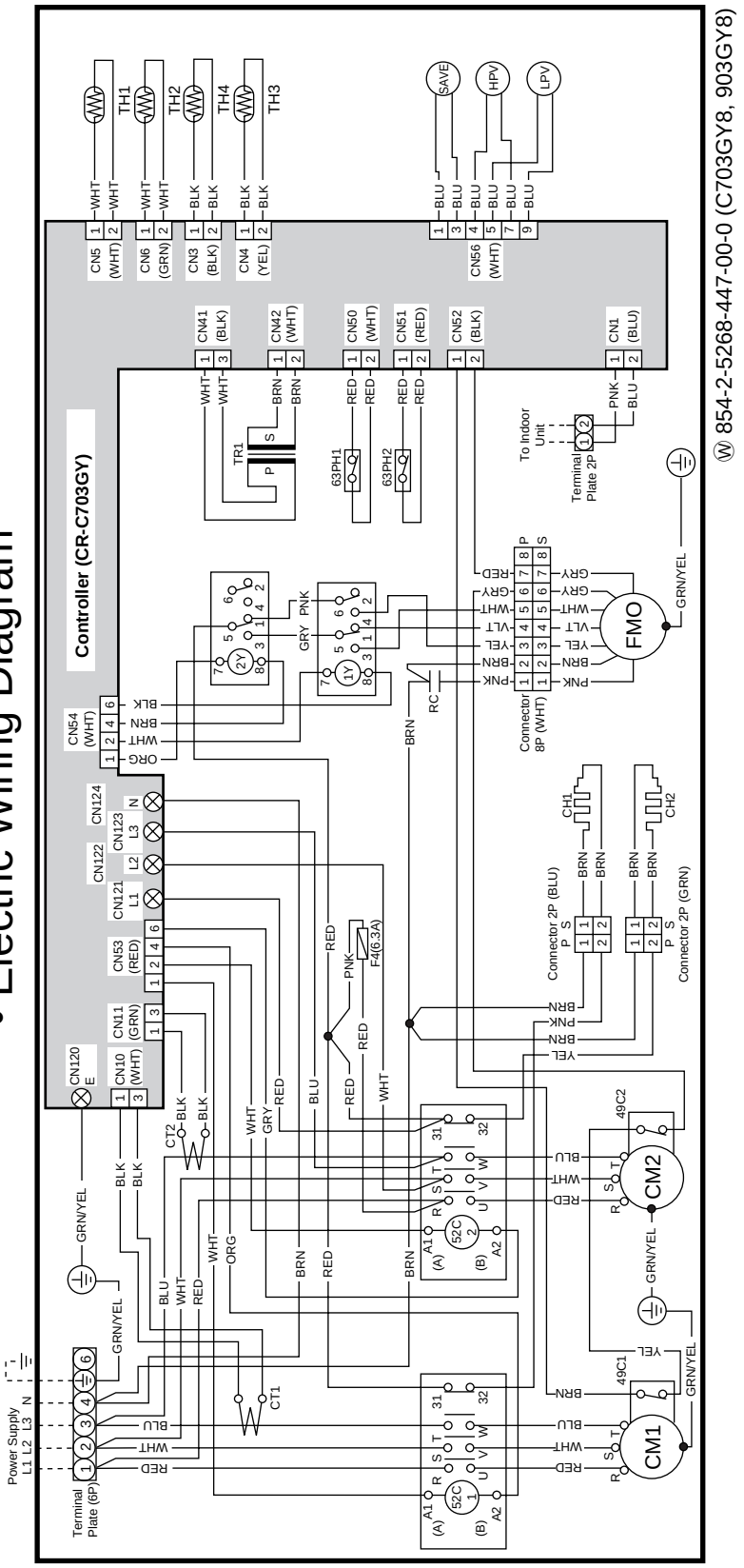
Symbols	Description
CM1,2	Compressor Motor
FMO	Outdoor Fan Motor
CH1,2	Crank Case Heater
52C1,2	Compressor Motor Magnetic Contactor
49C1,2	Compressor Motor Thermal Protector
49FO	Fan Motor Thermal Protector
RC	Running Capacitor
20S	Four Way Valve
SAVE	Save Valve
HPV	High Pressure Valve
LPV	Low Pressure Valve
LLV	Liquid Line Valve
CT1,2	Current Transmitter
63PH1,2	High Pressure Switch

Symbols	Description
F1,2,3,4	Fuse
TH1	Thermistor (Discharge PC)
TH2	Thermistor (Discharge AC)
TH3	Thermistor (Outdoor Coil)
TH4	Thermistor (Coil Liquid Side)
TR1	Power Transformer
1Y,2Y,RY1-10	Auxiliary Relay
□	Connector
⊕	Terminal
⊗	Terminal
CR-C703GYH	Outdoor Controller

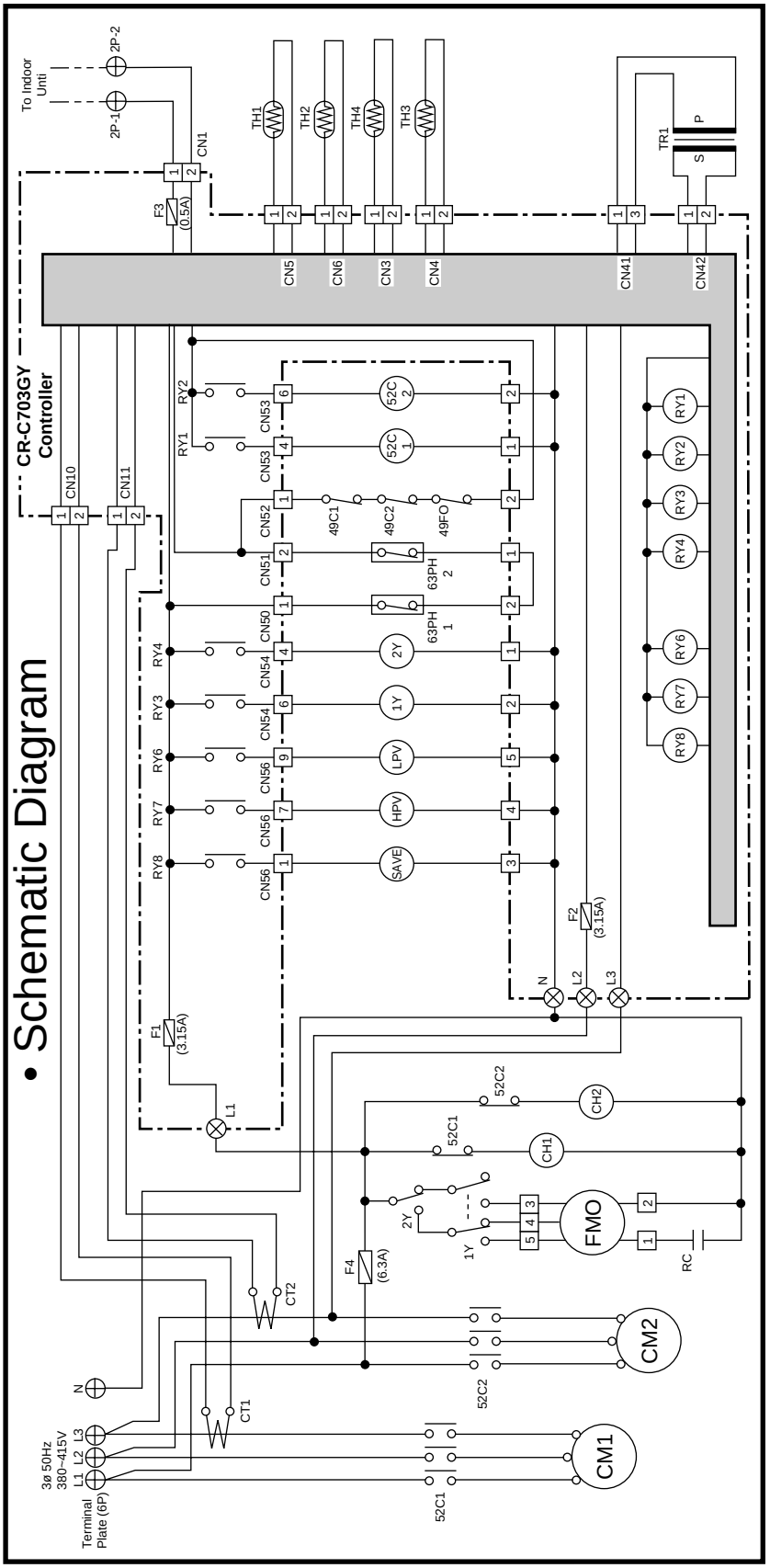
Ⓢ 854-2-5268-373-00-1 (C703GYH8, C903GYH8)

4

(4) SPW-C703GY8, SPW-C903GY8



(4) SPW-C703GY8, SPW-C903GY8



Symbols	Description
CM1,2	Compressor Motor
FMO	Outdoor Fan Motor
CH1,2	Crank Case Heater
52C1,2	Compressor Motor Magnetic Contactor
49C1,2	Compressor Motor Thermal Protector
49FO	Fan Motor Thermal Protector
RC	Running Capacitor
SAVE	Save Valve
HPV	High Pressure Valve
LPV	Low Pressure Valve
CT1,2	Current Transmitter
63PH1,2	High Pressure Switch

Symbols	Description
F1,2,3,4	Fuse
TH1	Thermistor (Discharge PC)
TH2	Thermistor (Discharge AC)
TH3	Thermistor (Outdoor Coil)
TH4	Thermistor (Coil Liquid Side)
TR1	Power Transformer
1Y,2Y,RY1-8	Auxiliary Relay
□	Connector
⊕	Terminal
⊗	Terminal
CR-C703GY	Outdoor Controller

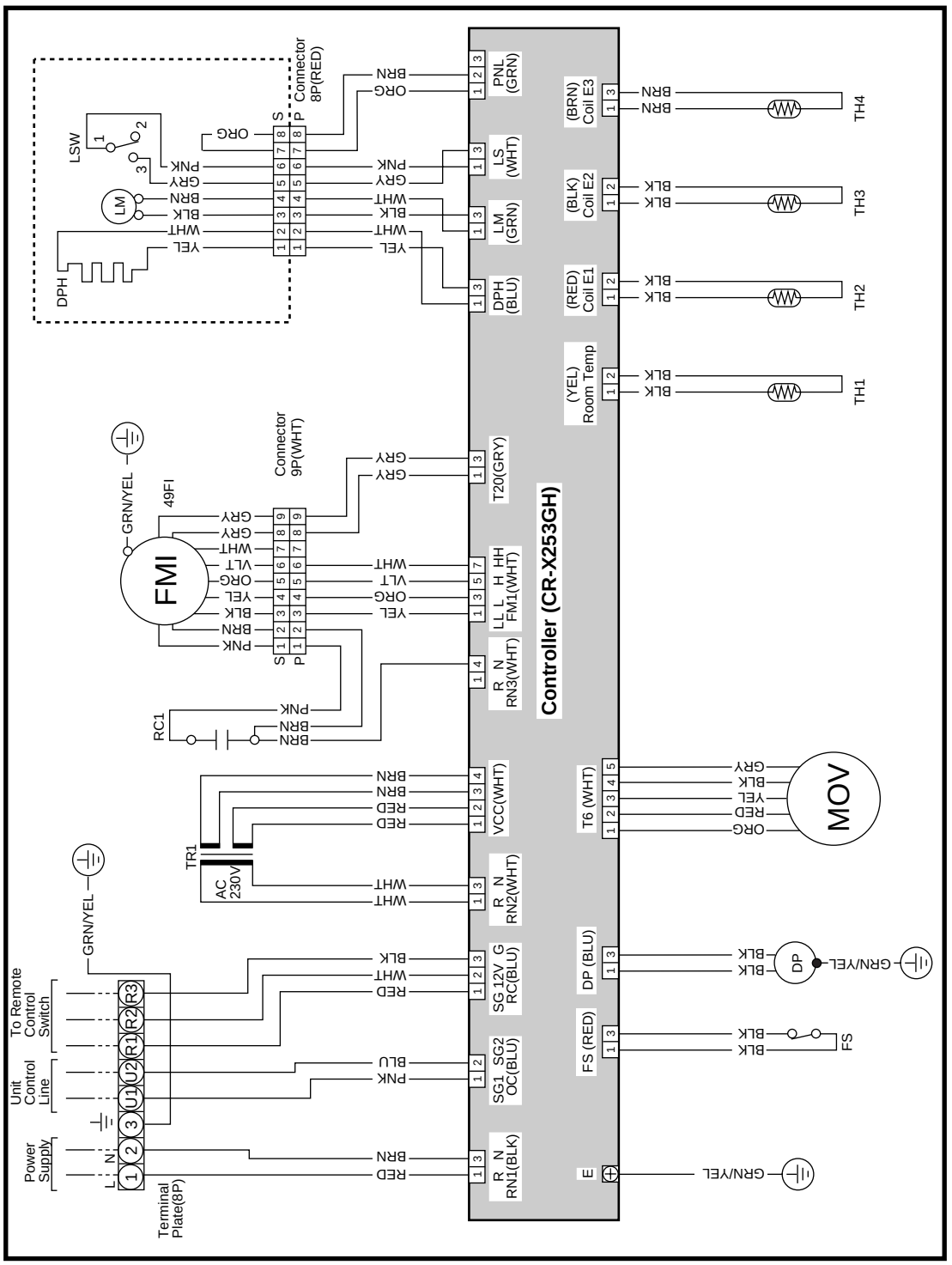
Ⓢ 854-2-5268-447-00-0 (C703GY8, 903GY8)

4

2. Indoor Unit

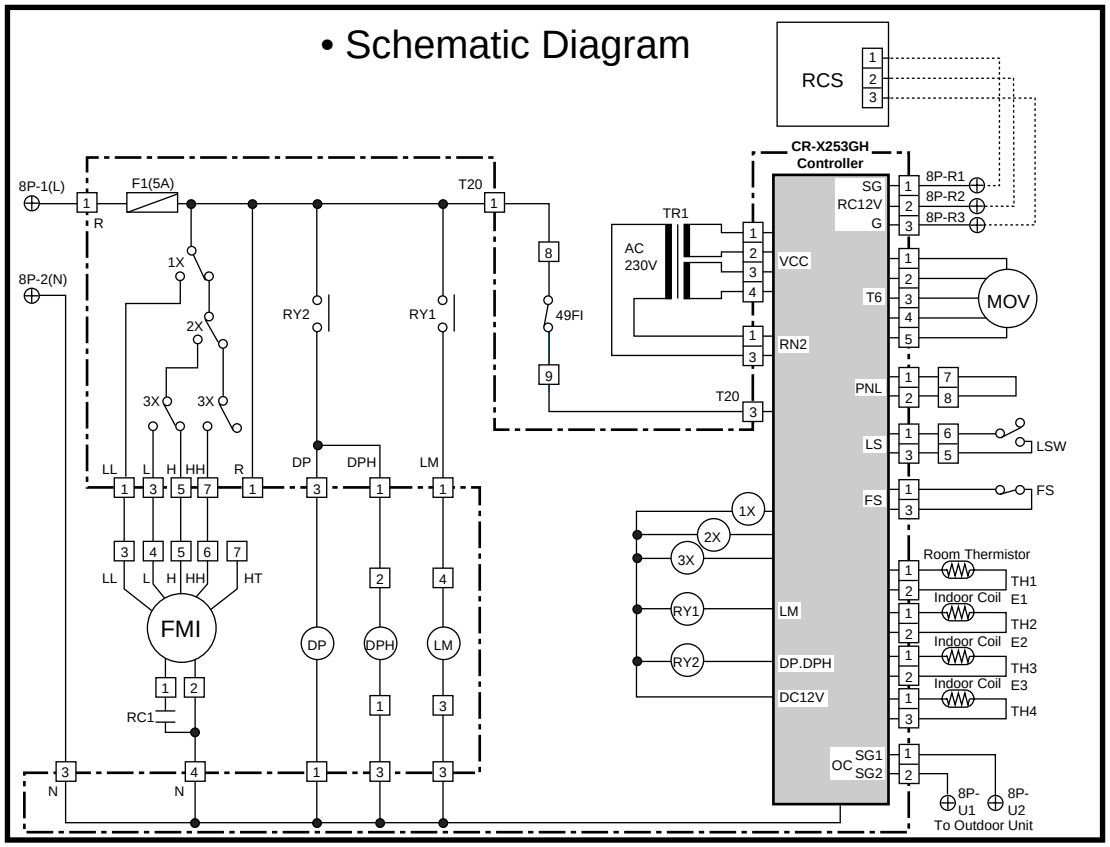
(1) SPW-X123GH56, SPW-X183GH56, SPW-X253GH56, SPW-X363GH56, SPW-X483GH56

• Electric Wiring Diagram



Ⓦ 854-2-5268-470-00-3 (X)

(1) SPW-X123GH56, SPW-X183GH56, SPW-X253GH56, SPW-X363GH56, SPW-X483GH56

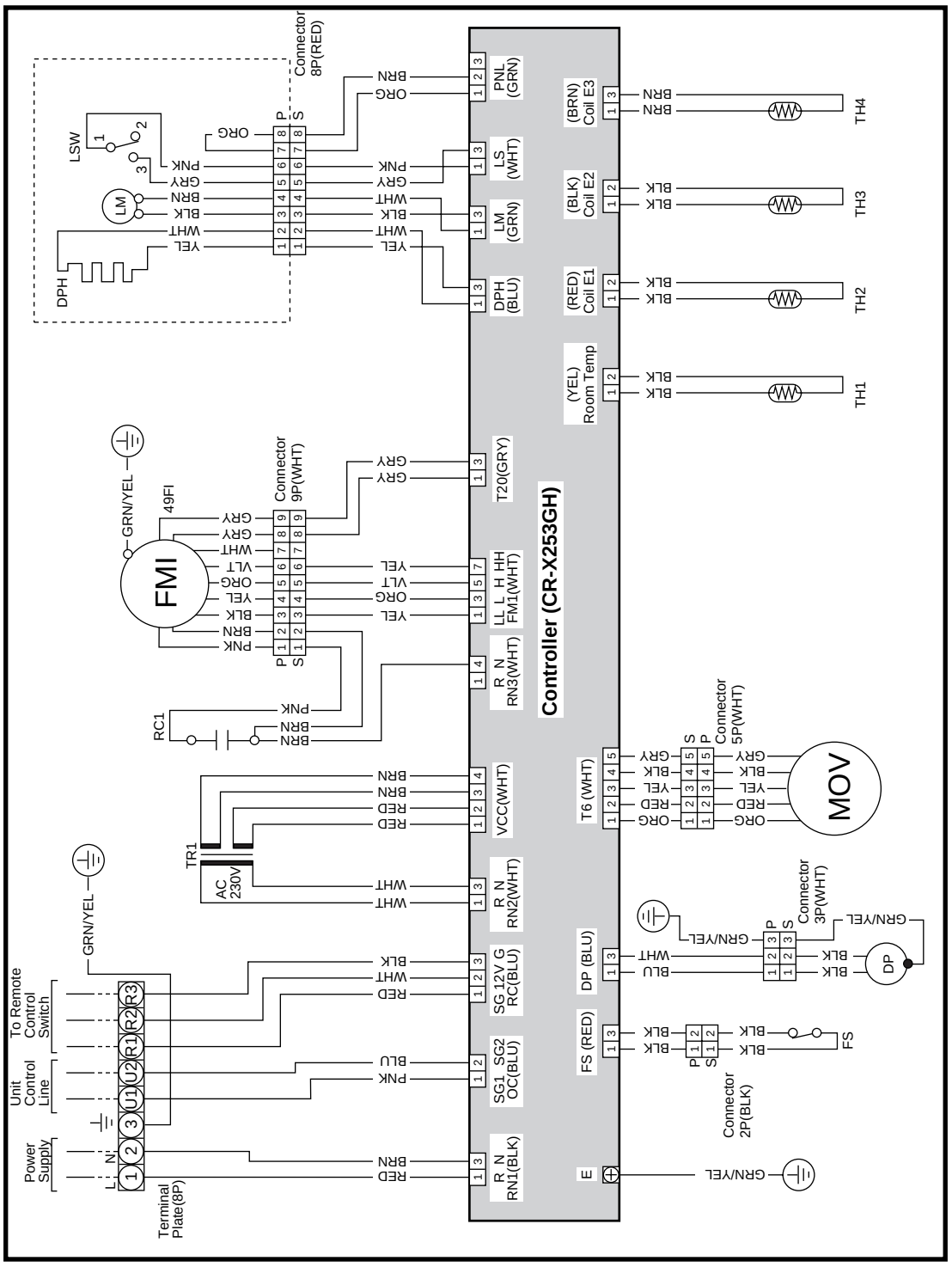


Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH3	Thermistor (Indoor Coil E2)
49FI	Indoor Motor Thermal Protector	TH4	Thermistor (Indoor Coil E3)
RC1	Running Capacitor	CR-X253GH	Indoor Controller
F1	Fuse	⊕	Terminal Plate
LM	Auto Louver Motor	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	DP	Drain Pump
RY1-RY2	Auxiliary Relay	DPH	Dew Proof Heater
MOV	Motor Operated Valve	LSW	Limit Switch
RCS	Remote Control Switch	FS	Float Switch
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		

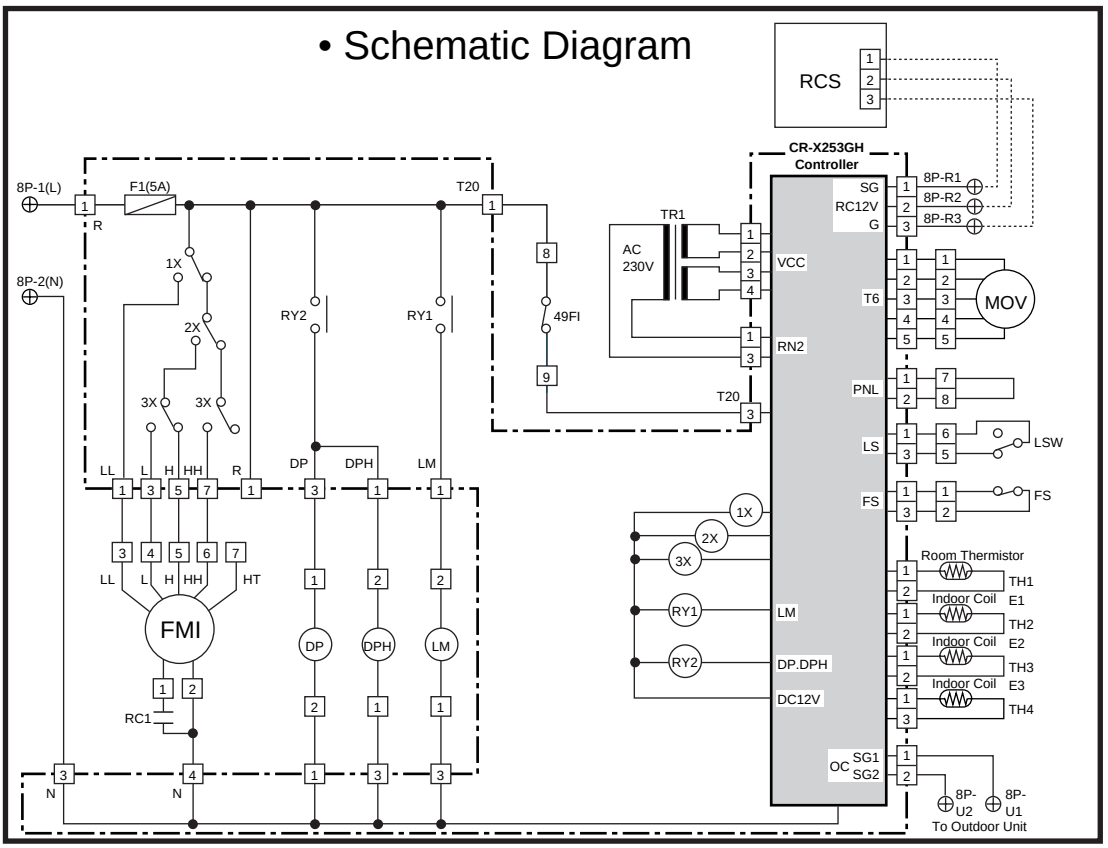
Ⓢ 854-2-5268-470-00-3 (X)

4

(2) SPW-S93GH56, SPW-S123GH56, SPW-S183GH56, SPW-S253GH56



(2) SPW-S93GH56, SPW-S123GH56, SPW-S183GH56, SPW-S253GH56

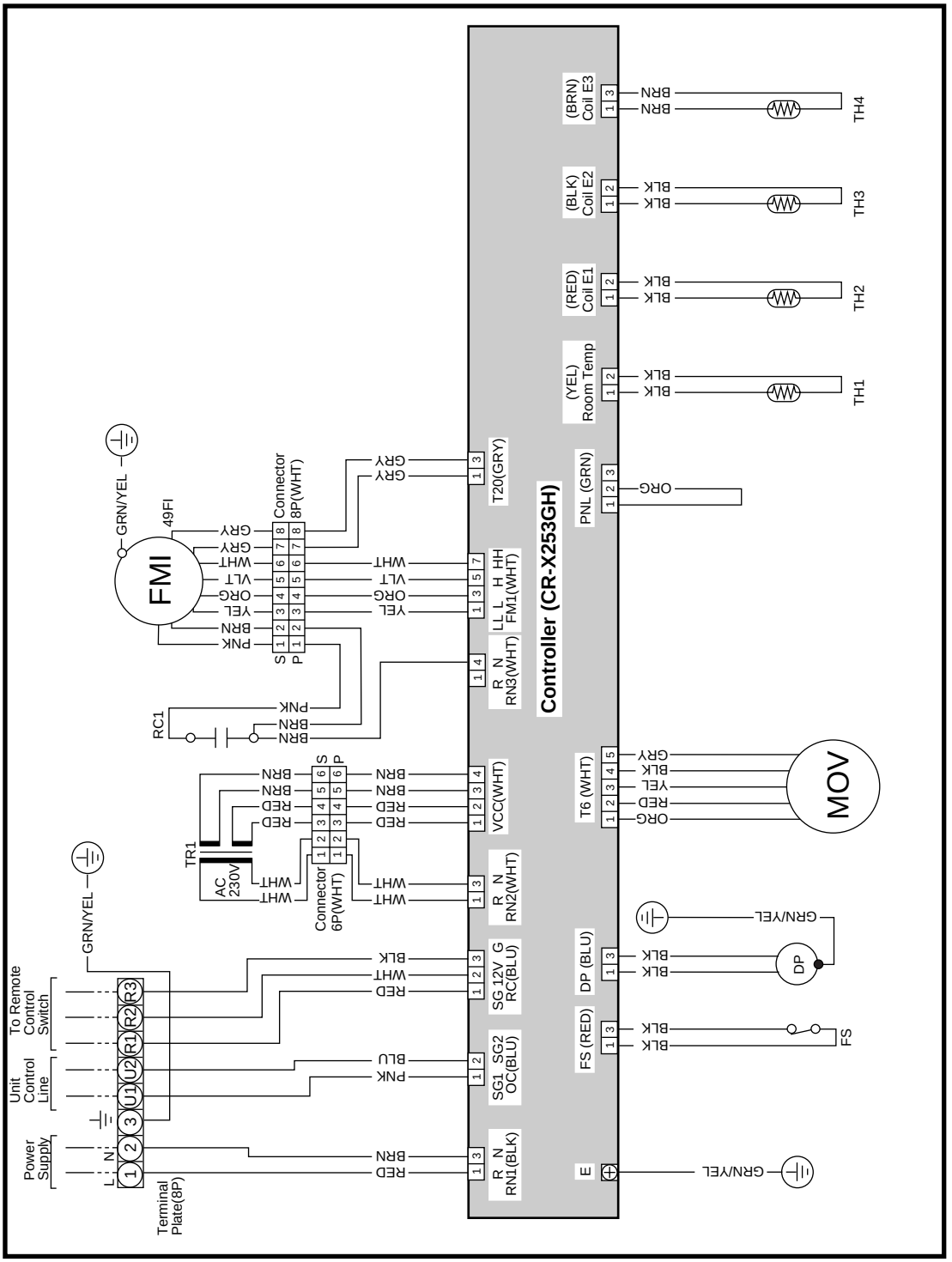


Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH3	Thermistor (Indoor Coil E2)
49FI	Indoor Motor Thermal Protector	TH4	Thermistor (Indoor Coil E3)
RC1	Running Capacitor	CR-X253GH	Indoor Controller
F1	Fuse	⊕	Terminal Plate
LM	Auto Louver Motor	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	DP	Drain Pump
RY1-RY2	Auxiliary Relay	DPH	Dew Proof Heater
MOV	Motor Operated Valve	LSW	Limit Switch
RCS	Remote Control Switch	FS	Float Switch
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		

Ⓢ 854-2-5268-413-00-1 (S)

4

(3) SPW-AS93GH56, SPW-AS123GH56

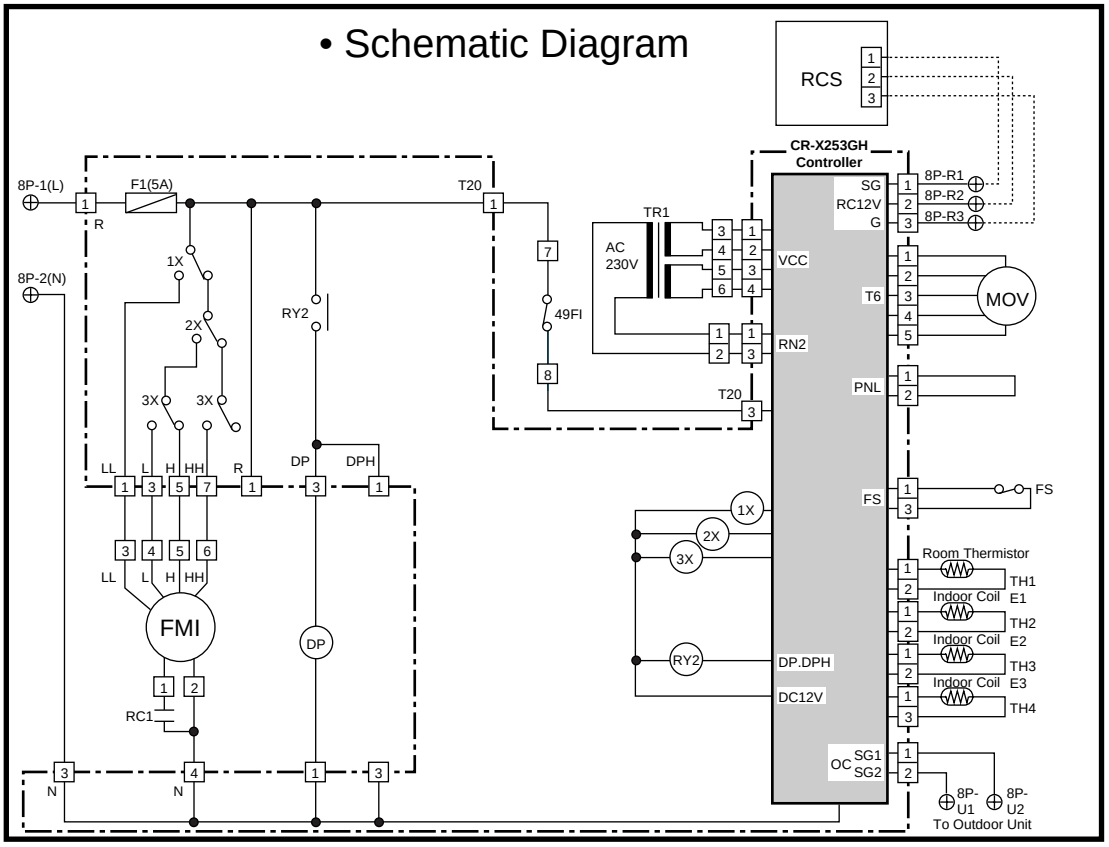


Ⓦ 854-2-5268-411-00-1 (AS)

• Electric Wiring Diagram

4

(3) SPW-AS93GH56, SPW-AS123GH56

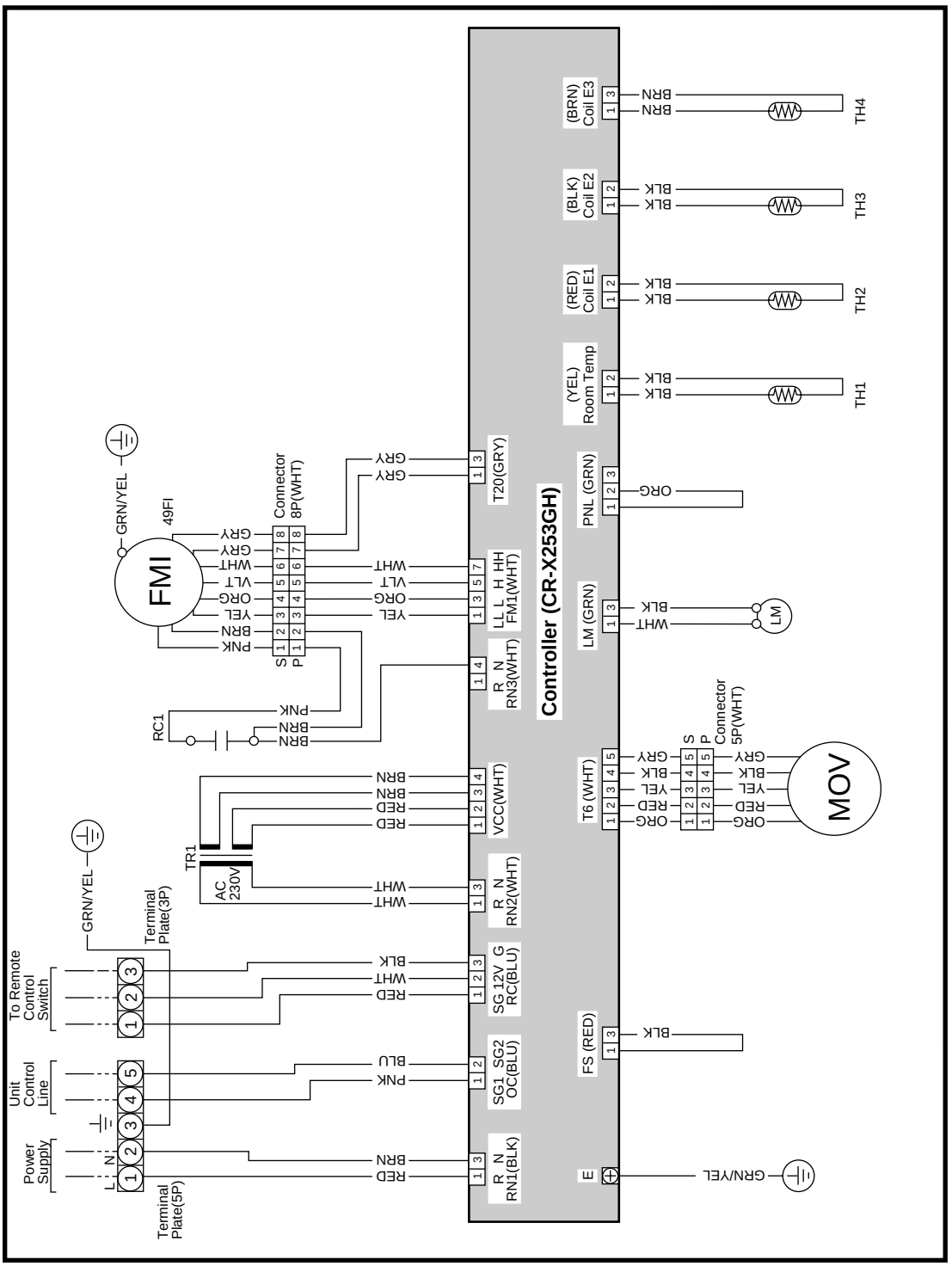


Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH3	Thermistor (Indoor Coil E2)
49FI	Indoor Motor Thermal Protector	TH4	Thermistor (Indoor Coil E3)
RC1	Running Capacitor	CR-X253GH	Indoor Controller
F1	Fuse	⊕	Terminal Plate
DP	Drain Pump	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	FS	Float Switch
RY2	Auxiliary Relay		
MOV	Motor Operated Valve		
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		

Ⓢ 854-2-5268-411-00-1 (AS)

4

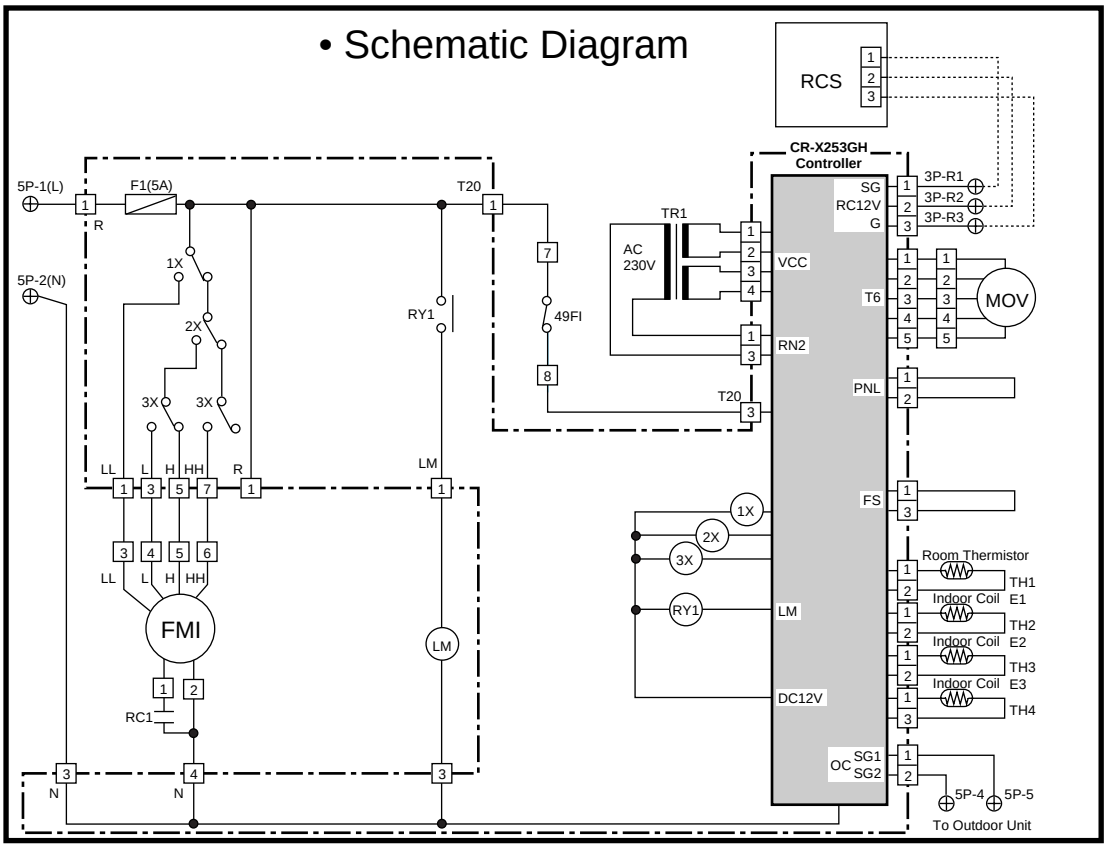
(4) SPW-K93GH56, SPW-K123GH56, SPW-K183GH56



Ⓦ 854-2-5268-410-00-1 (K)

• Electric Wiring Diagram

(4) SPW-K93GH56, SPW-K123GH56, SPW-K183GH56



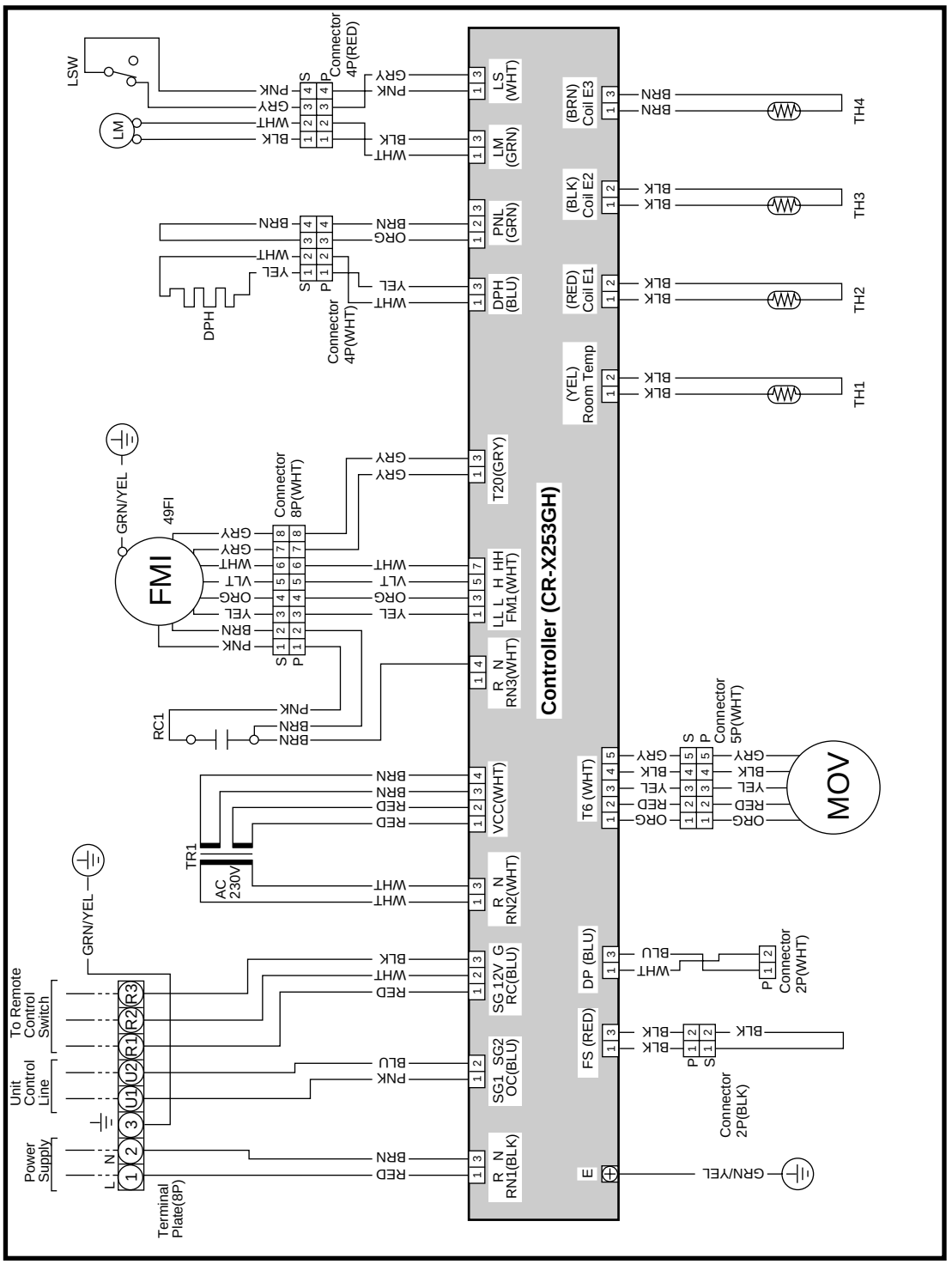
Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH3	Thermistor (Indoor Coil E2)
49FI	Indoor Motor Thermal Protector	TH4	Thermistor (Indoor Coil E3)
RC1	Running Capacitor	CR-X253GH	Indoor Controller
F1	Fuse	⊕	Terminal Plate
LM	Auto Louver Motor	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay		
RY1	Auxiliary Relay		
MOV	Motor Operated Valve		
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		

Ⓢ 854-2-5268-410-00-1 (K)

4

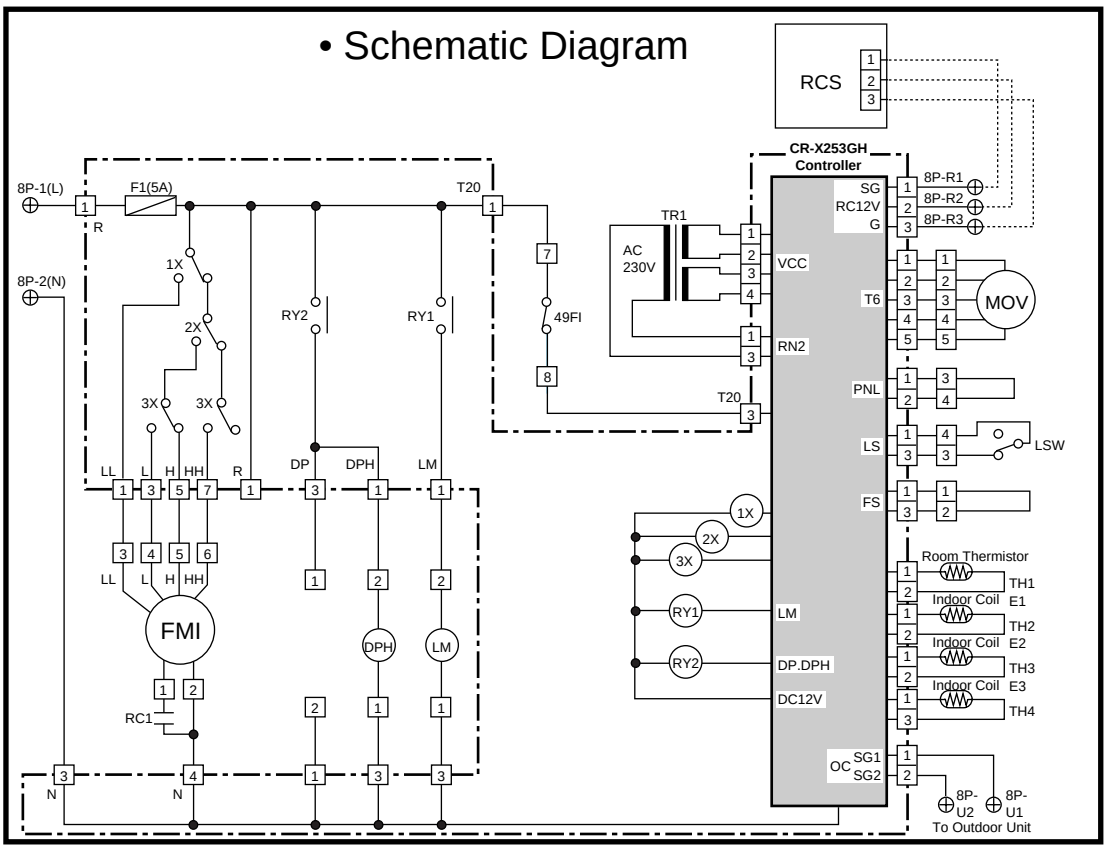
(5) SPW-T183GH56, SPW-T253GH56, SPW-T363GH56, SPW-T483GH56

• Electric Wiring Diagram



Ⓦ 854-2-5268-412-00-1 (T)

(5) SPW-T183GH56, SPW-T253GH56, SPW-T363GH56, SPW-T483GH56



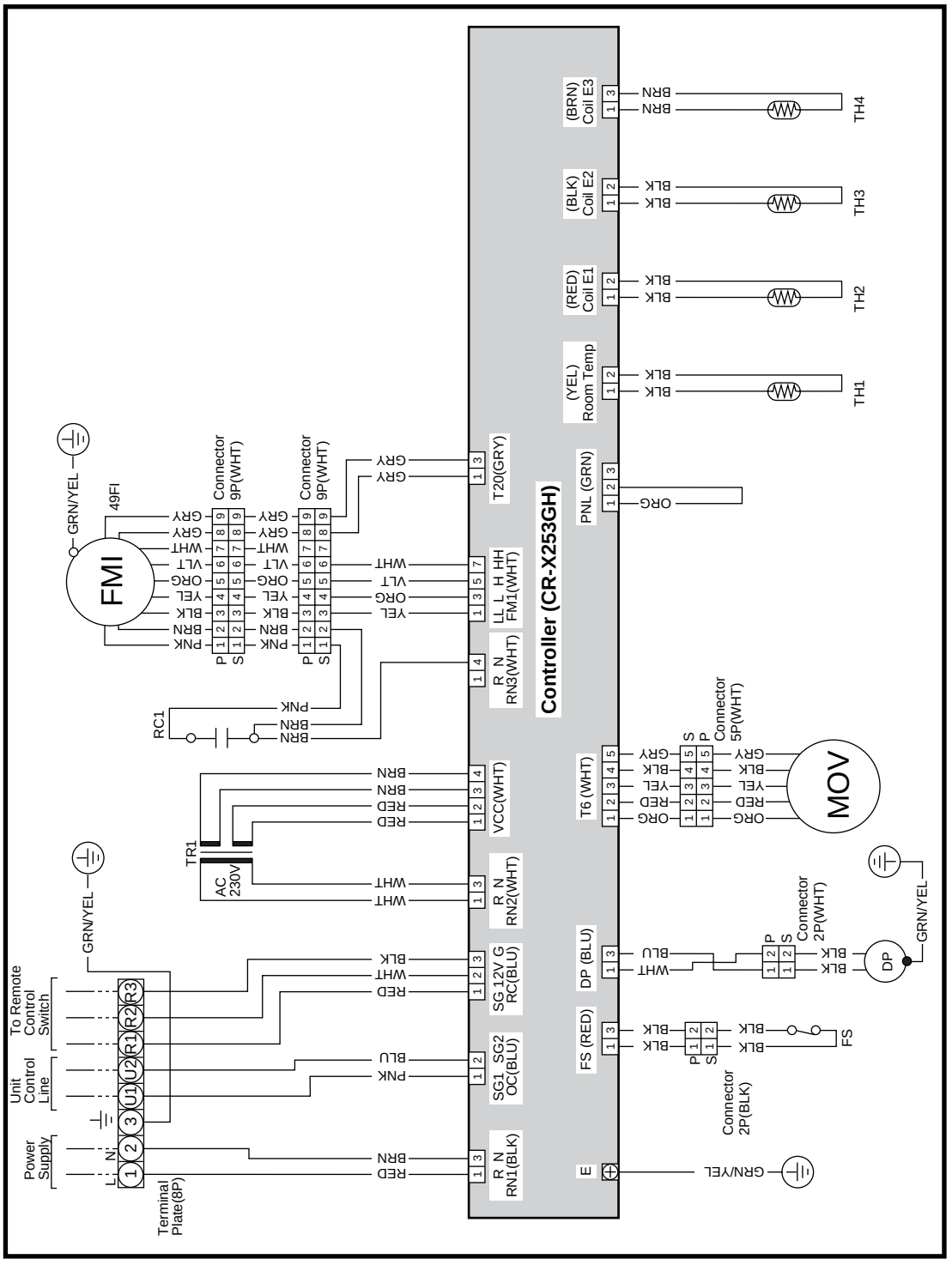
Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH3	Thermistor (Indoor Coil E2)
49FI	Indoor Motor Thermal Protector	TH4	Thermistor (Indoor Coil E3)
RC1	Running Capacitor	CR-X253GH	Indoor Controller
F1	Fuse	⊕	Terminal Plate
LM	Auto Louver Motor	□	Connector
TR1	Power Transformer	⊕	Terminal
1X-3X	Auxiliary Relay	DPH	Dew Proof Heater
RY1-RY2	Auxiliary Relay	LSW	Limit Switch
MOV	Motor Operated Valve	FS	Float Switch
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		

Ⓢ 854-2-5268-412-00-1 (T)

4

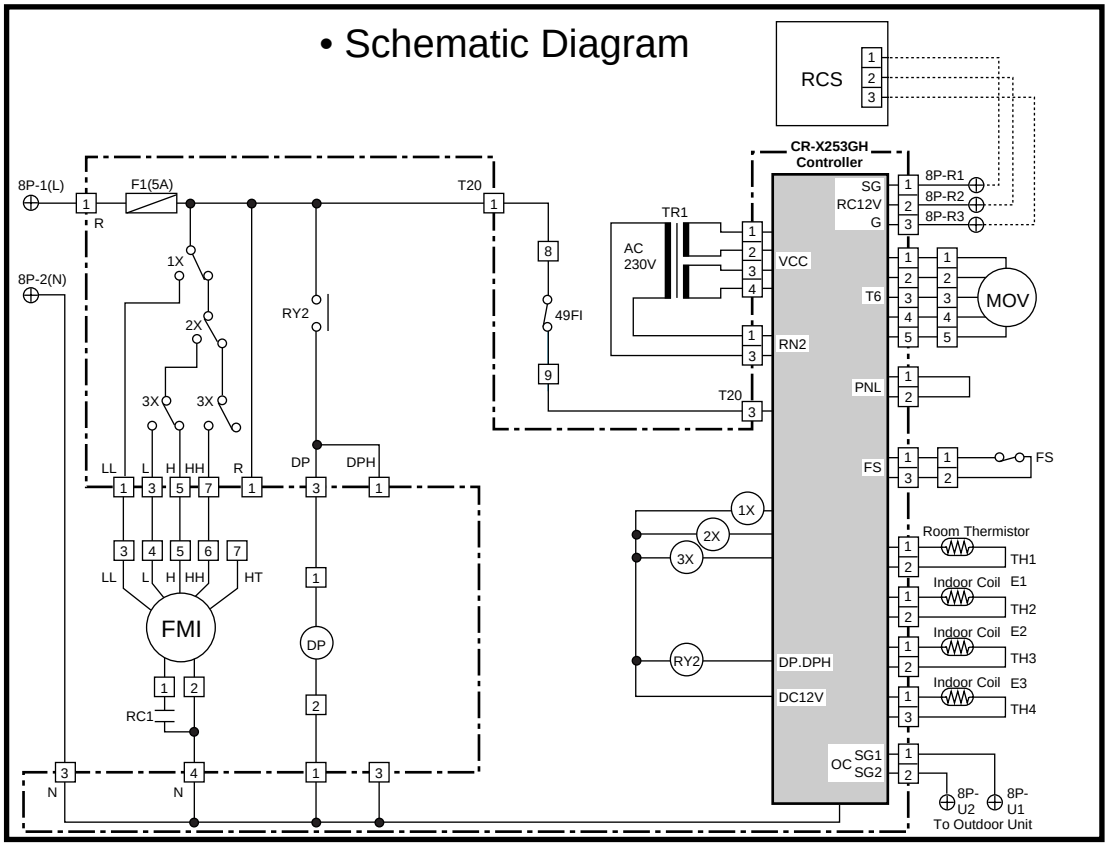
(6)-1 SPW-U93GH56, SPW-U123GH56, SPW-U183GH56, SPW-U253GH56

• Electric Wiring Diagram



Ⓦ 854-2-5268-419-00-1 (U)

(6)-1 SPW-U93GH56, SPW-U123GH56, SPW-U183GH56, SPW-U253GH56

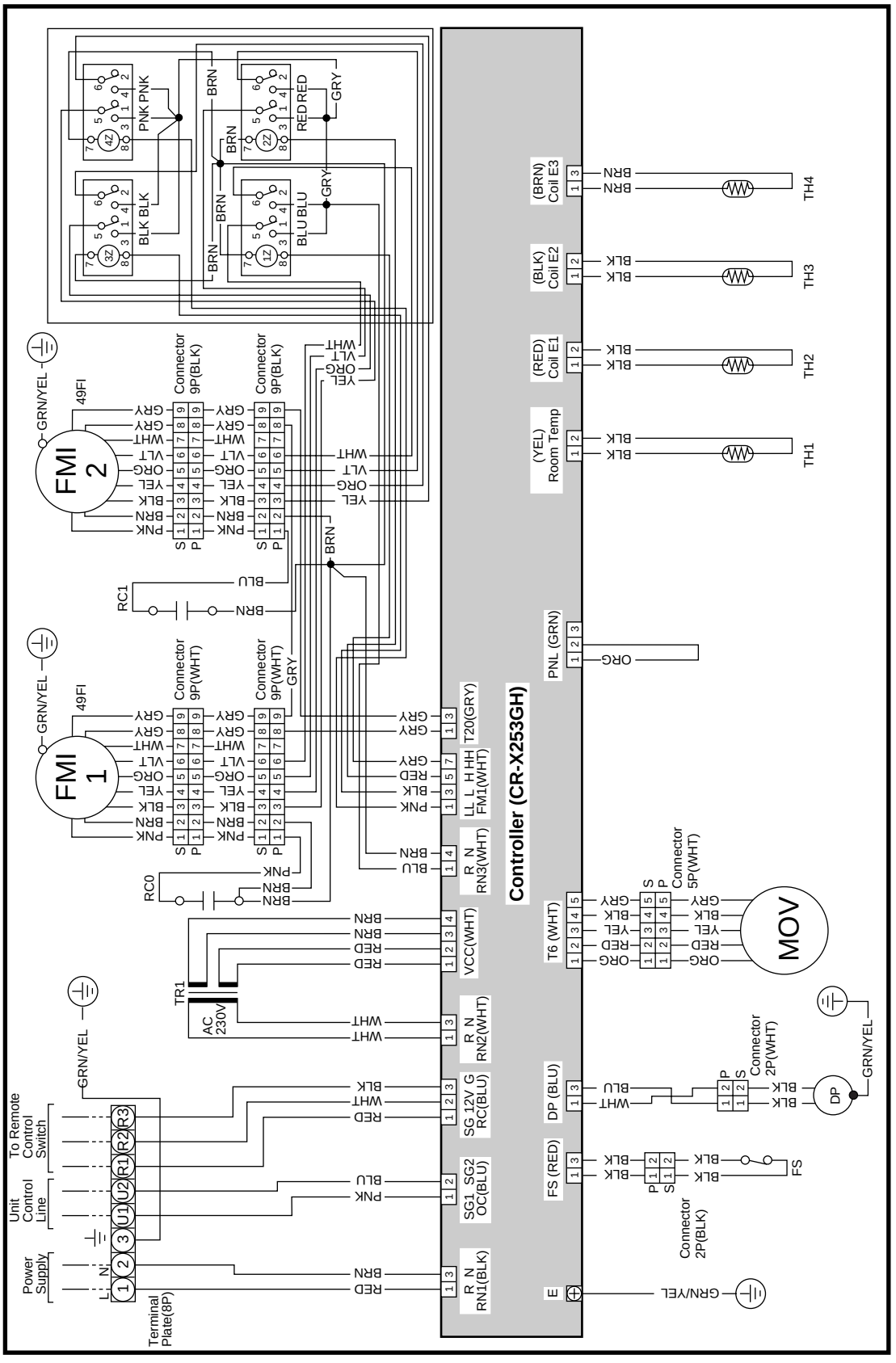


Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH4	Thermistor (Indoor Coil E3)
49FI	Indoor Motor Thermal Protector	CR-X253GH	Indoor Controller
RC1	Running Capacitor	⊕	Terminal Plate
F1	Fuse	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	DP	Drain Pump
RY2	Auxiliary Relay	FS	Float Switch
MOV	Motor Operated Valve		
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		
TH3	Thermistor (Indoor Coil E2)		

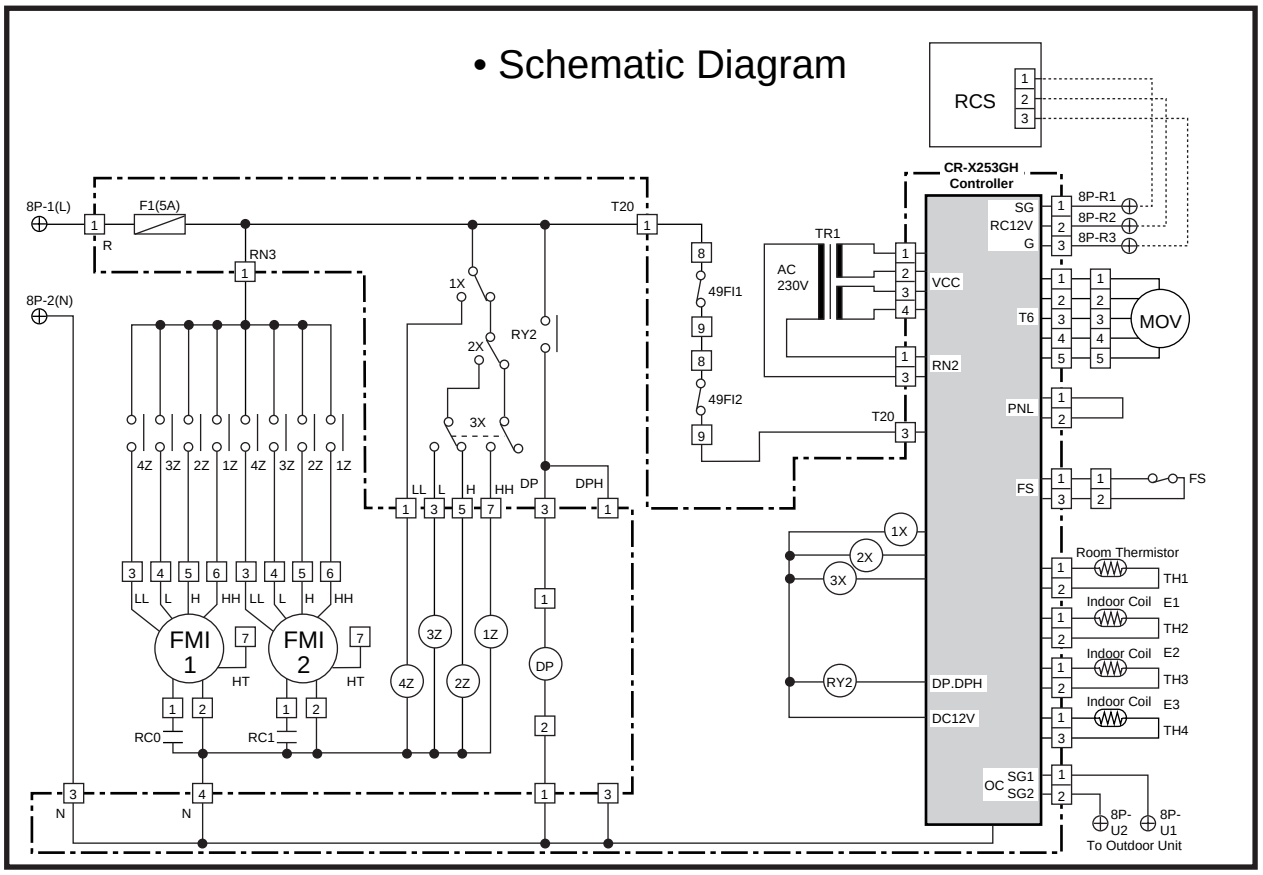
Ⓢ 854-2-5268-419-00-1 (U)

4

(6)-2 SPW-U363GH56, SPW-U483GH56



(6)-2 SPW-U363GH56, SPW-U483GH56

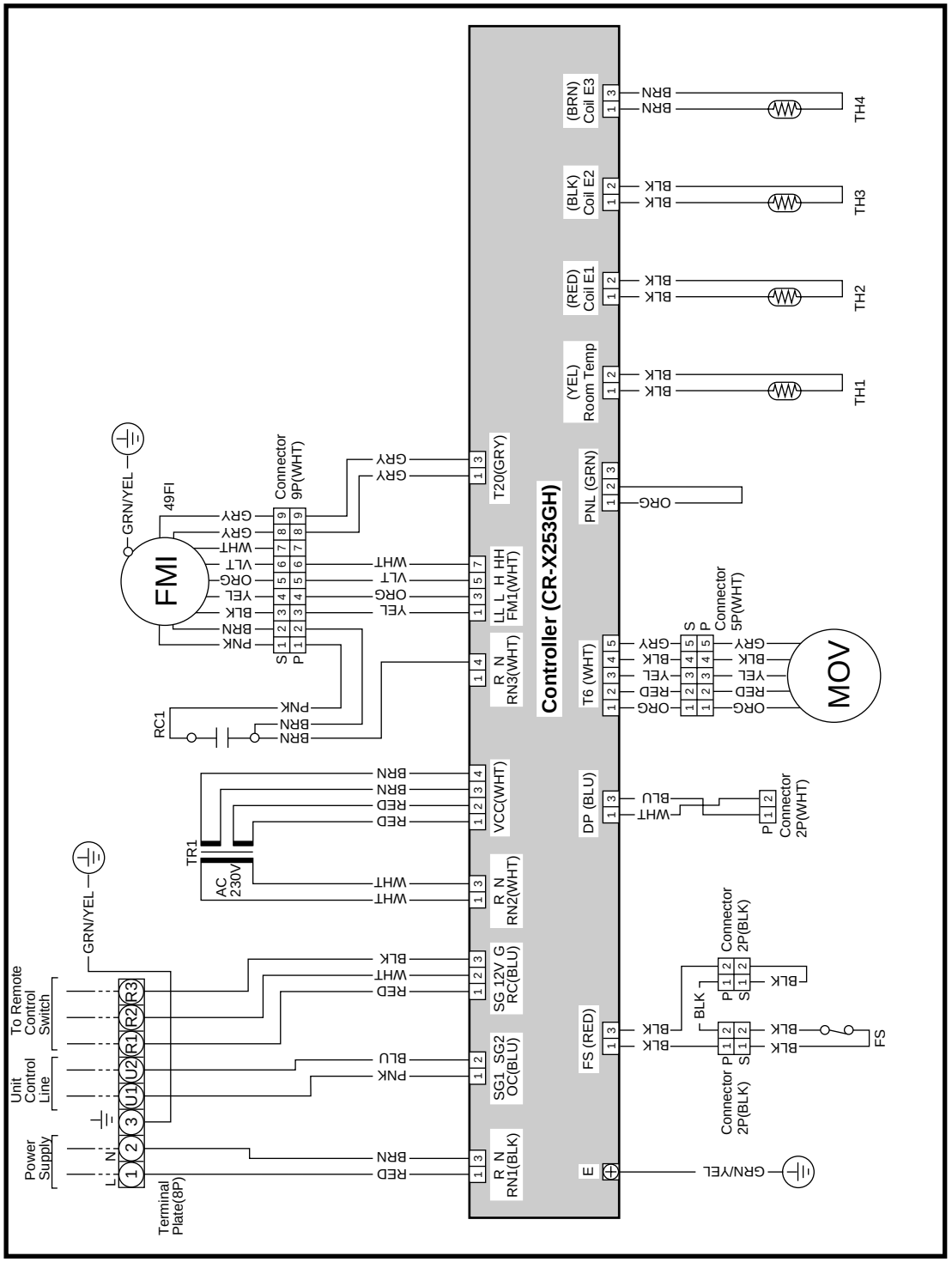


Symbols	Description	Symbols	Description
FMI1, 2	Indoor Fan Motor	TH4	Thermistor (Indoor Coil E3)
49FI1, 2	Indoor Motor Thermal Protector	CR-X253GH	Indoor Controller
RC0, 1	Running Capacitor	⊕	Terminal Plate
F1	Fuse	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	DP	Drain Pump
RY2	Auxiliary Relay	FS	Float Switch
MOV	Motor Operated Valve	1Z-4Z	Auxiliary Relay
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		
TH3	Thermistor (Indoor Coil E2)		

Ⓢ 854-2-5268-420-00-1 (U)

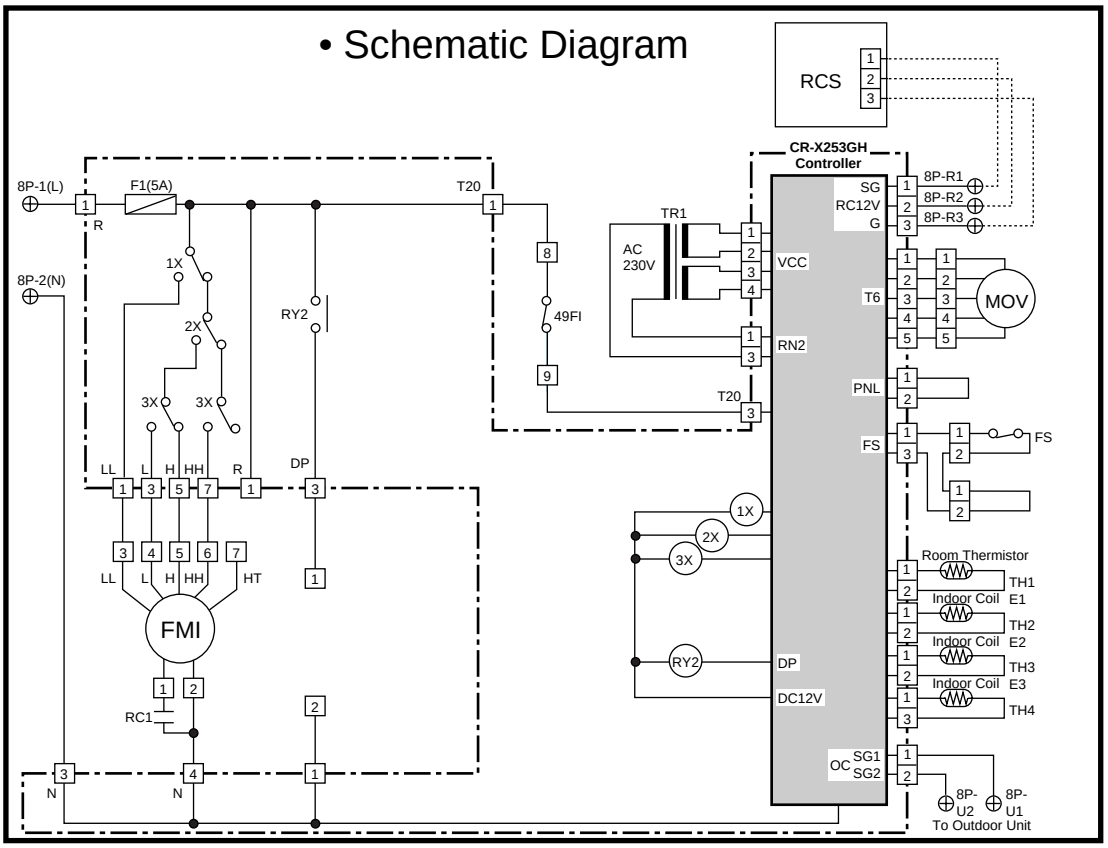
(7)-1 SPW-D253GH56

• Electric Wiring Diagram



Ⓦ 854-2-5268-426-00-1 (D)

(7)-1 SPW-D253GH56

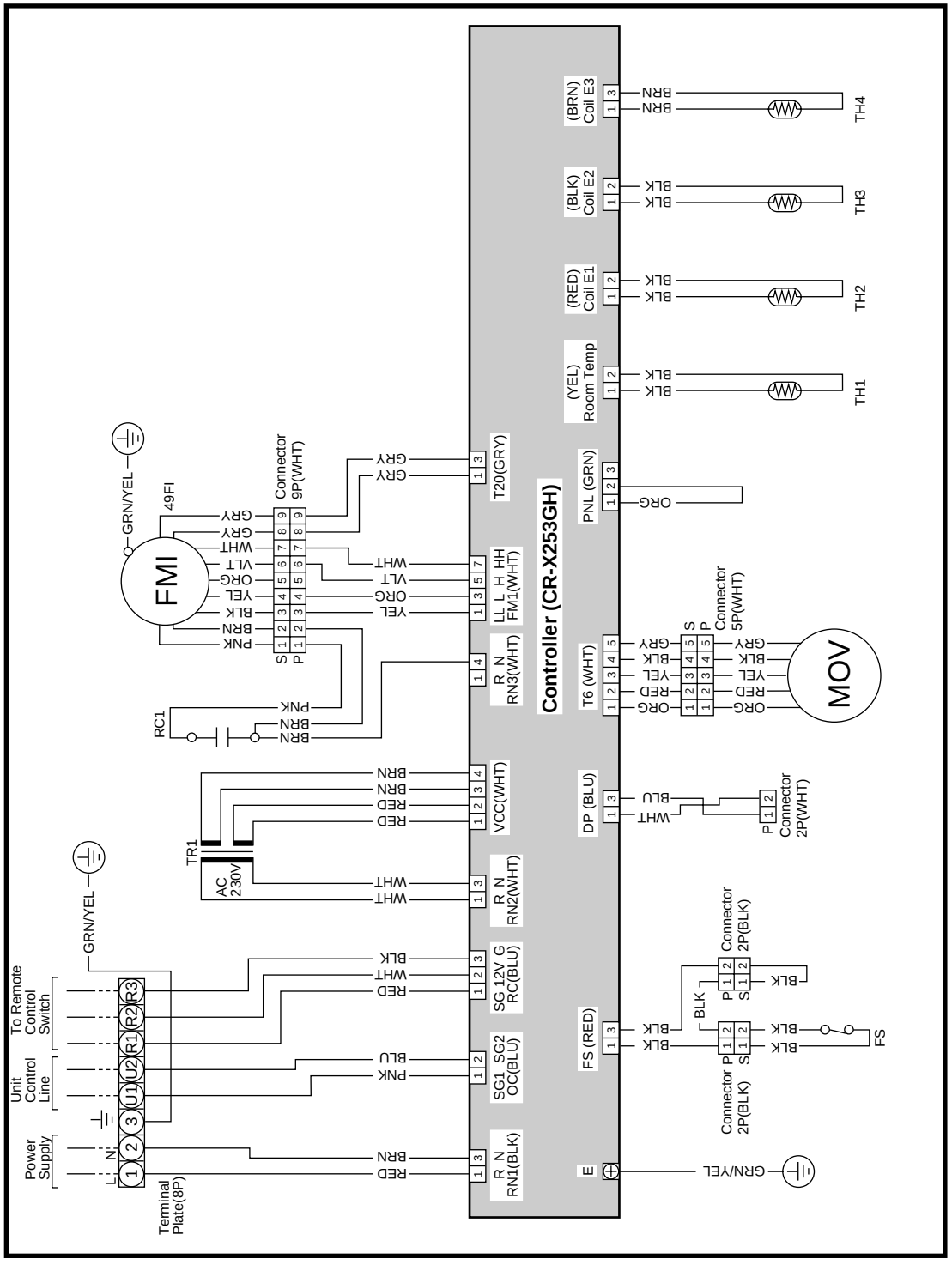


Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH4	Thermistor (Indoor Coil E3)
49FI	Indoor Motor Thermal Protector	CR-X253GH	Indoor Controller
RC1	Running Capacitor	⊕	Terminal Plate
F1	Fuse	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	FS	Float Switch
RY2	Auxiliary Relay		
MOV	Motor Operated Valve		
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		
TH3	Thermistor (Indoor Coil E2)		

Ⓢ 854-2-5268-426-00-1 (D)

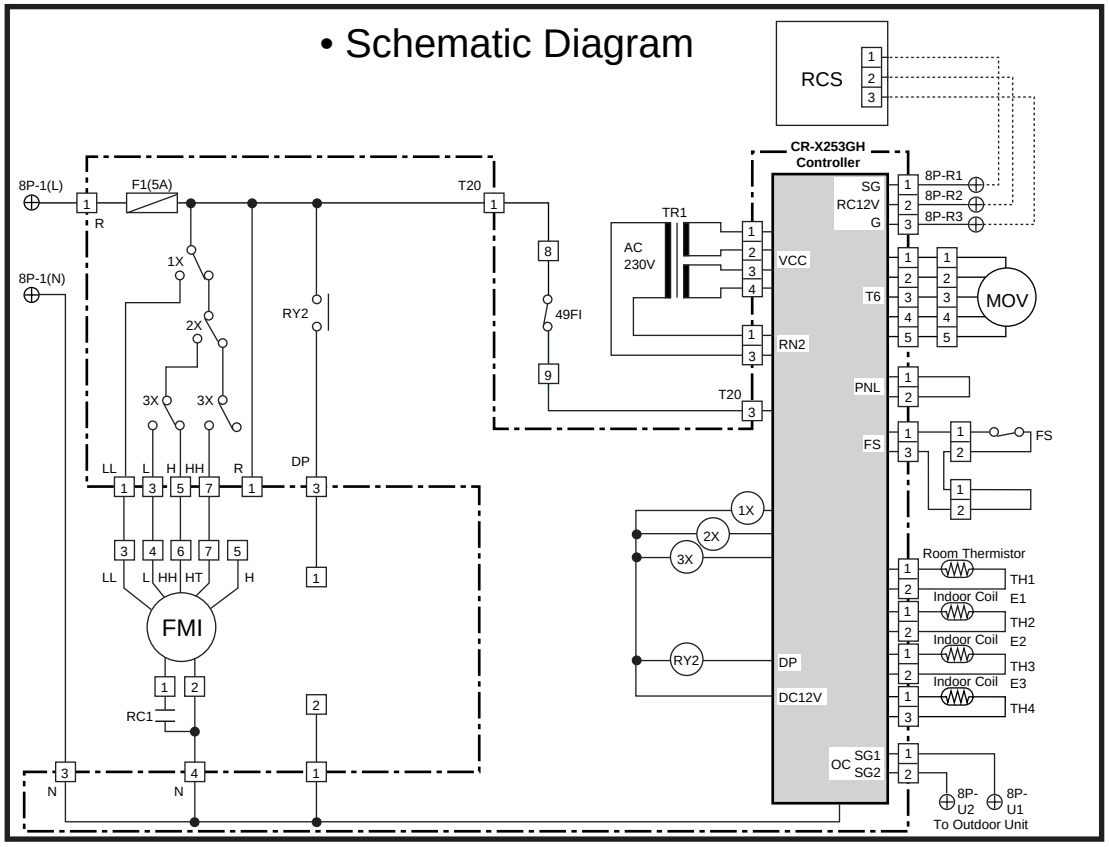
4

(7)-2 SPW-D363GH56



Ⓦ 854-2-5268-427-00-1 (D)

(7)-2 SPW-D363GH56

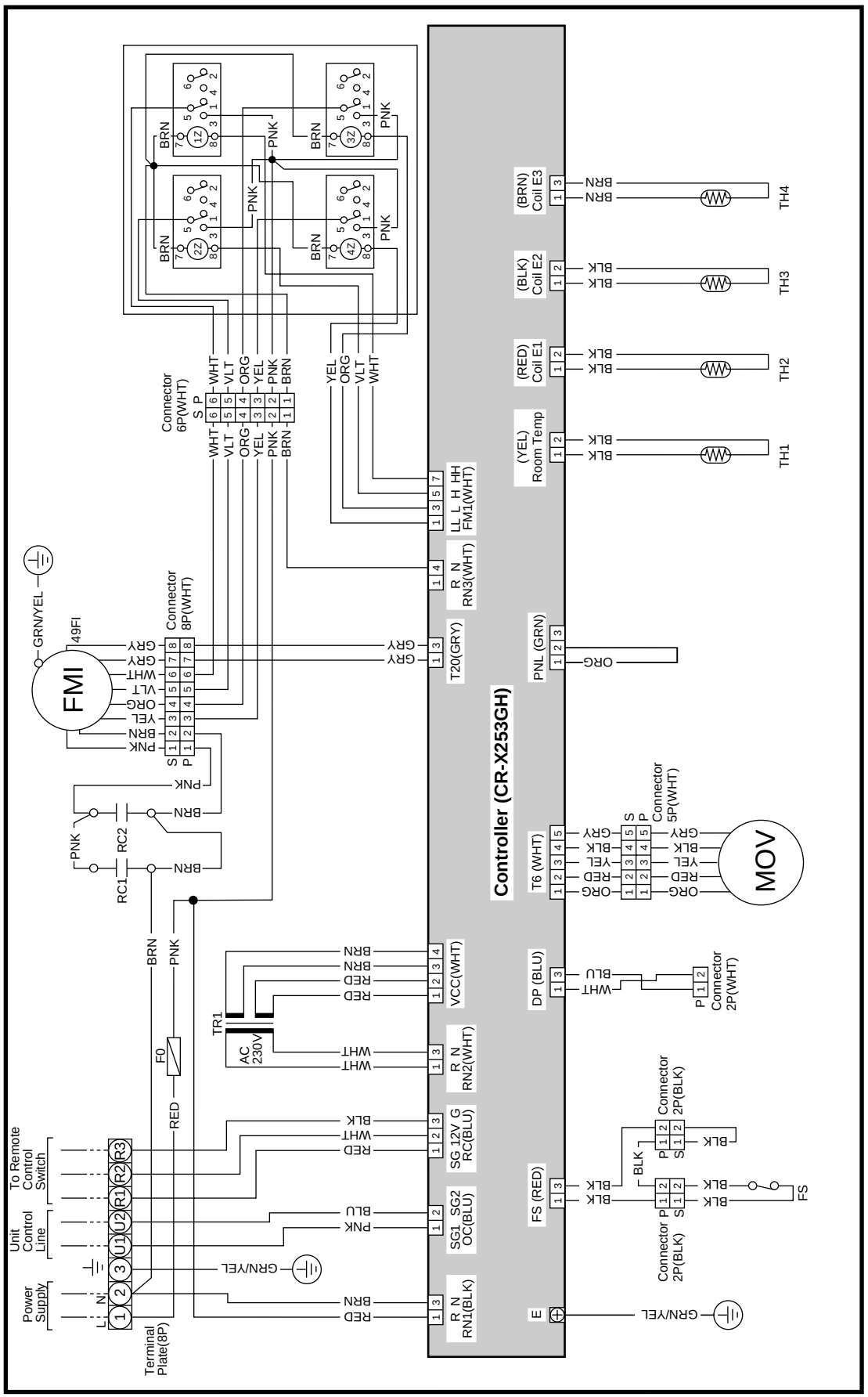


Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH4	Thermistor (Indoor Coil E3)
49FI	Indoor Motor Thermal Protector	CR-X253GH	Indoor Controller
RC1	Running Capacitor	⊕	Terminal Plate
F1	Fuse	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	FS	Float Switch
RY2	Auxiliary Relay		
MOV	Motor Operated Valve		
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		
TH3	Thermistor (Indoor Coil E2)		

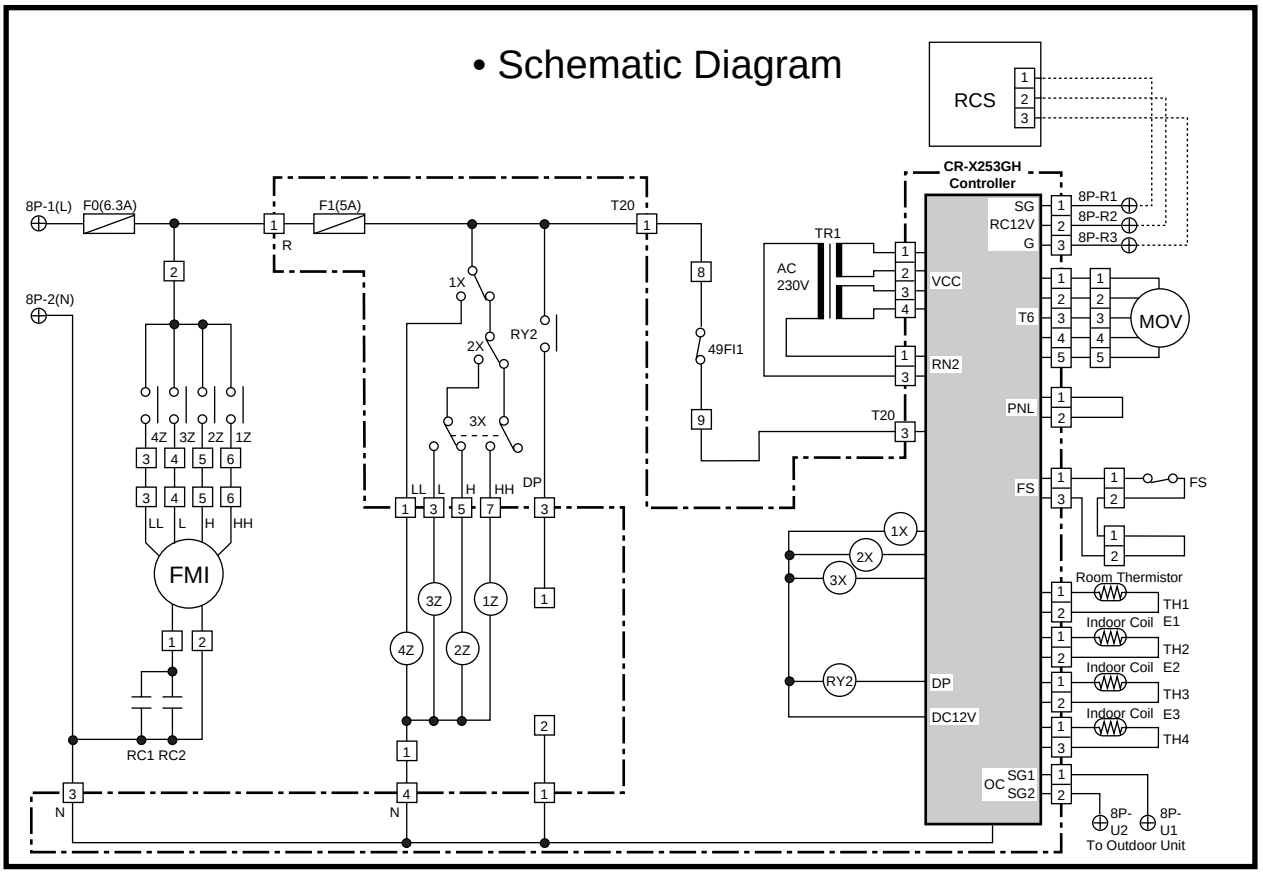
Ⓢ 854-2-5268-427-00-1 (D)

4

(7)-3 SPW-D483GH56



(7)-3 SPW-D483GH56



Symbols	Description	Symbols	Description
FMI	Indoor Fan Motor	TH4	Thermistor (Indoor Coil E3)
49FI	Indoor Motor Thermal Protector	CR-X253GH	Indoor Controller
RC1, 2	Running Capacitor	⊕	Terminal Plate
F0, 1	Fuse	□	Connector
TR1	Power Transformer	⊡	Terminal
1X-3X	Auxiliary Relay	FS	Float Switch
RY2	Auxiliary Relay	1Z-4Z	Auxiliary Relay
MOV	Motor Operated Valve		
RCS	Remote Control Switch		
TH1	Room Thermistor		
TH2	Thermistor (Indoor Coil E1)		
TH3	Thermistor (Indoor Coil E2)		

Ⓢ 854-2-5268-428-00-1 (D)

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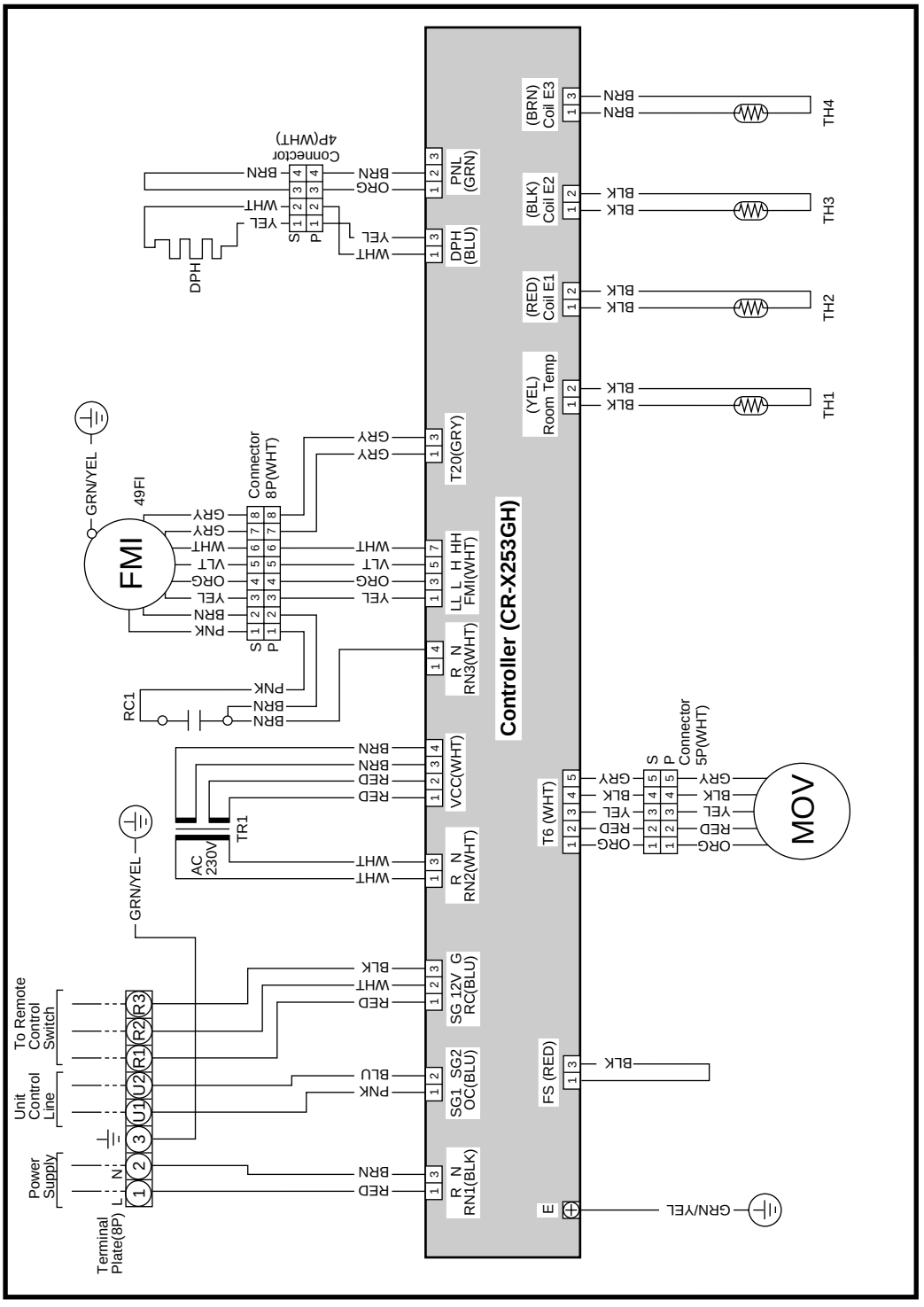
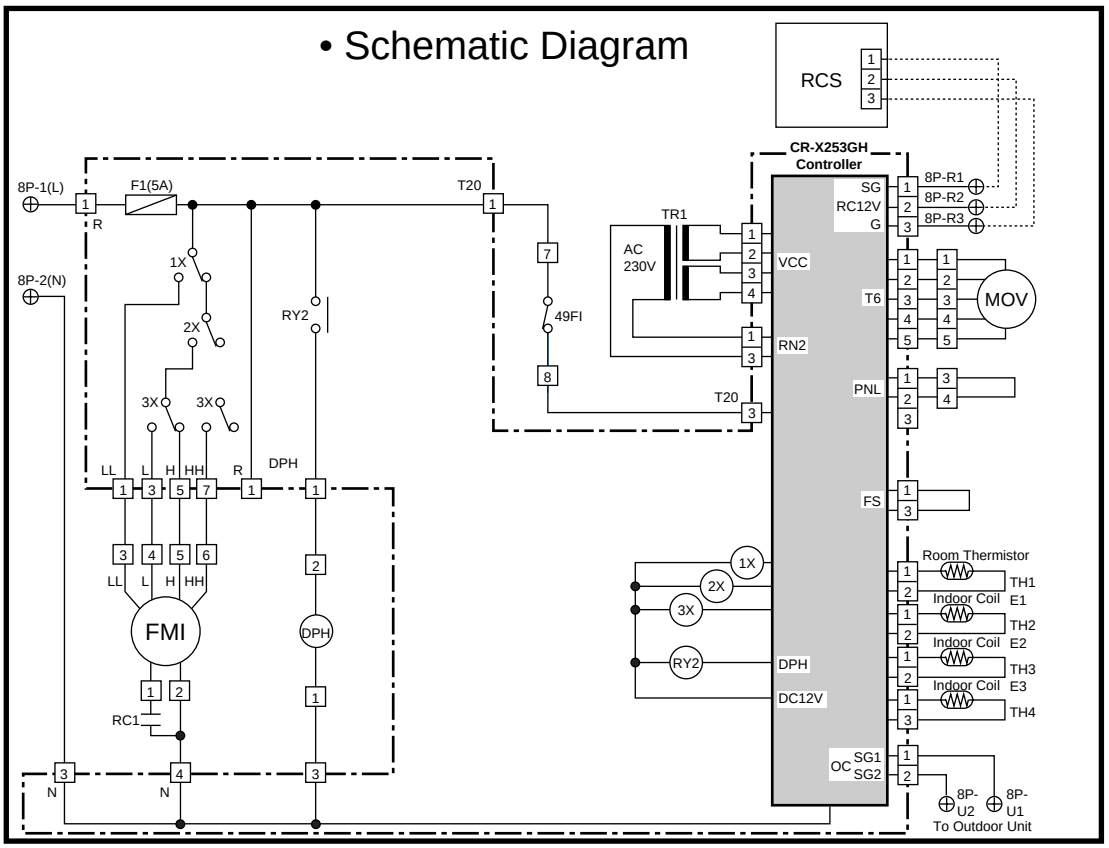
(8) SPW-F93GH56, SPW-F123GH56, SPW-F183GH56, SPW-F253GH56

• Electric Wiring Diagram



Ⓦ 854-2-5268-558-00-0 (F93GH56, F123GH56, F183GH56, F253GH56)

(8) SPW-F93GH56, SPW-F123GH56, SPW-F183GH56, SPW-F253GH56



Symbols	Description
FMI	Indoor Fan Motor
49FI	Indoor Motor Thermal Protector
RC1	Running Capacitor
F1	Fuse
TR1	Power Transformer
1X-3X	Auxiliary Relay
RY2	Auxiliary Relay
MOV	Motor Operated Valve
RCS	Remote Control Switch
TH1	Room Thermistor
TH2	Thermistor (Indoor Coil E1)
TH3	Thermistor (Indoor Coil E2)
TH4	Thermistor (Indoor Coil E3)
CR-X253GH	Indoor Controller
⊕	Terminal Plate
□	Connector
⊡	Terminal
DPH	Dew Proof Heater

Ⓢ 854-2-5268-558-00-0 (F93GH56, F123GH56, F183GH56, F253GH56)

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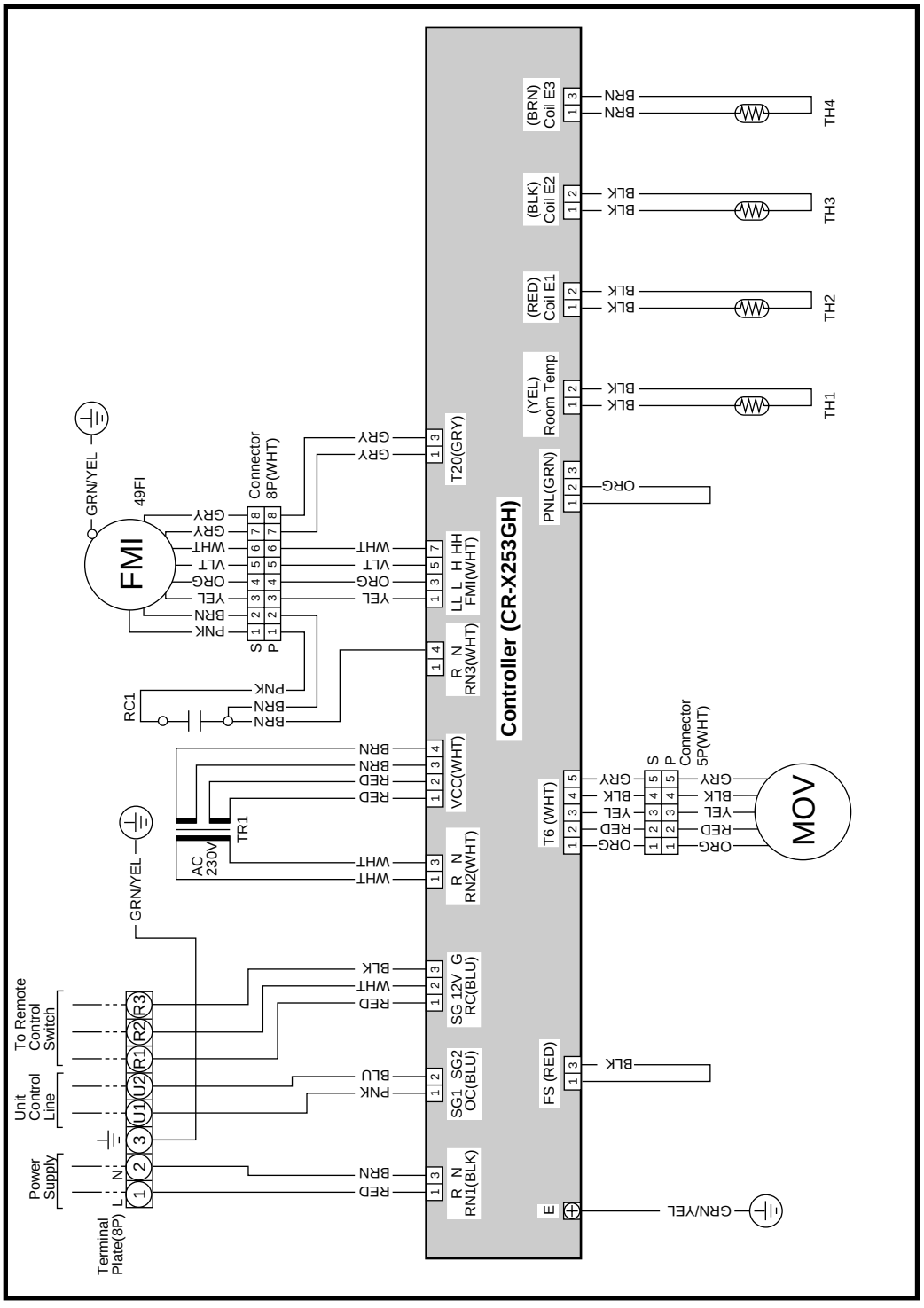
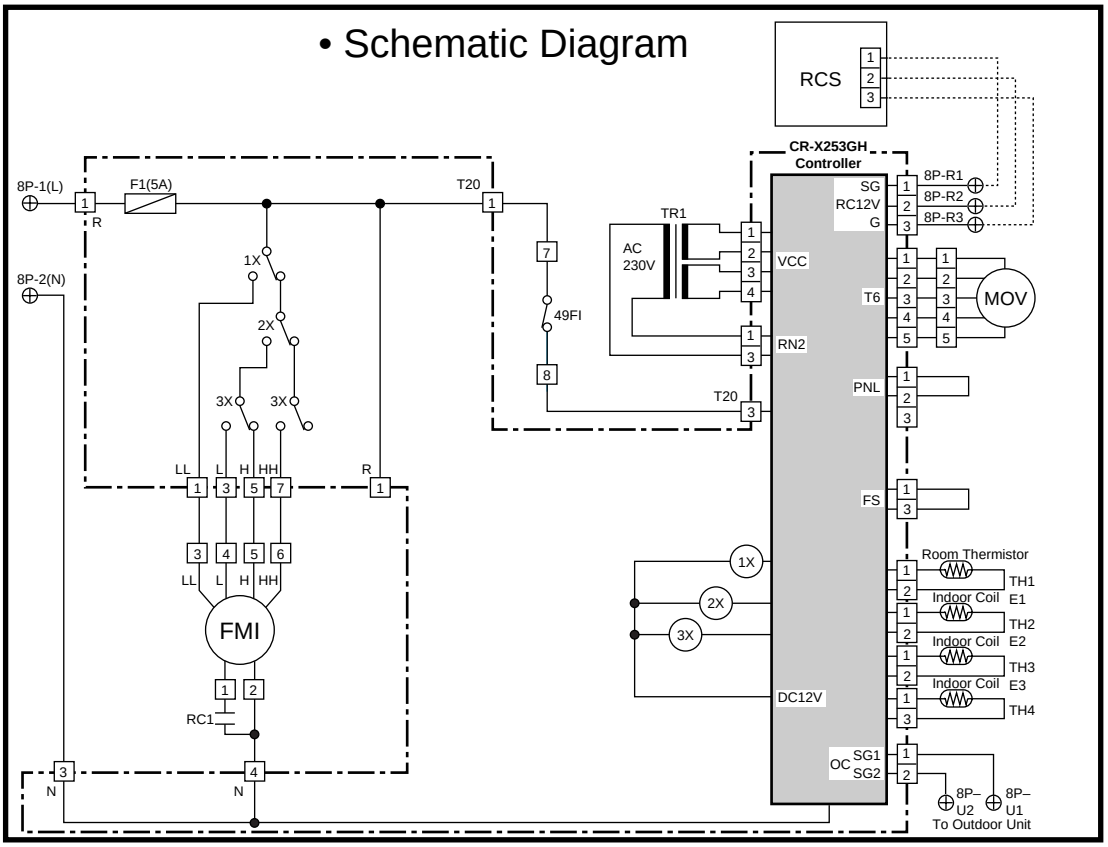
(9) SPW-FM93GH56, SPW-FM123GH56, SPW-FM183GH56, SPW-FM253GH56

• Electric Wiring Diagram



Ⓦ 854-2-5268-559-00-0 (FM93GH56, FM123GH56, FM183GH56, FM253GH56)

(9) SPW-FM93GH56, SPW-FM123GH56, SPW-FM183GH56, SPW-FM253GH56



Symbols	Description
FMI	Indoor Fan Motor
49FI	Indoor Motor Thermal Protector
RC1	Running Capacitor
F1	Fuse
TR1	Power Transformer
1X-3X	Auxiliary Relay
MOV	Motor Operated Valve
RCS	Remote Control Switch
TH1	Room Thermistor
TH2	Thermistor (Indoor Coil E1)
TH3	Thermistor (Indoor Coil E2)
TH4	Thermistor (Indoor Coil E3)
CR-X253GH	Indoor Controller
⊕	Terminal Plate
□	Connector
⊡	Terminal

Ⓢ 854-2-5268-559-00-0 (FM93GH56, FM123GH56, FM183GH56, FM253GH56)

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