



SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

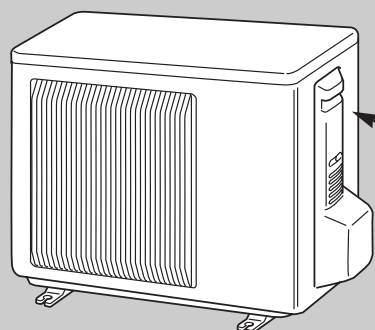
No. OB372



SERVICE MANUAL

Wireless type Models

- MUZ-FA25VA** - E1
- MUZ-FA35VA** - E1
- MUZ-FA25VAH** - E1
- MUZ-FA35VAH** - E1



Indication of
model name

- MUZ-FA25VA** - E1
- MUZ-FA35VA** - E1
- MUZ-FA25VAH** - E1
- MUZ-FA35VAH** - E1

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NOTE:

This service manual describes technical data of the outdoor units.

•As for indoor units MSZ-FA25VA-E1 and MSZ-FA35VA-E1, refer to the service manual OB371.



1 TECHNICAL CHANGES

MUZ-A09YV -[E1] → **MUZ-FA25VA** -[E1]
MUZ-A09YVH -[E1] → **MUZ-FA25VAH** -[E1]

1. Indication of capacity has been changed.(BTU base→kW base)
2. Control method between indoor and outdoor unit has been changed.
3. Power supply method has been changed (change to supply from outdoor unit).
4. Terminal block for power supply has been added.
5. Power P.C.board has been changed.
6. Inverter P.C. board has been changed.
7. Refrigerant circuit has been changed.
 - Compressor has been changed.(KNB073FBVH→KNB073FDVH)
 - Specification and position of muffler have been changed.
 - Path of outdoor heat exchanger has been changed.
 - 4-way valve and R.V. coil have been changed.
 - Stop valve has been changed.
8. Fan motor has been changed.(AC→DC)
9. Shape of grille has been changed.
10. Shape of service panel has been changed.
11. Shape of propeller has been changed.
12. Quick Clean Kit has been added.
13. Symbol on terminal block has been changed (to S1/S2/S3).

MUZ-A12YV -[E1] → **MUZ-FA35VA** -[E1]
MUZ-A12YVH -[E1] → **MUZ-FA35VAH** -[E1]

1. Indication of capacity has been changed.(BTU base→kW base)
2. Control method between indoor and outdoor unit has been changed.
3. Power supply method has been changed (change to supply from outdoor unit).
4. Power P.C.board has been changed.
5. Terminal block for power supply has been added.
6. Inverter P.C. board has been changed.
7. Refrigerant circuit has been changed.
 - Compressor has been changed.(KNB092FAAH→KNB092FCAH)
 - Specification and position of muffler have been changed.
 - Outdoor heat exchanger has been changed.
 - 4-way valve and R.V. coil have been changed.
 - Stop valve has been changed.
8. Fan motor has been changed.(AC→DC)
9. Shape of grille has been changed.
10. Shape of service panel has been changed.
11. Shape of propeller has been changed.
12. Quick Clean Kit has been added.
13. Symbol on terminal block has been changed (to S1/S2/S3).

INFORMATION FOR THE AIR CONDITIONER WITH R410A REFRIGERANT

- This room air conditioner adopts HFC refrigerant (R410A) which never destroys the ozone layer.
- Pay particular attention to the following points, though the basic installation procedure is same as that for R22 air conditioners.
 - ① As R410A has working pressure approximate 1.6 times as high as that of R22, some special tools and piping parts/materials are required. Refer to the table below.
 - ② Take sufficient care not to allow water and other contaminations to enter the R410A refrigerant during storage and installation, since it is more susceptible to contaminations than R22.
 - ③ For refrigerant piping, use clean, pressure-proof parts/materials specifically designed for R410A. (Refer to 2. Refrigerant piping.)
 - ④ Composition change may occur in R410A since it is a mixed refrigerant. When charging, charge liquid refrigerant to prevent composition change.

		New refrigerant	Previous refrigerant
Refrigerant	Refrigerant	R410A	R22
	Composition (Ratio)	HFC-32: HFC-125 (50%:50%)	R22 (100%)
	Refrigerant handling	Pseudo-azeotropic refrigerant	Single refrigerant
	Chlorine	Not included	Included
	Safety group (ASHRAE)	A1/A1	A1
	Molecular weight	72.6	86.5
	Boiling point (°C)	-51.4	-40.8
	Steam pressure [25°C](Mpa)	1.557	0.94
	Saturated steam density [25°C](Kg/m ³)	64	44.4
	Combustibility	Non combustible	Non combustible
	ODP ※1	0	0.055
	GWP ※2	1730	1700
	Refrigerant charge method	From liquid phase in cylinder	Gas phase
	Additional charge on leakage	Possible	Possible
Refrigeration oil	Kind	Incompatible oil	Compatible oil
	Color	Non	Light yellow
	Smell	Non	Non

※1 :Ozone Destruction Parameter : based on CFC-11

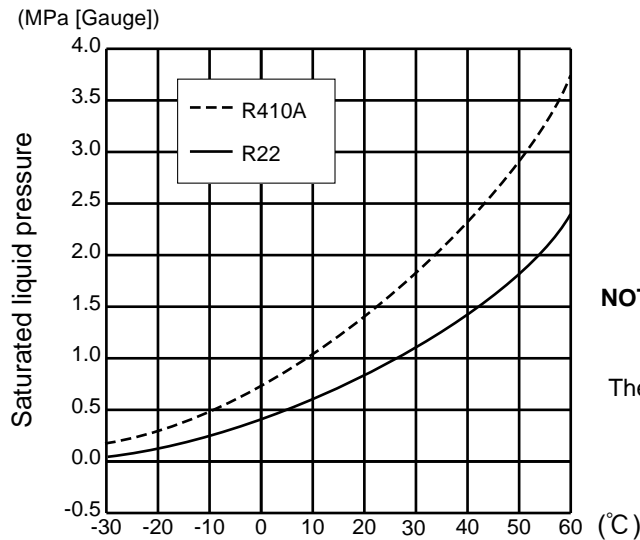
※2 :Global Warmth Parameter : based on CO₂



	New Specification	Current Specification
Compressor	<p>The incompatible refrigeration oil easily separates from refrigerant and is in the upper layer inside the suction muffler. Raising position of the oil back hole enables to back the refrigeration oil of the upper layer to flow back to the compressor.</p>	<p>Since refrigerant and refrigeration oil are compatible each, refrigeration oil goes back to the compressor through the lower position oil back hole.</p>

NOTE : The unit of pressure has been changed to MPa on the international system of units(SI unit system).
 The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/cm² [Gauge])**

Conversion chart of refrigerant temperature and pressure



NOTE : The unit of pressure has been changed to MPa on the international system of units(SI unit system).
 The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/cm² [Gauge])**

1.Tools dedicated for the air conditioner with R410A refrigerant

The following tools are required for R410A refrigerant. Some R22 tools can be substituted for R410A tools.
 The diameter of the service port on the stop valve in outdoor unit has been changed to prevent any other refrigerant being charged into the unit. Cap size has been changed from 7/16 UNF with 20 threads to 1/2 UNF with 20 threads.

R410A tools	Can R22 tools be used?	Description
Gauge manifold	No	R410A has high pressures beyond the measurement range of existing gauges. Port diameters have been changed to prevent any other refrigerant from being charged into the unit.
Charge hose	No	Hose material and cap size have been changed to improve the pressure resistance.
Gas leak detector	No	Dedicated for HFC refrigerant.
Torque wrench	Yes	6.35 mm and 9.52 mm
	No	12.7 mm
Flare tool	Yes	Clamp bar hole has been enlarged to reinforce the spring strength in the tool.
Flare gauge	New	Provided for flaring work (to be used with R22 flare tool).
Vacuum pump adapter	New	Provided to prevent the back flow of oil. This adapter enables you to use vacuum pumps.
Electronic scale for refrigerant charging	New	It is difficult to measure R410A with a charging cylinder because the refrigerant bubbles due to high pressure and high-speed vaporization

No : Not Substitutable for R410A Yes : Substitutable for R410A

2.Refrigerant piping

① Specifications

Use the refrigerant pipes that meet the following specifications.

Pipe	Outside diameter	Wall thickness	Insulation material
	mm		
For liquid	6.35	0.8 mm	Heat resisting foam plastic Specific gravity 0.045 Thickness 8 mm
For gas	9.52	0.8 mm	
	12.7	0.8 mm	

- Use a copper pipe or a copper-alloy seamless pipe with a thickness of 0.8 mm. Never use any pipe with a thickness less than 0.8mm, as the pressure resistance is insufficient.

② Flaring work and flare nut

Flaring work for R410A pipe differs from that for R22 pipe.

For details of flaring work, refer to Installation manual "FLARING WORK".

Pipe diameter	Dimension of flare nut	
	R410A	R22
mm		
6.35	17	17
9.52	22	22
12.7	26	24

3.Refrigerant oil

Apply the special refrigeration oil (accessories: packed with indoor unit) to the flare and the union seat surfaces.

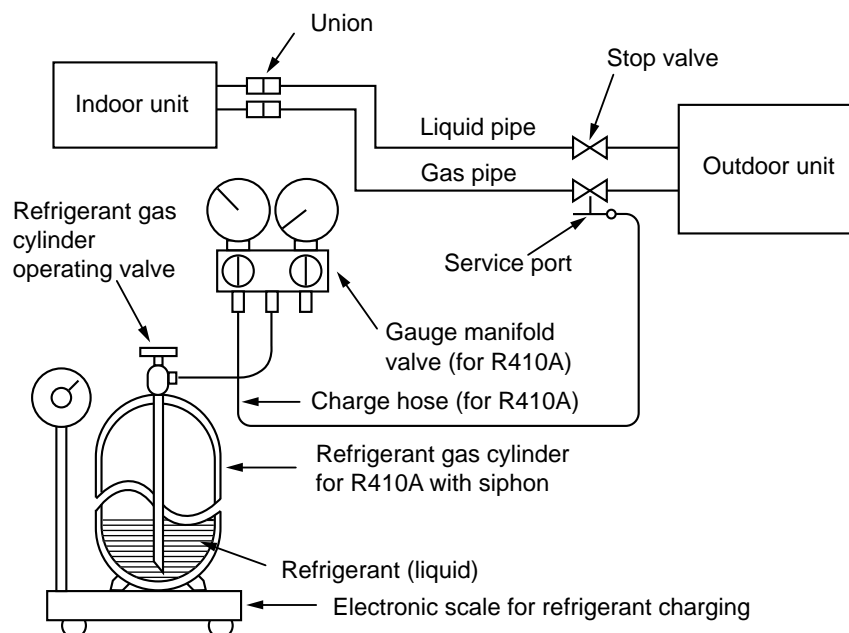
4.Air purge

- Do not discharge the refrigerant into the atmosphere.
Take care not to discharge refrigerant into the atmosphere during installation, reinstallation, or repairs to the refrigerant circuit.
- Use the vacuum pump for air purging for the purpose of environmental protection.

5.Additional charge

For additional charging, charge the refrigerant from liquid phase of the gas cylinder.

If the refrigerant is charged from the gas phase, composition change may occur in the refrigerant inside the cylinder and the outdoor unit. In this case, ability of the refrigeration cycle decreases or normal operation can be impossible. However, charging the liquid refrigerant all at once may cause the compressor to be locked. Thus, charge the refrigerant slowly.



2.Refrigerant piping

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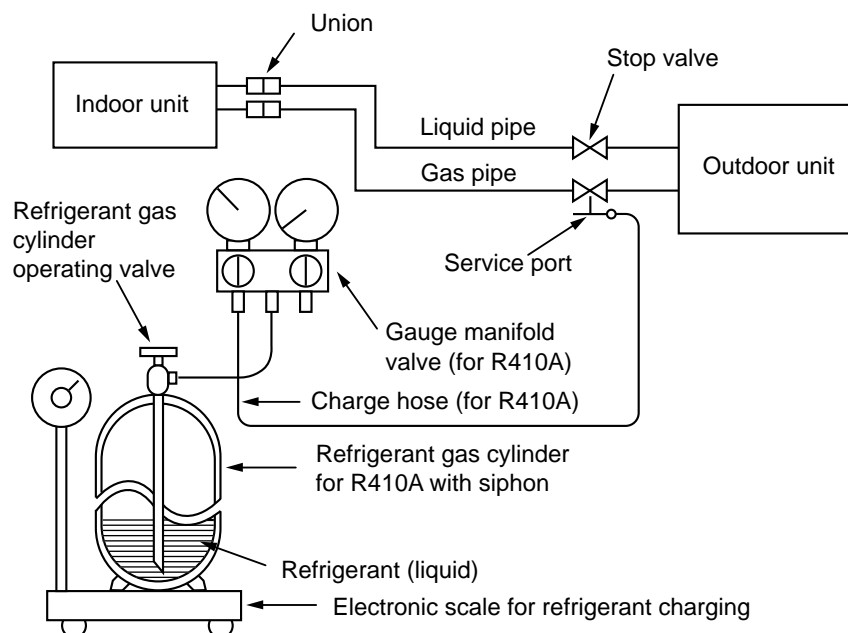
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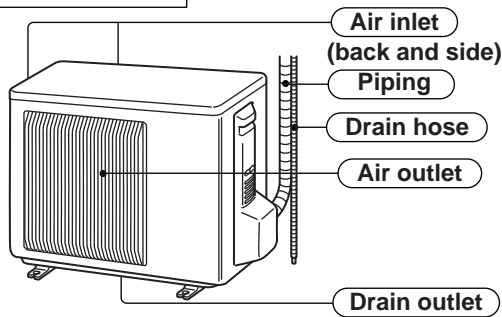


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PART NAMES AND FUNCTIONS

MUZ-FA25VA -[E1] **MUZ-FA35VA** -[E1]
MUZ-FA25VAH -[E1] **MUZ-FA35VAH** -[E1]

OUTDOOR UNIT



ACCESSORIES

		MUZ-FA25VA - [E1] MUZ-FA35VA - [E1]	MUZ-FA25VAH - [E1] MUZ-FA35VAH - [E1]
①	Drain socket	1	—
②	Quick clean kit	1	1

3

SPECIFICATION

Outdoor model			MUZ-FA25VA - [E1] MUZ-FA25VAH - [E1]		MUZ-FA35VA - [E1] MUZ-FA35VAH - [E1]	
Function			Cooling	Heating	Cooling	Heating
Power supply			Single phase 230V,50Hz		Single phase 230V,50Hz	
Capacity	Capacity Rated frequency(Min.-Max.)	kW	2.5(0.9-3.2)	3.2(0.9-5.0)	3.5(1.0-4.1)	4.0(0.9-6.0)
	Dehumidification	ℓ /h	1.4	—	2.0	—
	Air flow *1	m³ /h	2,058	1,938	2,004	
Electrical data	Starting current (Total) *1	A	3.5		4.6	
	Compressor motor current *1	A	2.44	2.97	3.72	4.02
	Fan motor current *1	A	0.31	0.28	0.33	0.33
Coefficient of performance(C.O.P) *1			4.20	4.35	3.74	4.02
Compressor	Model		KNB073FDVH		KNB092FCAH	
	Output	W	550		650	
	Winding resistance(at 20°C)	Ω	U-V 1.53	U-W 1.53	U-V 0.49	U-W 0.49
Fan motor	Model		RC0J50-AL		RC0J50-AL	
	Winding resistance(at 20°C)	Ω	WHT-BLK 37.5 BLK-RED 37.5 RED-WHT 37.5		WHT-BLK 37.5 BLK-RED 37.5 RED-WHT 37.5	
	Dimensions W×H×D	mm	800×550×285		800×550×285	
Weight	kg	33		37		
Special remarks	Sound level *1	dB(A)	46		47	48
	Fan speed(High*/Low*, High/Med.*/Low*)	rpm	810*/750*	880*/810*/650*	840*/760*	880*/800*/630*
	Fan speed regulator		2	3	2	3
	Refrigerant filling capacity(R410A)	kg	0.90		1.05	
	Refrigeration oil (Model)	cc	320 (NEO22)		320 (NEO22)	
	Thermistor RT61(at 0°C)	kΩ	32.6		32.6	
	Thermistor RT62(at 100°C)	kΩ	13.4		13.4	
	Thermistor RT64(at 50°C)	kΩ	17		17	
	Thermistor RT65(at 25°C)	kΩ	10		10	

NOTE : Test conditions are based on ISO 5151

Cooling : Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
 Outdoor Dry-bulb temperature 35°C Wet-bulb temperature(24°C)
 Heating : Indoor Dry-bulb temperature 20°C Wet-bulb temperature 15°C
 Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C




Refrigerant piping length (one way): 5m

*1 Measured under rated operating frequency

* Reference value

Specifications and rating conditions of main electric parts

OUTDOOR UNIT

Item	Model	MUZ-FA25VA - 			
		MUZ-FA25VAH - 	MUZ-FA35VA - 	MUZ-FA35VAH - 	
Current transformer (CT)		ETA19Z59BZ			
Current transformer (CT761, CT781)		ETQ19Z71AY			
Smoothing capacitor (C63A, C63B, C63C)		620 μ F 420V			
Diode module (DB61, DB65)		D25XB60			
Fuse (F61)		250V 20A			
Fuse (F71, F801)		250V 3.15A			
Defrost heater (H)		—	230V 130W	—	230V 130W
Intelligent power module (IPM)		PS21244-A-203			
Expansion valve coil (LEV)		CAD-MD12ME 12VDC			
Reactor (L61)		10A 23.0mH			
Current-detecting resistor (R61)		45m Ω 5W (1 element)		50m Ω 5W (2 elements)	
Current-detecting resistor (R831)		25m Ω 5W			
Current-limiting resistor (R64A, R64B)		5.1 Ω 5W			
Terminal block (TB1, TB2)		3P			
Relay (X63)		G5NB-1a			
Relay (X64)		G4A-1A-PS			
Relay (X66)		—	G5NB-1a	—	G5NB-1a
R.V. coil (21S4)		STF-01AJ503			
Heater protector (26H)		—	Open 45°C	—	Open 45°C

4

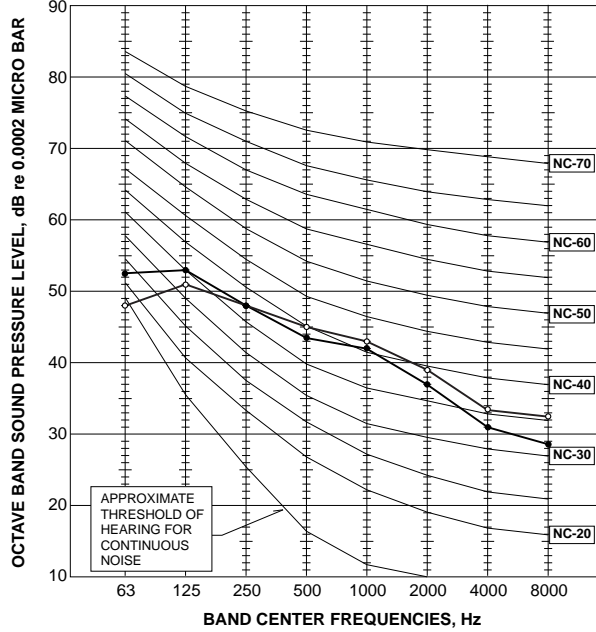
NOISE CRITERIA CURVES

MUZ-FA25VA -[E1]
MUZ-FA25VAH -[E1]

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High Med.	COOLING	46	●—●
	HEATING	46	○—○

Test conditions,

Cooling : Dry-bulb temperature 35°C Wet-bulb temperature (24°C)
 Heating : Dry-bulb temperature 7°C Wet-bulb temperature 6°C

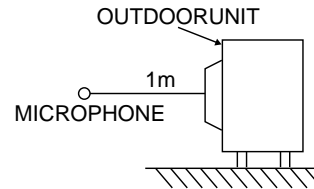
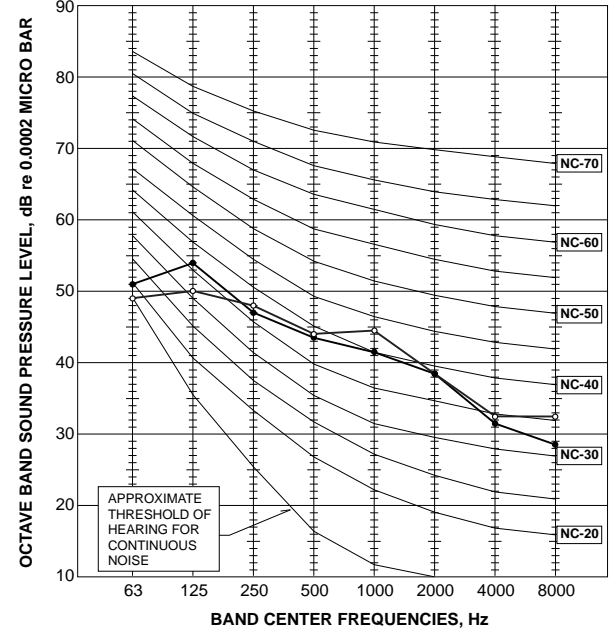


MUZ-FA35VA -[E1]
MUZ-FA35VAH -[E1]

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High Med.	COOLING	47	●—●
	HEATING	48	○—○

Test conditions,

Cooling : Dry-bulb temperature 35°C Wet-bulb temperature (24°C)
 Heating : Dry-bulb temperature 7°C Wet-bulb temperature 6°C



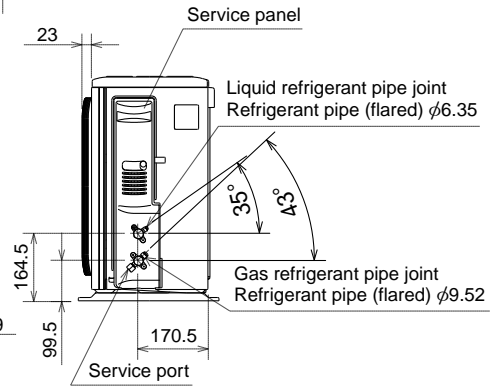
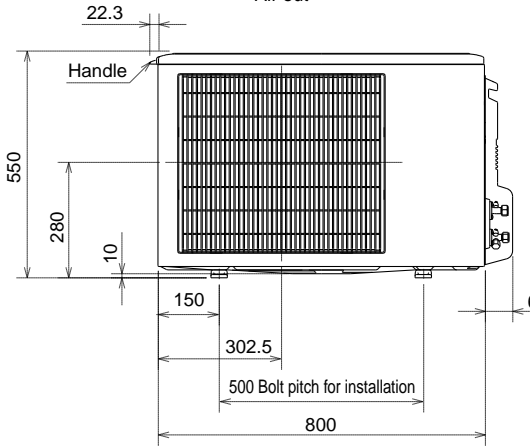
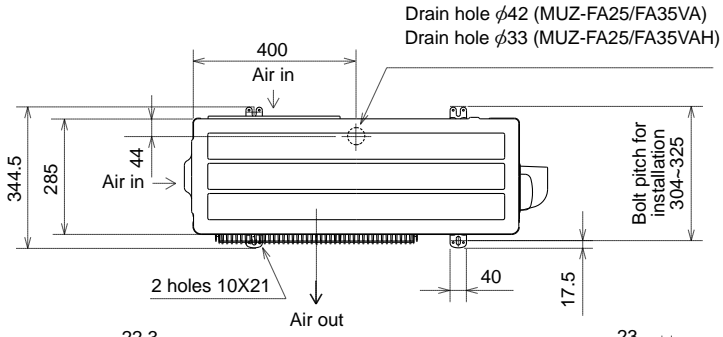
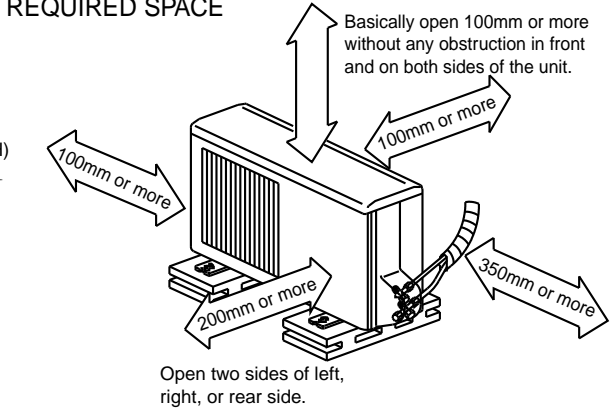
5 OUTLINES AND DIMENSIONS

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
 MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

Unit: mm

OUTDOOR UNIT

REQUIRED SPACE



6

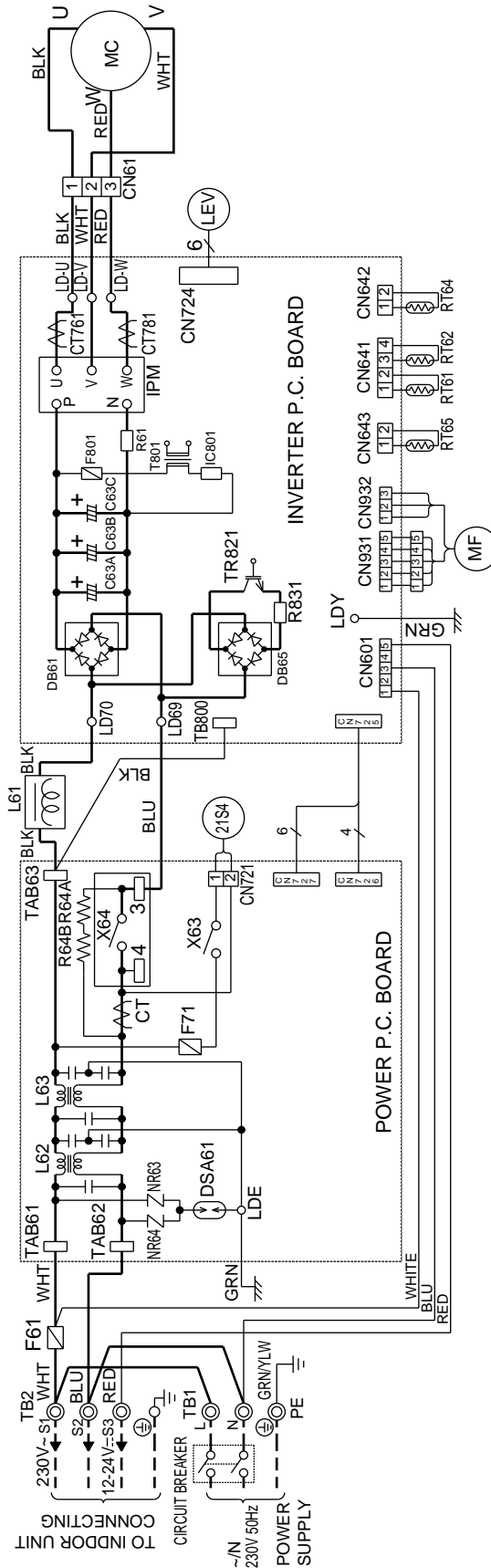
WIRING DIAGRAM

MUZ-FA25VA -E1

MUZ-FA35VA -E1

OUTDOOR UNIT

MODELS WIRING DIAGRAM



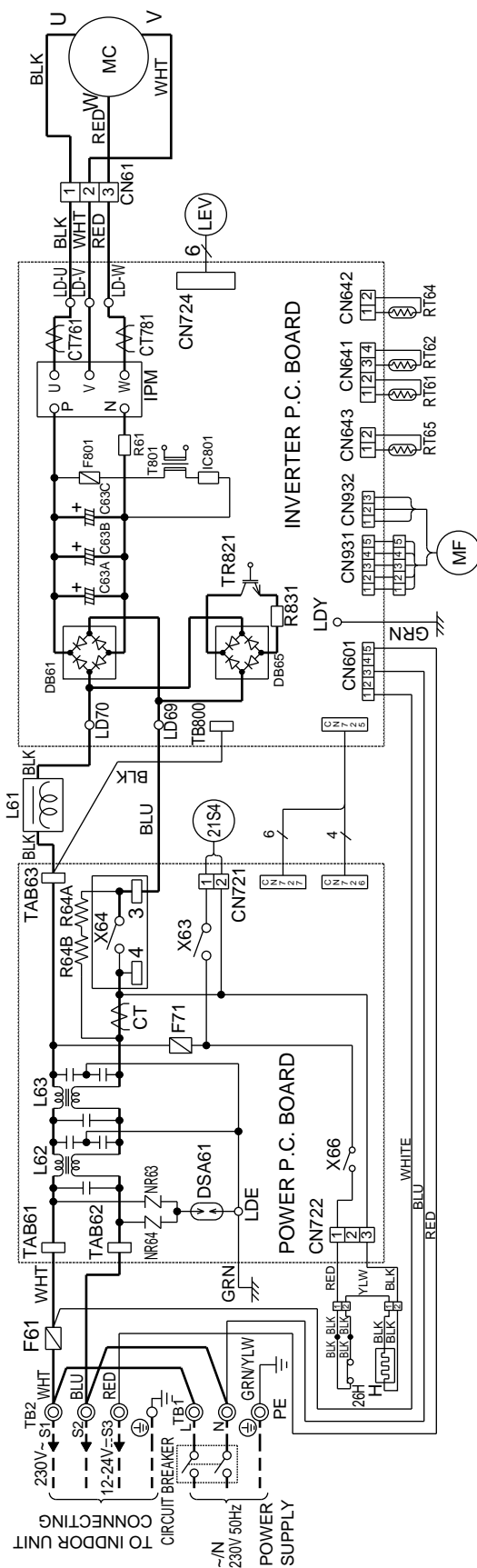
NOTE: 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
 2. Use copper conductors only. (For field wiring)
 3. Symbols below indicate.
 ◎: Terminal block, □□□□: Connector

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT, CT761, CT781	CURRENT TRANSFORMER	L61	REACTOR	R61, R831	CURRENT-DETECTING RESISTOR
C63A, C63B, C63C	SMOOTHING CAPACITOR	L62, L63	CMC COIL	R64A, R64B	CURRENT-LIMITING RESISTOR
DB61, DB65	DIODE MODULE	MC	COMPRESSOR	TB1, TB2	TERMINAL BLOCK
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	TR821	SWITCHING POWER TRANSISTOR
F61	FUSE (T20AL250V)	NR63, NR64	VARIATOR	T801	TRANSFORMER
F71, F801	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	X63, X64	RELAY
IC801	INTELLIGENT POWER DEVICE	RT62	DISCHARGE TEMPERATURE THERMISTOR	21S4	R. V. COIL
IPM	INTELLIGENT POWER MODULE	RT64	FIN TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	RT65	AMBIENT TEMPERATURE THERMISTOR		

MUZ-FA25VAH -E1 MODELS WIRING DIAGRAM

MUZ-FA35VAH -E1

OUTDOOR UNIT



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 ⊙: Terminal block, □□□: Connector

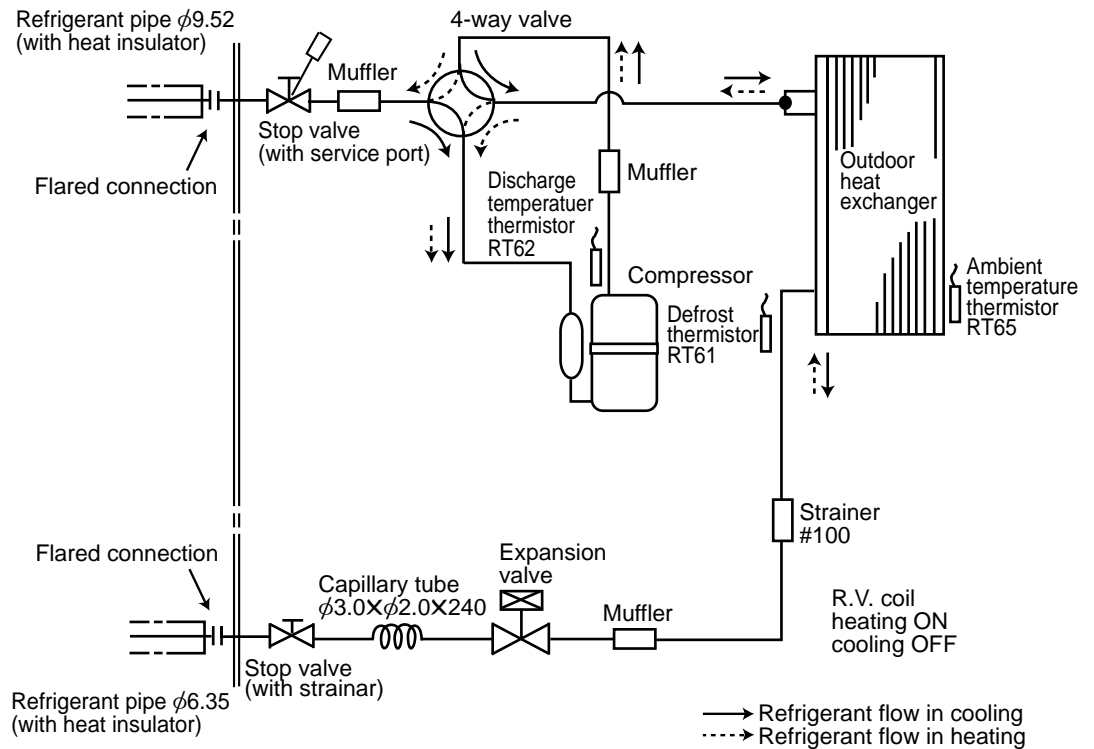
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT, CT761, CT781	CURRENT TRANSFORMER	L61	REACTOR	R64A, R64B	CURRENT-LIMITING RESISTOR
C63A, C63B, C63C	SMOOTHING CAPACITOR	L62, L63	CMC COIL	TB1, TB2	TERMINAL BLOCK
DB61, DB65	DIODE MODULE	MC	COMPRESSOR	TR821	SWITCHING POWER TRANSISTOR
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	T801	TRANSFORMER
F61	FUSE (T20AL250V)	NR63, NR64	VARIATOR	X63, X64, X66	RELAY
F71, F801	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	21S4	R. V. COIL
H	DEFROST HEATER	RT62	DISCHARGE TEMPERATURE THERMISTOR	26H	HEATER PROTECTOR
IC801	INTELLIGENT POWER DEVICE	RT64	FIN TEMPERATURE THERMISTOR		
IPM	INTELLIGENT POWER MODULE	RT65	AMBIENT TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	R61, R831	CURRENT-DETECTING RESISTOR		

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REFRIGERANT SYSTEM DIAGRAM

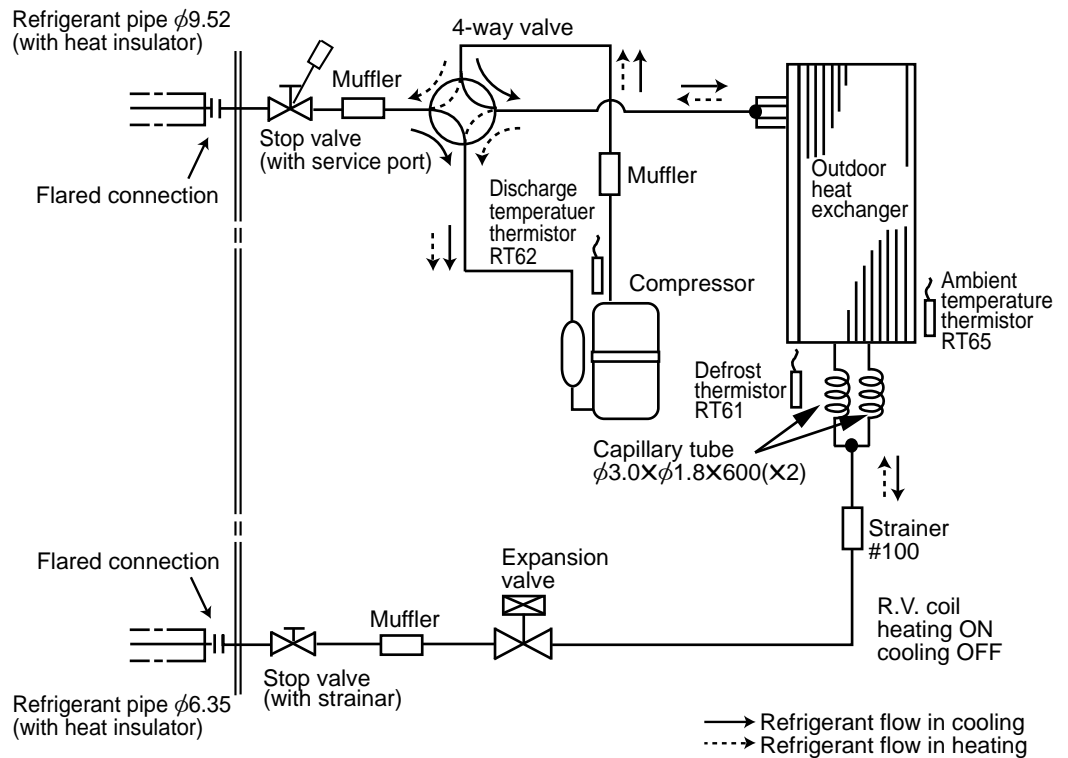
MUZ-FA25VA -[E1]
MUZ-FA25VAH -[E1]
OUTDOOR UNIT

Unit:mm



MUZ-FA35VA -[E1]
MUZ-FA35VAH -[E1]
OUTDOOR UNIT

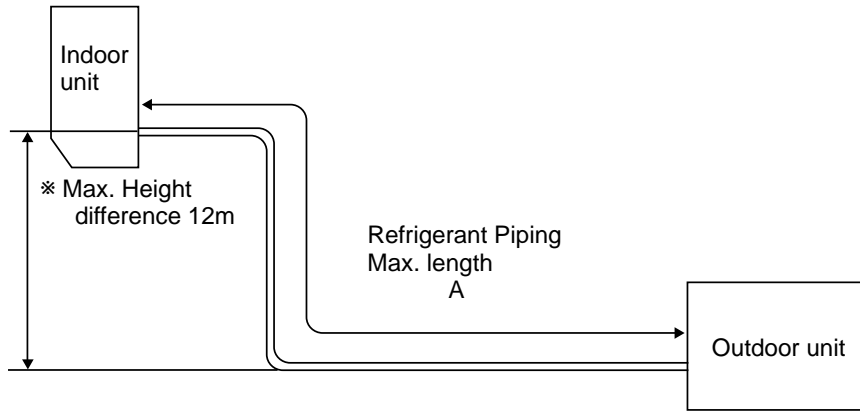
Unit:mm



MAX. REFRIGERANT PIPING LENGTH

Model	Refrigerant piping Max. length : m A	Piping size O.D : mm		Length of connecting pipe : m	
		Gas	Liquid	Indoor unit	Outdoor unit
MUZ-FA25VA - E1 MUZ-FA25VAH - E1 MUZ-FA35VA - E1 MUZ-FA35VAH - E1	20	9.52	6.35	Gas 0.43 Liquid 0.5	———

MAX. HEIGHT DIFFERENCE



※ Height difference should be within 12m regardless of which unit, indoor or outdoor position is high.

ADDITIONAL REFRIGERANT CHARGE (R410A:g)

Model	Outdoor unit precharged	Refrigerant piping length (one way)											
		5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	20m
MUZ-FA25VA - E1 MUZ-FA25VAH - E1	900	0	0	0	90	120	150	180	210	240	270	300	450
MUZ-FA35VA - E1 MUZ-FA35VAH - E1	1,050	0	0	0	90	120	150	180	210	240	270	300	450

Calculation : $X_g = 30g/m \times (\text{Refrigerant piping length}(m) - 5)$

8

PERFORMANCE CURVES

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

The standard data contained in these specifications apply only to the operation of the air conditioner under normal conditions. Since operating conditions vary according to the areas where these units are installed. The following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

207 ~ 253V, 50Hz

(2) AIR FLOW

Air flow should be set at MAX.

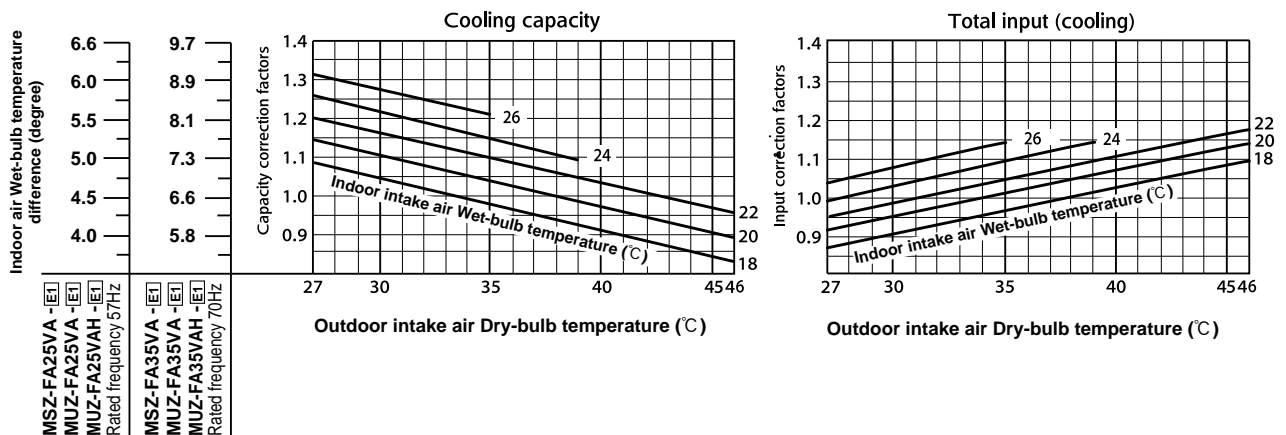
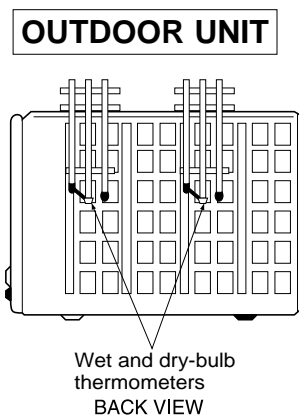
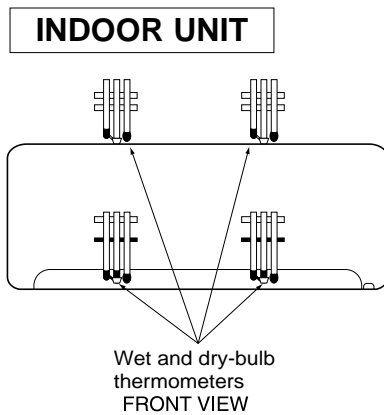
(3) MAIN READINGS

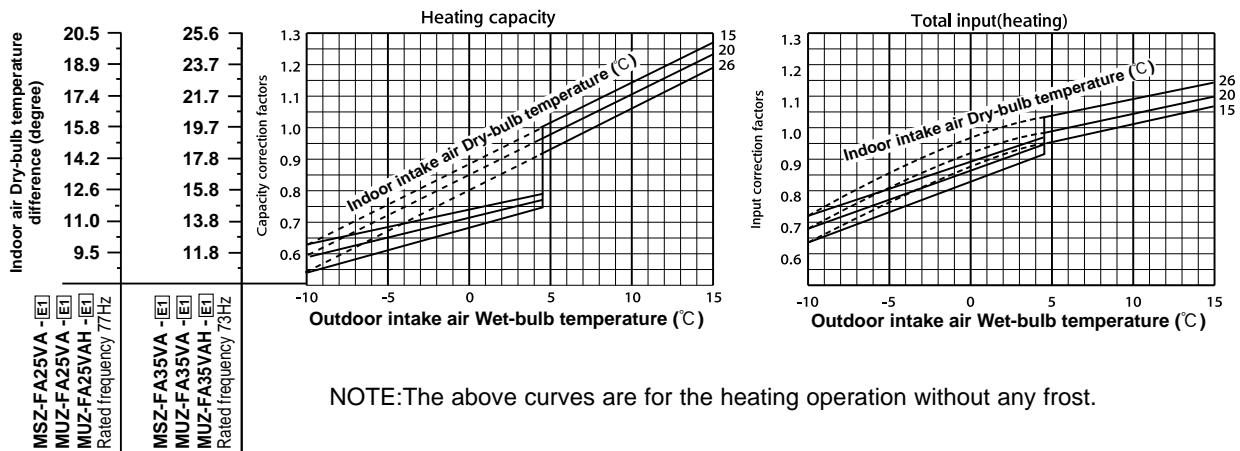
- | | | |
|---|-------|-----------|
| (1) Indoor intake air wet-bulb temperature : | °C WB | } Cooling |
| (2) Indoor outlet air wet-bulb temperature : | °C WB | |
| (3) Outdoor intake air dry-bulb temperature : | °C DB | |
| (4) Total input: | W | } Heating |
| (5) Indoor intake air dry-bulb temperature : | °C DB | |
| (6) Outdoor intake air wet-bulb temperature : | °C WB | |
| (7) Total input : | W | |

Indoor air wet/dry-bulb temperature difference on the left side of the chart on next page shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

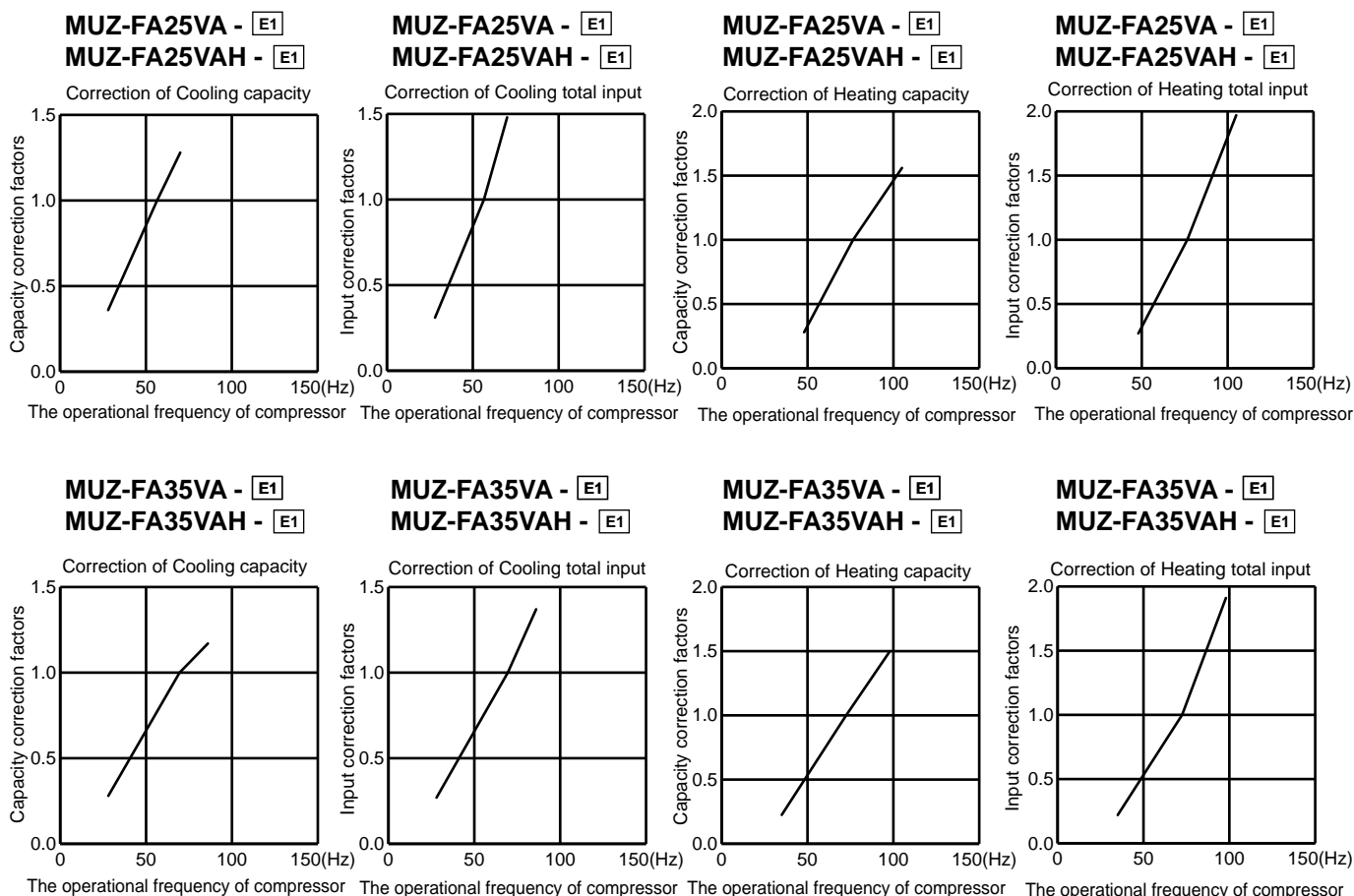
How to measure the indoor air wet-bulb / dry-bulb temperature difference

- Attach at least 2 sets of wet and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
- Attach at least 2 sets of wet and dry-bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
- Check that the air filter is cleaned.
- Open windows and doors of room.
- Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
- When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
- 10 minutes later, measure temperature again and check that the temperature does not change.





NOTE: The above curves are for the heating operation without any frost.



OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

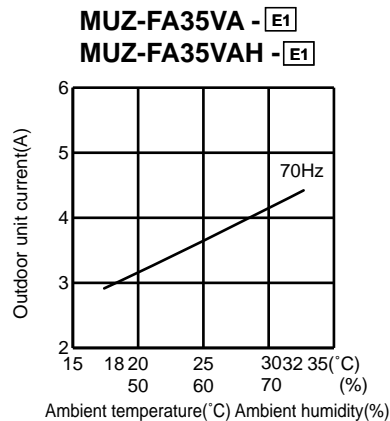
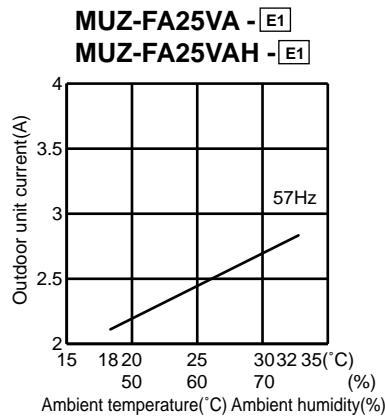
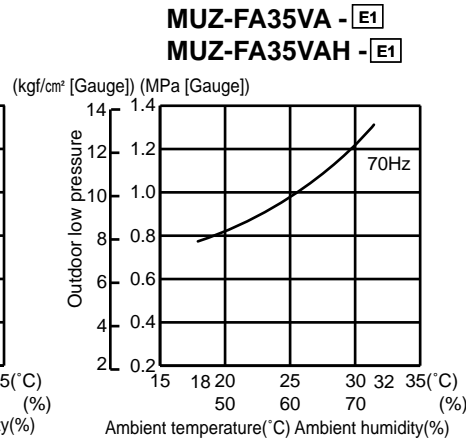
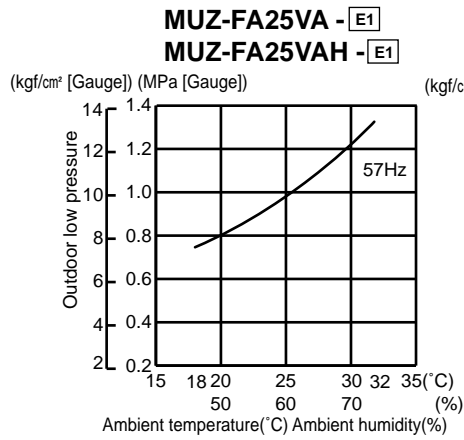
- <How to operate fixed-frequency operation (Test run operation)>
1. Press EMERGENCY OPERATION switch to COOL or HEAT mode (COOL : Press once, HEAT : Press twice).
 2. Test run operation starts and continues to operate for 30 minutes.
 3. Compressor operates at rated frequency in COOL mode or 58Hz in HEAT mode.
 4. Indoor fan operates at High speed.
 5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (Operation frequency of compressor varies).
 6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

NOTE : The unit of pressure has been changed to MPa on the international system of units (SI unit system).
The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/cm² [Gauge])**

OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT COOL operation

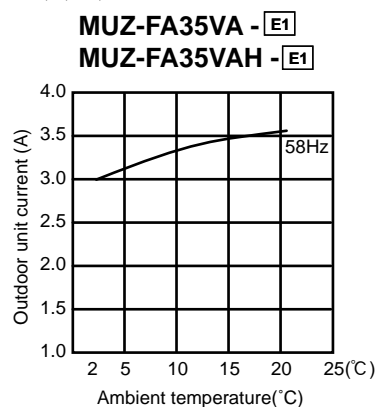
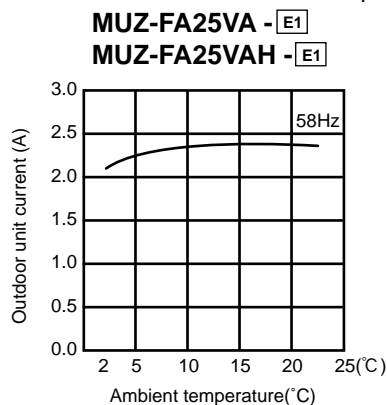
- ① Both indoor and outdoor unit are under the same temperature/humidity condition.
- ② Air flow : High speed
- ③ Operational frequency : 57Hz(MUZ-FA25VA, MUZ-FA25VAH)
70Hz(MUZ-FA35VA, MUZ-FA35VAH)

Dry-bulb temperature	Relative humidity(%)
20	50
25	60
30	70



HEAT operation

Condition indoor: Dry bulb temperature 20.0°C
Wet bulb temperature 14.5°C
Condition outdoor: Dry bulb temperature 2,7,15,20.0°C
Wet bulb temperature 1,6,12,14.5°C



PERFORMANCE DATA COOL operation Rated frequency 57Hz**MSZ-FA25VA -[E1] : MUZ-FA25VA -[E1] MUZ-FA25VAH -[E1]**

CAPACITY:2.5(kW) SHF:0.79 INPUT:595(W)

		OUTDOOR DB(°C)															
INDOOR DB(°C)	INDOOR WB(°C)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.94	1.79	0.61	476	2.81	1.72	0.61	500	2.70	1.65	0.61	524	2.60	1.59	0.61	547
21	20	3.06	1.50	0.49	500	2.94	1.44	0.49	530	2.85	1.40	0.49	541	2.75	1.35	0.49	565
22	18	2.94	1.91	0.65	476	2.81	1.83	0.65	500	2.70	1.76	0.65	524	2.60	1.69	0.65	547
22	20	3.06	1.62	0.53	500	2.94	1.56	0.53	530	2.85	1.51	0.53	541	2.75	1.46	0.53	565
22	22	3.19	1.31	0.41	518	3.08	1.26	0.41	550	3.00	1.23	0.41	565	2.88	1.18	0.41	589
23	18	2.94	2.03	0.69	476	2.81	1.94	0.69	500	2.70	1.86	0.69	524	2.60	1.79	0.69	547
23	20	3.06	1.75	0.57	500	2.94	1.67	0.57	530	2.85	1.62	0.57	541	2.75	1.57	0.57	565
23	22	3.19	1.43	0.45	518	3.08	1.38	0.45	550	3.00	1.35	0.45	565	2.88	1.29	0.45	589
24	18	2.94	2.14	0.73	476	2.81	2.05	0.73	500	2.70	1.97	0.73	524	2.60	1.90	0.73	547
24	20	3.06	1.87	0.61	500	2.94	1.79	0.61	530	2.85	1.74	0.61	541	2.75	1.68	0.61	565
24	22	3.19	1.56	0.49	518	3.08	1.51	0.49	550	3.00	1.47	0.49	565	2.88	1.41	0.49	589
24	24	3.35	1.24	0.37	541	3.23	1.19	0.37	571	3.15	1.17	0.37	589	3.05	1.13	0.37	619
25	18	2.94	2.26	0.77	476	2.81	2.17	0.77	500	2.70	2.08	0.77	524	2.60	2.00	0.77	547
25	20	3.06	1.99	0.65	500	2.94	1.91	0.65	530	2.85	1.85	0.65	541	2.75	1.79	0.65	565
25	22	3.19	1.69	0.53	518	3.08	1.63	0.53	550	3.00	1.59	0.53	565	2.88	1.52	0.53	589
25	24	3.35	1.37	0.41	541	3.23	1.32	0.41	571	3.15	1.29	0.41	589	3.05	1.25	0.41	619
26	18	2.94	2.38	0.81	476	2.81	2.28	0.81	500	2.70	2.19	0.81	524	2.60	2.11	0.81	547
26	20	3.06	2.11	0.69	500	2.94	2.03	0.69	530	2.85	1.97	0.69	541	2.75	1.90	0.69	565
26	22	3.19	1.82	0.57	518	3.08	1.75	0.57	550	3.00	1.71	0.57	565	2.88	1.64	0.57	589
26	24	3.35	1.51	0.45	541	3.23	1.45	0.45	571	3.15	1.42	0.45	589	3.05	1.37	0.45	619
26	26	3.45	1.14	0.33	571	3.35	1.11	0.33	601	3.30	1.09	0.33	619	3.20	1.06	0.33	637
27	18	2.94	2.50	0.85	476	2.81	2.39	0.85	500	2.70	2.30	0.85	524	2.60	2.21	0.85	547
27	20	3.06	2.24	0.73	500	2.94	2.14	0.73	530	2.85	2.08	0.73	541	2.75	2.01	0.73	565
27	22	3.19	1.94	0.61	518	3.08	1.88	0.61	550	3.00	1.83	0.61	565	2.88	1.75	0.61	589
27	24	3.35	1.64	0.49	541	3.23	1.58	0.49	571	3.15	1.54	0.49	589	3.05	1.49	0.49	619
27	26	3.45	1.28	0.37	571	3.35	1.24	0.37	601	3.30	1.22	0.37	619	3.20	1.18	0.37	637
28	18	2.94	2.61	0.89	476	2.81	2.50	0.89	500	2.70	2.40	0.89	524	2.60	2.31	0.89	547
28	20	3.06	2.36	0.77	500	2.94	2.26	0.77	530	2.85	2.19	0.77	541	2.75	2.12	0.77	565
28	22	3.19	2.07	0.65	518	3.08	2.00	0.65	550	3.00	1.95	0.65	565	2.88	1.87	0.65	589
28	24	3.35	1.78	0.53	541	3.23	1.71	0.53	571	3.15	1.67	0.53	589	3.05	1.62	0.53	619
28	26	3.45	1.41	0.41	571	3.35	1.37	0.41	601	3.30	1.35	0.41	619	3.20	1.31	0.41	637
29	18	2.94	2.73	0.93	476	2.81	2.62	0.93	500	2.70	2.51	0.93	524	2.60	2.42	0.93	547
29	20	3.06	2.48	0.81	500	2.94	2.38	0.81	530	2.85	2.31	0.81	541	2.75	2.23	0.81	565
29	22	3.19	2.20	0.69	518	3.08	2.12	0.69	550	3.00	2.07	0.69	565	2.88	1.98	0.69	589
29	24	3.35	1.91	0.57	541	3.23	1.84	0.57	571	3.15	1.80	0.57	589	3.05	1.74	0.57	619
29	26	3.45	1.55	0.45	571	3.35	1.51	0.45	601	3.30	1.49	0.45	619	3.20	1.44	0.45	637
30	18	2.94	2.85	0.97	476	2.81	2.73	0.97	500	2.70	2.62	0.97	524	2.60	2.52	0.97	547
30	20	3.06	2.60	0.85	500	2.94	2.50	0.85	530	2.85	2.42	0.85	541	2.75	2.34	0.85	565
30	22	3.19	2.33	0.73	518	3.08	2.24	0.73	550	3.00	2.19	0.73	565	2.88	2.10	0.73	589
30	24	3.35	2.04	0.61	541	3.23	1.97	0.61	571	3.15	1.92	0.61	589	3.05	1.86	0.61	619
30	26	3.45	1.69	0.49	571	3.35	1.64	0.49	601	3.30	1.62	0.49	619	3.20	1.57	0.49	637
31	18	2.94	2.97	1.01	476	2.81	2.84	1.01	500	2.70	2.73	1.01	524	2.60	2.63	1.01	547
31	20	3.06	2.73	0.89	500	2.94	2.61	0.89	530	2.85	2.54	0.89	541	2.75	2.45	0.89	565
31	22	3.19	2.45	0.77	518	3.08	2.37	0.77	550	3.00	2.31	0.77	565	2.88	2.21	0.77	589
31	24	3.35	2.18	0.65	541	3.23	2.10	0.65	571	3.15	2.05	0.65	589	3.05	1.98	0.65	619
31	26	3.45	1.83	0.53	571	3.35	1.78	0.53	601	3.30	1.75	0.53	619	3.20	1.70	0.53	637
32	18	2.94	3.08	1.05	476	2.81	2.95	1.05	500	2.70	2.84	1.05	524	2.60	2.73	1.05	547
32	20	3.06	2.85	0.93	500	2.94	2.73	0.93	530	2.85	2.65	0.93	541	2.75	2.56	0.93	565
32	22	3.19	2.58	0.81	518	3.08	2.49	0.81	550	3.00	2.43	0.81	565	2.88	2.33	0.81	589
32	24	3.35	2.31	0.69	541	3.23	2.23	0.69	571	3.15	2.17	0.69	589	3.05	2.10	0.69	619
32	26	3.45	1.97	0.57	571	3.35	1.91	0.57	601	3.30	1.88	0.57	619	3.20	1.82	0.57	637

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 57Hz
MSZ-FA25VA -[E1] : MUZ-FA25VA -[E1] MUZ-FA25VAH -[E1]

CAPACITY:2.5(kW) SHF:0.79 INPUT:595(W)

		OUTDOOR DB(°C)											
INDOOR DB (°C)	INDOOR WB (°C)	35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.45	1.49	0.61	583	2.25	1.37	0.61	619	2.08	1.27	0.61	643
21	20	2.58	1.26	0.49	607	2.40	1.18	0.49	637	2.23	1.09	0.49	672
22	18	2.45	1.59	0.65	583	2.25	1.46	0.65	619	2.08	1.35	0.65	643
22	20	2.58	1.36	0.53	607	2.40	1.27	0.53	637	2.23	1.18	0.53	672
22	22	2.73	1.12	0.41	631	2.55	1.05	0.41	666	2.38	0.97	0.41	690
23	18	2.45	1.69	0.69	583	2.25	1.55	0.69	619	2.08	1.43	0.69	643
23	20	2.58	1.47	0.57	607	2.40	1.37	0.57	637	2.23	1.27	0.57	672
23	22	2.73	1.23	0.45	631	2.55	1.15	0.45	666	2.38	1.07	0.45	690
24	18	2.45	1.79	0.73	583	2.25	1.64	0.73	619	2.08	1.51	0.73	643
24	20	2.58	1.57	0.61	607	2.40	1.46	0.61	637	2.23	1.36	0.61	672
24	22	2.73	1.34	0.49	631	2.55	1.25	0.49	666	2.38	1.16	0.49	690
24	24	2.88	1.06	0.37	655	2.70	1.00	0.37	684	2.55	0.94	0.37	714
25	18	2.45	1.89	0.77	583	2.25	1.73	0.77	619	2.08	1.60	0.77	643
25	20	2.58	1.67	0.65	607	2.40	1.56	0.65	637	2.23	1.45	0.65	672
25	22	2.73	1.44	0.53	631	2.55	1.35	0.53	666	2.38	1.26	0.53	690
25	24	2.88	1.18	0.41	655	2.70	1.11	0.41	684	2.55	1.05	0.41	714
26	18	2.45	1.98	0.81	583	2.25	1.82	0.81	619	2.08	1.68	0.81	643
26	20	2.58	1.78	0.69	607	2.40	1.66	0.69	637	2.23	1.54	0.69	672
26	22	2.73	1.55	0.57	631	2.55	1.45	0.57	666	2.38	1.35	0.57	690
26	24	2.88	1.29	0.45	655	2.70	1.22	0.45	684	2.55	1.15	0.45	714
26	26	3.03	1.00	0.33	678	2.85	0.94	0.33	708	2.68	0.88	0.33	738
27	18	2.45	2.08	0.85	583	2.25	1.91	0.85	619	2.08	1.76	0.85	643
27	20	2.58	1.88	0.73	607	2.40	1.75	0.73	637	2.23	1.62	0.73	672
27	22	2.73	1.66	0.61	631	2.55	1.56	0.61	666	2.38	1.45	0.61	690
27	24	2.88	1.41	0.49	655	2.70	1.32	0.49	684	2.55	1.25	0.49	714
27	26	3.03	1.12	0.37	678	2.85	1.05	0.37	708	2.68	0.99	0.37	738
28	18	2.45	2.18	0.89	583	2.25	2.00	0.89	619	2.08	1.85	0.89	643
28	20	2.58	1.98	0.77	607	2.40	1.85	0.77	637	2.23	1.71	0.77	672
28	22	2.73	1.77	0.65	631	2.55	1.66	0.65	666	2.38	1.54	0.65	690
28	24	2.88	1.52	0.53	655	2.70	1.43	0.53	684	2.55	1.35	0.53	714
28	26	3.03	1.24	0.41	678	2.85	1.17	0.41	708	2.68	1.10	0.41	738
29	18	2.45	2.28	0.93	583	2.25	2.09	0.93	619	2.08	1.93	0.93	643
29	20	2.58	2.09	0.81	607	2.40	1.94	0.81	637	2.23	1.80	0.81	672
29	22	2.73	1.88	0.69	631	2.55	1.76	0.69	666	2.38	1.64	0.69	690
29	24	2.88	1.64	0.57	655	2.70	1.54	0.57	684	2.55	1.45	0.57	714
29	26	3.03	1.36	0.45	678	2.85	1.28	0.45	708	2.68	1.20	0.45	738
30	18	2.45	2.38	0.97	583	2.25	2.18	0.97	619	2.08	2.01	0.97	643
30	20	2.58	2.19	0.85	607	2.40	2.04	0.85	637	2.23	1.89	0.85	672
30	22	2.73	1.99	0.73	631	2.55	1.86	0.73	666	2.38	1.73	0.73	690
30	24	2.88	1.75	0.61	655	2.70	1.65	0.61	684	2.55	1.56	0.61	714
30	26	3.03	1.48	0.49	678	2.85	1.40	0.49	708	2.68	1.31	0.49	738
31	18	2.45	2.47	1.01	583	2.25	2.27	1.01	619	2.08	2.10	1.01	643
31	20	2.58	2.29	0.89	607	2.40	2.14	0.89	637	2.23	1.98	0.89	672
31	22	2.73	2.10	0.77	631	2.55	1.96	0.77	666	2.38	1.83	0.77	690
31	24	2.88	1.87	0.65	655	2.70	1.76	0.65	684	2.55	1.66	0.65	714
31	26	3.03	1.60	0.53	678	2.85	1.51	0.53	708	2.68	1.42	0.53	738
32	18	2.45	2.57	1.05	583	2.25	2.36	1.05	619	2.08	2.18	1.05	643
32	20	2.58	2.39	0.93	607	2.40	2.23	0.93	637	2.23	2.07	0.93	672
32	22	2.73	2.21	0.81	631	2.55	2.07	0.81	666	2.38	1.92	0.81	690
32	24	2.88	1.98	0.69	655	2.70	1.86	0.69	684	2.55	1.76	0.69	714
32	26	3.03	1.72	0.57	678	2.85	1.62	0.57	708	2.68	1.52	0.57	738

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 70Hz
MSZ-FA35VA -[E1] : MUZ-FA35VA -[E1] MUZ-FA35VAH -[E1]

CAPACITY:3.5(kW) SHF:0.76 INPUT:935(W)

		OUTDOOR DB(°C)															
INDOOR DB(°C)	INDOOR WB(°C)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.11	2.39	0.58	748	3.94	2.28	0.58	785	3.78	2.19	0.58	823	3.64	2.11	0.58	860
21	20	4.29	1.97	0.46	785	4.11	1.89	0.46	832	3.99	1.84	0.46	851	3.85	1.77	0.46	888
22	18	4.11	2.55	0.62	748	3.94	2.44	0.62	785	3.78	2.34	0.62	823	3.64	2.26	0.62	860
22	20	4.29	2.14	0.50	785	4.11	2.06	0.50	832	3.99	2.00	0.50	851	3.85	1.93	0.50	888
22	22	4.46	1.70	0.38	813	4.31	1.64	0.38	865	4.20	1.60	0.38	888	4.03	1.53	0.38	926
23	18	4.11	2.71	0.66	748	3.94	2.60	0.66	785	3.78	2.49	0.66	823	3.64	2.40	0.66	860
23	20	4.29	2.32	0.54	785	4.11	2.22	0.54	832	3.99	2.15	0.54	851	3.85	2.08	0.54	888
23	22	4.46	1.87	0.42	813	4.31	1.81	0.42	865	4.20	1.76	0.42	888	4.03	1.69	0.42	926
24	18	4.11	2.88	0.70	748	3.94	2.76	0.70	785	3.78	2.65	0.70	823	3.64	2.55	0.70	860
24	20	4.29	2.49	0.58	785	4.11	2.39	0.58	832	3.99	2.31	0.58	851	3.85	2.23	0.58	888
24	22	4.46	2.05	0.46	813	4.31	1.98	0.46	865	4.20	1.93	0.46	888	4.03	1.85	0.46	926
24	24	4.69	1.59	0.34	851	4.52	1.54	0.34	898	4.41	1.50	0.34	926	4.27	1.45	0.34	972
25	18	4.11	3.04	0.74	748	3.94	2.91	0.74	785	3.78	2.80	0.74	823	3.64	2.69	0.74	860
25	20	4.29	2.66	0.62	785	4.11	2.55	0.62	832	3.99	2.47	0.62	851	3.85	2.39	0.62	888
25	22	4.46	2.23	0.50	813	4.31	2.15	0.50	865	4.20	2.10	0.50	888	4.03	2.01	0.50	926
25	24	4.69	1.78	0.38	851	4.52	1.72	0.38	898	4.41	1.68	0.38	926	4.27	1.62	0.38	972
26	18	4.11	3.21	0.78	748	3.94	3.07	0.78	785	3.78	2.95	0.78	823	3.64	2.84	0.78	860
26	20	4.29	2.83	0.66	785	4.11	2.71	0.66	832	3.99	2.63	0.66	851	3.85	2.54	0.66	888
26	22	4.46	2.41	0.54	813	4.31	2.32	0.54	865	4.20	2.27	0.54	888	4.03	2.17	0.54	926
26	24	4.69	1.97	0.42	851	4.52	1.90	0.42	898	4.41	1.85	0.42	926	4.27	1.79	0.42	972
26	26	4.83	1.45	0.30	898	4.69	1.41	0.30	944	4.62	1.39	0.30	972	4.48	1.34	0.30	1000
27	18	4.11	3.37	0.82	748	3.94	3.23	0.82	785	3.78	3.10	0.82	823	3.64	2.98	0.82	860
27	20	4.29	3.00	0.70	785	4.11	2.88	0.70	832	3.99	2.79	0.70	851	3.85	2.70	0.70	888
27	22	4.46	2.59	0.58	813	4.31	2.50	0.58	865	4.20	2.44	0.58	888	4.03	2.33	0.58	926
27	24	4.69	2.16	0.46	851	4.52	2.08	0.46	898	4.41	2.03	0.46	926	4.27	1.96	0.46	972
27	26	4.83	1.64	0.34	898	4.69	1.59	0.34	944	4.62	1.57	0.34	972	4.48	1.52	0.34	1000
28	18	4.11	3.54	0.86	748	3.94	3.39	0.86	785	3.78	3.25	0.86	823	3.64	3.13	0.86	860
28	20	4.29	3.17	0.74	785	4.11	3.04	0.74	832	3.99	2.95	0.74	851	3.85	2.85	0.74	888
28	22	4.46	2.77	0.62	813	4.31	2.67	0.62	865	4.20	2.60	0.62	888	4.03	2.50	0.62	926
28	24	4.69	2.35	0.50	851	4.52	2.26	0.50	898	4.41	2.21	0.50	926	4.27	2.14	0.50	972
28	26	4.83	1.84	0.38	898	4.69	1.78	0.38	944	4.62	1.76	0.38	972	4.48	1.70	0.38	1000
29	18	4.11	3.70	0.90	748	3.94	3.54	0.90	785	3.78	3.40	0.90	823	3.64	3.28	0.90	860
29	20	4.29	3.34	0.78	785	4.11	3.21	0.78	832	3.99	3.11	0.78	851	3.85	3.00	0.78	888
29	22	4.46	2.95	0.66	813	4.31	2.84	0.66	865	4.20	2.77	0.66	888	4.03	2.66	0.66	926
29	24	4.69	2.53	0.54	851	4.52	2.44	0.54	898	4.41	2.38	0.54	926	4.27	2.31	0.54	972
29	26	4.83	2.03	0.42	898	4.69	1.97	0.42	944	4.62	1.94	0.42	972	4.48	1.88	0.42	1000
30	18	4.11	3.87	0.94	748	3.94	3.70	0.94	785	3.78	3.55	0.94	823	3.64	3.42	0.94	860
30	20	4.29	3.52	0.82	785	4.11	3.37	0.82	832	3.99	3.27	0.82	851	3.85	3.16	0.82	888
30	22	4.46	3.12	0.70	813	4.31	3.01	0.70	865	4.20	2.94	0.70	888	4.03	2.82	0.70	926
30	24	4.69	2.72	0.58	851	4.52	2.62	0.58	898	4.41	2.56	0.58	926	4.27	2.48	0.58	972
30	26	4.83	2.22	0.46	898	4.69	2.16	0.46	944	4.62	2.13	0.46	972	4.48	2.06	0.46	1000
31	18	4.11	4.03	0.98	748	3.94	3.86	0.98	785	3.78	3.70	0.98	823	3.64	3.57	0.98	860
31	20	4.29	3.69	0.86	785	4.11	3.54	0.86	832	3.99	3.43	0.86	851	3.85	3.31	0.86	888
31	22	4.46	3.30	0.74	813	4.31	3.19	0.74	865	4.20	3.11	0.74	888	4.03	2.98	0.74	926
31	24	4.69	2.91	0.62	851	4.52	2.80	0.62	898	4.41	2.73	0.62	926	4.27	2.65	0.62	972
31	26	4.83	2.42	0.50	898	4.69	2.35	0.50	944	4.62	2.31	0.50	972	4.48	2.24	0.50	1000
32	18	4.11	4.19	1.02	748	3.94	4.02	1.02	785	3.78	3.86	1.02	823	3.64	3.71	1.02	860
32	20	4.29	3.86	0.90	785	4.11	3.70	0.90	832	3.99	3.59	0.90	851	3.85	3.47	0.90	888
32	22	4.46	3.48	0.78	813	4.31	3.36	0.78	865	4.20	3.28	0.78	888	4.03	3.14	0.78	926
32	24	4.69	3.10	0.66	851	4.52	2.98	0.66	898	4.41	2.91	0.66	926	4.27	2.82	0.66	972
32	26	4.83	2.61	0.54	898	4.69	2.53	0.54	944	4.62	2.49	0.54	972	4.48	2.42	0.54	1000

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 70Hz
MSZ-FA35VA -[E1] : MUZ-FA35VA -[E1] MUZ-FA35VAH -[E1]

CAPACITY:3.5(kW) SHF:0.76 INPUT:935(W)

		OUTDOOR DB(°C)											
INDOOR DB (°C)	INDOOR WB (°C)	35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.43	1.99	0.58	916	3.15	1.83	0.58	972	2.91	1.68	0.58	1010
21	20	3.61	1.66	0.46	954	3.36	1.55	0.46	1000	3.12	1.43	0.46	1057
22	18	3.43	2.13	0.62	916	3.15	1.95	0.62	972	2.91	1.80	0.62	1010
22	20	3.61	1.80	0.50	954	3.36	1.68	0.50	1000	3.12	1.56	0.50	1057
22	22	3.82	1.45	0.38	991	3.57	1.36	0.38	1047	3.33	1.26	0.38	1085
23	18	3.43	2.26	0.66	916	3.15	2.08	0.66	972	2.91	1.92	0.66	1010
23	20	3.61	1.95	0.54	954	3.36	1.81	0.54	1000	3.12	1.68	0.54	1057
23	22	3.82	1.60	0.42	991	3.57	1.50	0.42	1047	3.33	1.40	0.42	1085
24	18	3.43	2.40	0.70	916	3.15	2.21	0.70	972	2.91	2.03	0.70	1010
24	20	3.61	2.09	0.58	954	3.36	1.95	0.58	1000	3.12	1.81	0.58	1057
24	22	3.82	1.75	0.46	991	3.57	1.64	0.46	1047	3.33	1.53	0.46	1085
24	24	4.03	1.37	0.34	1029	3.78	1.29	0.34	1075	3.57	1.21	0.34	1122
25	18	3.43	2.54	0.74	916	3.15	2.33	0.74	972	2.91	2.15	0.74	1010
25	20	3.61	2.24	0.62	954	3.36	2.08	0.62	1000	3.12	1.93	0.62	1057
25	22	3.82	1.91	0.50	991	3.57	1.79	0.50	1047	3.33	1.66	0.50	1085
25	24	4.03	1.53	0.38	1029	3.78	1.44	0.38	1075	3.57	1.36	0.38	1122
26	18	3.43	2.68	0.78	916	3.15	2.46	0.78	972	2.91	2.27	0.78	1010
26	20	3.61	2.38	0.66	954	3.36	2.22	0.66	1000	3.12	2.06	0.66	1057
26	22	3.82	2.06	0.54	991	3.57	1.93	0.54	1047	3.33	1.80	0.54	1085
26	24	4.03	1.69	0.42	1029	3.78	1.59	0.42	1075	3.57	1.50	0.42	1122
26	26	4.24	1.27	0.30	1066	3.99	1.20	0.30	1113	3.75	1.12	0.30	1159
27	18	3.43	2.81	0.82	916	3.15	2.58	0.82	972	2.91	2.38	0.82	1010
27	20	3.61	2.52	0.70	954	3.36	2.35	0.70	1000	3.12	2.18	0.70	1057
27	22	3.82	2.21	0.58	991	3.57	2.07	0.58	1047	3.33	1.93	0.58	1085
27	24	4.03	1.85	0.46	1029	3.78	1.74	0.46	1075	3.57	1.64	0.46	1122
27	26	4.24	1.44	0.34	1066	3.99	1.36	0.34	1113	3.75	1.27	0.34	1159
28	18	3.43	2.95	0.86	916	3.15	2.71	0.86	972	2.91	2.50	0.86	1010
28	20	3.61	2.67	0.74	954	3.36	2.49	0.74	1000	3.12	2.31	0.74	1057
28	22	3.82	2.37	0.62	991	3.57	2.21	0.62	1047	3.33	2.06	0.62	1085
28	24	4.03	2.01	0.50	1029	3.78	1.89	0.50	1075	3.57	1.79	0.50	1122
28	26	4.24	1.61	0.38	1066	3.99	1.52	0.38	1113	3.75	1.42	0.38	1159
29	18	3.43	3.09	0.90	916	3.15	2.84	0.90	972	2.91	2.61	0.90	1010
29	20	3.61	2.81	0.78	954	3.36	2.62	0.78	1000	3.12	2.43	0.78	1057
29	22	3.82	2.52	0.66	991	3.57	2.36	0.66	1047	3.33	2.19	0.66	1085
29	24	4.03	2.17	0.54	1029	3.78	2.04	0.54	1075	3.57	1.93	0.54	1122
29	26	4.24	1.78	0.42	1066	3.99	1.68	0.42	1113	3.75	1.57	0.42	1159
30	18	3.43	3.22	0.94	916	3.15	2.96	0.94	972	2.91	2.73	0.94	1010
30	20	3.61	2.96	0.82	954	3.36	2.76	0.82	1000	3.12	2.55	0.82	1057
30	22	3.82	2.67	0.70	991	3.57	2.50	0.70	1047	3.33	2.33	0.70	1085
30	24	4.03	2.33	0.58	1029	3.78	2.19	0.58	1075	3.57	2.07	0.58	1122
30	26	4.24	1.95	0.46	1066	3.99	1.84	0.46	1113	3.75	1.72	0.46	1159
31	18	3.43	3.36	0.98	916	3.15	3.09	0.98	972	2.91	2.85	0.98	1010
31	20	3.61	3.10	0.86	954	3.36	2.89	0.86	1000	3.12	2.68	0.86	1057
31	22	3.82	2.82	0.74	991	3.57	2.64	0.74	1047	3.33	2.46	0.74	1085
31	24	4.03	2.50	0.62	1029	3.78	2.34	0.62	1075	3.57	2.21	0.62	1122
31	26	4.24	2.12	0.50	1066	3.99	2.00	0.50	1113	3.75	1.87	0.50	1159
32	18	3.43	3.50	1.02	916	3.15	3.21	1.02	972	2.91	2.96	1.02	1010
32	20	3.61	3.24	0.90	954	3.36	3.02	0.90	1000	3.12	2.80	0.90	1057
32	22	3.82	2.98	0.78	991	3.57	2.78	0.78	1047	3.33	2.59	0.78	1085
32	24	4.03	2.66	0.66	1029	3.78	2.49	0.66	1075	3.57	2.36	0.66	1122
32	26	4.24	2.29	0.54	1066	3.99	2.15	0.54	1113	3.75	2.02	0.54	1159

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA HEAT operation**MSZ-FA25VA -[E1] : MUZ-FA25VA -[E1] MUZ-FA25VAH -[E1] Rated frequency 77Hz**

CAPACITY:3.2(kW) INPUT:735(W)

INDOOR DB(°C)	OUTDOOR WB(°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.02	478	2.43	573	2.85	647	3.26	698	3.68	742	4.06	764	4.48	779
21	1.92	515	2.30	610	2.72	676	3.10	728	3.52	764	3.90	786	4.30	816
26	1.73	551	2.14	647	2.53	713	2.94	764	3.36	801	3.74	823	4.16	845

NOTE Q:Total capacity (kW) INPUT:Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature**MSZ-FA35VA -[E1] : MUZ-FA35VA -[E1] MUZ-FA35VAH -[E1] Rated frequency 73Hz**

CAPACITY:4.0(kW) INPUT:995(W)

INDOOR DB(°C)	OUTDOOR WB(°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.52	647	3.04	776	3.56	876	4.08	945	4.60	1005	5.08	1035	5.60	1055
21	2.40	697	2.88	826	3.40	915	3.88	985	4.40	1035	4.88	1065	5.38	1104
26	2.16	746	2.68	876	3.16	965	3.68	1035	4.20	1085	4.68	1114	5.20	1144

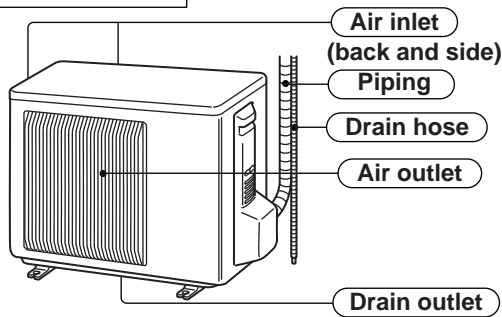
NOTE Q:Total capacity (kW) INPUT:Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature

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PART NAMES AND FUNCTIONS

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
 MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

OUTDOOR UNIT



ACCESSORIES

		MUZ-FA25VA - [E1] MUZ-FA35VA - [E1]	MUZ-FA25VAH - [E1] MUZ-FA35VAH - [E1]
①	Drain socket	1	—
②	Quick clean kit	1	1

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SPECIFICATION

Outdoor model			MUZ-FA25VA - [E1] MUZ-FA25VAH - [E1]		MUZ-FA35VA - [E1] MUZ-FA35VAH - [E1]	
Function			Cooling	Heating	Cooling	Heating
Power supply			Single phase 230V,50Hz		Single phase 230V,50Hz	
Capacity	Capacity Rated frequency(Min.-Max.)	kW	2.5(0.9-3.2)	3.2(0.9-5.0)	3.5(1.0-4.1)	4.0(0.9-6.0)
	Dehumidification	ℓ /h	1.4	—	2.0	—
	Air flow *1	m³ /h	2,058	1,938	2,004	
Electrical data	Starting current (Total) *1	A	3.5		4.6	
	Compressor motor current *1	A	2.44	2.97	3.72	4.02
	Fan motor current *1	A	0.31	0.28	0.33	0.33
Coefficient of performance(C.O.P) *1			4.20	4.35	3.74	4.02
Compressor	Model		KNB073FDVH		KNB092FCAH	
	Output	W	550		650	
	Winding resistance(at 20°C)	Ω	U-V 1.53	U-W 1.53	U-V 0.49	U-W 0.49
Fan motor	Model		RC0J50-AL		RC0J50-AL	
	Winding resistance(at 20°C)	Ω	WHT-BLK 37.5 BLK-RED 37.5 RED-WHT 37.5		WHT-BLK 37.5 BLK-RED 37.5 RED-WHT 37.5	
	Dimensions W×H×D	mm	800×550×285		800×550×285	
Weight			33		37	
Special remarks	Sound level *1	dB(A)	46		47	48
	Fan speed(High*/Low*, High/Med.*/Low*)	rpm	810*/750*	880*/810*/650*	840*/760*	880*/800*/630*
	Fan speed regulator		2	3	2	3
	Refrigerant filling capacity(R410A)	kg	0.90		1.05	
	Refrigeration oil (Model)	cc	320 (NEO22)		320 (NEO22)	
	Thermistor RT61(at 0°C)	kΩ	32.6		32.6	
	Thermistor RT62(at 100°C)	kΩ	13.4		13.4	
	Thermistor RT64(at 50°C)	kΩ	17		17	
	Thermistor RT65(at 25°C)	kΩ	10		10	

NOTE : Test conditions are based on ISO 5151

Cooling : Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
 Outdoor Dry-bulb temperature 35°C Wet-bulb temperature(24°C)
 Heating : Indoor Dry-bulb temperature 20°C Wet-bulb temperature 15°C
 Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C





Refrigerant piping length (one way): 5m

*1 Measured under rated operating frequency

* Reference value

Specifications and rating conditions of main electric parts

OUTDOOR UNIT

Item	Model	MUZ-FA25VA - 			
		MUZ-FA25VA - 	MUZ-FA25VAH - 	MUZ-FA35VA - 	MUZ-FA35VAH - 
Current transformer	(CT)	ETA19Z59BZ			
Current transformer	(CT761, CT781)	ETQ19Z71AY			
Smoothing capacitor	(C63A, C63B, C63C)	620 μ F 420V			
Diode module	(DB61, DB65)	D25XB60			
Fuse	(F61)	250V 20A			
Fuse	(F71, F801)	250V 3.15A			
Defrost heater	(H)	—	230V 130W	—	230V 130W
Intelligent power module	(IPM)	PS21244-A-203			
Expansion valve coil	(LEV)	CAD-MD12ME 12VDC			
Reactor	(L61)	10A 23.0mH			
Current-detecting resistor	(R61)	45m Ω 5W (1 element)		50m Ω 5W (2 elements)	
Current-detecting resistor	(R831)	25m Ω 5W			
Current-limiting resistor	(R64A, R64B)	5.1 Ω 5W			
Terminal block	(TB1, TB2)	3P			
Relay	(X63)	G5NB-1a			
Relay	(X64)	G4A-1A-PS			
Relay	(X66)	—	G5NB-1a	—	G5NB-1a
R.V. coil	(21S4)	STF-01AJ503			
Heater protector	(26H)	—	Open 45°C	—	Open 45°C

4

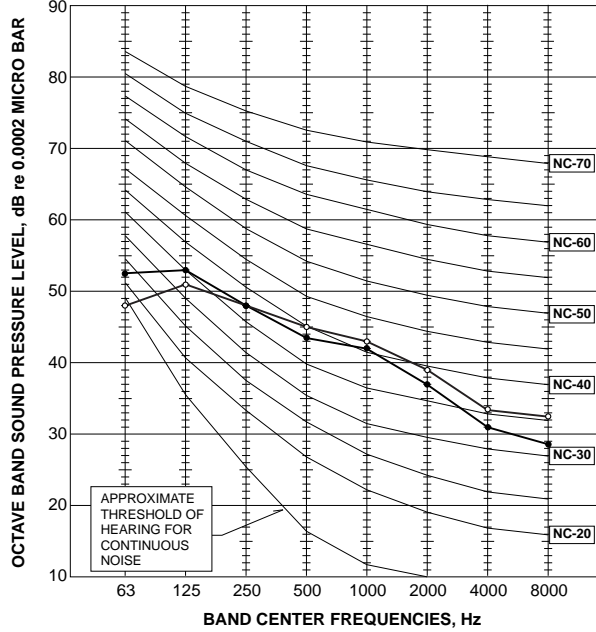
NOISE CRITERIA CURVES

MUZ-FA25VA -[E1]
MUZ-FA25VAH -[E1]

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High Med.	COOLING	46	●—●
	HEATING	46	○—○

Test conditions,

Cooling : Dry-bulb temperature 35°C Wet-bulb temperature (24°C)
 Heating : Dry-bulb temperature 7°C Wet-bulb temperature 6°C

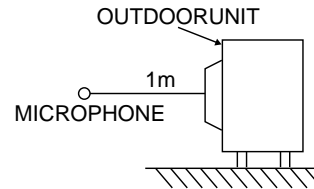
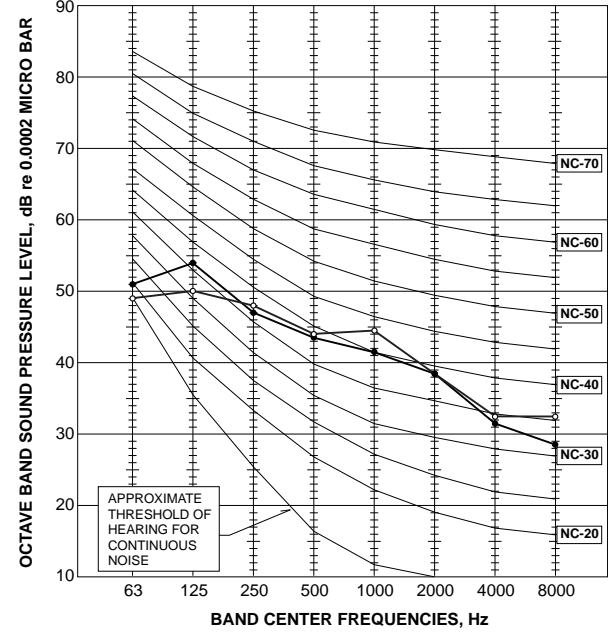


MUZ-FA35VA -[E1]
MUZ-FA35VAH -[E1]

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High Med.	COOLING	47	●—●
	HEATING	48	○—○

Test conditions,

Cooling : Dry-bulb temperature 35°C Wet-bulb temperature (24°C)
 Heating : Dry-bulb temperature 7°C Wet-bulb temperature 6°C



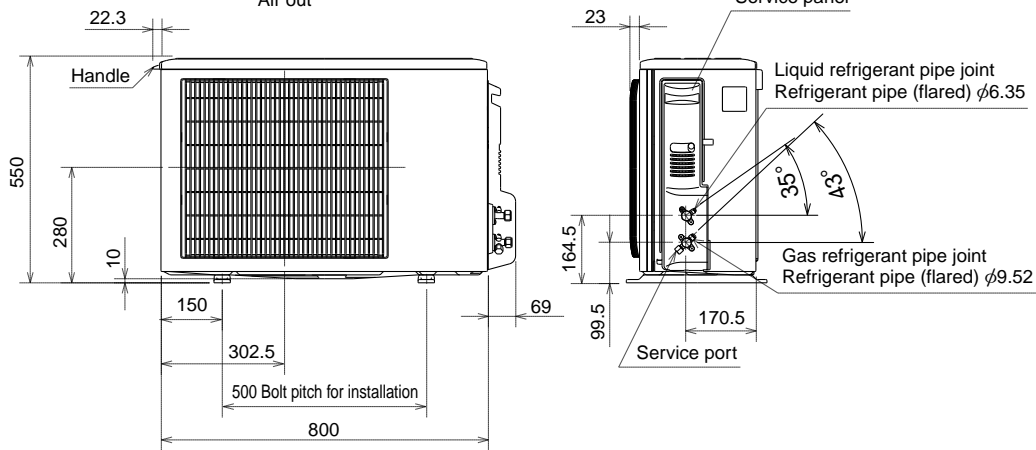
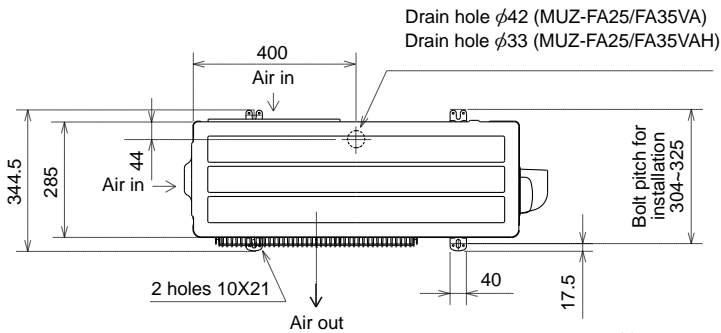
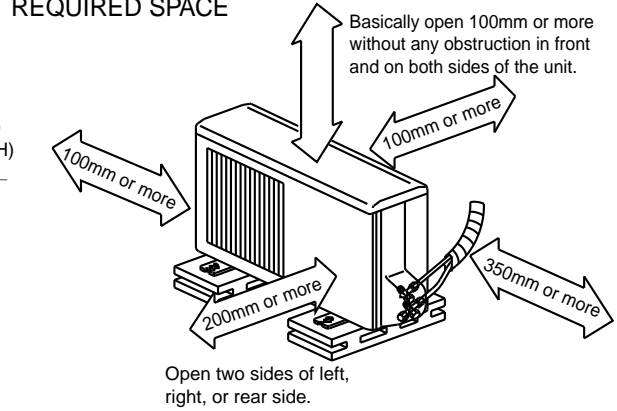
5 OUTLINES AND DIMENSIONS

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
 MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

Unit: mm

OUTDOOR UNIT

REQUIRED SPACE



6

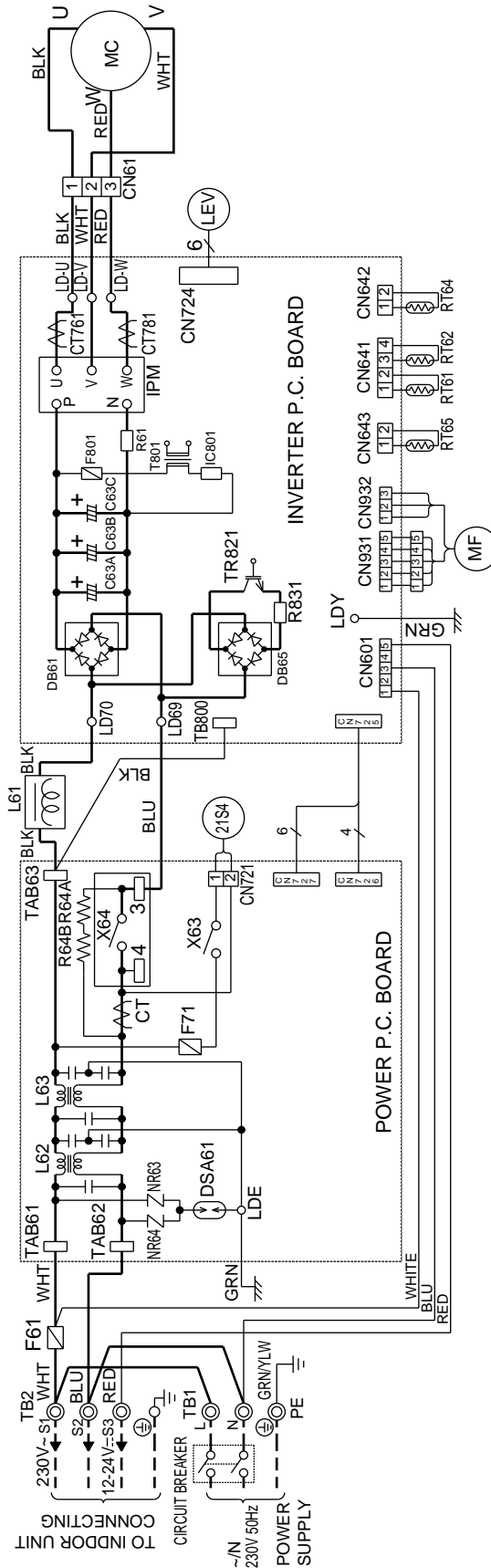
WIRING DIAGRAM

MUZ-FA25VA -E1

MUZ-FA35VA -E1

OUTDOOR UNIT

MODELS WIRING DIAGRAM



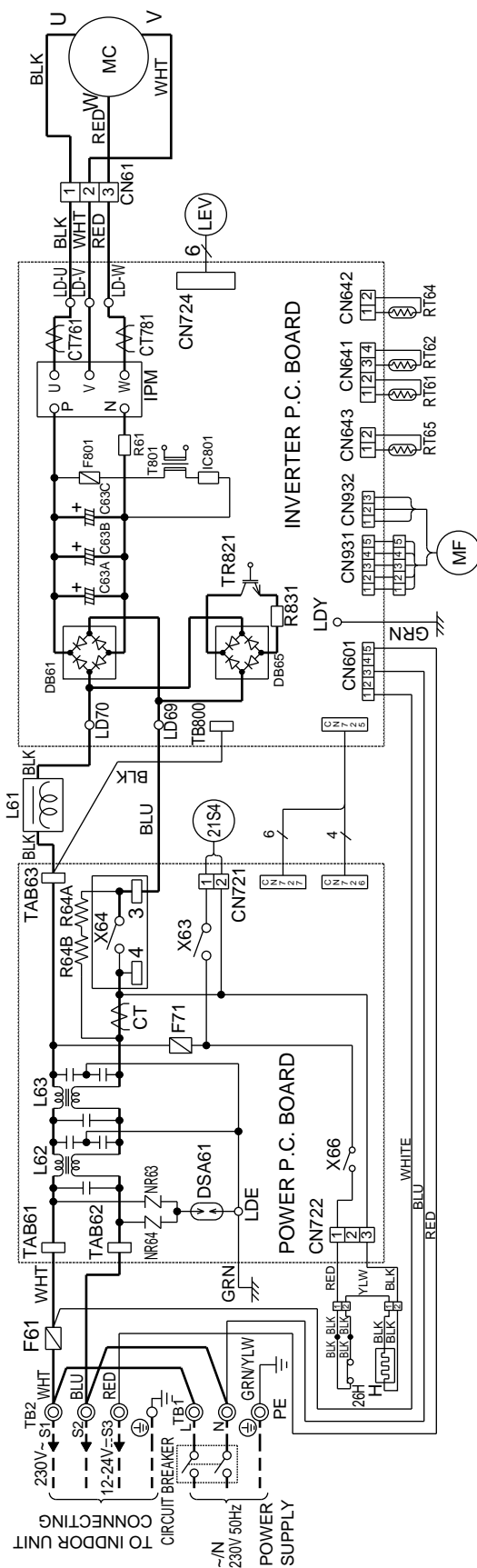
NOTE: 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
 2. Use copper conductors only. (For field wiring)
 3. Symbols below indicate.
 ◎: Terminal block, □□□□: Connector

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT, CT761, CT781	CURRENT TRANSFORMER	L61	REACTOR	R61, R831	CURRENT-DETECTING RESISTOR
C63A, C63B, C63C	SMOOTHING CAPACITOR	L62, L63	CMC COIL	R64A, R64B	CURRENT-LIMITING RESISTOR
DB61, DB65	DIODE MODULE	MC	COMPRESSOR	TB1, TB2	TERMINAL BLOCK
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	TR821	SWITCHING POWER TRANSISTOR
F61	FUSE (T20AL250V)	NR63, NR64	VARIATOR	T801	TRANSFORMER
F71, F801	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	X63, X64	RELAY
IC801	INTELLIGENT POWER DEVICE	RT62	DISCHARGE TEMPERATURE THERMISTOR	21S4	R. V. COIL
IPM	INTELLIGENT POWER MODULE	RT64	FIN TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	RT65	AMBIENT TEMPERATURE THERMISTOR		

MUZ-FA25VAH -E1 MODELS WIRING DIAGRAM

MUZ-FA35VAH -E1

OUTDOOR UNIT



NOTE: 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
 2. Use copper conductors only. (For field wiring)
 3. Symbols below indicate.
 ⊙: Terminal block, □□□: Connector

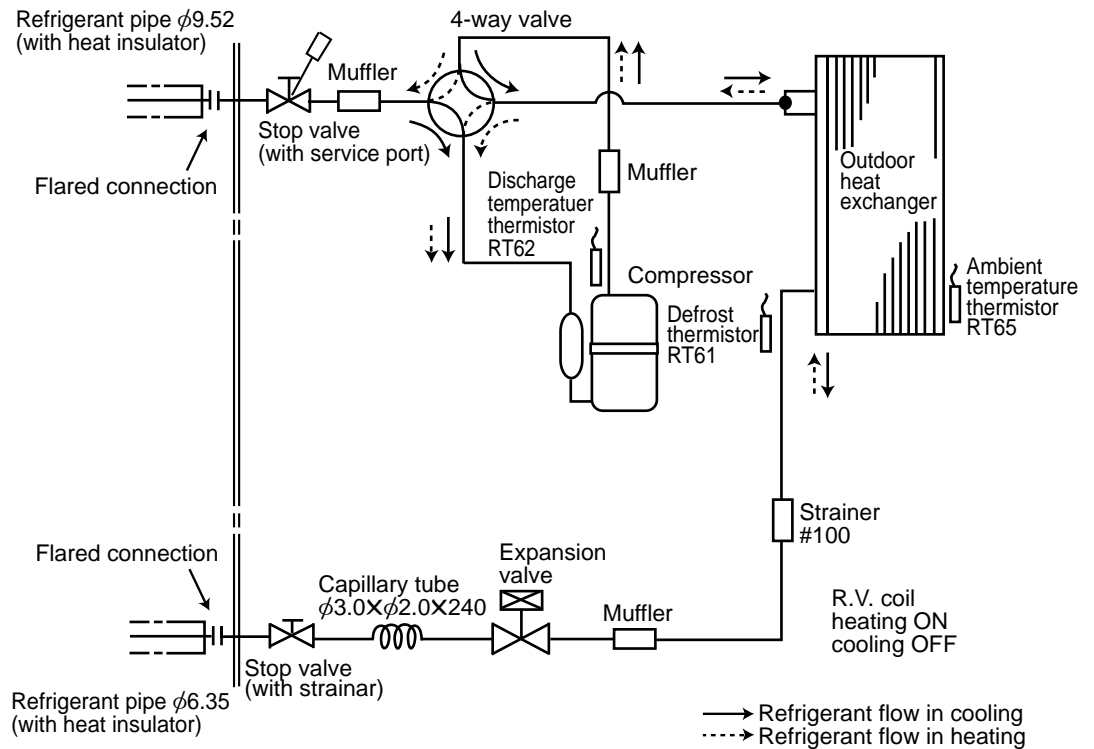
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CT761, CT781	CURRENT TRANSFORMER	L61	REACTOR	R64A, R64B	CURRENT-LIMITING RESISTOR
C63A, C63B, C63C	SMOOTHING CAPACITOR	L62, L63	CMC COIL	TB1, TB2	TERMINAL BLOCK
DB61, DB65	DIODE MODULE	MC	COMPRESSOR	TR821	SWITCHING POWER TRANSISTOR
DSA61	SURGE ABSORBER	MF	OUTDOOR FAN MOTOR	T801	TRANSFORMER
F61	FUSE (T20AL250V)	NR63, NR64	VARIATOR	X63, X64, X66	RELAY
F71, F801	FUSE (T3.15AL250V)	RT61	DEFROST THERMISTOR	21S4	R. V. COIL
H	DEFROST HEATER	RT62	DISCHARGE TEMPERATURE THERMISTOR	26H	HEATER PROTECTOR
IC801	INTELLIGENT POWER DEVICE	RT64	FIN TEMPERATURE THERMISTOR		
IPM	INTELLIGENT POWER MODULE	RT65	AMBIENT TEMPERATURE THERMISTOR		
LEV	EXPANSION VALVE COIL	R61, R831	CURRENT-DETECTING RESISTOR		

7

REFRIGERANT SYSTEM DIAGRAM

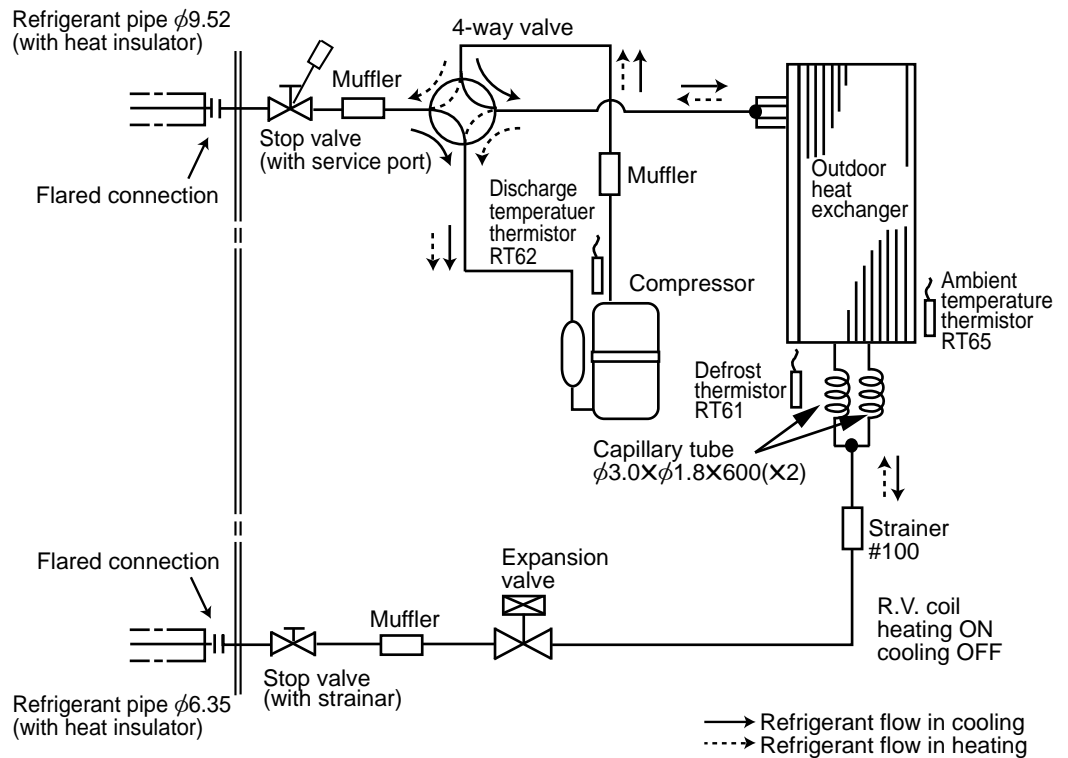
MUZ-FA25VA -[E1]
 MUZ-FA25VAH -[E1]
OUTDOOR UNIT

Unit:mm



MUZ-FA35VA -[E1]
 MUZ-FA35VAH -[E1]
OUTDOOR UNIT

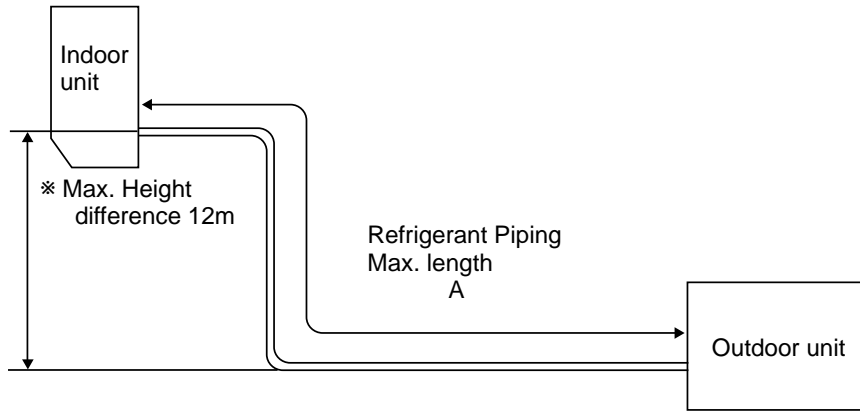
Unit:mm



MAX. REFRIGERANT PIPING LENGTH

Model	Refrigerant piping Max. length : m A	Piping size O.D : mm		Length of connecting pipe : m	
		Gas	Liquid	Indoor unit	Outdoor unit
MUZ-FA25VA - E1 MUZ-FA25VAH - E1 MUZ-FA35VA - E1 MUZ-FA35VAH - E1	20	9.52	6.35	Gas 0.43 Liquid 0.5	—

MAX. HEIGHT DIFFERENCE



※ Height difference should be within 12m regardless of which unit, indoor or outdoor position is high.

ADDITIONAL REFRIGERANT CHARGE (R410A:g)

Model	Outdoor unit precharged	Refrigerant piping length (one way)											
		5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	20m
MUZ-FA25VA - E1 MUZ-FA25VAH - E1	900	0	0	0	90	120	150	180	210	240	270	300	450
MUZ-FA35VA - E1 MUZ-FA35VAH - E1	1,050	0	0	0	90	120	150	180	210	240	270	300	450

Calculation : $X_g = 30g/m \times (\text{Refrigerant piping length(m)} - 5)$

8

PERFORMANCE CURVES

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

The standard data contained in these specifications apply only to the operation of the air conditioner under normal conditions. Since operating conditions vary according to the areas where these units are installed. The following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

207 ~ 253V, 50Hz

(2) AIR FLOW

Air flow should be set at MAX.

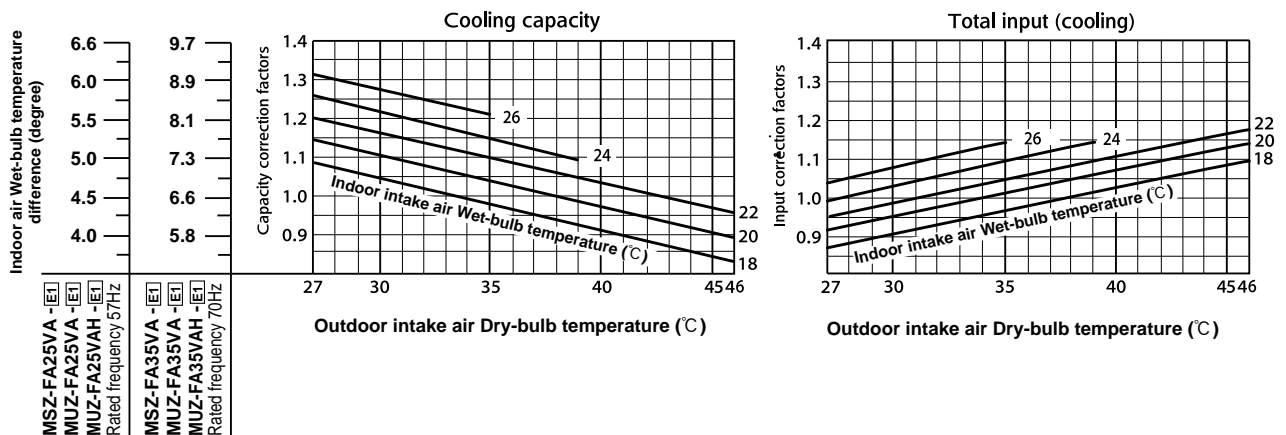
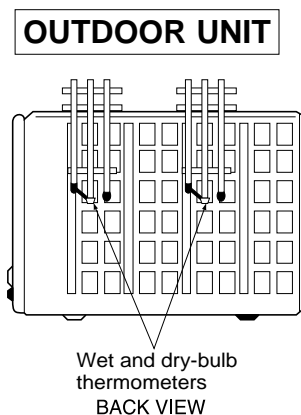
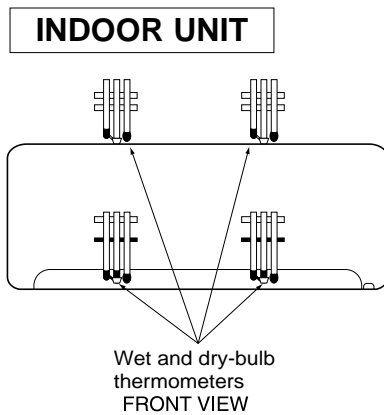
(3) MAIN READINGS

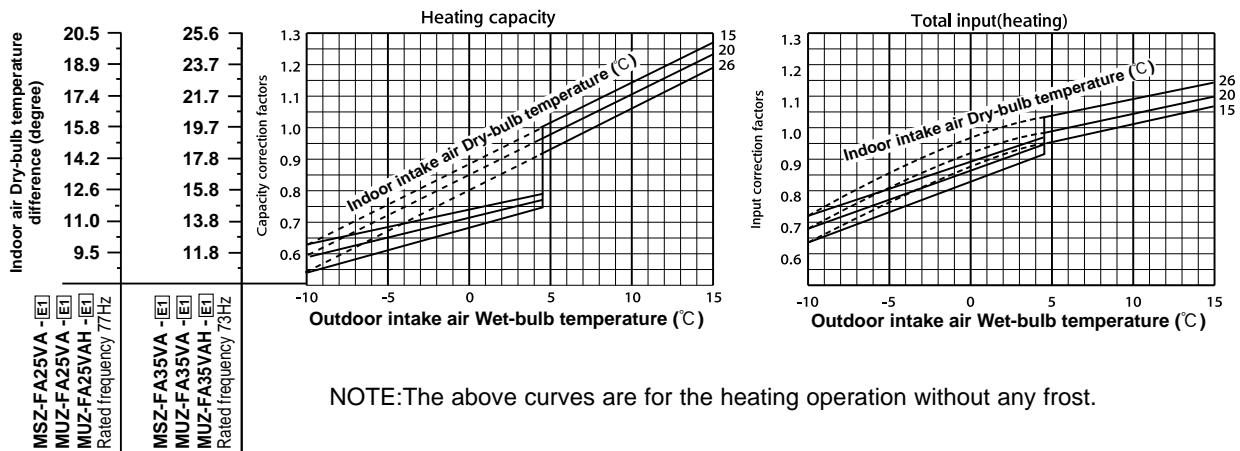
- | | | |
|---|-------|-----------|
| (1) Indoor intake air wet-bulb temperature : | °C WB | } Cooling |
| (2) Indoor outlet air wet-bulb temperature : | °C WB | |
| (3) Outdoor intake air dry-bulb temperature : | °C DB | |
| (4) Total input: | W | } Heating |
| (5) Indoor intake air dry-bulb temperature : | °C DB | |
| (6) Outdoor intake air wet-bulb temperature : | °C WB | |
| (7) Total input : | W | |

Indoor air wet/dry-bulb temperature difference on the left side of the chart on next page shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

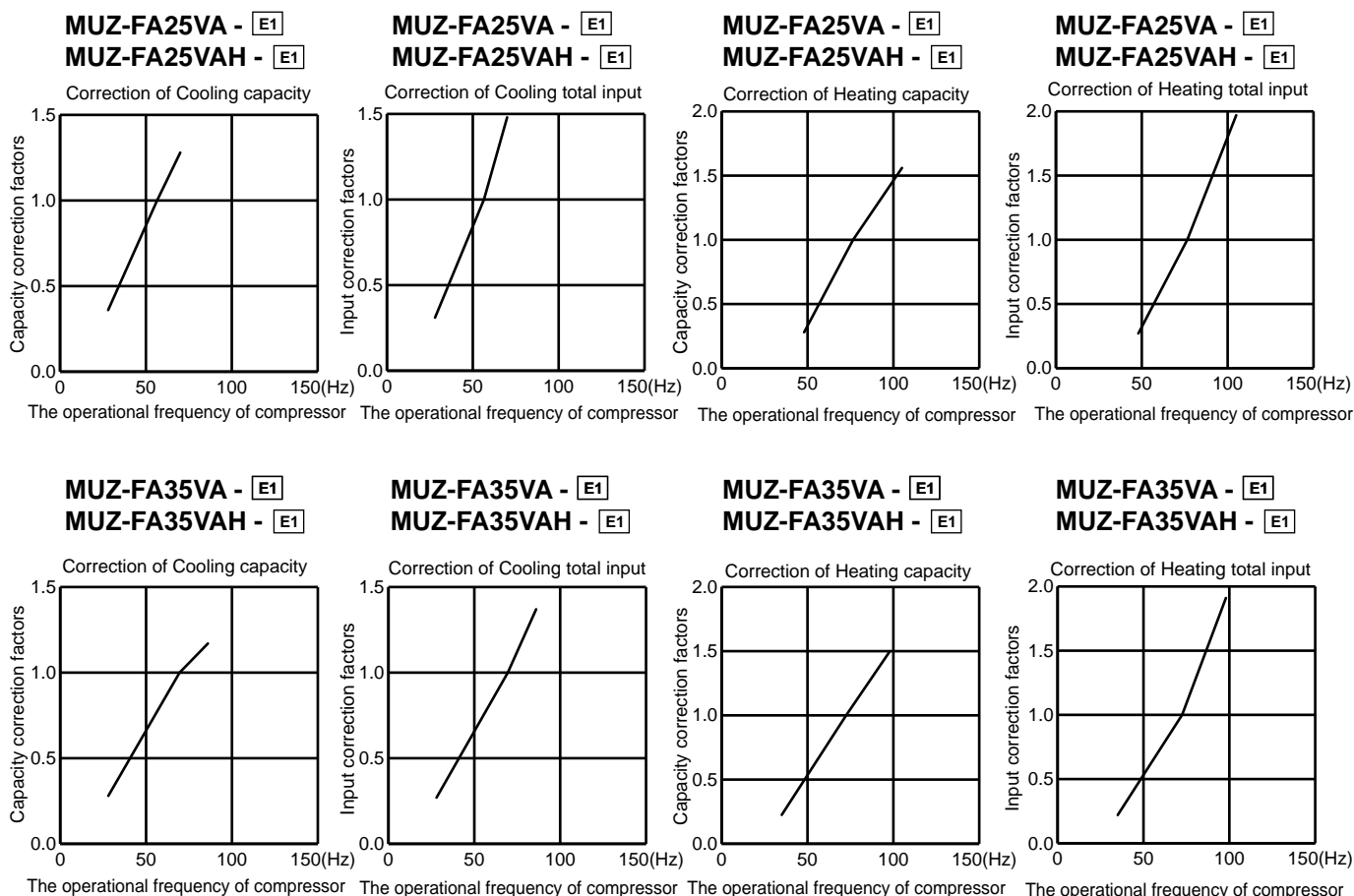
How to measure the indoor air wet-bulb / dry-bulb temperature difference

- Attach at least 2 sets of wet and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
- Attach at least 2 sets of wet and dry-bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
- Check that the air filter is cleaned.
- Open windows and doors of room.
- Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
- When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
- 10 minutes later, measure temperature again and check that the temperature does not change.





NOTE: The above curves are for the heating operation without any frost.



OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

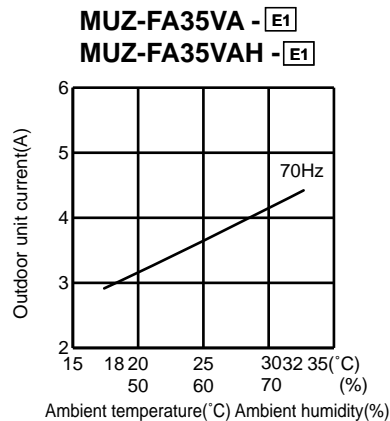
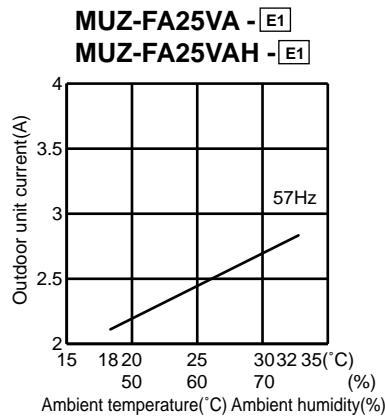
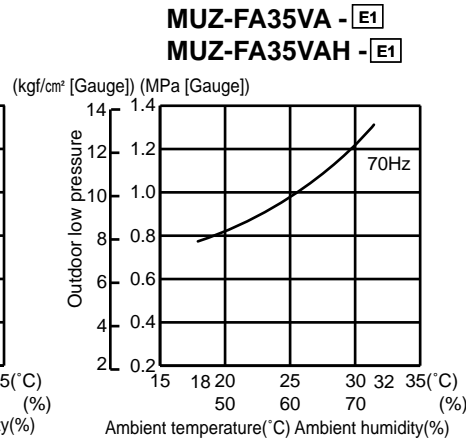
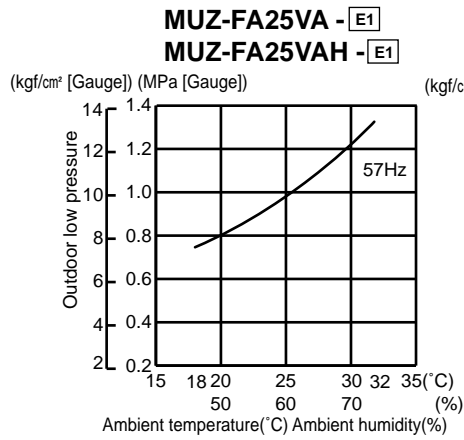
- <How to operate fixed-frequency operation (Test run operation)>
1. Press EMERGENCY OPERATION switch to COOL or HEAT mode (COOL : Press once, HEAT : Press twice).
 2. Test run operation starts and continues to operate for 30 minutes.
 3. Compressor operates at rated frequency in COOL mode or 58Hz in HEAT mode.
 4. Indoor fan operates at High speed.
 5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (Operation frequency of compressor varies).
 6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

NOTE : The unit of pressure has been changed to MPa on the international system of units (SI unit system).
The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/cm² [Gauge])**

OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT COOL operation

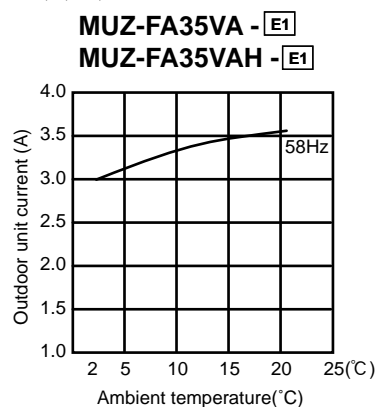
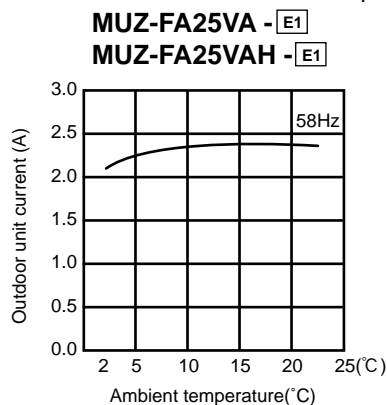
- ① Both indoor and outdoor unit are under the same temperature/humidity condition.
- ② Air flow : High speed
- ③ Operational frequency : 57Hz(MUZ-FA25VA, MUZ-FA25VAH)
70Hz(MUZ-FA35VA, MUZ-FA35VAH)

Dry-bulb temperature	Relative humidity(%)
20	50
25	60
30	70



HEAT operation

- Condition indoor: Dry bulb temperature 20.0°C
Wet bulb temperature 14.5°C
- Condition outdoor: Dry bulb temperature 2,7,15,20.0°C
Wet bulb temperature 1,6,12,14.5°C



PERFORMANCE DATA COOL operation Rated frequency 57Hz**MSZ-FA25VA -[E1] : MUZ-FA25VA -[E1] MUZ-FA25VAH -[E1]**

CAPACITY:2.5(kW) SHF:0.79 INPUT:595(W)

		OUTDOOR DB(°C)															
INDOOR DB(°C)	INDOOR WB(°C)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.94	1.79	0.61	476	2.81	1.72	0.61	500	2.70	1.65	0.61	524	2.60	1.59	0.61	547
21	20	3.06	1.50	0.49	500	2.94	1.44	0.49	530	2.85	1.40	0.49	541	2.75	1.35	0.49	565
22	18	2.94	1.91	0.65	476	2.81	1.83	0.65	500	2.70	1.76	0.65	524	2.60	1.69	0.65	547
22	20	3.06	1.62	0.53	500	2.94	1.56	0.53	530	2.85	1.51	0.53	541	2.75	1.46	0.53	565
22	22	3.19	1.31	0.41	518	3.08	1.26	0.41	550	3.00	1.23	0.41	565	2.88	1.18	0.41	589
23	18	2.94	2.03	0.69	476	2.81	1.94	0.69	500	2.70	1.86	0.69	524	2.60	1.79	0.69	547
23	20	3.06	1.75	0.57	500	2.94	1.67	0.57	530	2.85	1.62	0.57	541	2.75	1.57	0.57	565
23	22	3.19	1.43	0.45	518	3.08	1.38	0.45	550	3.00	1.35	0.45	565	2.88	1.29	0.45	589
24	18	2.94	2.14	0.73	476	2.81	2.05	0.73	500	2.70	1.97	0.73	524	2.60	1.90	0.73	547
24	20	3.06	1.87	0.61	500	2.94	1.79	0.61	530	2.85	1.74	0.61	541	2.75	1.68	0.61	565
24	22	3.19	1.56	0.49	518	3.08	1.51	0.49	550	3.00	1.47	0.49	565	2.88	1.41	0.49	589
24	24	3.35	1.24	0.37	541	3.23	1.19	0.37	571	3.15	1.17	0.37	589	3.05	1.13	0.37	619
25	18	2.94	2.26	0.77	476	2.81	2.17	0.77	500	2.70	2.08	0.77	524	2.60	2.00	0.77	547
25	20	3.06	1.99	0.65	500	2.94	1.91	0.65	530	2.85	1.85	0.65	541	2.75	1.79	0.65	565
25	22	3.19	1.69	0.53	518	3.08	1.63	0.53	550	3.00	1.59	0.53	565	2.88	1.52	0.53	589
25	24	3.35	1.37	0.41	541	3.23	1.32	0.41	571	3.15	1.29	0.41	589	3.05	1.25	0.41	619
26	18	2.94	2.38	0.81	476	2.81	2.28	0.81	500	2.70	2.19	0.81	524	2.60	2.11	0.81	547
26	20	3.06	2.11	0.69	500	2.94	2.03	0.69	530	2.85	1.97	0.69	541	2.75	1.90	0.69	565
26	22	3.19	1.82	0.57	518	3.08	1.75	0.57	550	3.00	1.71	0.57	565	2.88	1.64	0.57	589
26	24	3.35	1.51	0.45	541	3.23	1.45	0.45	571	3.15	1.42	0.45	589	3.05	1.37	0.45	619
26	26	3.45	1.14	0.33	571	3.35	1.11	0.33	601	3.30	1.09	0.33	619	3.20	1.06	0.33	637
27	18	2.94	2.50	0.85	476	2.81	2.39	0.85	500	2.70	2.30	0.85	524	2.60	2.21	0.85	547
27	20	3.06	2.24	0.73	500	2.94	2.14	0.73	530	2.85	2.08	0.73	541	2.75	2.01	0.73	565
27	22	3.19	1.94	0.61	518	3.08	1.88	0.61	550	3.00	1.83	0.61	565	2.88	1.75	0.61	589
27	24	3.35	1.64	0.49	541	3.23	1.58	0.49	571	3.15	1.54	0.49	589	3.05	1.49	0.49	619
27	26	3.45	1.28	0.37	571	3.35	1.24	0.37	601	3.30	1.22	0.37	619	3.20	1.18	0.37	637
28	18	2.94	2.61	0.89	476	2.81	2.50	0.89	500	2.70	2.40	0.89	524	2.60	2.31	0.89	547
28	20	3.06	2.36	0.77	500	2.94	2.26	0.77	530	2.85	2.19	0.77	541	2.75	2.12	0.77	565
28	22	3.19	2.07	0.65	518	3.08	2.00	0.65	550	3.00	1.95	0.65	565	2.88	1.87	0.65	589
28	24	3.35	1.78	0.53	541	3.23	1.71	0.53	571	3.15	1.67	0.53	589	3.05	1.62	0.53	619
28	26	3.45	1.41	0.41	571	3.35	1.37	0.41	601	3.30	1.35	0.41	619	3.20	1.31	0.41	637
29	18	2.94	2.73	0.93	476	2.81	2.62	0.93	500	2.70	2.51	0.93	524	2.60	2.42	0.93	547
29	20	3.06	2.48	0.81	500	2.94	2.38	0.81	530	2.85	2.31	0.81	541	2.75	2.23	0.81	565
29	22	3.19	2.20	0.69	518	3.08	2.12	0.69	550	3.00	2.07	0.69	565	2.88	1.98	0.69	589
29	24	3.35	1.91	0.57	541	3.23	1.84	0.57	571	3.15	1.80	0.57	589	3.05	1.74	0.57	619
29	26	3.45	1.55	0.45	571	3.35	1.51	0.45	601	3.30	1.49	0.45	619	3.20	1.44	0.45	637
30	18	2.94	2.85	0.97	476	2.81	2.73	0.97	500	2.70	2.62	0.97	524	2.60	2.52	0.97	547
30	20	3.06	2.60	0.85	500	2.94	2.50	0.85	530	2.85	2.42	0.85	541	2.75	2.34	0.85	565
30	22	3.19	2.33	0.73	518	3.08	2.24	0.73	550	3.00	2.19	0.73	565	2.88	2.10	0.73	589
30	24	3.35	2.04	0.61	541	3.23	1.97	0.61	571	3.15	1.92	0.61	589	3.05	1.86	0.61	619
30	26	3.45	1.69	0.49	571	3.35	1.64	0.49	601	3.30	1.62	0.49	619	3.20	1.57	0.49	637
31	18	2.94	2.97	1.01	476	2.81	2.84	1.01	500	2.70	2.73	1.01	524	2.60	2.63	1.01	547
31	20	3.06	2.73	0.89	500	2.94	2.61	0.89	530	2.85	2.54	0.89	541	2.75	2.45	0.89	565
31	22	3.19	2.45	0.77	518	3.08	2.37	0.77	550	3.00	2.31	0.77	565	2.88	2.21	0.77	589
31	24	3.35	2.18	0.65	541	3.23	2.10	0.65	571	3.15	2.05	0.65	589	3.05	1.98	0.65	619
31	26	3.45	1.83	0.53	571	3.35	1.78	0.53	601	3.30	1.75	0.53	619	3.20	1.70	0.53	637
32	18	2.94	3.08	1.05	476	2.81	2.95	1.05	500	2.70	2.84	1.05	524	2.60	2.73	1.05	547
32	20	3.06	2.85	0.93	500	2.94	2.73	0.93	530	2.85	2.65	0.93	541	2.75	2.56	0.93	565
32	22	3.19	2.58	0.81	518	3.08	2.49	0.81	550	3.00	2.43	0.81	565	2.88	2.33	0.81	589
32	24	3.35	2.31	0.69	541	3.23	2.23	0.69	571	3.15	2.17	0.69	589	3.05	2.10	0.69	619
32	26	3.45	1.97	0.57	571	3.35	1.91	0.57	601	3.30	1.88	0.57	619	3.20	1.82	0.57	637

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 57Hz
MSZ-FA25VA -[E1] : MUZ-FA25VA -[E1] MUZ-FA25VAH -[E1]

CAPACITY:2.5(kW) SHF:0.79 INPUT:595(W)

		OUTDOOR DB(°C)											
INDOOR DB (°C)	INDOOR WB (°C)	35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.45	1.49	0.61	583	2.25	1.37	0.61	619	2.08	1.27	0.61	643
21	20	2.58	1.26	0.49	607	2.40	1.18	0.49	637	2.23	1.09	0.49	672
22	18	2.45	1.59	0.65	583	2.25	1.46	0.65	619	2.08	1.35	0.65	643
22	20	2.58	1.36	0.53	607	2.40	1.27	0.53	637	2.23	1.18	0.53	672
22	22	2.73	1.12	0.41	631	2.55	1.05	0.41	666	2.38	0.97	0.41	690
23	18	2.45	1.69	0.69	583	2.25	1.55	0.69	619	2.08	1.43	0.69	643
23	20	2.58	1.47	0.57	607	2.40	1.37	0.57	637	2.23	1.27	0.57	672
23	22	2.73	1.23	0.45	631	2.55	1.15	0.45	666	2.38	1.07	0.45	690
24	18	2.45	1.79	0.73	583	2.25	1.64	0.73	619	2.08	1.51	0.73	643
24	20	2.58	1.57	0.61	607	2.40	1.46	0.61	637	2.23	1.36	0.61	672
24	22	2.73	1.34	0.49	631	2.55	1.25	0.49	666	2.38	1.16	0.49	690
24	24	2.88	1.06	0.37	655	2.70	1.00	0.37	684	2.55	0.94	0.37	714
25	18	2.45	1.89	0.77	583	2.25	1.73	0.77	619	2.08	1.60	0.77	643
25	20	2.58	1.67	0.65	607	2.40	1.56	0.65	637	2.23	1.45	0.65	672
25	22	2.73	1.44	0.53	631	2.55	1.35	0.53	666	2.38	1.26	0.53	690
25	24	2.88	1.18	0.41	655	2.70	1.11	0.41	684	2.55	1.05	0.41	714
26	18	2.45	1.98	0.81	583	2.25	1.82	0.81	619	2.08	1.68	0.81	643
26	20	2.58	1.78	0.69	607	2.40	1.66	0.69	637	2.23	1.54	0.69	672
26	22	2.73	1.55	0.57	631	2.55	1.45	0.57	666	2.38	1.35	0.57	690
26	24	2.88	1.29	0.45	655	2.70	1.22	0.45	684	2.55	1.15	0.45	714
26	26	3.03	1.00	0.33	678	2.85	0.94	0.33	708	2.68	0.88	0.33	738
27	18	2.45	2.08	0.85	583	2.25	1.91	0.85	619	2.08	1.76	0.85	643
27	20	2.58	1.88	0.73	607	2.40	1.75	0.73	637	2.23	1.62	0.73	672
27	22	2.73	1.66	0.61	631	2.55	1.56	0.61	666	2.38	1.45	0.61	690
27	24	2.88	1.41	0.49	655	2.70	1.32	0.49	684	2.55	1.25	0.49	714
27	26	3.03	1.12	0.37	678	2.85	1.05	0.37	708	2.68	0.99	0.37	738
28	18	2.45	2.18	0.89	583	2.25	2.00	0.89	619	2.08	1.85	0.89	643
28	20	2.58	1.98	0.77	607	2.40	1.85	0.77	637	2.23	1.71	0.77	672
28	22	2.73	1.77	0.65	631	2.55	1.66	0.65	666	2.38	1.54	0.65	690
28	24	2.88	1.52	0.53	655	2.70	1.43	0.53	684	2.55	1.35	0.53	714
28	26	3.03	1.24	0.41	678	2.85	1.17	0.41	708	2.68	1.10	0.41	738
29	18	2.45	2.28	0.93	583	2.25	2.09	0.93	619	2.08	1.93	0.93	643
29	20	2.58	2.09	0.81	607	2.40	1.94	0.81	637	2.23	1.80	0.81	672
29	22	2.73	1.88	0.69	631	2.55	1.76	0.69	666	2.38	1.64	0.69	690
29	24	2.88	1.64	0.57	655	2.70	1.54	0.57	684	2.55	1.45	0.57	714
29	26	3.03	1.36	0.45	678	2.85	1.28	0.45	708	2.68	1.20	0.45	738
30	18	2.45	2.38	0.97	583	2.25	2.18	0.97	619	2.08	2.01	0.97	643
30	20	2.58	2.19	0.85	607	2.40	2.04	0.85	637	2.23	1.89	0.85	672
30	22	2.73	1.99	0.73	631	2.55	1.86	0.73	666	2.38	1.73	0.73	690
30	24	2.88	1.75	0.61	655	2.70	1.65	0.61	684	2.55	1.56	0.61	714
30	26	3.03	1.48	0.49	678	2.85	1.40	0.49	708	2.68	1.31	0.49	738
31	18	2.45	2.47	1.01	583	2.25	2.27	1.01	619	2.08	2.10	1.01	643
31	20	2.58	2.29	0.89	607	2.40	2.14	0.89	637	2.23	1.98	0.89	672
31	22	2.73	2.10	0.77	631	2.55	1.96	0.77	666	2.38	1.83	0.77	690
31	24	2.88	1.87	0.65	655	2.70	1.76	0.65	684	2.55	1.66	0.65	714
31	26	3.03	1.60	0.53	678	2.85	1.51	0.53	708	2.68	1.42	0.53	738
32	18	2.45	2.57	1.05	583	2.25	2.36	1.05	619	2.08	2.18	1.05	643
32	20	2.58	2.39	0.93	607	2.40	2.23	0.93	637	2.23	2.07	0.93	672
32	22	2.73	2.21	0.81	631	2.55	2.07	0.81	666	2.38	1.92	0.81	690
32	24	2.88	1.98	0.69	655	2.70	1.86	0.69	684	2.55	1.76	0.69	714
32	26	3.03	1.72	0.57	678	2.85	1.62	0.57	708	2.68	1.52	0.57	738

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 70Hz
MSZ-FA35VA -[E1] : MUZ-FA35VA -[E1] MUZ-FA35VAH -[E1]

CAPACITY:3.5(kW) SHF:0.76 INPUT:935(W)

		OUTDOOR DB(°C)															
INDOOR DB(°C)	INDOOR WB(°C)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.11	2.39	0.58	748	3.94	2.28	0.58	785	3.78	2.19	0.58	823	3.64	2.11	0.58	860
21	20	4.29	1.97	0.46	785	4.11	1.89	0.46	832	3.99	1.84	0.46	851	3.85	1.77	0.46	888
22	18	4.11	2.55	0.62	748	3.94	2.44	0.62	785	3.78	2.34	0.62	823	3.64	2.26	0.62	860
22	20	4.29	2.14	0.50	785	4.11	2.06	0.50	832	3.99	2.00	0.50	851	3.85	1.93	0.50	888
22	22	4.46	1.70	0.38	813	4.31	1.64	0.38	865	4.20	1.60	0.38	888	4.03	1.53	0.38	926
23	18	4.11	2.71	0.66	748	3.94	2.60	0.66	785	3.78	2.49	0.66	823	3.64	2.40	0.66	860
23	20	4.29	2.32	0.54	785	4.11	2.22	0.54	832	3.99	2.15	0.54	851	3.85	2.08	0.54	888
23	22	4.46	1.87	0.42	813	4.31	1.81	0.42	865	4.20	1.76	0.42	888	4.03	1.69	0.42	926
24	18	4.11	2.88	0.70	748	3.94	2.76	0.70	785	3.78	2.65	0.70	823	3.64	2.55	0.70	860
24	20	4.29	2.49	0.58	785	4.11	2.39	0.58	832	3.99	2.31	0.58	851	3.85	2.23	0.58	888
24	22	4.46	2.05	0.46	813	4.31	1.98	0.46	865	4.20	1.93	0.46	888	4.03	1.85	0.46	926
24	24	4.69	1.59	0.34	851	4.52	1.54	0.34	898	4.41	1.50	0.34	926	4.27	1.45	0.34	972
25	18	4.11	3.04	0.74	748	3.94	2.91	0.74	785	3.78	2.80	0.74	823	3.64	2.69	0.74	860
25	20	4.29	2.66	0.62	785	4.11	2.55	0.62	832	3.99	2.47	0.62	851	3.85	2.39	0.62	888
25	22	4.46	2.23	0.50	813	4.31	2.15	0.50	865	4.20	2.10	0.50	888	4.03	2.01	0.50	926
25	24	4.69	1.78	0.38	851	4.52	1.72	0.38	898	4.41	1.68	0.38	926	4.27	1.62	0.38	972
26	18	4.11	3.21	0.78	748	3.94	3.07	0.78	785	3.78	2.95	0.78	823	3.64	2.84	0.78	860
26	20	4.29	2.83	0.66	785	4.11	2.71	0.66	832	3.99	2.63	0.66	851	3.85	2.54	0.66	888
26	22	4.46	2.41	0.54	813	4.31	2.32	0.54	865	4.20	2.27	0.54	888	4.03	2.17	0.54	926
26	24	4.69	1.97	0.42	851	4.52	1.90	0.42	898	4.41	1.85	0.42	926	4.27	1.79	0.42	972
26	26	4.83	1.45	0.30	898	4.69	1.41	0.30	944	4.62	1.39	0.30	972	4.48	1.34	0.30	1000
27	18	4.11	3.37	0.82	748	3.94	3.23	0.82	785	3.78	3.10	0.82	823	3.64	2.98	0.82	860
27	20	4.29	3.00	0.70	785	4.11	2.88	0.70	832	3.99	2.79	0.70	851	3.85	2.70	0.70	888
27	22	4.46	2.59	0.58	813	4.31	2.50	0.58	865	4.20	2.44	0.58	888	4.03	2.33	0.58	926
27	24	4.69	2.16	0.46	851	4.52	2.08	0.46	898	4.41	2.03	0.46	926	4.27	1.96	0.46	972
27	26	4.83	1.64	0.34	898	4.69	1.59	0.34	944	4.62	1.57	0.34	972	4.48	1.52	0.34	1000
28	18	4.11	3.54	0.86	748	3.94	3.39	0.86	785	3.78	3.25	0.86	823	3.64	3.13	0.86	860
28	20	4.29	3.17	0.74	785	4.11	3.04	0.74	832	3.99	2.95	0.74	851	3.85	2.85	0.74	888
28	22	4.46	2.77	0.62	813	4.31	2.67	0.62	865	4.20	2.60	0.62	888	4.03	2.50	0.62	926
28	24	4.69	2.35	0.50	851	4.52	2.26	0.50	898	4.41	2.21	0.50	926	4.27	2.14	0.50	972
28	26	4.83	1.84	0.38	898	4.69	1.78	0.38	944	4.62	1.76	0.38	972	4.48	1.70	0.38	1000
29	18	4.11	3.70	0.90	748	3.94	3.54	0.90	785	3.78	3.40	0.90	823	3.64	3.28	0.90	860
29	20	4.29	3.34	0.78	785	4.11	3.21	0.78	832	3.99	3.11	0.78	851	3.85	3.00	0.78	888
29	22	4.46	2.95	0.66	813	4.31	2.84	0.66	865	4.20	2.77	0.66	888	4.03	2.66	0.66	926
29	24	4.69	2.53	0.54	851	4.52	2.44	0.54	898	4.41	2.38	0.54	926	4.27	2.31	0.54	972
29	26	4.83	2.03	0.42	898	4.69	1.97	0.42	944	4.62	1.94	0.42	972	4.48	1.88	0.42	1000
30	18	4.11	3.87	0.94	748	3.94	3.70	0.94	785	3.78	3.55	0.94	823	3.64	3.42	0.94	860
30	20	4.29	3.52	0.82	785	4.11	3.37	0.82	832	3.99	3.27	0.82	851	3.85	3.16	0.82	888
30	22	4.46	3.12	0.70	813	4.31	3.01	0.70	865	4.20	2.94	0.70	888	4.03	2.82	0.70	926
30	24	4.69	2.72	0.58	851	4.52	2.62	0.58	898	4.41	2.56	0.58	926	4.27	2.48	0.58	972
30	26	4.83	2.22	0.46	898	4.69	2.16	0.46	944	4.62	2.13	0.46	972	4.48	2.06	0.46	1000
31	18	4.11	4.03	0.98	748	3.94	3.86	0.98	785	3.78	3.70	0.98	823	3.64	3.57	0.98	860
31	20	4.29	3.69	0.86	785	4.11	3.54	0.86	832	3.99	3.43	0.86	851	3.85	3.31	0.86	888
31	22	4.46	3.30	0.74	813	4.31	3.19	0.74	865	4.20	3.11	0.74	888	4.03	2.98	0.74	926
31	24	4.69	2.91	0.62	851	4.52	2.80	0.62	898	4.41	2.73	0.62	926	4.27	2.65	0.62	972
31	26	4.83	2.42	0.50	898	4.69	2.35	0.50	944	4.62	2.31	0.50	972	4.48	2.24	0.50	1000
32	18	4.11	4.19	1.02	748	3.94	4.02	1.02	785	3.78	3.86	1.02	823	3.64	3.71	1.02	860
32	20	4.29	3.86	0.90	785	4.11	3.70	0.90	832	3.99	3.59	0.90	851	3.85	3.47	0.90	888
32	22	4.46	3.48	0.78	813	4.31	3.36	0.78	865	4.20	3.28	0.78	888	4.03	3.14	0.78	926
32	24	4.69	3.10	0.66	851	4.52	2.98	0.66	898	4.41	2.91	0.66	926	4.27	2.82	0.66	972
32	26	4.83	2.61	0.54	898	4.69	2.53	0.54	944	4.62	2.49	0.54	972	4.48	2.42	0.54	1000

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation Rated frequency 70Hz
MSZ-FA35VA -[E1] : MUZ-FA35VA -[E1] MUZ-FA35VAH -[E1]

CAPACITY:3.5(kW) SHF:0.76 INPUT:935(W)

		OUTDOOR DB(°C)											
INDOOR DB (°C)	INDOOR WB (°C)	35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.43	1.99	0.58	916	3.15	1.83	0.58	972	2.91	1.68	0.58	1010
21	20	3.61	1.66	0.46	954	3.36	1.55	0.46	1000	3.12	1.43	0.46	1057
22	18	3.43	2.13	0.62	916	3.15	1.95	0.62	972	2.91	1.80	0.62	1010
22	20	3.61	1.80	0.50	954	3.36	1.68	0.50	1000	3.12	1.56	0.50	1057
22	22	3.82	1.45	0.38	991	3.57	1.36	0.38	1047	3.33	1.26	0.38	1085
23	18	3.43	2.26	0.66	916	3.15	2.08	0.66	972	2.91	1.92	0.66	1010
23	20	3.61	1.95	0.54	954	3.36	1.81	0.54	1000	3.12	1.68	0.54	1057
23	22	3.82	1.60	0.42	991	3.57	1.50	0.42	1047	3.33	1.40	0.42	1085
24	18	3.43	2.40	0.70	916	3.15	2.21	0.70	972	2.91	2.03	0.70	1010
24	20	3.61	2.09	0.58	954	3.36	1.95	0.58	1000	3.12	1.81	0.58	1057
24	22	3.82	1.75	0.46	991	3.57	1.64	0.46	1047	3.33	1.53	0.46	1085
24	24	4.03	1.37	0.34	1029	3.78	1.29	0.34	1075	3.57	1.21	0.34	1122
25	18	3.43	2.54	0.74	916	3.15	2.33	0.74	972	2.91	2.15	0.74	1010
25	20	3.61	2.24	0.62	954	3.36	2.08	0.62	1000	3.12	1.93	0.62	1057
25	22	3.82	1.91	0.50	991	3.57	1.79	0.50	1047	3.33	1.66	0.50	1085
25	24	4.03	1.53	0.38	1029	3.78	1.44	0.38	1075	3.57	1.36	0.38	1122
26	18	3.43	2.68	0.78	916	3.15	2.46	0.78	972	2.91	2.27	0.78	1010
26	20	3.61	2.38	0.66	954	3.36	2.22	0.66	1000	3.12	2.06	0.66	1057
26	22	3.82	2.06	0.54	991	3.57	1.93	0.54	1047	3.33	1.80	0.54	1085
26	24	4.03	1.69	0.42	1029	3.78	1.59	0.42	1075	3.57	1.50	0.42	1122
26	26	4.24	1.27	0.30	1066	3.99	1.20	0.30	1113	3.75	1.12	0.30	1159
27	18	3.43	2.81	0.82	916	3.15	2.58	0.82	972	2.91	2.38	0.82	1010
27	20	3.61	2.52	0.70	954	3.36	2.35	0.70	1000	3.12	2.18	0.70	1057
27	22	3.82	2.21	0.58	991	3.57	2.07	0.58	1047	3.33	1.93	0.58	1085
27	24	4.03	1.85	0.46	1029	3.78	1.74	0.46	1075	3.57	1.64	0.46	1122
27	26	4.24	1.44	0.34	1066	3.99	1.36	0.34	1113	3.75	1.27	0.34	1159
28	18	3.43	2.95	0.86	916	3.15	2.71	0.86	972	2.91	2.50	0.86	1010
28	20	3.61	2.67	0.74	954	3.36	2.49	0.74	1000	3.12	2.31	0.74	1057
28	22	3.82	2.37	0.62	991	3.57	2.21	0.62	1047	3.33	2.06	0.62	1085
28	24	4.03	2.01	0.50	1029	3.78	1.89	0.50	1075	3.57	1.79	0.50	1122
28	26	4.24	1.61	0.38	1066	3.99	1.52	0.38	1113	3.75	1.42	0.38	1159
29	18	3.43	3.09	0.90	916	3.15	2.84	0.90	972	2.91	2.61	0.90	1010
29	20	3.61	2.81	0.78	954	3.36	2.62	0.78	1000	3.12	2.43	0.78	1057
29	22	3.82	2.52	0.66	991	3.57	2.36	0.66	1047	3.33	2.19	0.66	1085
29	24	4.03	2.17	0.54	1029	3.78	2.04	0.54	1075	3.57	1.93	0.54	1122
29	26	4.24	1.78	0.42	1066	3.99	1.68	0.42	1113	3.75	1.57	0.42	1159
30	18	3.43	3.22	0.94	916	3.15	2.96	0.94	972	2.91	2.73	0.94	1010
30	20	3.61	2.96	0.82	954	3.36	2.76	0.82	1000	3.12	2.55	0.82	1057
30	22	3.82	2.67	0.70	991	3.57	2.50	0.70	1047	3.33	2.33	0.70	1085
30	24	4.03	2.33	0.58	1029	3.78	2.19	0.58	1075	3.57	2.07	0.58	1122
30	26	4.24	1.95	0.46	1066	3.99	1.84	0.46	1113	3.75	1.72	0.46	1159
31	18	3.43	3.36	0.98	916	3.15	3.09	0.98	972	2.91	2.85	0.98	1010
31	20	3.61	3.10	0.86	954	3.36	2.89	0.86	1000	3.12	2.68	0.86	1057
31	22	3.82	2.82	0.74	991	3.57	2.64	0.74	1047	3.33	2.46	0.74	1085
31	24	4.03	2.50	0.62	1029	3.78	2.34	0.62	1075	3.57	2.21	0.62	1122
31	26	4.24	2.12	0.50	1066	3.99	2.00	0.50	1113	3.75	1.87	0.50	1159
32	18	3.43	3.50	1.02	916	3.15	3.21	1.02	972	2.91	2.96	1.02	1010
32	20	3.61	3.24	0.90	954	3.36	3.02	0.90	1000	3.12	2.80	0.90	1057
32	22	3.82	2.98	0.78	991	3.57	2.78	0.78	1047	3.33	2.59	0.78	1085
32	24	4.03	2.66	0.66	1029	3.78	2.49	0.66	1075	3.57	2.36	0.66	1122
32	26	4.24	2.29	0.54	1066	3.99	2.15	0.54	1113	3.75	2.02	0.54	1159

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA HEAT operation**MSZ-FA25VA -[E1] : MUZ-FA25VA -[E1] MUZ-FA25VAH -[E1] Rated frequency 77Hz**

CAPACITY:3.2(kW) INPUT:735(W)

INDOOR DB(°C)	OUTDOOR WB(°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.02	478	2.43	573	2.85	647	3.26	698	3.68	742	4.06	764	4.48	779
21	1.92	515	2.30	610	2.72	676	3.10	728	3.52	764	3.90	786	4.30	816
26	1.73	551	2.14	647	2.53	713	2.94	764	3.36	801	3.74	823	4.16	845

NOTE Q:Total capacity (kW) INPUT:Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature**MSZ-FA35VA -[E1] : MUZ-FA35VA -[E1] MUZ-FA35VAH -[E1] Rated frequency 73Hz**

CAPACITY:4.0(kW) INPUT:995(W)

INDOOR DB(°C)	OUTDOOR WB(°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.52	647	3.04	776	3.56	876	4.08	945	4.60	1005	5.08	1035	5.60	1055
21	2.40	697	2.88	826	3.40	915	3.88	985	4.40	1035	4.88	1065	5.38	1104
26	2.16	746	2.68	876	3.16	965	3.68	1035	4.20	1085	4.68	1114	5.20	1144

NOTE Q:Total capacity (kW) INPUT:Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature

9

ACTUATOR CONTROL

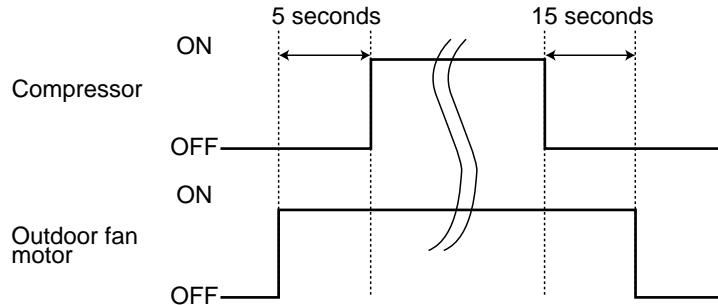
MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

9-1. Outdoor fan motor control

The fan motor turns ON/OFF, interlocking with the compressor.

[ON] The fan motor turns ON 5 seconds before the compressor starts up.

[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.



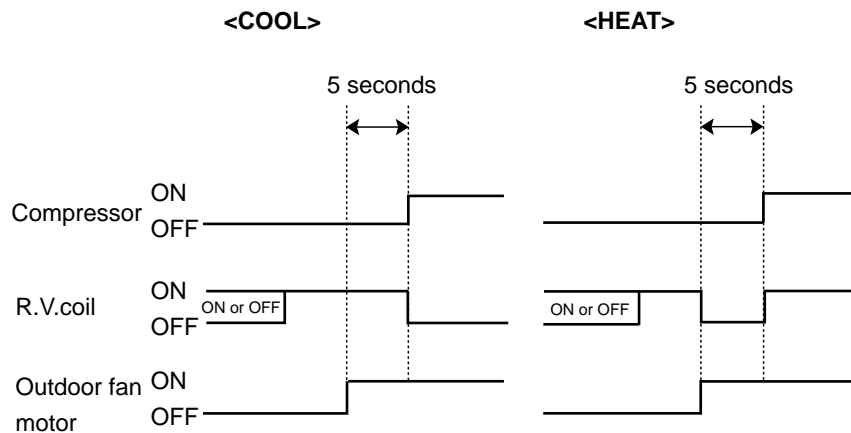
9-2. R.V. coil control

Heating ON

Cooling OFF

Dry OFF

NOTE: The 4-way valve reverses for 5 seconds right before start-up of the compressor.



9-3. Relation between main sensor and actuator

Sensor	Purpose	Actuator					
		Compressor	LEV	Outdoor fan motor	R.V. coil	Indoor fan motor	Defrost heater
Discharge temperature thermistor	Protection	○	○				
Indoor coil temperature thermistor	Cooling : Coil frost prevention	○					
	Heating : High pressure protection	○	○				
Defrost thermistor	Cooling : High pressure protection	○	○				
	Heating : Defrosting	○	○	○	○	○	
Fin temperature thermistor	Protection	○		○			
Ambient temperature thermistor	Cooling : Low ambient temperature operation	○	○	○			
	Heating : Defrosting (Heater)						○

10 SERVICE FUNCTIONS

MUZ-FA25VA -^[E1] **MUZ-FA35VA** -^[E1]
MUZ-FA25VAH -^[E1] **MUZ-FA35VAH** -^[E1]

CHANGE IN DEFROST SETTING

<JS> When the JS wire of the outdoor Inverter P.C. board is cut/ soldered, the defrost finish temperature is changed.
 (Refer to 11-7.1.)

Jumper wire		Defrost finish temperature			
		MUZ-FA25VA - ^[E1]	MUZ-FA25VAH - ^[E1]	MUZ-FA35VA - ^[E1]	MUZ-FA35VAH - ^[E1]
JS	soldered (Initial setting)	5°C	8°C	10°C	13°C
	none (cut)	8°C	15°C	13°C	15°C

11 TROUBLESHOOTING

MUZ-FA25VA -^[E1] **MUZ-FA35VA** -^[E1]
MUZ-FA25VAH -^[E1] **MUZ-FA35VAH** -^[E1]

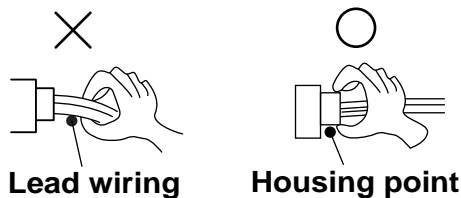
11-1. Cautions on troubleshooting

1. Before troubleshooting, check the following:

- 1) Check the power supply voltage.
- 2) Check the indoor/outdoor connecting wire for mis-wiring.

2. Take care the following during servicing.

- 1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn off the breaker and / or disconnect the power plug.
- 2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
- 3) When removing the electrical parts, be careful to the residual voltage of smoothing capacitor.
- 4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
- 5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.



3. Troubleshooting procedure

- 1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
- 2) Before servicing check that the connector and terminal are connected properly.
- 3) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
- 4) When troubleshooting, refer to 11-2., 11-3. and 11-4.

11-2. Failure mode recall function

Outline of the function

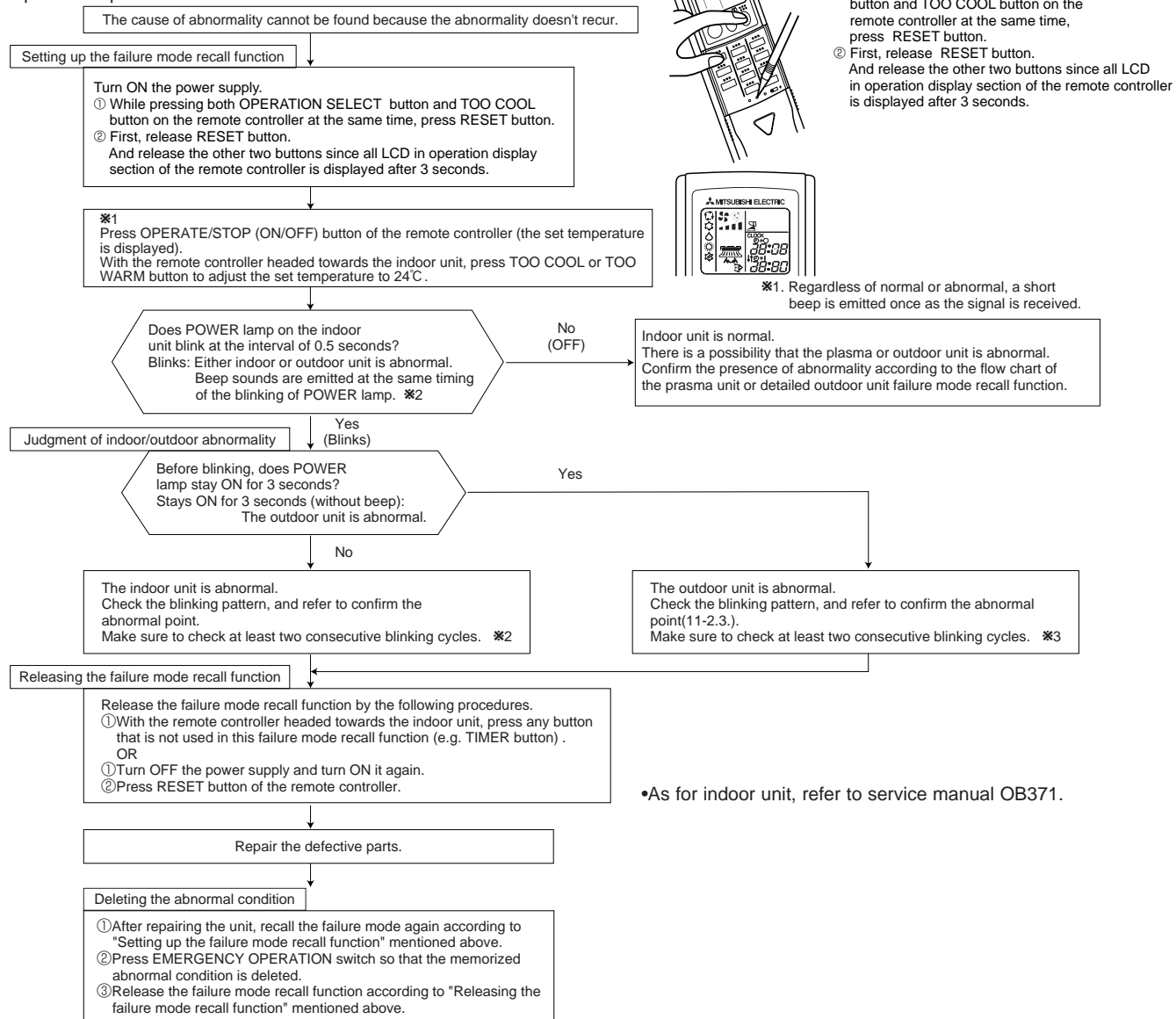
This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (11-4.) disappears, the memorized failure details can be recalled.

This mode is very useful when the unit needs to be repaired for the abnormality which doesn't recur.

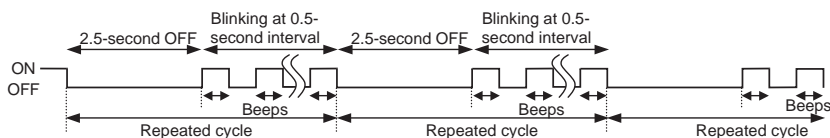
1. Flow chart of the indoor/outdoor unit failure mode recall function

Operational procedure

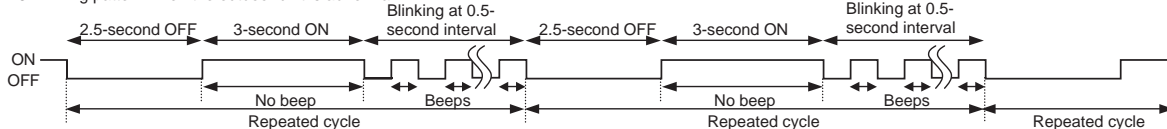


Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:

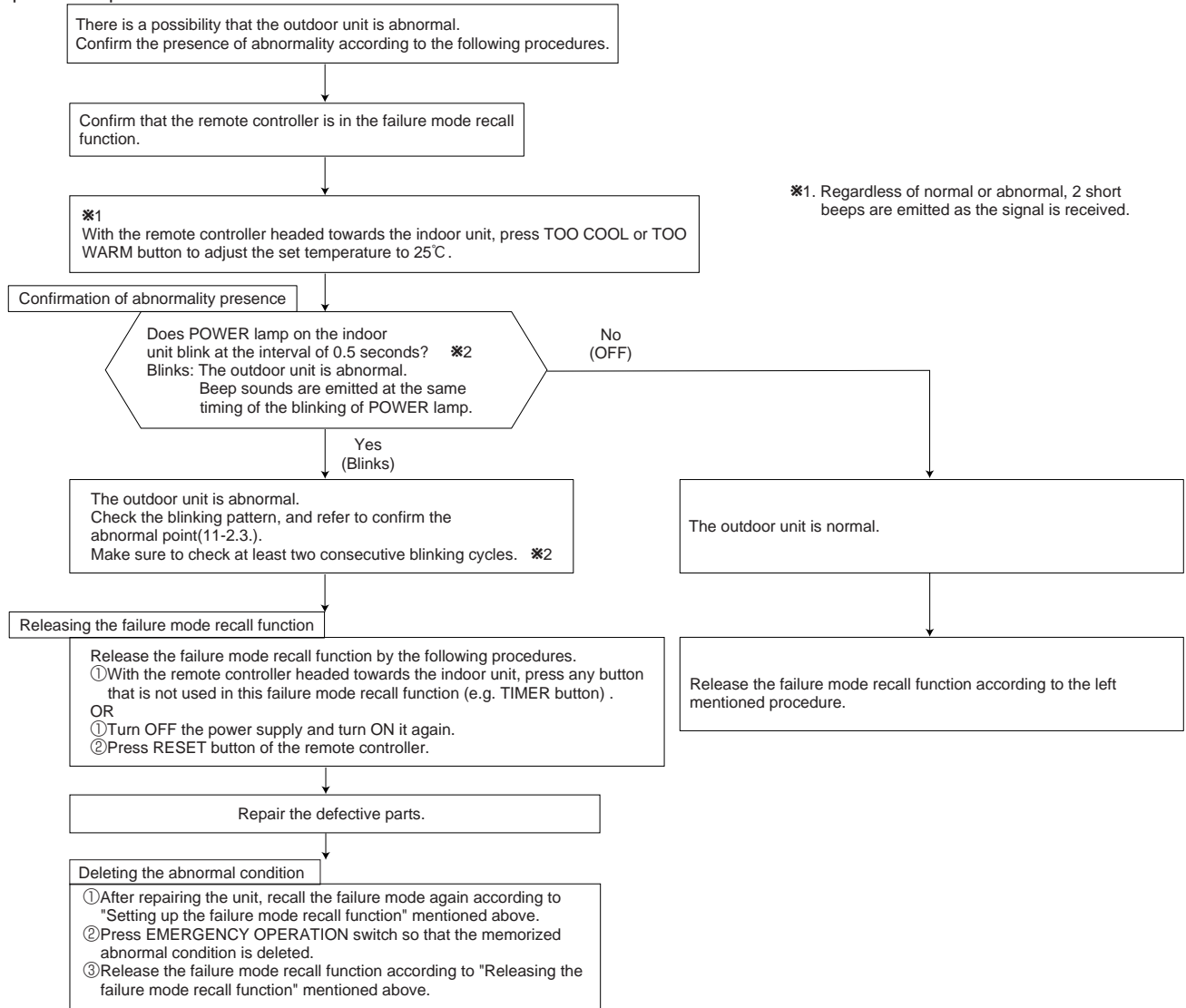


※3. Blinking pattern when the outdoor unit is abnormal:



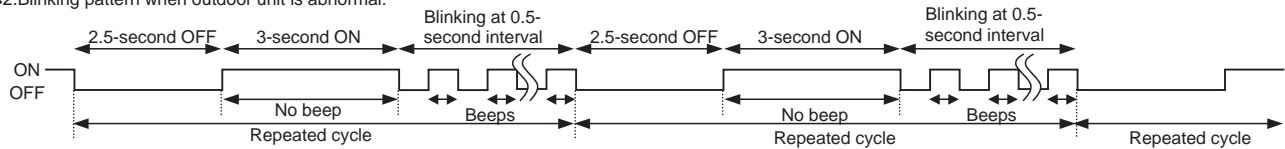
2. Flow chart of the detailed outdoor unit failure mode recall function

Operational procedure



Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

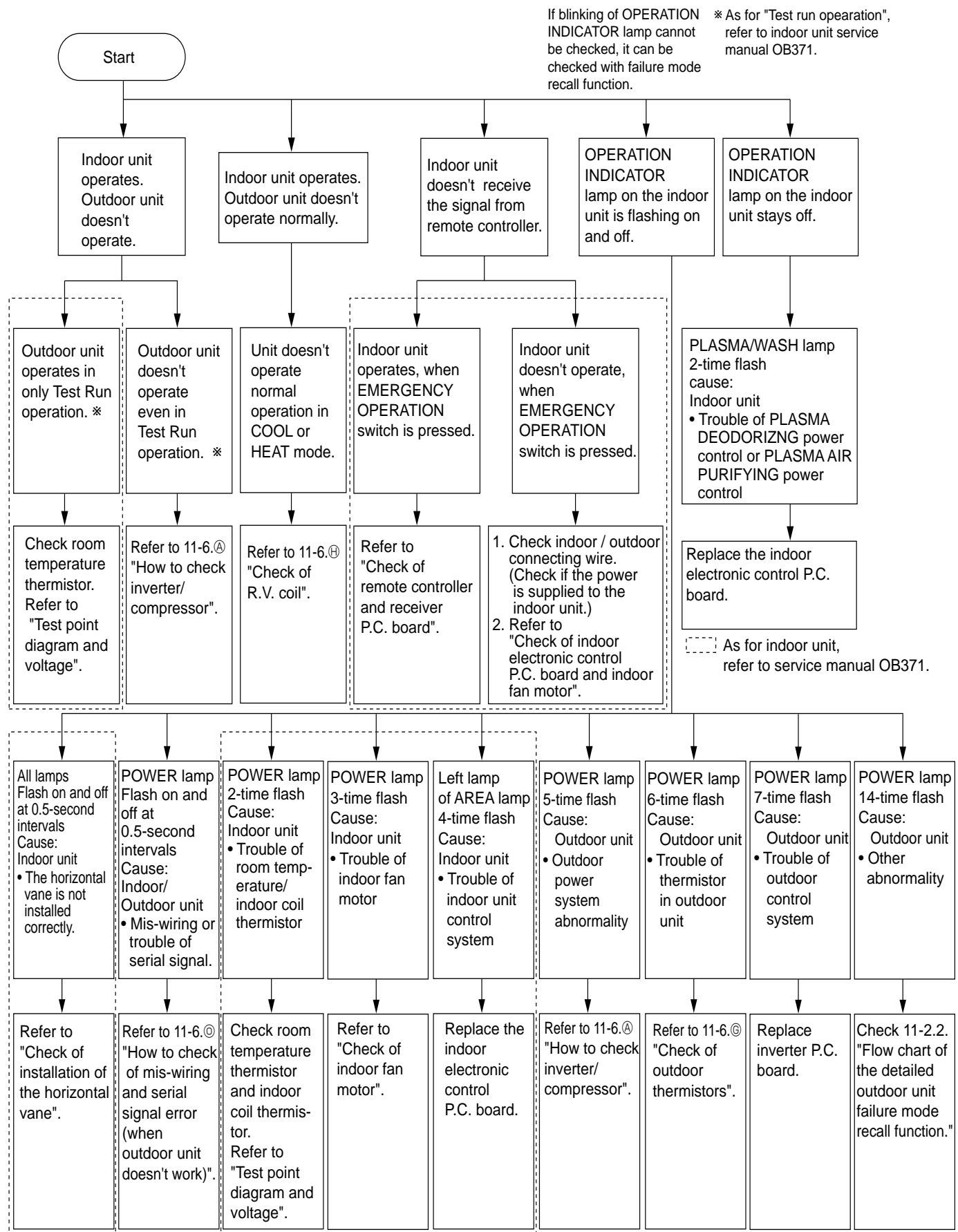
*2. Blinking pattern when outdoor unit is abnormal:



3. Outdoor unit failure mode table

POWER lamp	Abnormal point (Failure mode)	Details of abnormal point	LED indication	Detection method	Check point	Indoor/outdoor unit failure mode recall function	Outdoor unit failure mode recall function
OFF	Normal						
2-time flash 2.5 seconds OFF	Outdoor power system	Outdoor power system		When it consecutively occurs 3 times that the compressor stops for overcurrent protection or start-up failure protection within 1 minute after start-up.	•Reconnect compressor connector. •Refer to 11-6.④) "How to check inverter/ compressor". •Check stop valve.	○	○
3-time flash 2.5 seconds OFF	Outdoor thermistors	Discharge temperature thermistor Defrost thermistor Fin temperature thermistor	1-time flash every 2.5 seconds	When thermistors short or open during compressor running.	•Refer to 11-6.⑤) "Check of outdoor thermistors". ※ Defective outdoor thermistors can be identified by checking the blinking pattern of LED.	○	○
4-time flash 2.5 seconds OFF	P.C. board temperature thermistor	P.C. board temperature thermistor	4-time flash 2.5 seconds OFF				
5-time flash 2.5 seconds OFF	Ambient temperature thermistor	Ambient temperature thermistor	2-time flash 2.5 seconds OFF				
4-time flash 2.5 seconds OFF	Overcurrent protection	Overcurrent protection	11-time flash 2.5 seconds OFF	When 14A(MUZ-FA25VA, MUZ-FA25VAH)/ 24A(MUZ-FA35VA, MUZ-FA35VAH) current flow into intelligent power module.	•Reconnect compressor connector. •Refer to 11-6.⑥) "How to check inverter/ compressor". •Check stop valve.		○
5-time flash 2.5 seconds OFF	Refrigerant system protection	Compressor synchronous abnormality (Compressor start-up failure protection) Discharge temperature thermistor overheat protection	12-time flash 2.5 seconds OFF	When waveform of compressor current is distorted.	•Reconnect compressor connector. •Refer to 11-6.⑦) "How to check inverter/ compressor". •Check refrigerant circuit and refrigerant amount. •Refer to 11-6.⑧) "Check of LEV". •Refer to 11-6.⑨) "Check of outdoor thermistors".		○
6-time flash 2.5 seconds OFF	High pressure protection	High pressure overheat protection		When indoor coil thermistor exceeds 70°C in HEAT mode. When defrost thermistor exceeds 70°C in COOL mode.	•Check refrigerant circuit and refrigerant amount. •Check around outdoor unit. •Check stop valve.		○
7-time flash 2.5 seconds OFF	Fin temperature/P.C. board temperature thermistor overheat protection	Fin temperature/P.C. board temperature thermistor overheat protection	7-time flash 2.5 seconds OFF	When temperature of fin temperature thermistor on the inverter P.C. board exceeds 83°C (MUZ-FA25VA, MUZ-FA25VAH)/ 82°C (MUZ-FA35VA, MUZ-FA35VAH), or temperature of P.C. board temperature thermistor exceeds 85°C (MUZ-FA25VA, MUZ-FA25VAH)/ 81°C (MUZ-FA35VA, MUZ-FA35VAH).	•Check outdoor unit air passage. •Refer to 11-6.⑩) "Check of outdoor fan motor".		○
8-time flash 2.5 seconds OFF	Outdoor fan protection	Outdoor fan protection		When outdoor fan has stopped within 30 seconds 3-times in a row after outdoor fan start-up, unit stops.	•Refer to 11-6.⑪) "Check of outdoor fan motor." Refer to 11-6.⑫) "Check of inverter P.C. board".		○
9-time flash 2.5 seconds OFF	Outdoor control system	Nonvolatile memory data	5-time flash 2.5 seconds OFF	When nonvolatile memory data cannot be read properly, unit stops.	•Replace the inverter P.C. board.	○	○
10-time flash 2.5 seconds OFF	Low discharge temperature protection	Low discharge temperature protection		When discharge temperature has been 50°C or less for 20 minutes.	•Check refrigerant circuit and refrigerant amount. •Refer to 11-6.⑬) "Check of LEV".		○
11-time flash 2.5 seconds OFF	Converter control system	DC voltage Compressor each phase current	8-time flash 2.5 seconds OFF 9-time flash 2.5 seconds OFF	When DC voltage of inverter cannot be detected normally. When compressor each phase current cannot be detected normally.	•Refer to 11-6.⑭) "How to check inverter/ compressor".		○
12-time flash 2.5 seconds OFF	Overcurrent protection	Compressor open-phase protection	10-time flash 2.5 seconds OFF	When 14A(MUZ-FA25VA, MUZ-FA25VAH)/ 24A(MUZ-FA35VA, MUZ-FA35VAH) current flow into intelligent power module (IPM). When the open-phase operation of compressor is detected. When the interphase short out occurs in the output of the intelligent power module (IPM). When the compressor winding shorts out.	•Reconnect compressor connector. •Refer to 11-6.⑮) "How to check inverter/ compressor".		○
14-time flash 2.5 seconds OFF	Outdoor unit (Other abnormality)	Outdoor unit		When the inverter P.C. board is failed.	•Replace the inverter P.C. board.		○

11-3. Instruction of troubleshooting

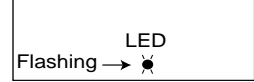




11-4. Troubleshooting check table

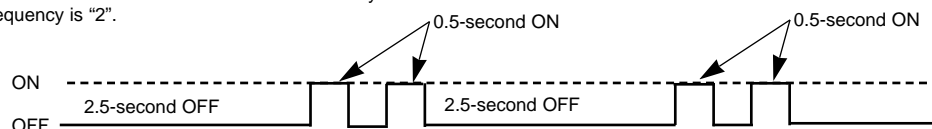
Inverter P.C. board (Parts side)

NOTE 1. The location of LED is illustrated at the right figure. Refer to 11-7.1.
2. LED lights up during normal operation.



No.	Symptom	LED indication	Abnormal point/ Condition	Detection method	Check point
1	Outdoor unit does not operate	1-time flash every 2.5 seconds	Outdoor power system	When it consecutively occurs 3times that the compressor stops for overcurrent protection or start-up failure protection within 1minute start-up.	<ul style="list-style-type: none"> Check stop valve. Reconnect connector of compressor. Refer to 11-6.Ⓐ "How to check inverter/ compressor". Refer to 11-6.Ⓒ "Check of intelligent power module".
2		NOTE: For abnormality location, refer to 'Indoor troubleshooting check table'. Refer to service manual OB371.	Outdoor thermistors	When discharge temperature thermistor, fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor or ambient temperature thermistor shorts or opens during compressor running, compressor stops.	Refer to 11-6.Ⓒ "Check of outdoor thermistors".
3			Outdoor control system	When nonvolatile memory data cannot be read properly, compressor stops. (When POWER lamp of the indoor unit lights up or flashes 7-time.)	Replace inverter P.C. board.
4			6-time flash 2.5 seconds OFF	serial signal	When the communication failure between the indoor and outdoor unit for 3 minutes.
5		14-time flash 2.5 seconds OFF	Outdoor unit (Other abnormality)	When outdoor unit is failure.	Refer to 11-2.2. Flow chart of the detailed outdoor unit failure mode recall function.
6	'Outdoor unit stops and restarts 3 minutes later' is repeated	2-time flash 2.5 seconds OFF	Overcurrent protection	When 14A(MUZ-FA25VA, MUZ-FA25VAH)/ 24A(MUZ-FA35VA, MUZ-FA35VAH) current flows into intelligent power module, compressor stops and restarts 3 minutes later.	<ul style="list-style-type: none"> Check stop valve. Reconnect connector of compressor. Refer to 11-6.Ⓐ "How to check inverter/compressor". Refer to 11-6.Ⓒ "Check of intelligent power module".
7		3-time flash 2.5 seconds OFF	Discharge temperature overheat protection	When discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.	<ul style="list-style-type: none"> Check refrigerant circuit and refrigerant amount. Refer to 11-6.Ⓓ "Check of LEV".
8		4-time flash 2.5 seconds OFF	Fin temperature /P.C. board temperature thermistor overheat protection	When temperature of fin temperature thermistor on the heat sink exceeds 83°C (MUZ-FA25VA, MUZ-FA25VAH)/ 82°C (MUZ-FA35VA, MUZ-FA35VAH) or temperature of P.C. board temperature thermistor exceeds 85°C (MUZ-FA25VA, MUZ-FA25VAH)/ 81°C (MUZ-FA35VA, MUZ-FA35VAH), compressor stops and restarts 3 minutes later.	<ul style="list-style-type: none"> Check around outdoor unit. Check outdoor unit air passage. Refer to 11-6.Ⓔ "Check of outdoor fan motor".
9		5-time flash 2.5 seconds OFF	High pressure protection	When indoor coil thermistor exceeds 70°C in HEAT mode. When the defrost thermistor exceeds 70°C in COOL mode.	<ul style="list-style-type: none"> Check refrigerant circuit and refrigerant amount. Check stop valve.
10		8-time flash 2.5 seconds OFF	Compressor synchronous abnormality	When the waveform of compressor current is distorted.	<ul style="list-style-type: none"> Reconnect connector of compressor. Refer to 11-6.Ⓐ "How to check inverter/compressor". Refer to 11-6.Ⓒ "Check of intelligent power module".
11		10-time flash 2.5 seconds OFF	Outdoor fan	When outdoor fan has stopped within 30 seconds 3-times a row after outdoor fan start-up, unit stops.	<ul style="list-style-type: none"> Refer to 11-6.Ⓕ "Check of outdoor fan motor." Refer to 11-6.Ⓖ "Check of inverter P.C. board."
12		12-time flash 2.5 seconds OFF	Compressor each phase current	When compressor each phase current cannot be detected normally	Refer to 11-6.Ⓐ "How to check inverter/compressor".
13	13-time flash 2.5 seconds OFF	DC voltage	When DC voltage of inverter cannot be detected normally.	<ul style="list-style-type: none"> Check for short time power failure by such as lightning strike. Refer to 11-6.Ⓐ "How to check inverter/compressor". 	
14	Outdoor unit operates	1-time flash 2.5 seconds OFF	Frequency drop by current protection	When current from power outlet exceeds 6.1A(MUZ-FA25VA, MUZ-FA25VAH)/ 9.2A(MUZ-FA35VA, MUZ-FA35VAH), compressor frequency lowers.	The unit is normal, but check the following. <ul style="list-style-type: none"> Check if indoor filters are clogged. Check if refrigerant is short. Check if indoor/outdoor unit air circulation is short cycled.
15		3-time flash 2.5 seconds OFF	Frequency drop by high pressure protection	When indoor coil thermistor exceeds 55°C in HEAT mode, compressor frequency lowers.	
15			Frequency drop by defrosting in COOL mode	When indoor coil thermistor reads 8°C or less in COOL mode, compressor frequency lowers.	
16		4-time flash 2.5 seconds OFF	Frequency drop by discharge temperature protection	When discharge temperature thermistor exceeds 111°C, compressor frequency lowers.	
17	Outdoor unit operates	7-time flash 2.5 seconds OFF	Low discharge temperature protection	When discharge temperature has been 50°C or less for 20 minutes.	<ul style="list-style-type: none"> Refer to 11-6.Ⓓ "Check of LEV". Check refrigerant circuit and refrigerant amount.
18		8-time flash 2.5 seconds OFF	PAM protection	When the overcurrent flows into IGBT(Insulated Gate Bipolar transistor : TR821) or when the bus-bar voltage reaches 320V or more, PAM stops and restarts.	This is not malfunction. PAM protection will be activated in the following cases; ① Instantaneous power voltage drop (Short time power failure) ② When the power supply voltage is high.
18			PAM: Pulse Amplitude Modulation		
19	9-time flash 2.5 seconds OFF	Inverter check mode	When the connector of compressor is disconnected, inverter check mode starts.	Check if the connector of the compressor is correctly connected. Refer to 11-6.Ⓐ "How to check inverter/ compressor".	

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the flashing frequency is "2".



11-5. Trouble criterion of main parts

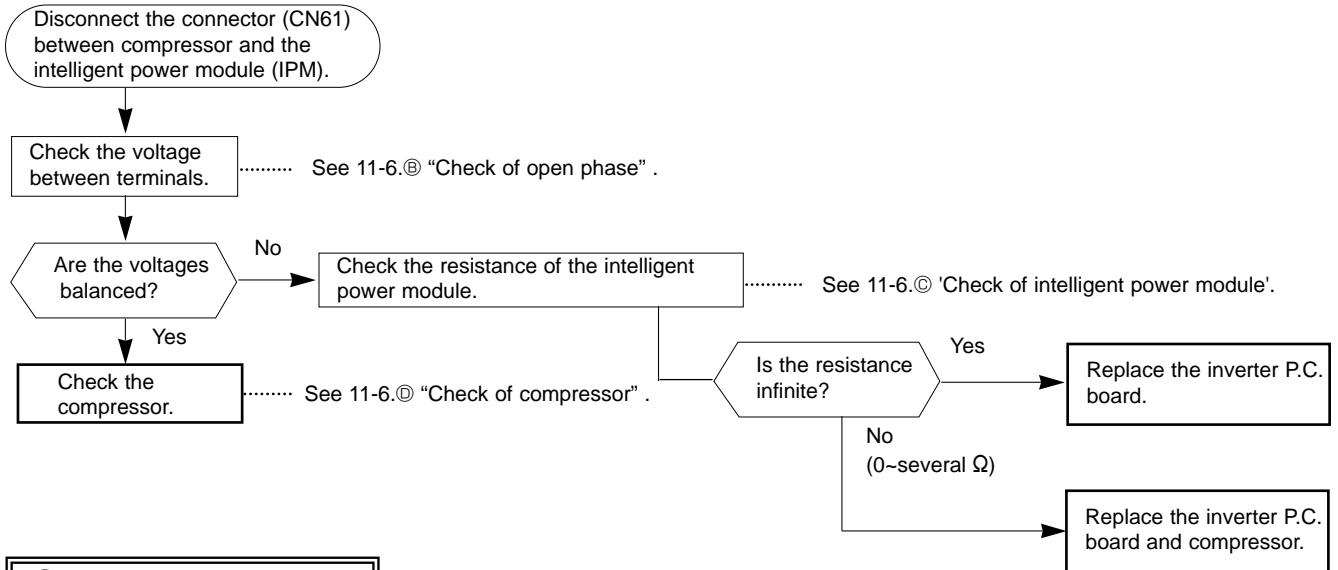
MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
 MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

Part name	Check method and criterion	Figure										
Defrost thermistor (RT61)	Measure the resistance with a tester. (Part temperature $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
Ambient temperature thermistor (RT65)	<table border="1"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>5 kΩ ~ 55 kΩ</td> <td>Open or short-circuit</td> </tr> </table>		Normal	Abnormal	5 k Ω ~ 55 k Ω	Open or short-circuit						
Normal	Abnormal											
5 k Ω ~ 55 k Ω	Open or short-circuit											
Discharge temperature thermistor (RT62)	Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up. (Part temperature $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>150 kΩ ~ 600 kΩ</td> <td>Open or short-circuit</td> </tr> </table>		Normal	Abnormal	150 k Ω ~ 600 k Ω	Open or short-circuit						
Normal	Abnormal											
150 k Ω ~ 600 k Ω	Open or short-circuit											
Fin temperature thermistor (RT64)	Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up. (Part temperature $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>30 kΩ ~ 180 kΩ</td> <td>Open or short-circuit</td> </tr> </table>		Normal	Abnormal	30 k Ω ~ 180 k Ω	Open or short-circuit						
Normal	Abnormal											
30 k Ω ~ 180 k Ω	Open or short-circuit											
Compressor (MC)	Measure the resistance between the terminals with a tester. (Part temperature $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td></td> <td colspan="2">Normal</td> <td rowspan="2">Abnormal</td> </tr> <tr> <td></td> <td>MUZ-FA25VA MUZ-FA25VAH</td> <td>MUZ-FA35VA MUZ-FA35VAH</td> </tr> <tr> <td>U-V U-W V-W</td> <td>1.28 Ω ~ 1.66 Ω</td> <td>0.41 Ω ~ 0.53 Ω</td> <td>Open or short-circuit</td> </tr> </table>			Normal		Abnormal		MUZ-FA25VA MUZ-FA25VAH	MUZ-FA35VA MUZ-FA35VAH	U-V U-W V-W	1.28 Ω ~ 1.66 Ω	0.41 Ω ~ 0.53 Ω
	Normal		Abnormal									
	MUZ-FA25VA MUZ-FA25VAH	MUZ-FA35VA MUZ-FA35VAH										
U-V U-W V-W	1.28 Ω ~ 1.66 Ω	0.41 Ω ~ 0.53 Ω	Open or short-circuit									
Outdoor fan motor (MF)	Measure the resistance between the terminals with a tester. (Part temperature $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td>Color of the lead wire</td> <td>Normal</td> <td rowspan="3">Abnormal</td> </tr> <tr> <td>WHT - BLK</td> <td>31 Ω ~ 41 Ω</td> </tr> <tr> <td>BLK - RED</td> <td>31 Ω ~ 41 Ω</td> </tr> <tr> <td>RED - WHT</td> <td>31 Ω ~ 41 Ω</td> <td>Open or short-circuit</td> </tr> </table>		Color of the lead wire	Normal	Abnormal	WHT - BLK	31 Ω ~ 41 Ω	BLK - RED	31 Ω ~ 41 Ω	RED - WHT	31 Ω ~ 41 Ω	Open or short-circuit
Color of the lead wire	Normal	Abnormal										
WHT - BLK	31 Ω ~ 41 Ω											
BLK - RED	31 Ω ~ 41 Ω											
RED - WHT	31 Ω ~ 41 Ω	Open or short-circuit										
R.V. coil (21S4)	Measure the resistance between the terminals with a tester. (Part temperature $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>1.20 kΩ ~ 1.55 kΩ</td> <td>Open or short-circuit</td> </tr> </table>		Normal	Abnormal	1.20 k Ω ~ 1.55 k Ω	Open or short-circuit						
Normal	Abnormal											
1.20 k Ω ~ 1.55 k Ω	Open or short-circuit											
LEV (Expansion valve coil)	Measure the resistance with a tester. (Part temperature : $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td>Color of the lead wire</td> <td>Normal</td> <td rowspan="4">Abnormal</td> </tr> <tr> <td>WHT - RED</td> <td rowspan="4">38 Ω ~ 50 Ω</td> </tr> <tr> <td>RED - ORN</td> </tr> <tr> <td>YLW - BRN</td> </tr> <tr> <td>BRN - BLU</td> </tr> <tr> <td></td> <td></td> <td>Open or short-circuit</td> </tr> </table>		Color of the lead wire	Normal	Abnormal	WHT - RED	38 Ω ~ 50 Ω	RED - ORN	YLW - BRN	BRN - BLU		
Color of the lead wire	Normal	Abnormal										
WHT - RED	38 Ω ~ 50 Ω											
RED - ORN												
YLW - BRN												
BRN - BLU												
		Open or short-circuit										
Defrost heater (H)	Measure the resistance with a tester. (Part temperature $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$)											
	<table border="1"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>333 Ω ~ 428 Ω</td> <td>Open or short-circuit</td> </tr> </table>		Normal	Abnormal	333 Ω ~ 428 Ω	Open or short-circuit						
Normal	Abnormal											
333 Ω ~ 428 Ω	Open or short-circuit											

11-6. Troubleshooting flow

When POWER lamp flashes 5-time.
Outdoor unit does not operate.

A How to check inverter/ compressor



B Check of open phase

- With the connector between the compressor and the intelligent power module disconnected, activate the inverter and check if the inverter is normal by measuring the balance of voltage between the terminals.

Output voltage [V]
115V

<< Operation method >>

Start cooling or heating operation by pressing EMERGENCY OPERATION switch on the indoor unit. (test-run mode : refer to page 14)

<<Measurement point>>

at 3 points

BLK (U)-WHT (V)

BLK (U)-RED (W)

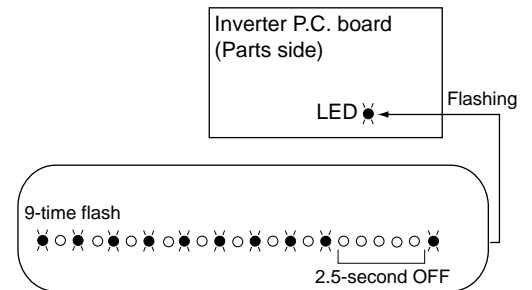
WHT(V)-RED (W)

※ Measure AC voltage between the lead wires at 3 points.

NOTE 1. Output voltage varies according to power supply voltage.

2. Measure the voltage by analog type tester.

3. During this check, LED of inverter P.C. board flashes 9 times.



C Check of intelligent power module

- Disconnect the connector (CN61) between the compressor and the intelligent power module, and measure the resistance between the terminals on the intelligent power module.

<<Measurement point>>

at 6 points

BLK-WHT, WHT-BLK

BLK-RED, RED-BLK

WHT-RED, RED-WHT

<<Judgement>>

Infinite [Ω].....Normal

0~dozens ofAbnormal (short)

ohmmeter indication



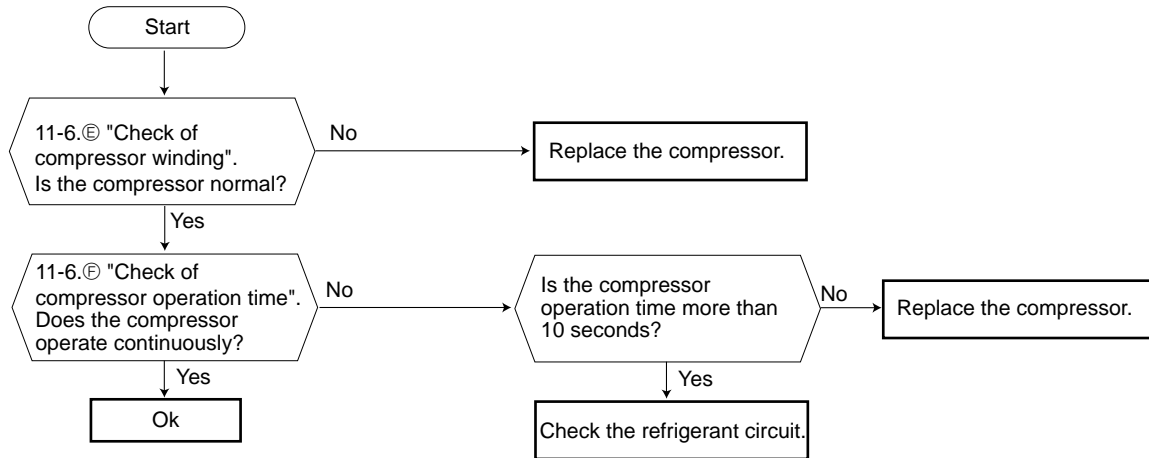
..... Normal (infinite)



..... Abnormal (0~dozens of Ω)



D Check of compressor



E Check of compressor winding

- Disconnect the connector (CN61) between the compressor and intelligent power module, and measure the resistance between the compressor terminals.

<<Measurement point>>

- at 3 points
- BLK-WHT
- BLK-RED
- WHT-RED

※ Measure the resistance between the lead wires at 3 points.

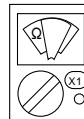
<<Judgement>>

Refer to 11-5..

- 0[Ω]Abnormal [short]
- Infinite[Ω]Abnormal [open]

- NOTE 1. Be sure to zero the ohmmeter before measurement.
2. Winding resistance for each phase at 20°C .
Refer to 3.SPECIFICATION.

Ohmmeter indication



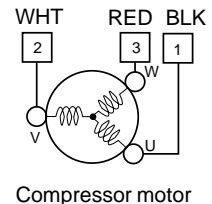
..... Normal
(1~several Ω)



..... Abnormal
(0Ω short)



..... Abnormal
(infinite..... open)



F Check of compressor operation time

- Connect the compressor and activate the inverter. Then measure the time until the inverter stops due to over current.

<<Operation method>>

Start heating or cooling operation by pressing EMERGENCY OPERATION switch on the indoor unit. (Test-run mode)

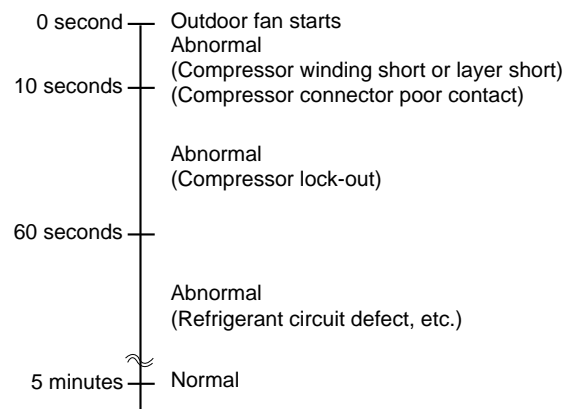
<<Measurement>>

Measure the time from the start of outdoor fan running to the stop of compressor due to over current.

<<Judgement>>

For reference

- 0~10 seconds.....Abnormal (compressor short or poor contact)
- 10~60 seconds.....Abnormal (compressor lock-out)
- 60 seconds~5 minutes.....Abnormal (refrigerant circuit defect)
- more than 5 minutes.....Normal



**When POWER lamp flashes 6-time.
The thermistors in the outdoor unit are abnormal.**

G Check of outdoor thermistors

Disconnect the connectors CN641, CN642 and CN643 from the inverter P.C. board.
(Check the characteristics of each thermistor.)

Defrost thermistor RT61

Measure the resistance between CN641 ① and ②.

Discharge temperature thermistor RT62

Measure the resistance between CN641 ③ and ④.

Fin temperature thermistor RT64

Measure the resistance between CN642 ① and ②.

Ambient temperature thermistor RT65

Measure the resistance between CN643 ① and ②.

Does the resistance of the thermistor have the characteristics (11-7.1.)?

Replace the thermistor except RT64. In case of RT64, replace the inverter P.C. board. Since RT64 is combined with the inverter P.C. board.

- ① Reconnect the connectors CN641, CN642 and CN643.
- ② Disconnect the connector (CN61) between the compressor and intelligent power module.

Turn ON the power supply and press EMERGENCY OPERATION switch.

Replace the inverter P.C. board.

Does the unit operate 10 minutes or more except RT65?

Reconnect the connector or the connecting wire.

H Check of R.V. coil

- ※ First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 11-5..
- ※ In case CN721 is not connected or R.V. coil is open, voltage is generated between the terminal pins of the connector although any signal is not being transmitted to R.V. coil. Check if CN721 is connected.

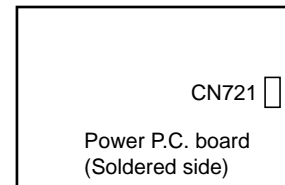
Unit operates COOL mode even if it is set to HEAT mode.

Disconnect connector (CN61) between the compressor and intelligent power module. Turn ON the power supply and press EMERGENCY OPERATION switch twice (HEAT mode).

Is there 230V AC between CN721 ① and ② on the power P.C. board 3 minutes after the power supply is turned ON?

Replace the 4-way valve.

Replace the power P.C. board.



Unit operates HEAT mode even if it is set to COOL mode.

Disconnect connector (CN61) between the compressor and the intelligent power module. Turn ON the power supply and press EMERGENCY OPERATION switch once (COOL mode).

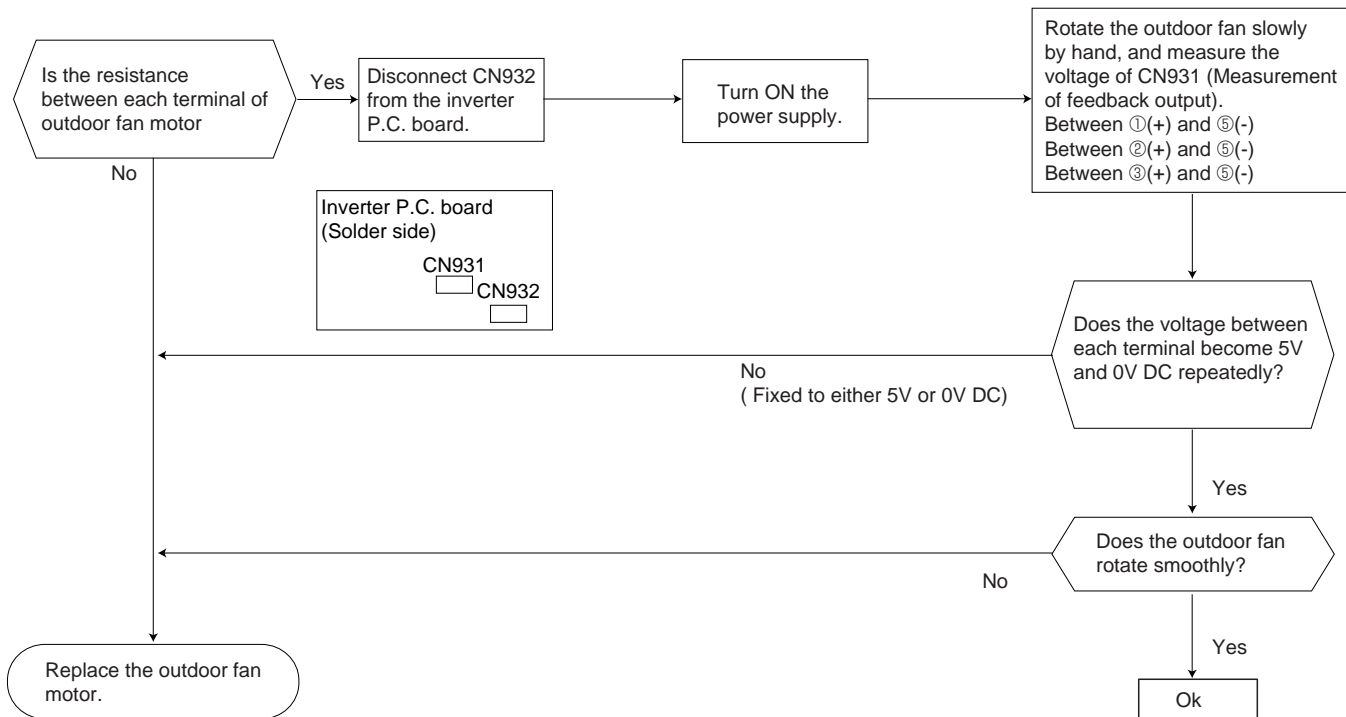
Is there 230V AC between CN721 ① and ② on the power P.C. board 3 minutes after the power supply is turned ON?

- Defective R.V. coil
- Defective 4-way valve

Replace the power P.C. board.

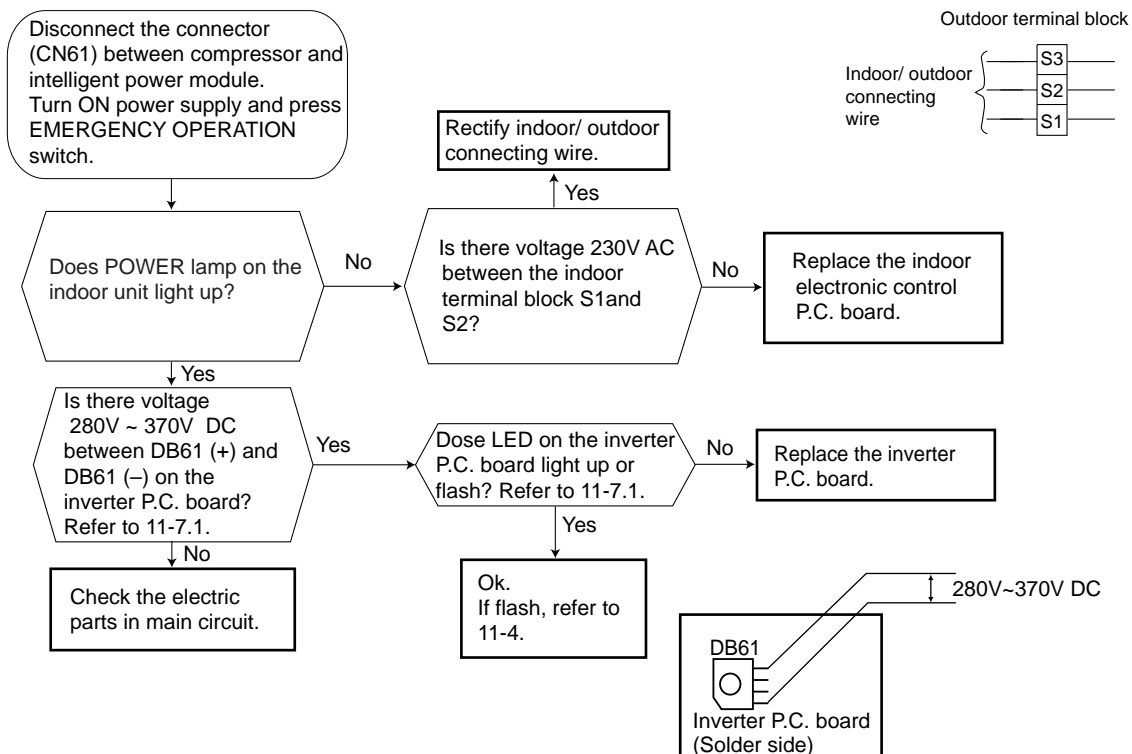
Outdoor fan motor does not operate.

① Check of outdoor fan motor



Inverter does not operate.

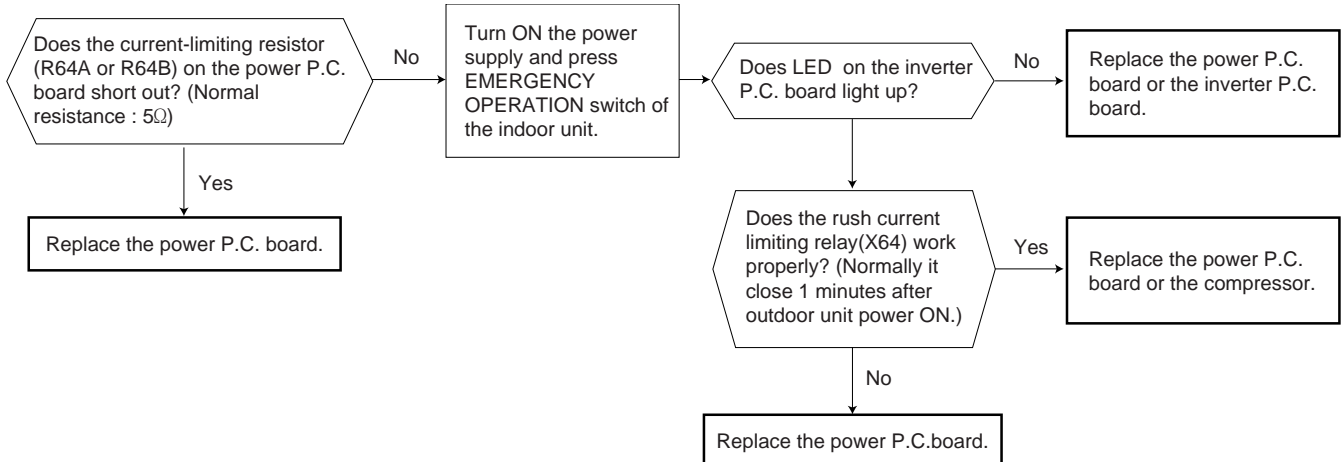
② Check of power supply



Outdoor unit does not operate at all, or stops immediately due to overcurrent.

K Check of current-limiting resistor

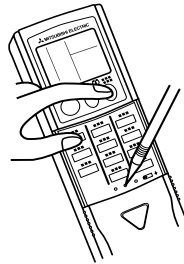
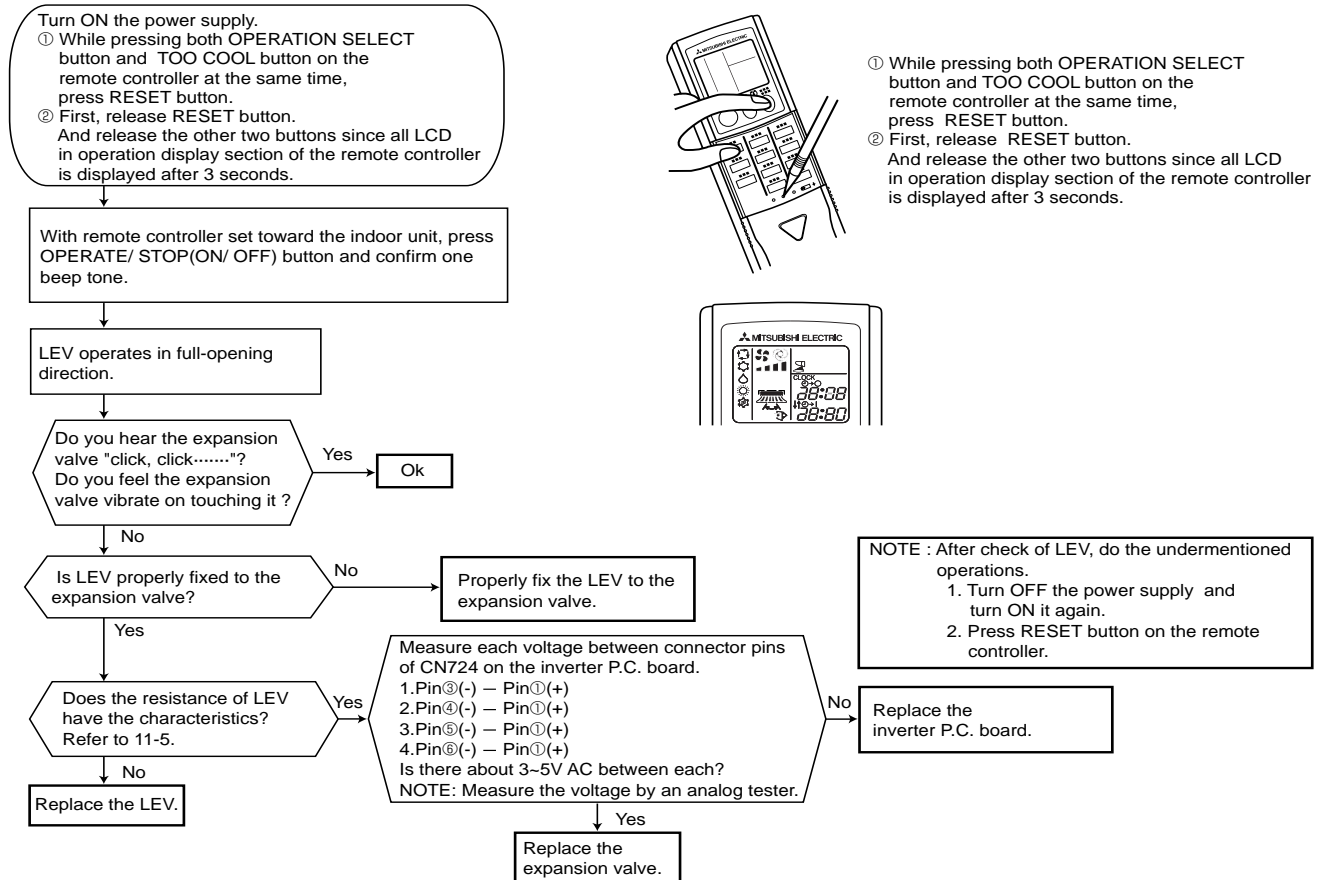
When the current-limiting resistor is open, the rush current limiting relay (X64) may not work properly.



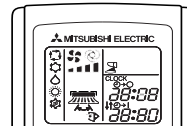
● Check other electric parts in the main circuit together in the case of the defective current-limiting resistor.

Heating/Cooling does not work sufficiently.

L Check of LEV (Expansion valve)



- ① While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
- ② First, release RESET button. And release the other two buttons since all LCD in operation display section of the remote controller is displayed after 3 seconds.



Outdoor base gets frozen.

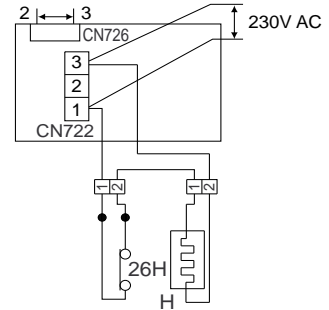
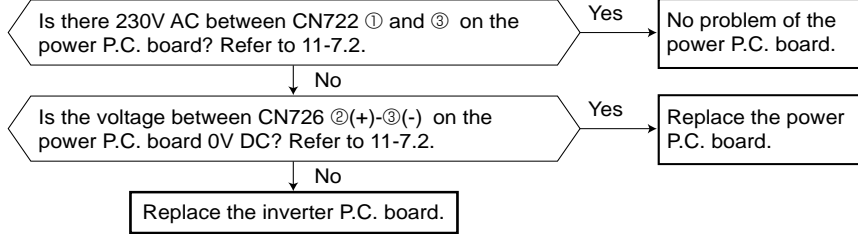
M Check of defrost heater <MUZ-FA25VAH MUZ-FA35VAH>

Check the following points before checking electric continuity.

- 1) Does the resistance of ambient temperature thermistor have the characteristics? Refer to 11-7.1.
- 2) Is the resistance of defrost heater normal? Refer to 11-5.
- 3) Does the heater protector remain conducted (not open)?
- 4) Are both ambient temperature thermistor and circuit of defrost heater securely connected to connectors?

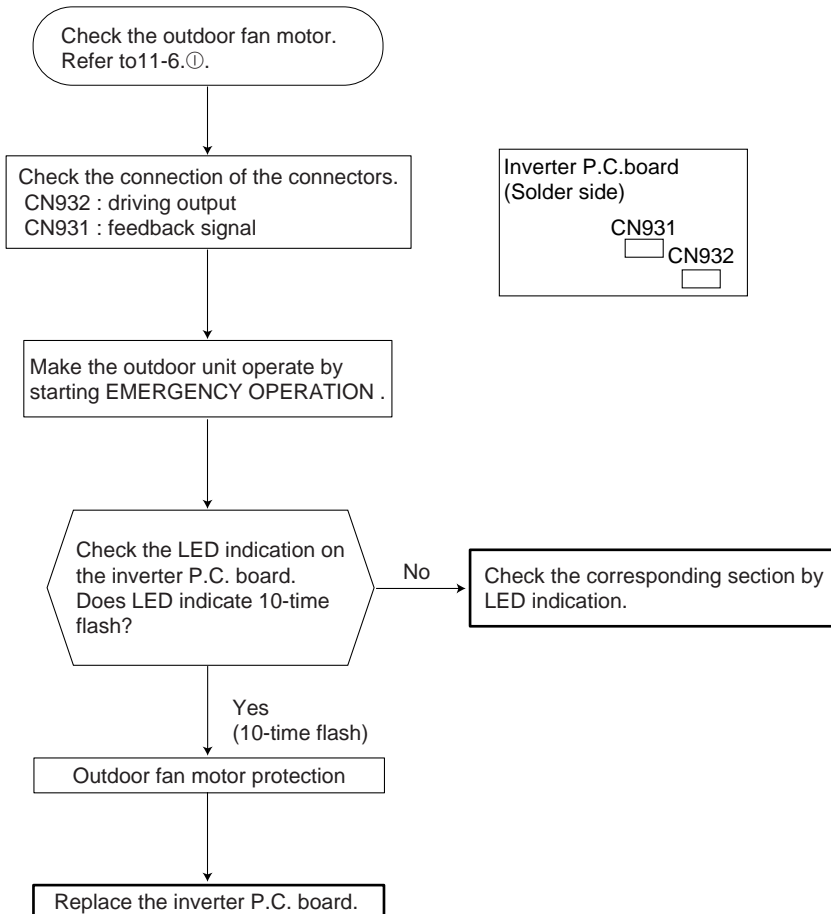
In HEAT mode, for more than 5 minutes, let the ambient temperature thermistor continue to read 5°C or less, and let the defrost thermistor continue to read -1°C or less.

NOTE: In case both thermistors are more than the above temperature, cool them with cold water etc...



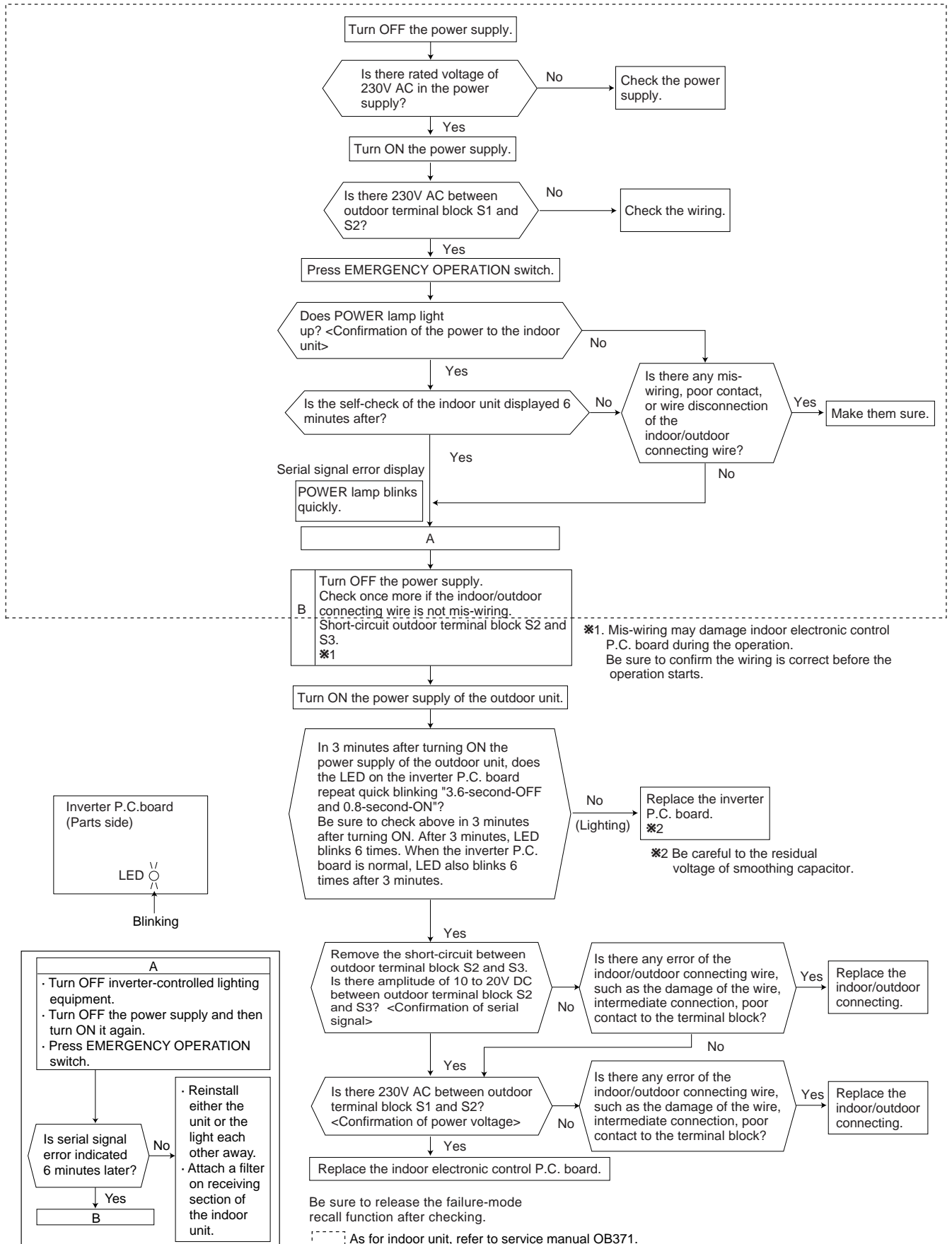
Outdoor fan motor does not operate, or stops immediately after starting up.

N Check of inverter P.C. board

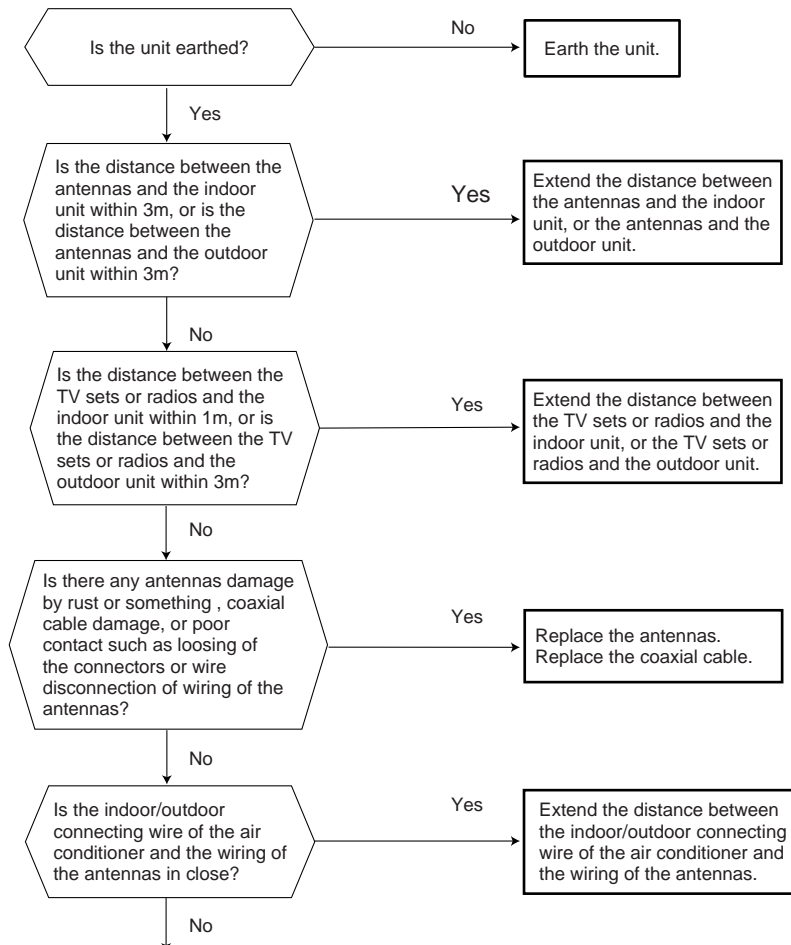


When POWER lamp flashes ON and OFF in every 0.5-second.
Outdoor unit doesn't operate.

○ How to check mis-wiring and serial signal error (when outdoor unit does not work)



Ⓟ Electromagnetic noise enters into TV sets or radios



Even if all of the above conditions is fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
 Check the followings before asking for service.

- 1.Devices affected by the electromagnetic noise
 TV sets, radios (FM/AM broadcast, shortwave)
- 2.Channel, frequency, broadcast station affected by the electromagnetic noise
- 3.Channel, frequency, broadcast station unaffected by the electromagnetic noise
- 4.Layout of ;
 indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, grounding wire, antennas, wiring from antennas, receiver
- 5.Electric field intensity of the broadcast station affected by the electromagnetic noise
- 6.Presence or absence of amplifier such as booster
- 7.Operation condition of air conditioner when the electromagnetic noise enters in.
 - 1)Turn OFF the power supply once, and then turn ON the power supply. In this situation check for the electromagnetic noise.
 - 2)Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power-on, and check for the electromagnetic noise.
 - 3)After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
 - 4)Press OPERATE/STOP (ON/OFF) button on the remote controller for power off, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation check for the electromagnetic noise.

After checking the above, consult the service representative.

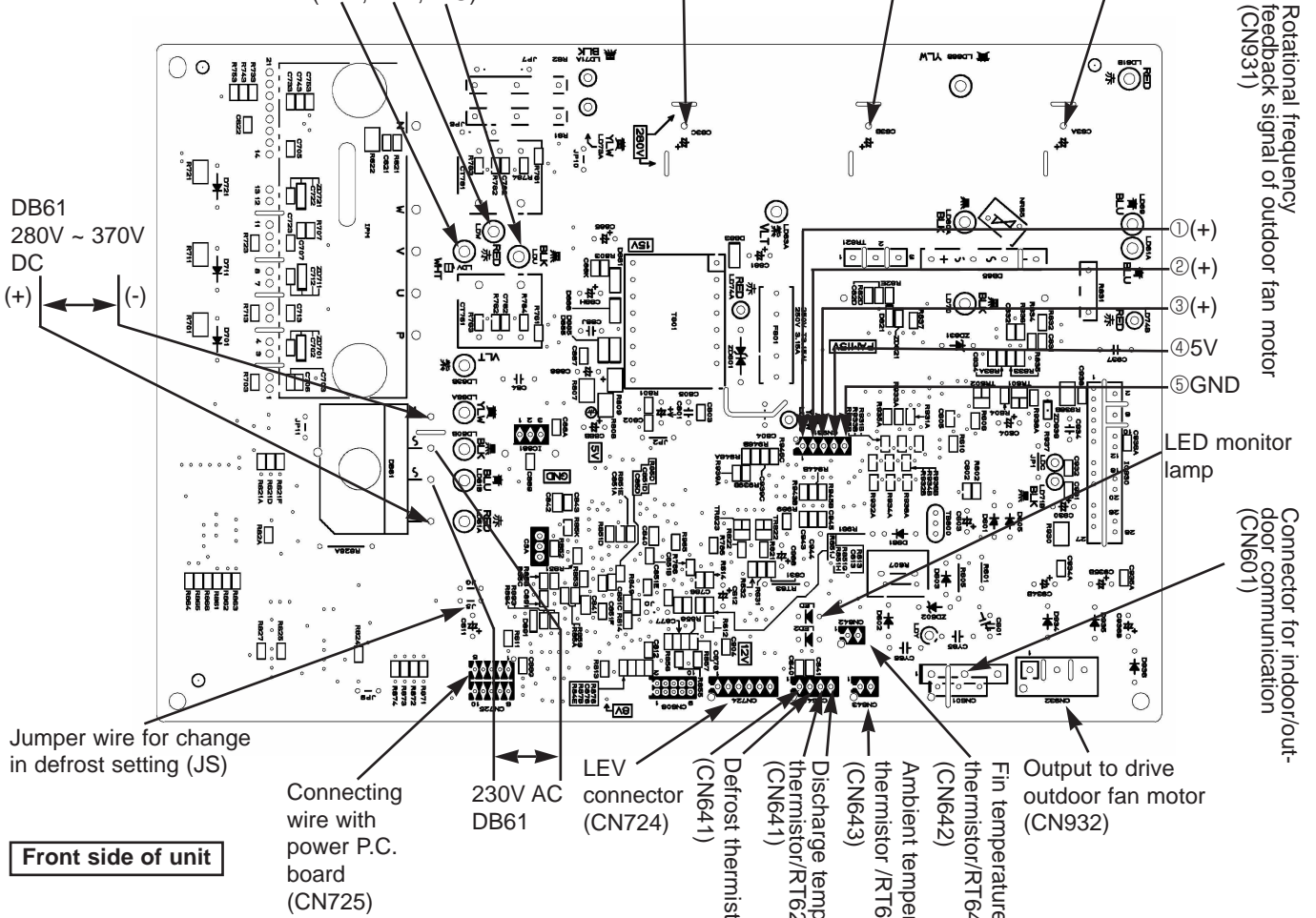
11-7. Test point diagram and voltage

MUZ-FA25VA -[E1] **MUZ-FA35VA -[E1]**
MUZ-FA25VAH -[E1] **MUZ-FA35VAH -[E1]**

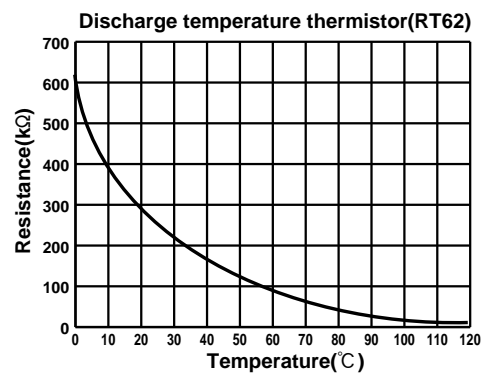
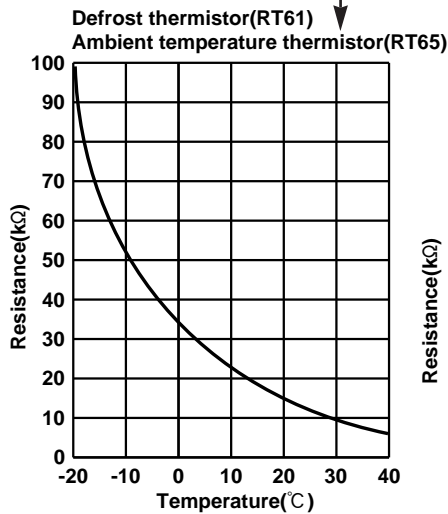
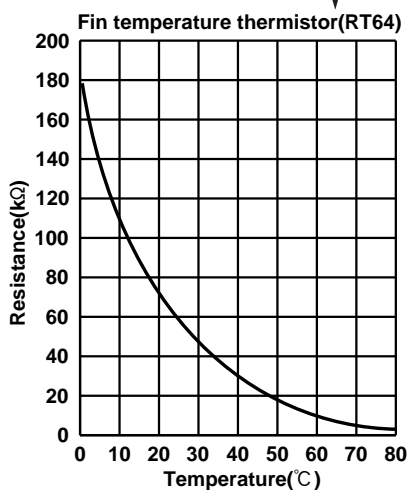
1. Inverter P.C. board

Back side of unit

Output to drive compressor (LDV,LDW,LDU) Smoothing capacitor (C63C) Smoothing capacitor (C63B) Smoothing capacitor (C63A)



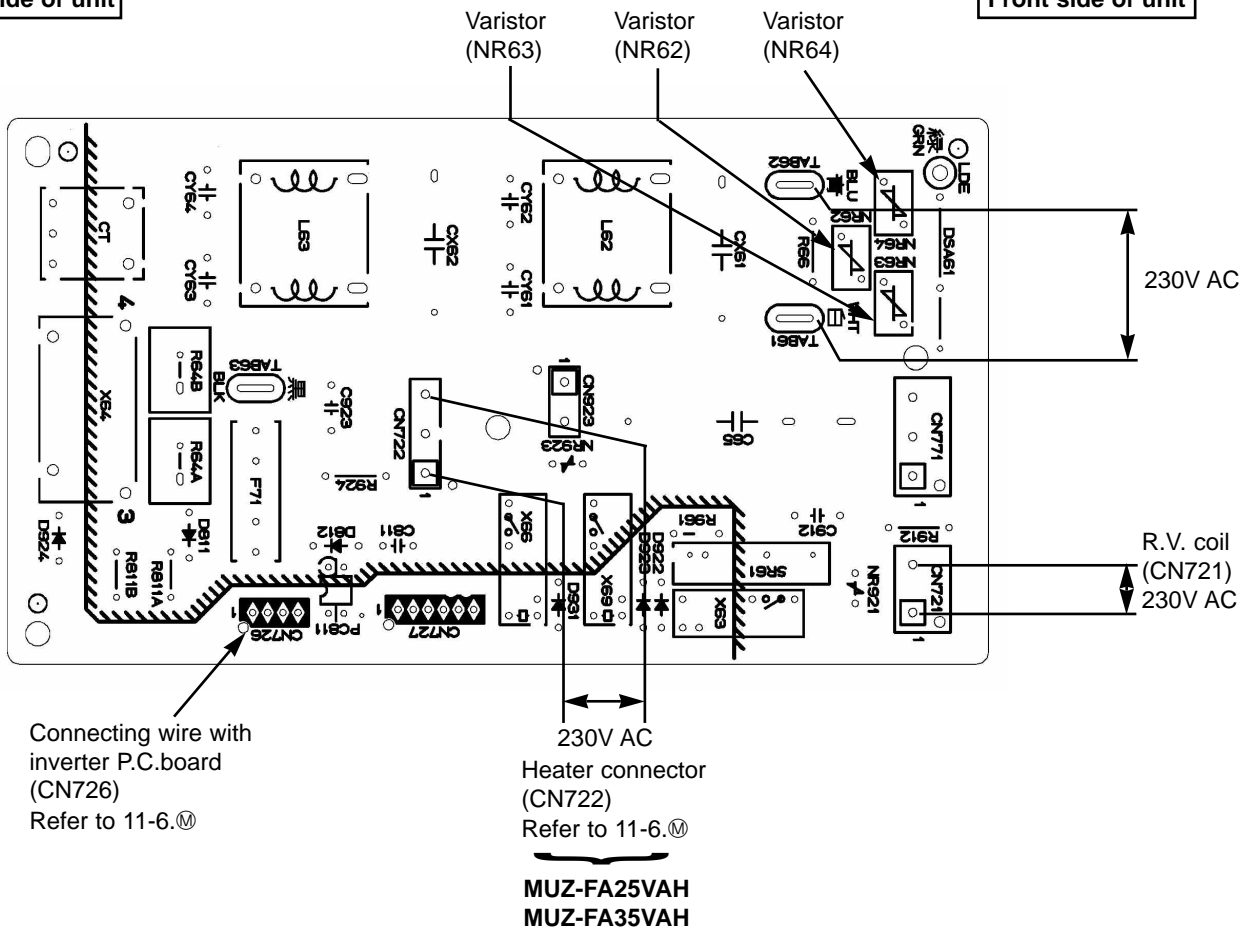
Front side of unit



MUZ-FA25VA -E1 MUZ-FA35VA -E1
MUZ-FA25VAH -E1 MUZ-FA35VAH -E1
 2. Power P.C. board

Back side of unit

Front side of unit



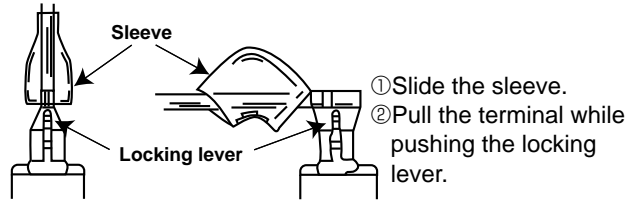
12

DISASSEMBLY INSTRUCTIONS

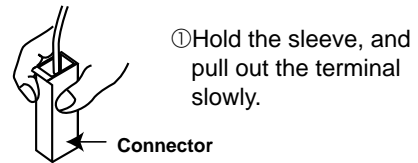
<"Terminal with locking mechanism" Detaching points>

The terminal which has the locking mechanism can be detached as shown below. There are two types (Refer to (1) and (2)) of the terminal with locking mechanism. The terminal without locking mechanism can be detached by pulling it out. Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.

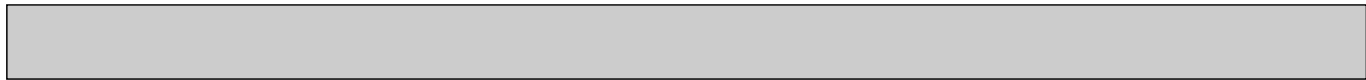


(2) The terminal with this connector has the locking mechanism.



MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]
MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]
OUTDOOR UNIT

OPERATING PROCEDURE	PHOTOS
<p>1. Removing the cabinet.</p> <p>(1) Remove the screw fixing the service panel. (See Photo 2.) (2) Pull down the service panel and remove it. (See Photo 2.) (3) Disconnect the power supply and indoor/outdoor connecting wire. (4) Remove the screws fixing the top panel. (See Photo 1.) (5) Remove the top panel. (See Photo 1.) (6) Remove the screws fixing the cabinet. (7) Remove the cabinet. (8) Remove the screws fixing the back panel. (9) Remove the back panel.</p> <p>Photo 2</p>	<p>Photo 1</p>

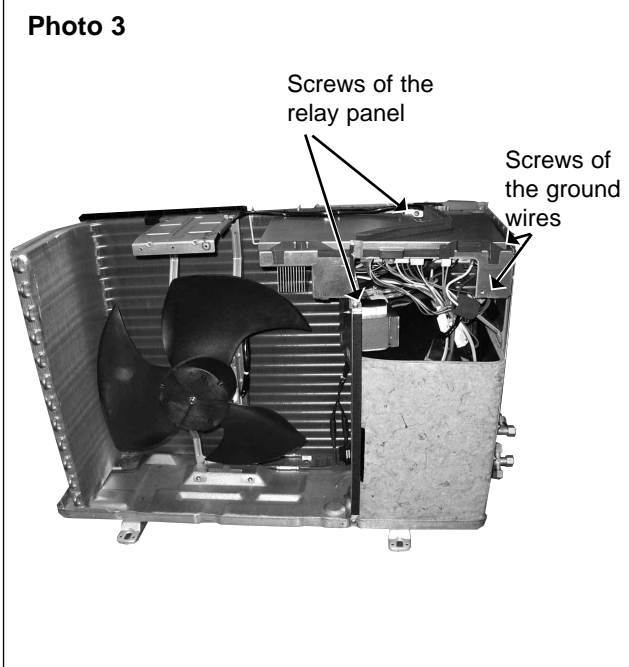


OPERATING PROCEDURE

PHOTOS

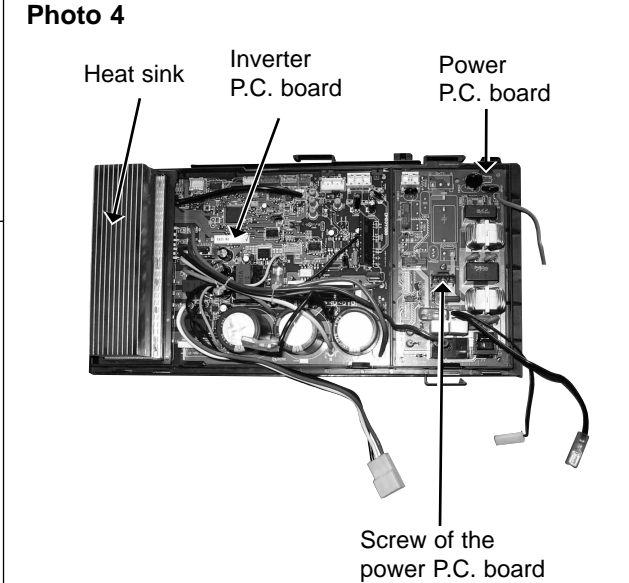
2. Removing the inverter assembly, inverter P.C. board and power P.C. board

- (1) Remove the top panel, cabinet and service panel. (Refer to 1.)
- (2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
- (3) Disconnect the ground wires (See Photo 3.), the lead wire to the reactor and the following connectors;
 - <Power P.C. board>
 - CN721 (4-way valve)
 - CN722 (Defrost heater) MUZ-FA25/FA35VAH-E1
 - <Inverter P.C. board>
 - CN931, CN932 (Fan motor)
 - CN641 (Defrost thermistor and discharge temperature thermistor)
 - CN643 (Ambient temperature thermistor)
 - CN724 (LEV)
- (4) Remove the compressor connector (CN61).
- (5) Remove the screws fixing the relay panel. (See Photo 3.)
- (6) Remove the inverter assembly. (See Photo 3.)
- (7) Disconnect all connectors and lead wires on the inverter P.C. board. (See Photo 4.)
- (8) Remove the inverter P.C. board from the inverter assembly.
- (9) Remove the screw fixing the power P.C. board. (See Photo 4.)
- (10) Disconnect all connectors and lead wires on the power P.C. board.
- (11) Remove the power P.C. board from the inverter assembly.



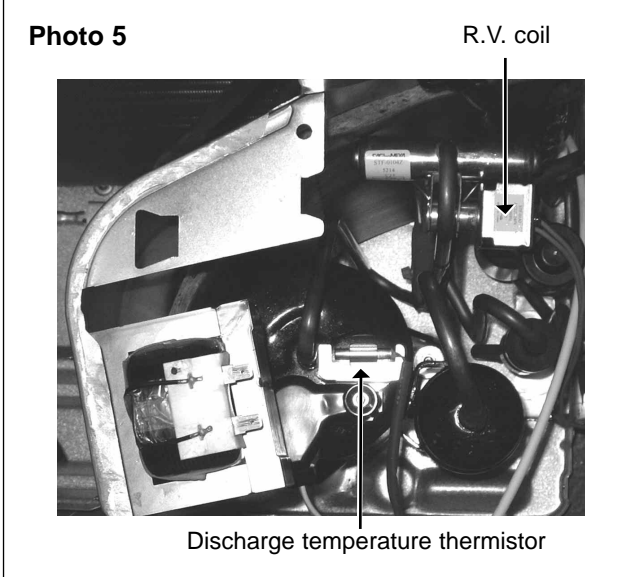
3. Removing R.V. coil

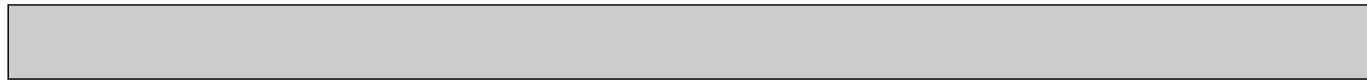
- (1) Remove the top panel, cabinet and service panel. (Refer to 1.)
- (2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
- (3) Remove the inverter assembly. (Refer to 2.)
- (4) Remove the R.V. coil. (See Photo 6.)

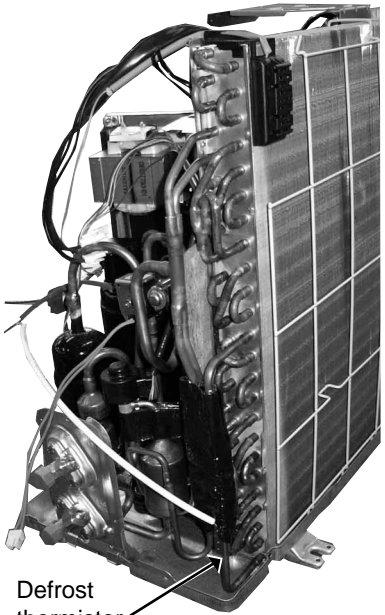

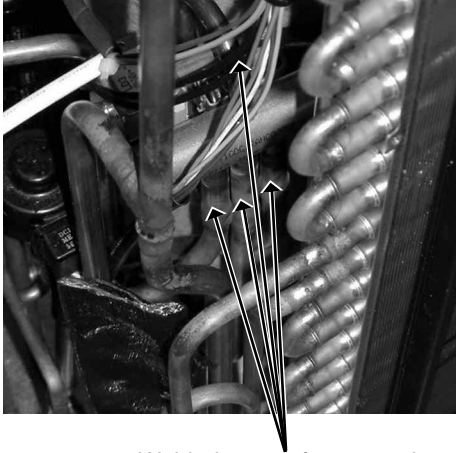


4. Removing the discharge temperature thermistor and defrost thermistor

- (1) Remove the top panel, cabinet and service panel. (Refer to 1.)
- (2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.)
- (3) Remove the inverter assembly. (Refer to 2.)
- (4) Pull out the discharge temperature thermistor from its holder. (See Photo 5.)
- (5) Pull out the defrost thermistor from its holder. (See Photo 6.)



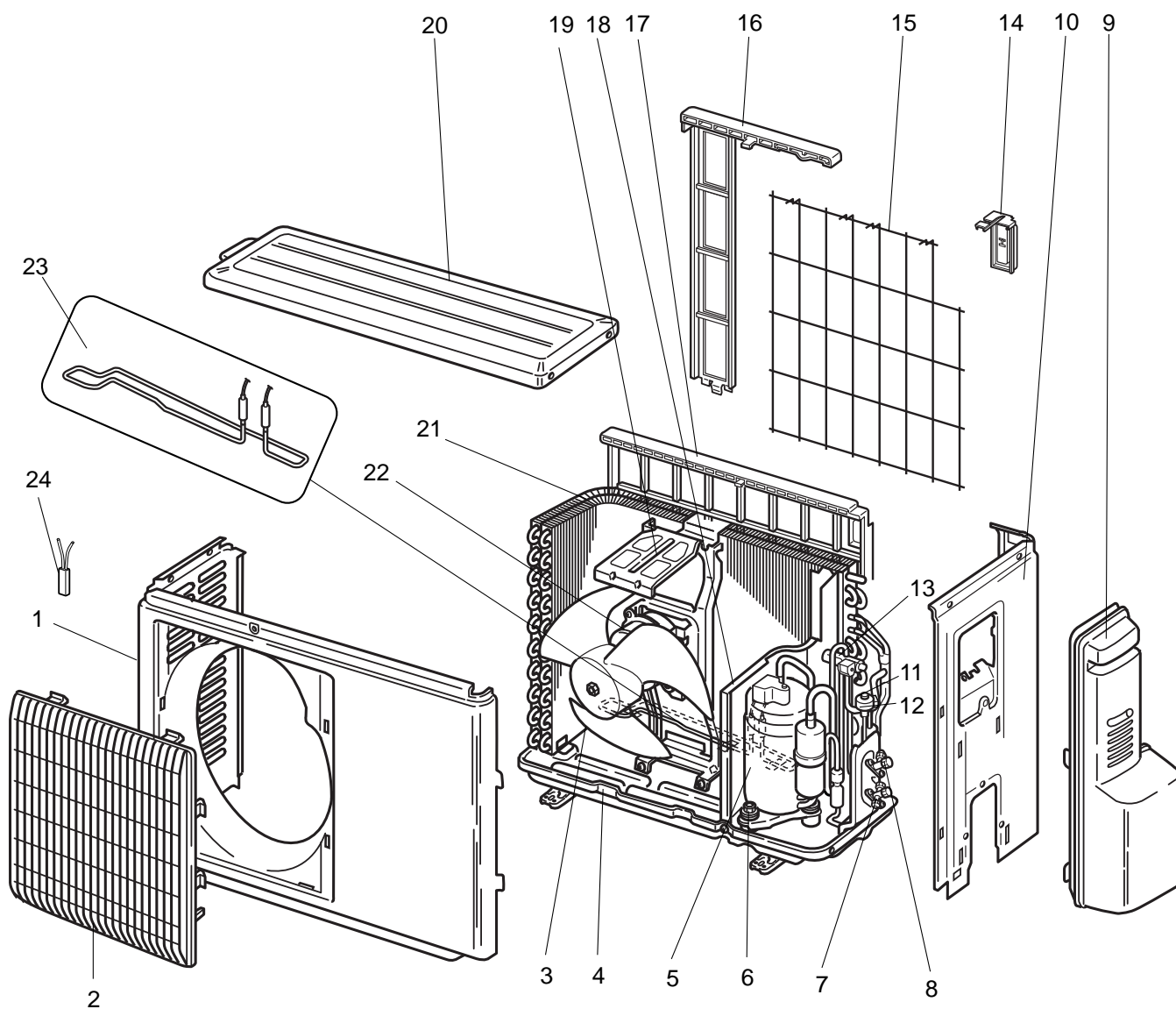


OPERATING PROCEDURE	PHOTOS
<p>5. Removing outdoor fan motor</p> <ol style="list-style-type: none"> (1) Remove the top panel, cabinet and service panel. (Refer to 1.) (2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.) (3) Disconnect the connectors for outdoor fan motor. (4) Remove the propeller nut. (5) Remove the propeller. (6) Remove the screws fixing the fan motor. (See Photo 7.) (7) Remove the fan motor. 	<p>Photo 6</p>  <p>Defrost thermistor</p>
<p>6. Removing the compressor and 4-way valve</p> <ol style="list-style-type: none"> (1) Remove the top panel, cabinet and service panel. (Refer to 1.) (2) Disconnect the power supply and indoor/outdoor connecting wire and remove the back panel. (Refer to 1.) (3) Remove the inverter assembly. (Refer to 2.) (4) Recover gas from the refrigerant circuit. <p>NOTE: Recover gas from the pipes until the pressure gauge shows 0 kg/cm² (0 MPa).</p> <ol style="list-style-type: none"> (5) Detach the welded part of the suction and the discharge pipe connected with compressor. (6) Remove the nuts of compressor legs. (7) Remove the compressor. (8) Detach the welded part of pipes connected with 4-way valve. (See Photo 8.) 	<p>Photo 7</p>  <p>Screws of the outdoor fan motor</p> <p>Photo 8</p>  <p>Propeller</p> <p>Welded parts of 4-way valve</p>

13 PARTS LIST

MUZ-FA25VA -E1 MUZ-FA35VA -E1
 MUZ-FA25VAH -E1 MUZ-FA35VAH -E1

13-1. OUTDOOR UNIT STRUCTURAL PARTS AND FUNCTIONAL PARTS



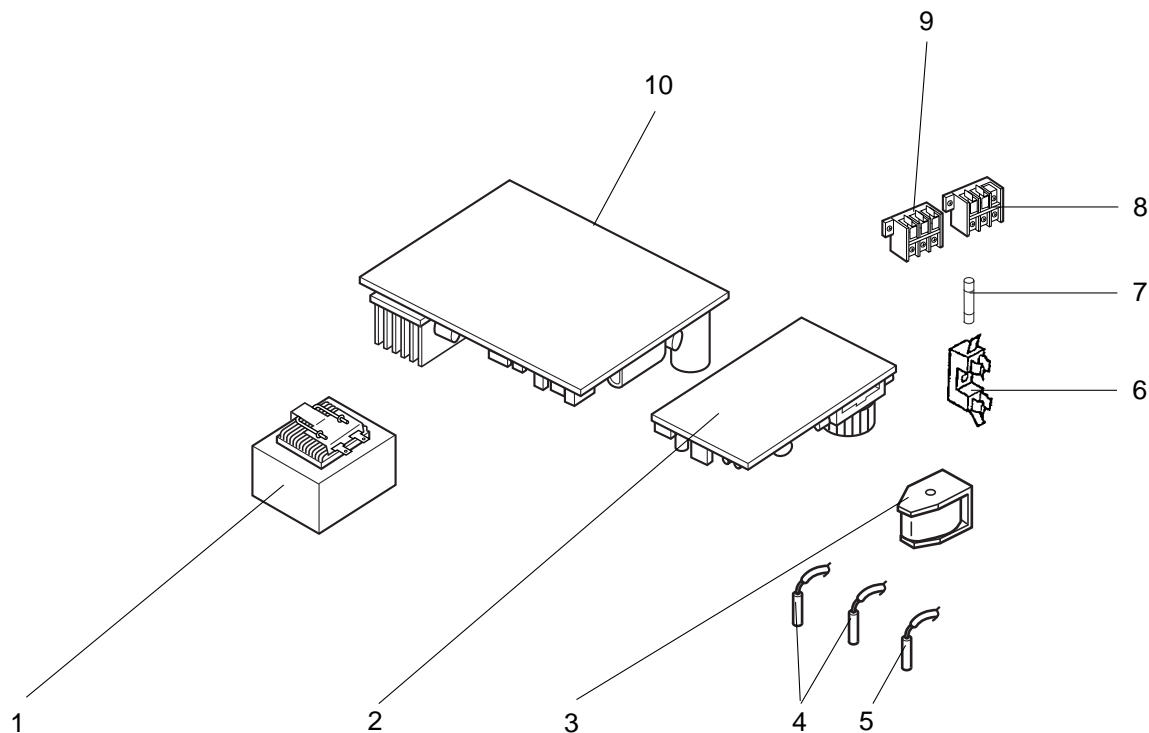
MUZ-FA25VA -^[E1] MUZ-FA35VA -^[E1]
 MUZ-FA25VAH -^[E1] MUZ-FA35VAH -^[E1]

13-1. OUTDOOR UNIT STRUCTURAL PARTS AND FUNCTIONAL PARTS

Part number that is circled is not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit				Remarks
				MUZ- FA25VA- [E1]	MUZ- FA25VAH- [E1]	MUZ- FA35VA- [E1]	MUZ- FA35VAH- [E1]	
1	E02 927 232	CABINET		1	1	1	1	
2	E02 927 521	GRILLE		1	1	1	1	
3	E02 927 501	PROPELLER		1	1	1	1	
4	E02 927 290	BASE		1		1		
	E02 928 290	BASE			1		1	
5	E02 927 900	COMPRESSOR	MC	1	1			KNB073FDVH
	E02 929 900	COMPRESSOR	MC			1	1	KNB092FCAH
6	E02 065 506	COMPRESSOR RUBBER SET		3	3	3	3	3RUBBERS/SET
7	E02 927 661	STOP VALVE (GAS)		1	1	1	1	φ9.52
8	E02 927 662	STOP VALVE (LIQUID)		1	1	1	1	φ6.35
9	E02 927 245	SERVICE PANEL		1	1	1	1	
10	E02 927 233	BACK PANEL		1	1	1	1	
11	E02 838 640	EXPANSION VALVE		1	1	1	1	
12	E02 927 493	EXPANSION VALVE COIL	LEV	1	1	1	1	
13	E02 927 961	4-WAY VALVE		1	1	1	1	
14	E02 928 079	THERMO HOLDER			1			
	E02 930 079	THERMO HOLDER					1	
15	E02 928 525	CONDENSER WIRE NET			1			
	E02 930 525	CONDENSER WIRE NET					1	
16	E02 928 523	CONDENSER NET			1			
	E02 930 523	CONDENSER NET					1	
17	E02 838 523	CONDENSER NET		1				
	E02 929 523	CONDENSER NET				1		
18	E02 927 293	SEPARATOR		1				
	E02 928 293	SEPARATOR			1			
	E02 929 293	SEPARATOR				1		
	E02 930 293	SEPARATOR					1	
19	E02 927 515	MOTOR SUPPORT		1	1			
	E02 929 515	MOTOR SUPPORT				1	1	
20	E02 927 297	TOP PANEL		1	1	1	1	
21	E02 927 630	OUTDOOR HEAT EXCHANGER		1	1			
	E02 929 630	OUTDOOR HEAT EXCHANGER				1	1	
22	E02 927 301	OUTDOOR FAN MOTOR	MF	1	1	1	1	RC0J50-□□
23	E02 840 526	DEFROST HEATER	H		1		1	
24	E02 840 381	HEATER PROTECTOR	26H		1		1	
25	E02 927 937	CAPILLARY TUBE		1	1			φ3.0×φ2.0×240
	E02 735 936	CAPILLARY TUBE				2	2	φ3.0×φ1.8×600

MUZ-FA25VA -^[E1] MUZ-FA35VA -^[E1]
MUZ-FA25VAH -^[E1] MUZ-FA35VAH -^[E1]
13-2. OUTDOOR UNIT ELECTRICAL PARTS

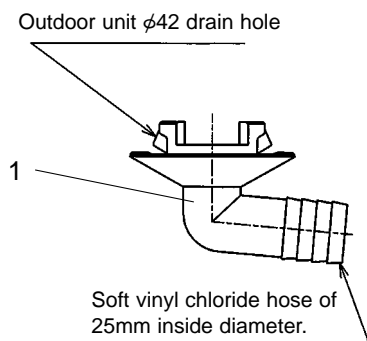


Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit				Remarks
				MUZ-FA25VA- ^[E1]	MUZ-FA25VAH- ^[E1]	MUZ-FA35VA- ^[E1]	MUZ-FA35VAH- ^[E1]	
1	E02 838 337	REACTOR	L61	1	1	1	1	
2	E02 927 444	POWER P.C. BOARD		1		1		
	E02 931 444	POWER P.C. BOARD			1		1	
3	E02 927 490	R.V. COIL	21S4	1	1	1	1	
4	E02 927 306	THERMISTOR SET	RT61,RT62	1	1	1	1	DEFROST, DISCHARGE
5	E02 927 308	AMBIENT TEMPERATURE THERMISTOR	RT65	1	1	1	1	
6	E02 735 241	FUSE HOLDER		1	1	1	1	
7	E02 735 382	FUSE	F61	1	1	1	1	250V/20A
8	E02 573 375	TERMINAL BLOCK	TB1	1	1	1	1	3P
9	E02 927 374	TERMINAL BLOCK	TB2	1	1	1	1	3P
10	E02 927 451	INVERTER P.C. BOARD		1				Including heat sink and RT64
	E02 935 451	INVERTER P.C. BOARD			1			Including heat sink and RT64
	E02 929 451	INVERTER P.C. BOARD				1		Including heat sink and RT64
	E02 930 451	INVERTER P.C. BOARD					1	Including heat sink and RT64
⑪	E02 127 382	FUSE	F71,F801	1	1	1	1	250V/3.15A
⑫	E02 661 385	VARISTOR	NR62,NR63,NR64	1	1	1	1	

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]

13-3. DRAIN SOCKET



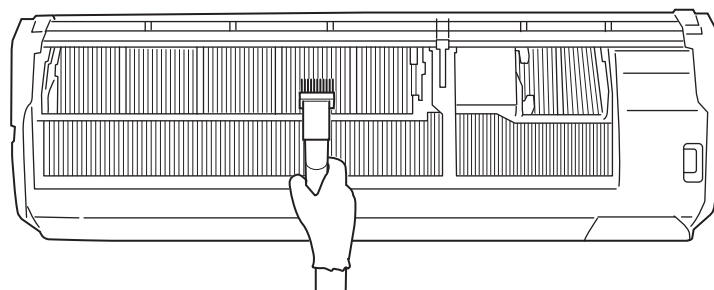
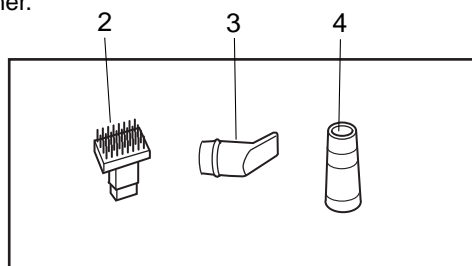
No.	Parts No.	Parts Name	Symbol in Wiring Diagram	Q'ty/unit		Remarks
				MUZ-FA25VA-[E1]	MUZ-FA35VA-[E1]	
1	E02 838 704	DRAIN SOCKET		1	1	

MUZ-FA25VA -[E1] MUZ-FA35VA -[E1]

MUZ-FA25VAH -[E1] MUZ-FA35VAH -[E1]

13-4. QUICK CLEAN KIT

● You can clean the surface of the heat exchanger and line flow fan if you attach QUICK CLEAN KIT to your vacuum cleaner.



No.	Parts No.	Parts Name	Symbol in Wiring Diagram	Q'ty/unit				Remarks
				MUZ-FA25VA-[E1]	MUZ-FA25VAH-[E1]	MUZ-FA35VA-[E1]	MUZ-FA35VAH-[E1]	
2	E02 927 113	BRUSH		1	1	1	1	
3	E02 927 115	NOZZLE		1	1	1	1	
4	E02 927 112	UNIVERSAL ADAPTER		1	1	1	1	



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