

PUHY-P600YSMF-B, PUHY-P650YSMF-B
 PUHY-P700YSMF-B, PUHY-P750YSMF-B

CONTENTS

1. Specifications	34
2. Capacity Tables	38
2-1 Correction by temperature	38
2-2 Correction by total indoor	40
2-3 Correction by refrigerant piping length	44
2-4 Correction at frosting and defrosting	45
2-5 Operation limit	45
3. Sound Levels	46
4. External Dimensions	48
5. Wiring Diagram	51
6. Refrigerant Circuit Diagram	53
And Thermal Sensor	

1. Specifications

This unit consists of a combination of PUHY-P400YMF-B and PUHN-P200YMF-B.

Model name		PUHY-P600YSMF-B	
		Cooling	Heating
Capacity	kcal/h	60,000	67,400
	kW	69.8	78.3
	BTU/h	238,200	267,500
Power source		3N ~ 380/400/415V 50/60Hz	
Power input	kW	25.5	22.95
Current	A	42.5/40.4/38.9	38.3/36.4/35.0
Refrigerant / Lubricant		R407C/MEL32	
External finish		Steel plate painting with polyester powder <MUNSELL 5Y8/1 or similar>	
Indoor unit	Total capacity	50 ~ 130% of outdoor unit capacity	
	Model / Quantity	Model 20 ~ 250 / 2 ~ 32	
Noise level	dB<A> (50/60Hz)	61.5 / 62	
Refrigerant piping diameter (main)	Liquid / Gas	φ19.05 / φ34.93	
Operating temperature range		Indoor:15°CWB ~ 24°CWB Outdoor:-5°CDB ~ 43°CDB (10°CDB~43°CDB with outdoor unit at lower position, or with indoor unit 20 or 25 type only is working)	Indoor:15°CDB ~ 27°CDB Outdoor:-15°CWB ~ 15.5°CWB (-12°CWB~10°CWB with indoor unit 20 or 25 type only is working)

Model name		PUHY-P400YMF-B	PUHN-P200YMF-B	
Fan	TypeX Quantity	Propeller fan X 2	Propeller fan X 1	
	Airflow rate	m ³ /min	370	185
	Motor output	kW	0.35 X 2	0.35 X 1
Compressor	Type	Hermetic		
	Motor output	kW	4.5 + 7.5	5.5
	Crankcase heater	kW	0.045 + 0.056	0.056
External dimension		mm	1715(H)X 1990(W) X 840(L)	1715(H)X 990(W) X 840(L)
Protection devices	High pressure protection	30kg/cm ² G(2.94MPa)		
	Compressor / Fan	Overcurrent protection / Thermal switch		
	Inverter	DC bus current protection, thermal switch	—	
Refrigerant piping diameter	Liquid / Gas	φ□5.88 flare / φ□34.93 Flange	φ□2.7 flare / φ□28.58 Flange	
Net weight	kg	455	240	

Note: 1.Cooling/heating capacity indicates the maximum value at operation under the following condition.

Cooling Indoor : 27°CDB/19.5°CWB Outdoor : 35°CDB
Heating Indoor : 21°CDB Outdoor : 7°CDB/6°CWB
 Pipe length : 10m Height difference : 0m

2.Works not included : Installation/foundation work, electrical connection work, duct work, insulation work, power source switch and other items not specified in this specification.

This unit consists of a combination of PUHY-P400YMF-B and PUHN-P250YMF-B.

Model name		PUHY-P650YSMF-B	
		Cooling	Heating
Capacity	kcal/h	65,000	73,000
	kW	75.6	84.9
	BTU/h	258,100	289,800
Power source		3N ~ 380/400/415V 50/60Hz	
Power input	kW	27.45	25.2
Current	A	45.8/43.5/41.9	42.0/39.9/38.5
Refrigerant / Lubricant		R407C/MEL32	
External finish		Steel plate painting with polyester powder <MUNSELL 5Y8/1 or similar>	
Indoor unit	Total capacity	50 ~ 130% of outdoor unit capacity	
	Model / Quantity	Model 20 ~ 250 / 2 ~ 32	
Noise level	dB<A> (50/60Hz)	62.0 / 62.5	
Refrigerant piping diameter (main)	Liquid / Gas	φ 19.05 / φ41.28	
Operating temperature range		Indoor:15°CWB ~ 24°CWB Outdoor:-5°CDB ~ 43°CDB (10°CDB~43°CDB with outdoor unit at lower position, or with indoor unit 20 or 25 type only is working)	Indoor:15°CDB ~ 27°CDB Outdoor:-15°CWB ~ 15.5°CWB (-12°CWB~10°CWB with indoor unit 20 or 25 type only is working)

Model name		PUHY-P400YMF-B		PUHN-P250YMF-B	
Fan	TypeX Quantity	Propeller fan X 2		Propeller fan X 1	
	Airflow rate	m ³ /min	370	185	
	Motor output	kW	0.35 X 2	0.35 X 1	
Compressor	Type	Hermetic			
	Motor output	kW	4.5 + 7.5	7.5	
	Crankcase heater	kW	0.045 + 0.056	0.056	
External dimension		mm	1715(H)X 1990(W)X 840(L)	1715(H)X 990(W)X 840(L)	
Protection devices	High pressure protection		30kg/cm ² G(2.94MPa)		
	Compressor / Fan		Overcurrent protection / Thermal switch		
	Inverter		DC bus current protection, thermal switch	—	
Refrigerant piping diameter	Liquid / Gas	φ□ 5.88 flare / φ□ 4.93 Flange	φ□ 2.7 flare / φ□ 28.58 Flange		
Net weight	kg	455	255		

Note: 1.Cooling/heating capacity indicates the maximum value at operation under the following condition.

Cooling Indoor : 27°CDB/19.5°CWB Outdoor : 35°CDB
Heating Indoor : 21°CDB Outdoor : 7°CDB/6°CWB
 Pipe length : 10m Height difference : 0m

2.Works not included : Installation/foundation work, electrical connection work, duct work, insulation work, power source switch and other items not specified in this specification.

This unit consists of a combination of PUHY-P500YMF-B and PUHN-P200YMF-B.

Model name		PUHY-P700YSMF-B	
		Cooling	Heating
Capacity	kcal/h	70,000	78,400
	kW	81.5	91.1
	BTU/h	277,900	311,200
Power source		3N ~ 380/400/415V 50/60Hz	
Power input	kW	30.5	26.95
Current	A	50.3/47.8/46.1	44.9/42.7/41.2
Refrigerant / Lubricant		R407C/MEL32	
External finish		Steel plate painting with polyester powder <MUNSELL 5Y8/1 or similar>	
Indoor unit	Total capacity	50 ~ 130% of outdoor unit capacity	
	Model / Quantity	Model 20 ~ 250 / 2 ~ 32	
Noise level	dB<A> (50/60Hz)	61.5 / 62.0	
Refrigerant piping diameter (main)	Liquid / Gas	φ19.05 / φ41.28	
Operating temperature range		Indoor:15°CWB ~ 24°CWB Outdoor:-5°CDB ~ 43°CDB (10°CDB~43°CDB with outdoor unit at lower position, or with indoor unit 20 or 25 type only is working)	Indoor:15°CDB ~ 27°CDB Outdoor:-15°CWB ~ 15.5°CWB (-12°CWB~10°CWB with indoor unit 20 or 25 type only is working)

Model name		PUHY-P500YMF-B		PUHN-P200YMF-B	
Fan	TypeX Quantity	Propeller fan X 2		Propeller fan X 1	
	Airflow rate	m ³ /min	370	185	
	Motor output	kW	0.35 X 2	0.35 X 1	
Compressor	Type	Hermetic			
	Motor output	kW	7.5 + 7.5	5.5	
	Crankcase heater	kW	0.045 + 0.056	0.056	
External dimension		mm	1715(H)X 1990(W) X 840(L)	1715(H)X 990(W) X 840(L)	
Protection devices	High pressure protection		30kg/cm ² G(2.94MPa)		
	Compressor / Fan		Overcurrent protection / Thermal switch		
	Inverter		DC bus current protection, thermal switch	—	
Refrigerant piping diameter	Liquid / Gas	φ□5.88 flare / φ□4.93 Flange	φ□2.7 flare / φ□28.58 Flange		
Net weight	kg	475	240		

Note: 1.Cooling/heating capacity indicates the maximum value at operation under the following condition.

Cooling Indoor : 27°CDB/19.5°CWB Outdoor : 35°CDB
Heating Indoor : 21°CDB Outdoor : 7°CDB/6°CWB
 Pipe length : 10m Height difference : 0m

2.Works not included : Installation/foundation work, electrical connection work, duct work, insulation work, power source switch and other items not specified in this specification.

This unit consists of a combination of PUHY-P500YMF-B and PUHN-P250YMF-B.

Model name		PUHY-P750YSMF-B	
		Cooling	Heating
Capacity	kcal/h	75,000	84,000
	kW	87.3	97.7
	BTU/h	297,800	333,500
Power source		3N ~ 380/400/415V 50/60Hz	
Power input	kW	32.4	28.95
Current	A	53.5/50.8/48.9	48.3/45.9/44.2
Refrigerant / Lubricant		R407C/MEL32	
External finish		Steel plate painting with polyester powder <MUNSELL 5Y8/1 or similar>	
Indoor unit	Total capacity	50 ~ 130% of outdoor unit capacity	
	Model / Quantity	Model 20 ~ 250 / 2 ~ 32	
Noise level	dB<A> (50/60Hz)	62.0 / 62.5	
Refrigerant piping diameter (main)	Liquid / Gas	φ19.05 / φ41.28	
Operating temperature range		Indoor: 15°CWB ~ 24°CWB Outdoor: -5°CDB ~ 43°CDB (10°CDB~43°CDB with outdoor unit at lower position, or with indoor unit 20 or 25 type only is working)	Indoor: 15°CDB ~ 27°CDB Outdoor: -15°CWB ~ 15.5°CWB (-12°CWB~10°CWB with indoor unit 20 or 25 type only is working)
		PUHY-P500YMF-B	PUHN-P250YMF-B
Fan	Type X Quantity	Propeller fan X 2	
	Airflow rate	m ³ /min	370
	Motor output	kW	0.35 X 2
Compressor	Type	Hermetic	
	Motor output	kW	7.5 + 7.5
	Crankcase heater	kW	0.045 + 0.056
External dimension	mm	1715(H)X 1990(W) X 840(L)	1715(H)X 990(W) X 840(L)
Protection devices	High pressure protection	30kg/cm ² G(2.94MPa)	
	Compressor / Fan	Overcurrent protection / Thermal switch	
	Inverter	DC bus current protection, thermal switch	—
Refrigerant piping diameter	Liquid / Gas	φ□5.88 flare / φ□4.93 Flange	φ□2.7 flare / φ□28.58 Flange
Net weight	kg	475	255

Note: 1.Cooling/heating capacity indicates the maximum value at operation under the following condition.

Cooling Indoor : 27°CDB/19.5°CWB Outdoor : 35°CDB
Heating Indoor : 21°CDB Outdoor : 7°CDB/6°CWB
 Pipe length : 10m Height difference : 0m

2.Works not included : Installation/foundation work, electrical connection work, duct work, insulation work, power source switch and other items not specified in this specification.

2. Capacity tables

2-1. Correction by temperature

Cooling

•Standard Specifications

		PUHY-P600YSMF-B	PUHY-P650YSMF-B	PUHY-P700YSMF-B	PUHY-P750YSMF-B
Capacity	kcal/h	60,000	65,000	70,000	75,000
	kW	69.8	75.6	81.5	87.3
	BTU/h	238,200	258,100	277,900	297,800
Input	kW	25.5	27.45	30.5	32.4
Source	V	380/400/415			
Current	A	42.5/40.4/38.9	45.8/43.5/41.9	50.3/47.8/46.1	53.5/50.8/48.9

•Calculation

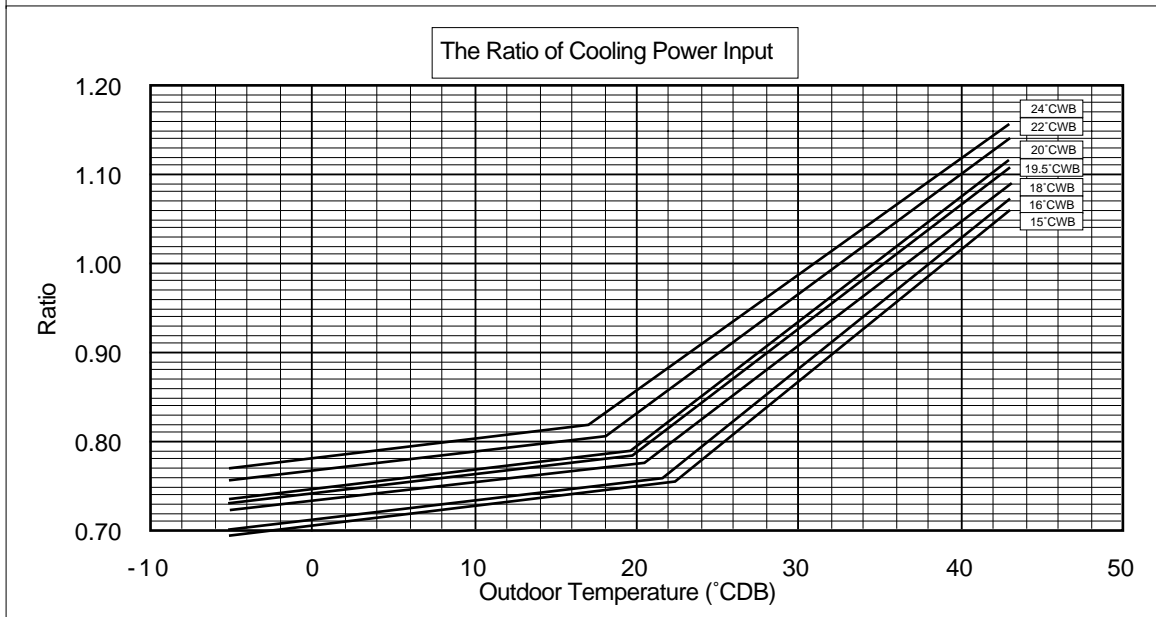
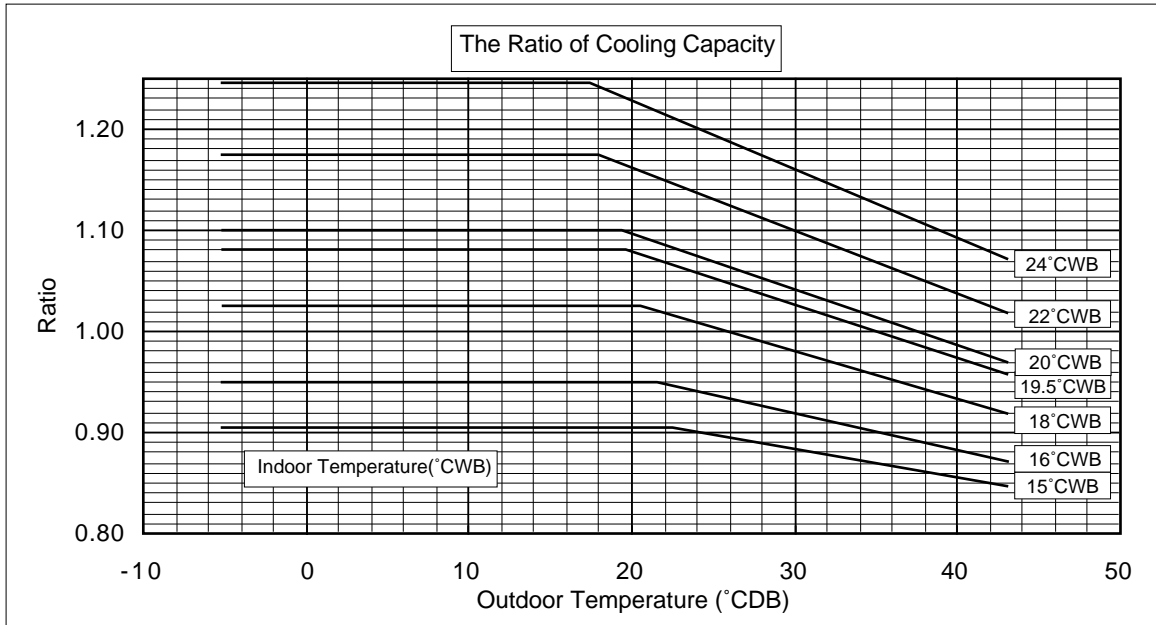
$$\text{Capacity}' = \text{Capacity} \times \text{Ratio}$$

$$\text{Input}' = \text{Input} \times \text{Ratio}$$

$$\text{Current}' = \frac{\text{Input}' \times 1000}{\sqrt{3} \times \text{Source}}$$

$$\begin{aligned} &\times 0.91 (\text{:PUHY-P600-650YSMF-B}) \\ &\times 0.92 (\text{:PUHY-P700-750YSMF-B}) \end{aligned}$$

✳Capacity'
Input'
Current' } After correction



Super Y(R407C)

Heating

•Standard Specifications

		PUHY-P600YSMF-B	PUHY-P650YSMF-B	PUHY-P700YSMF-B	PUHY-P750YSMF-B
Capacity	kcal/h	67,400	73,000	78,400	84,000
	kW	78.3	84.9	91.1	97.7
	BTU/h	267,500	289,800	311,200	333,500
Input	kW	22.95	25.2	26.95	28.95
Source	V	380/400/415			
Current	A	38.3/36.4/35.0	42.0/39.9/38.5	44.9/42.7/41.2	48.3/45.9/44.2

•Calculation

Capacity' = Capacity X Ratio

Input' = Input X Ratio

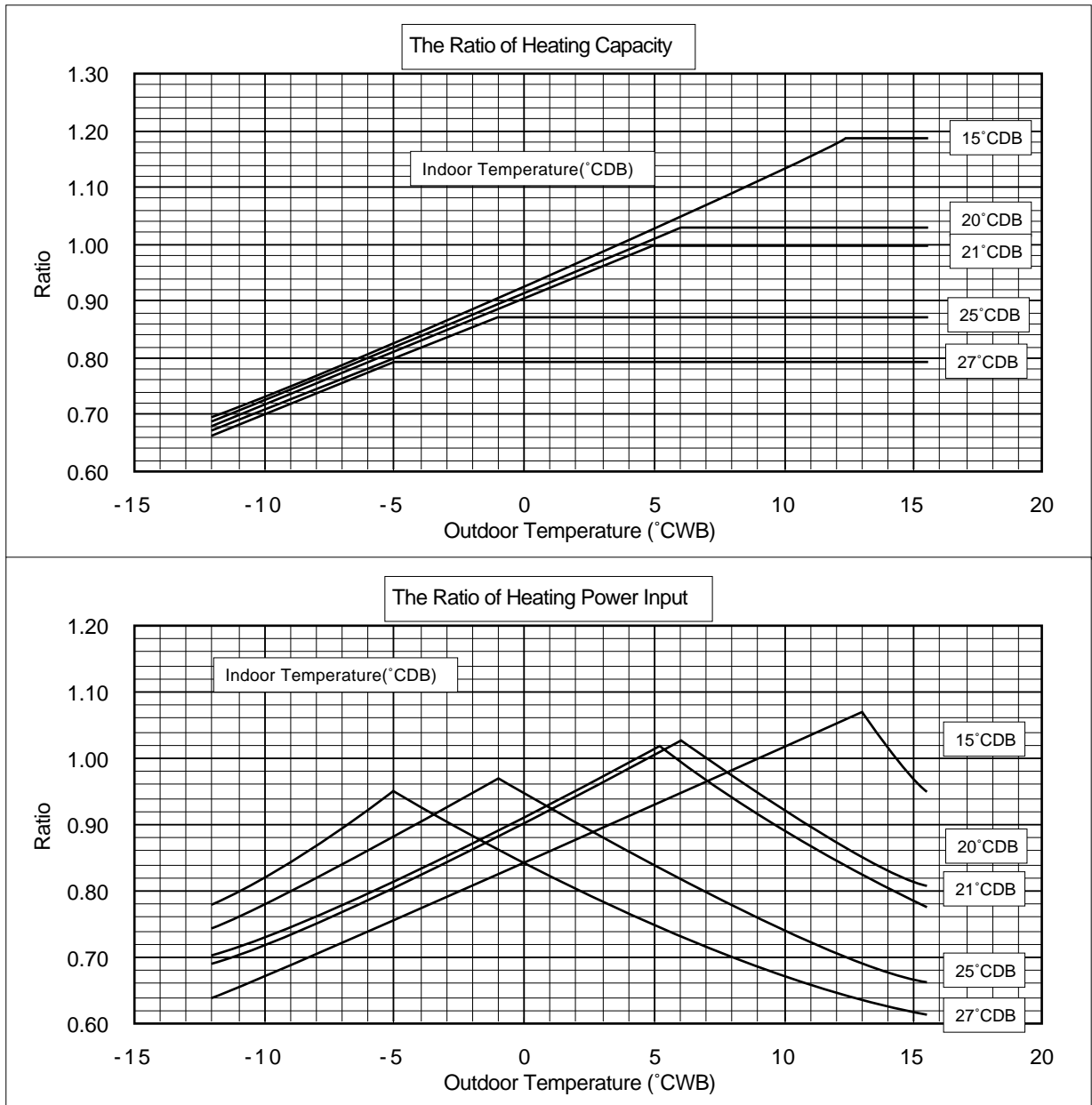
Current' = $\frac{\text{Input}' \times 1000}{\sqrt{3} \times \text{Source} \times 0.91}$ (:PUHY-P600-650-700-750YSMF-B)

※Capacity'

Input'

Current'

} After correction

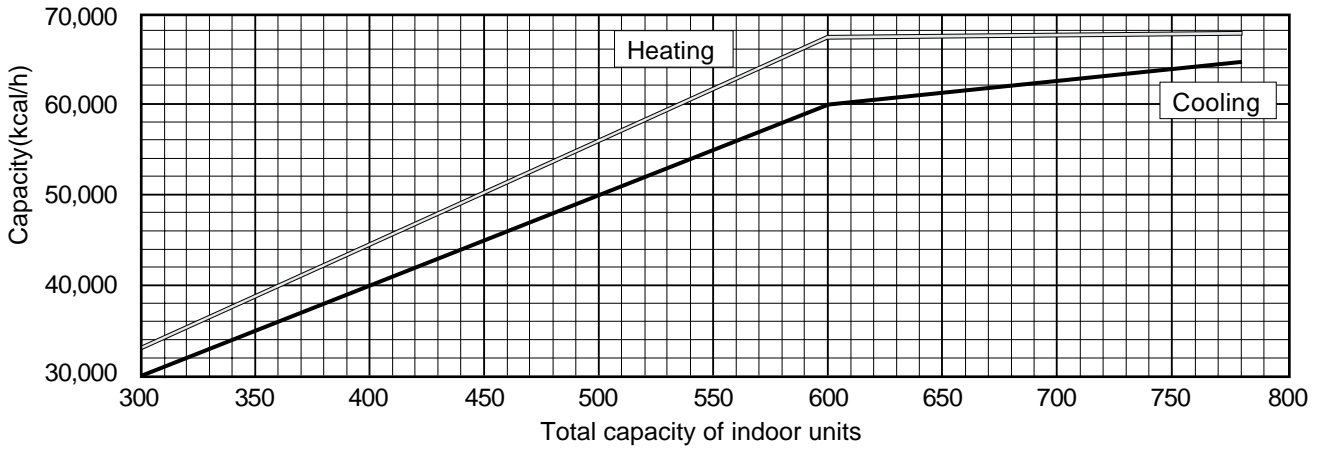


Super Y(R407C)

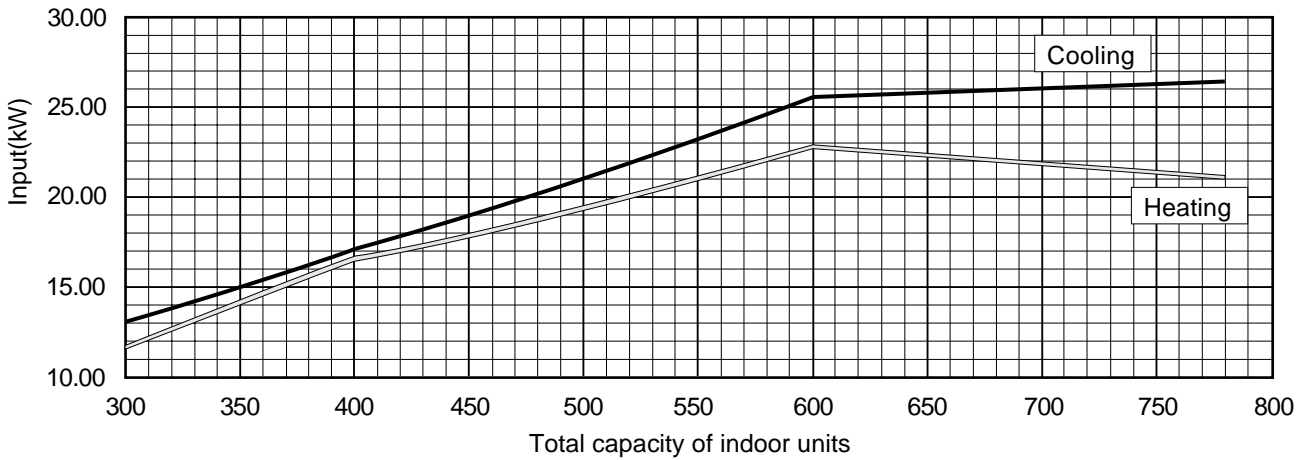
2-2. Correction by total indoor

PUHY-P600YSMF-B

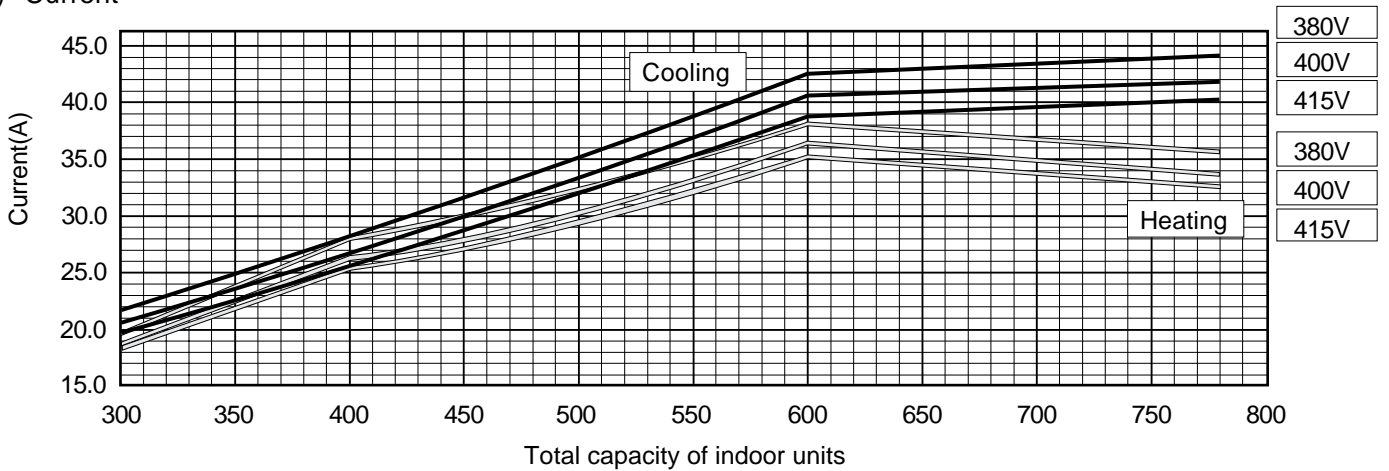
1) Capacity



2) Input

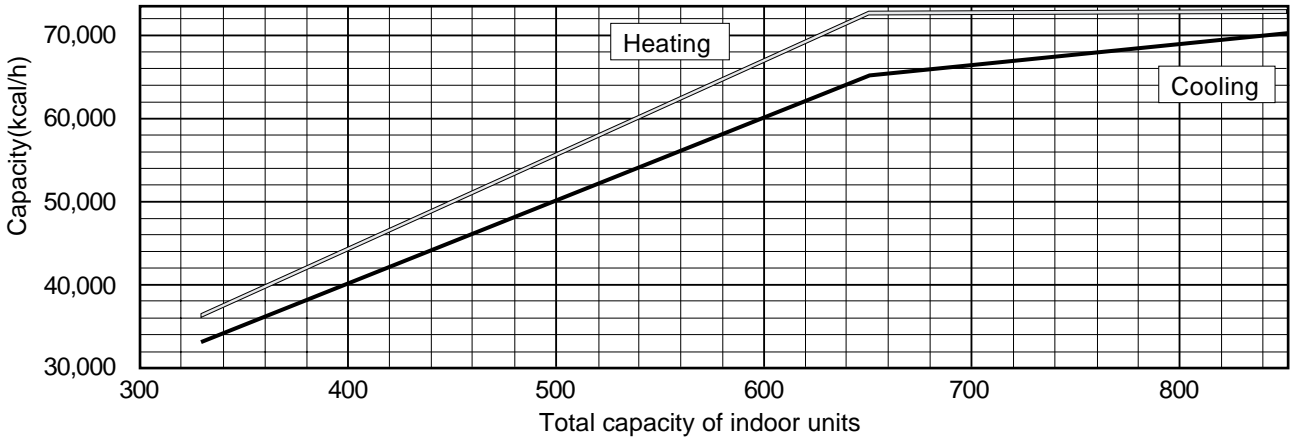


3) Current



PUHY-P650YSMF-B

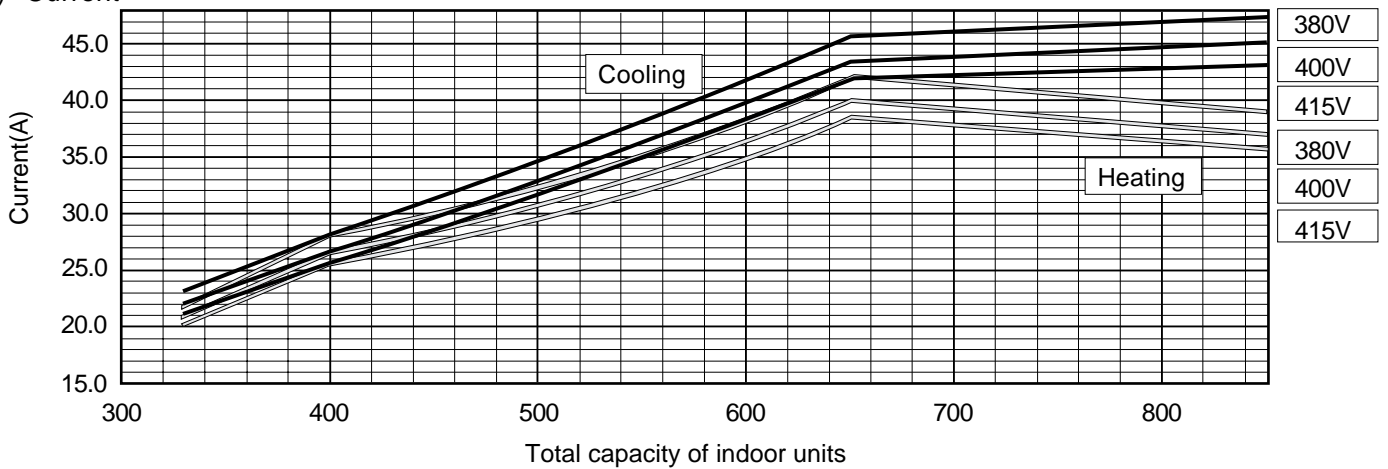
1) Capacity



2) Input



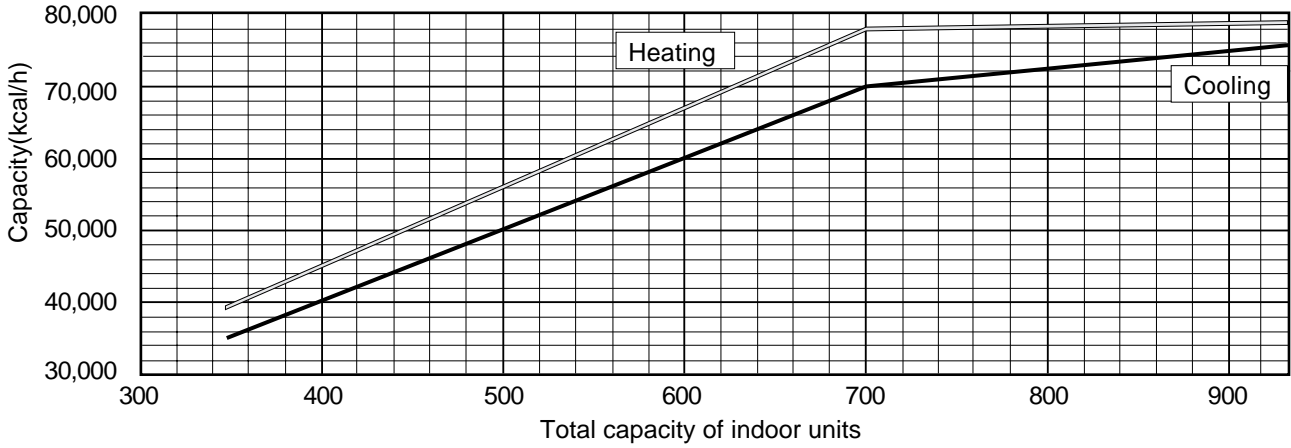
3) Current



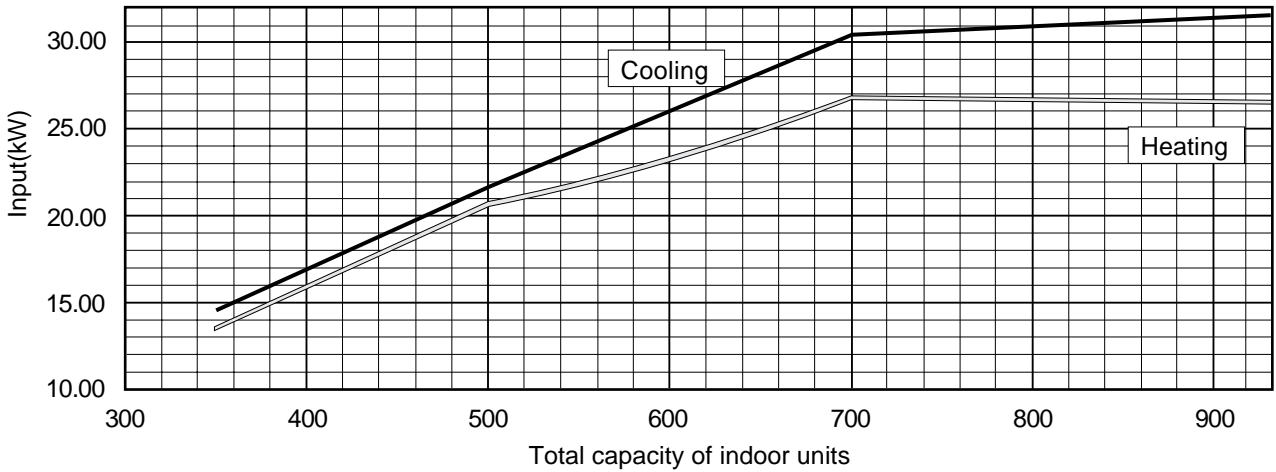
Super Y(R407C)

PUHY-P700YSMF-B

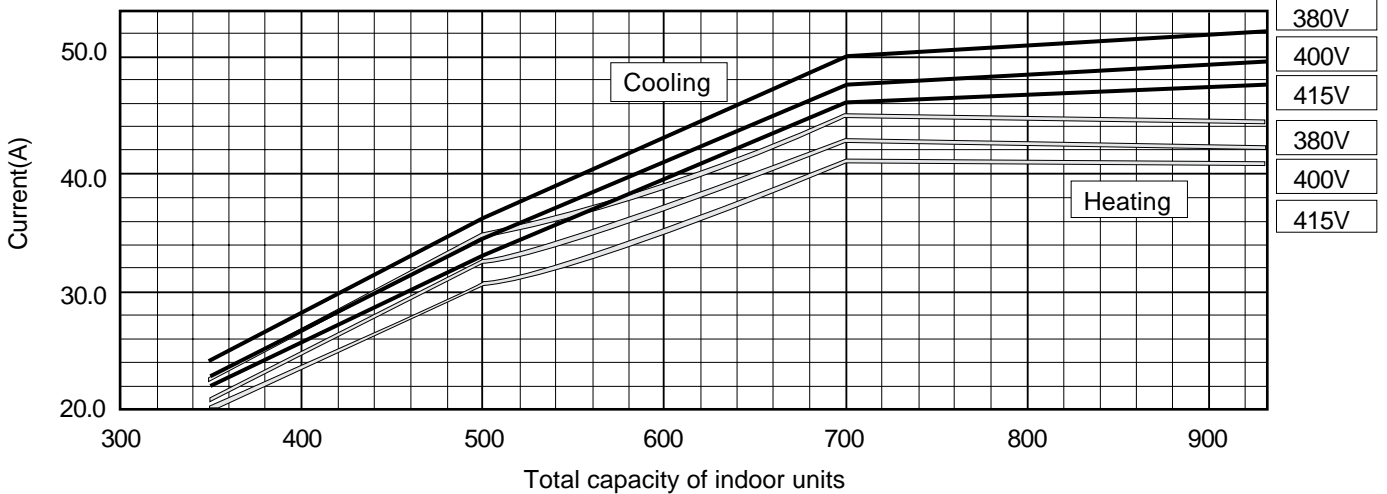
1) Capacity



2) Input



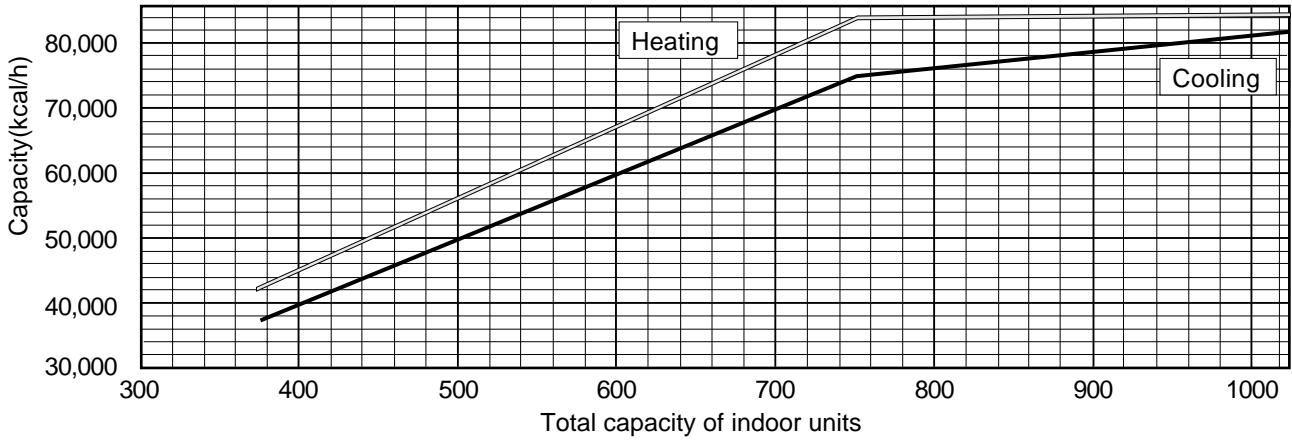
3) Current



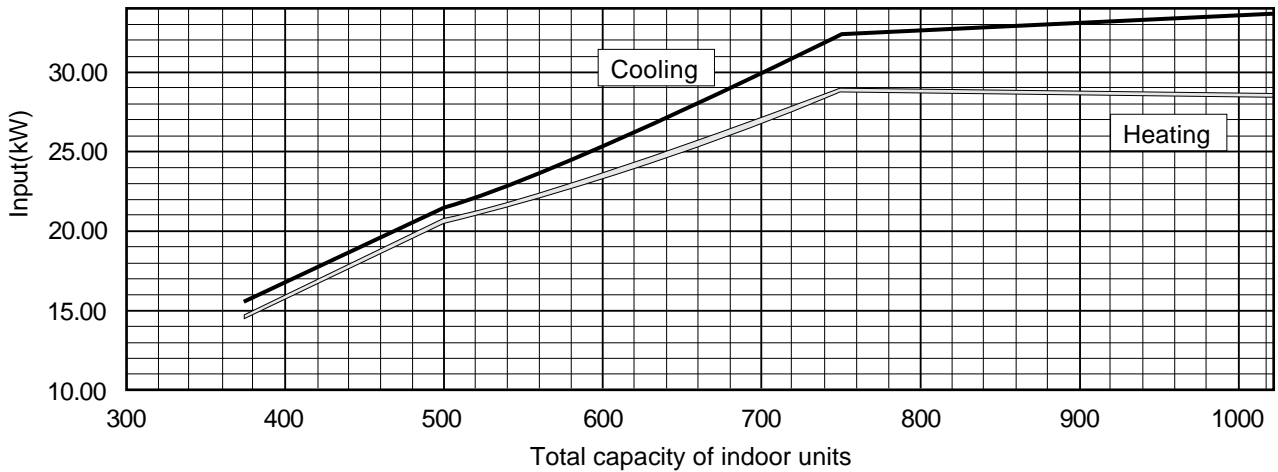
Super Y(R407C)

PUHY-P750YSMF-B

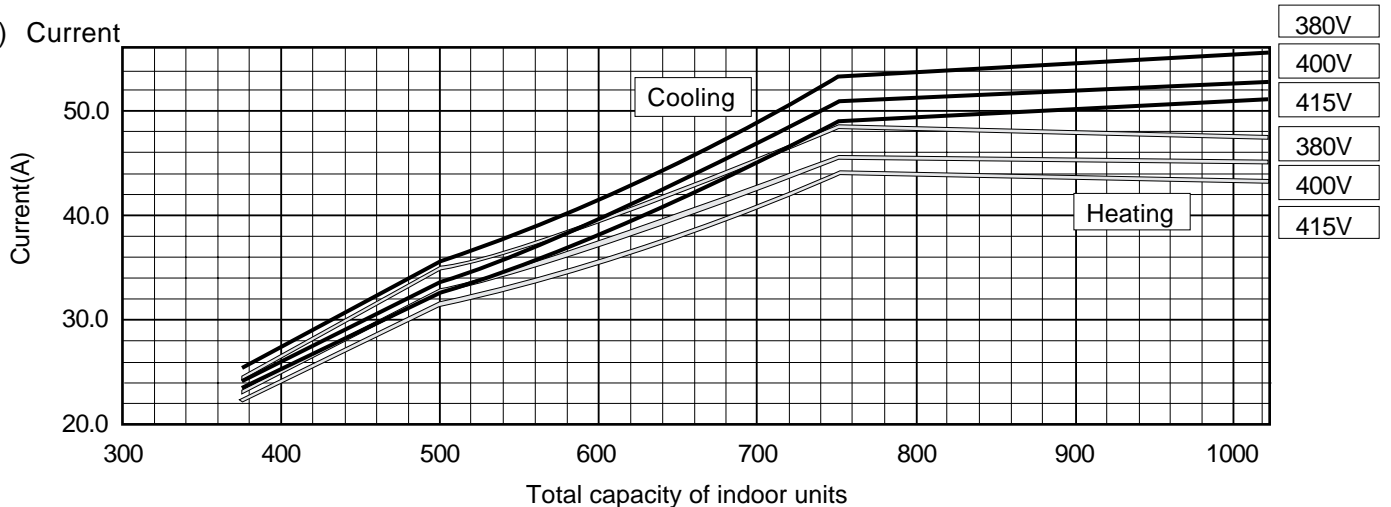
1) Capacity



2) Input



3) Current

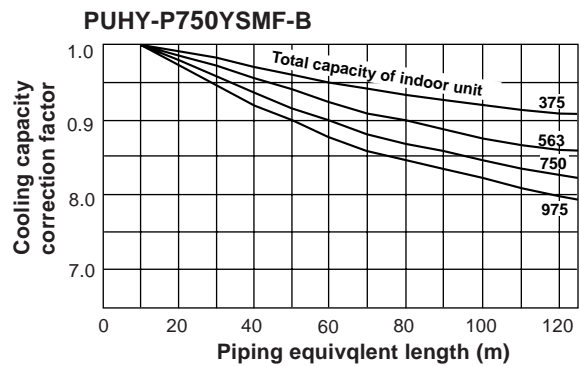
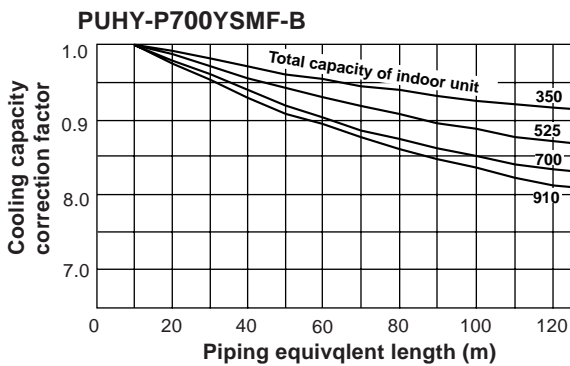
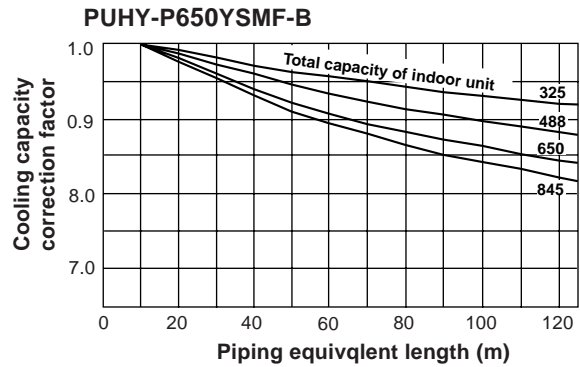
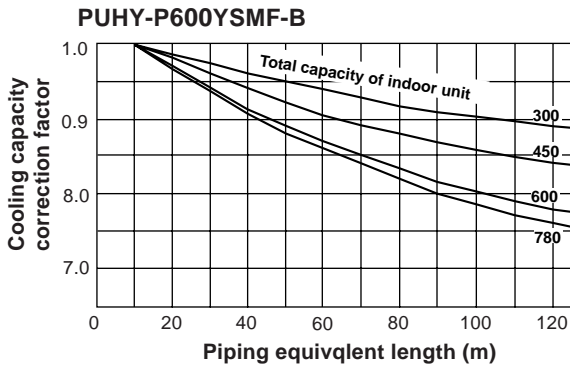


Super Y(R407C)

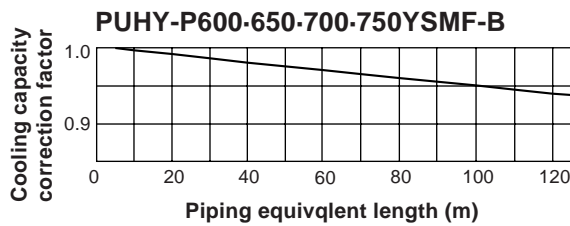
2-3 Correction by refrigerant piping length

To obtain a decrease in cooling/heating capacity due to refrigerant piping extension, multiply by the capacity correction factor based on the refrigerant piping equivalent length in the table below.

• Cooling capacity correction



• Heating capacity correction



• How to obtain piping equivalent length

① PUHY-P600YSMF-B

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.80 × number of bent on the piping)m

② PUHY-P650 ~ 750YSMF-B

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.95 × number of bent on the piping)m

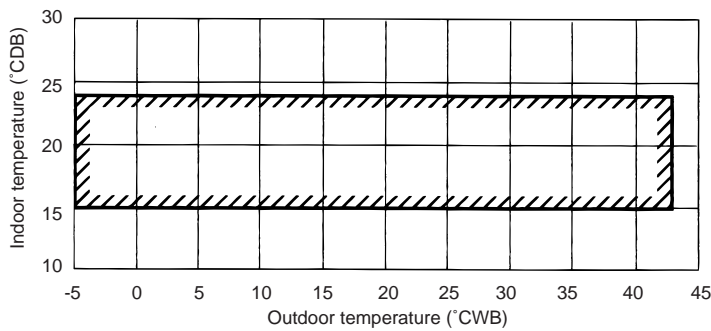
2-4 Correction at frosting and defrosting

When a decrease in heating capacity due to frosted and defrosting operations is considered, the value multiplied by the correction factor in the table below represents the heating capacity.

Outdoor inlet air temp (°CWB)	6	4	2	0	-2	-4	-6	-8	-10
Correction factor	1.0	0.98	0.89	0.89	0.90	0.92	0.95	0.95	0.95

2-5 Operation limit

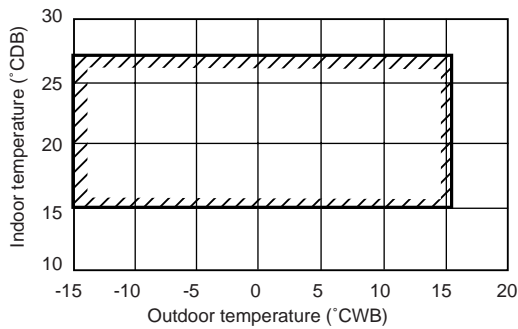
• Cooling



When the indoor unit is located above the outdoor unit for 4m or more, or indoor unit 20 or 25type only is working, the outdoor unit inlet air temperature becomes 10~43°CDB.

Super Y(R407C)

• Heating

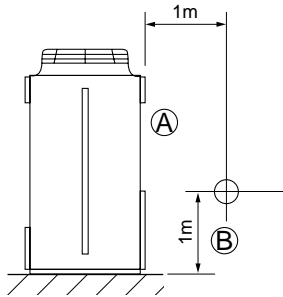


When the indoor unit 20 or 25type only is working, the outdoor unit inlet air temperature becomes -15~10°CWB.

3. Sound levels

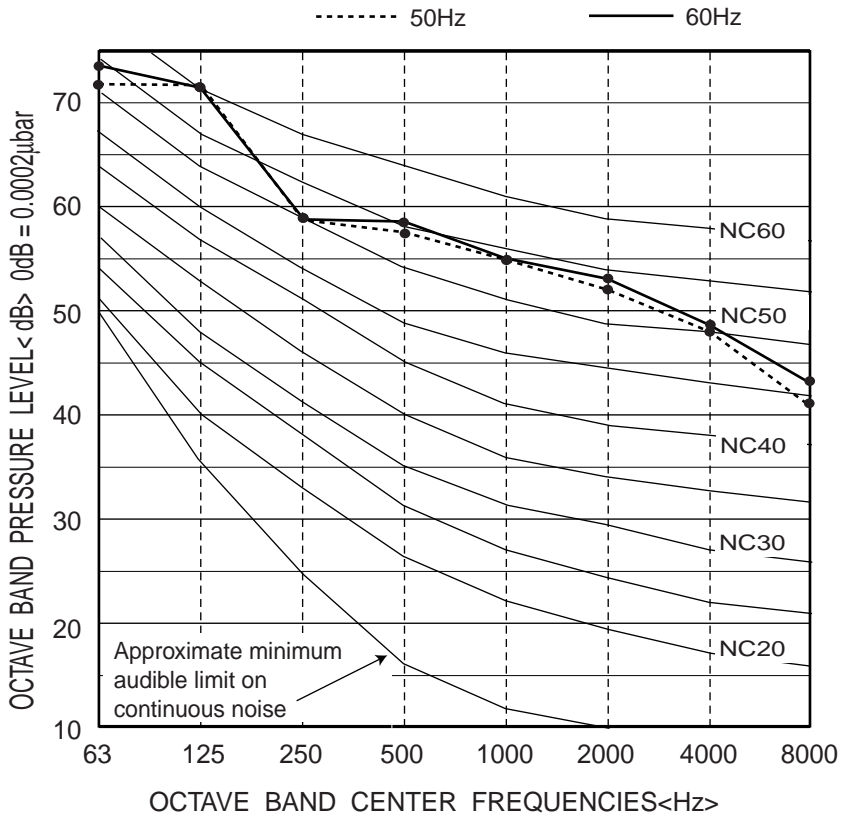
PUHY-P600YSMF-B

Measurement condition



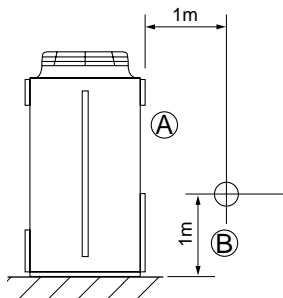
Sound pressure level in anechoic room

61.5 / 62.0 dB (A)



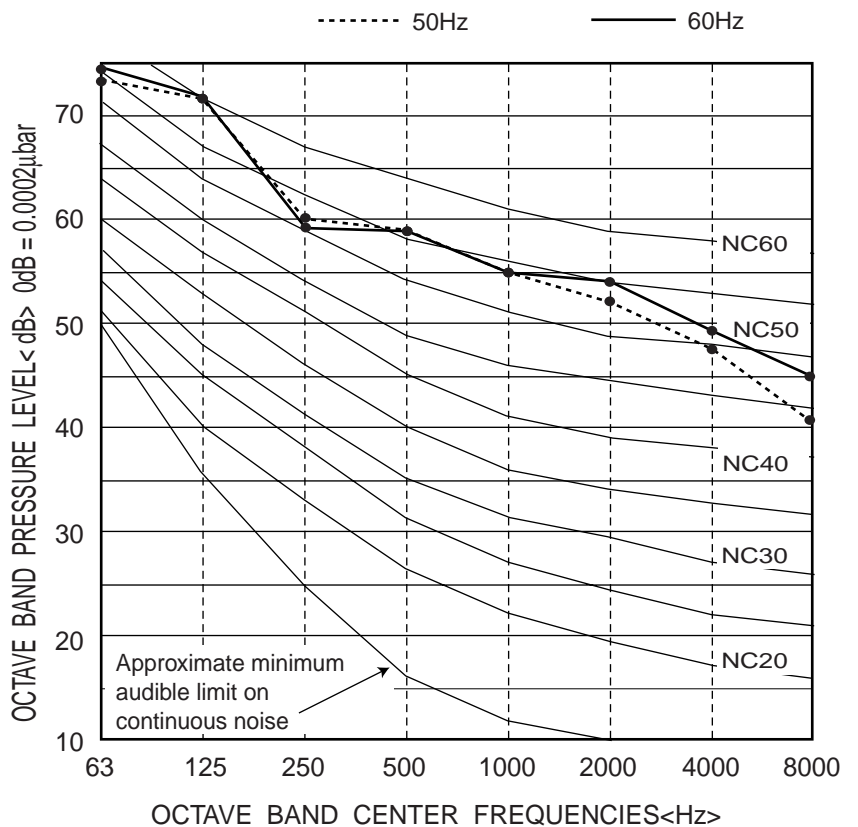
PUHY-P650YSMF-B

Measurement condition



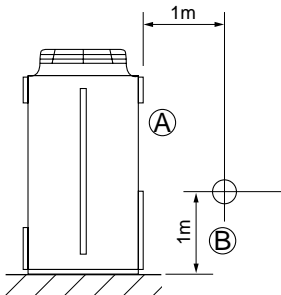
Sound pressure level in anechoic room

62.0 / 62.5 dB (A)



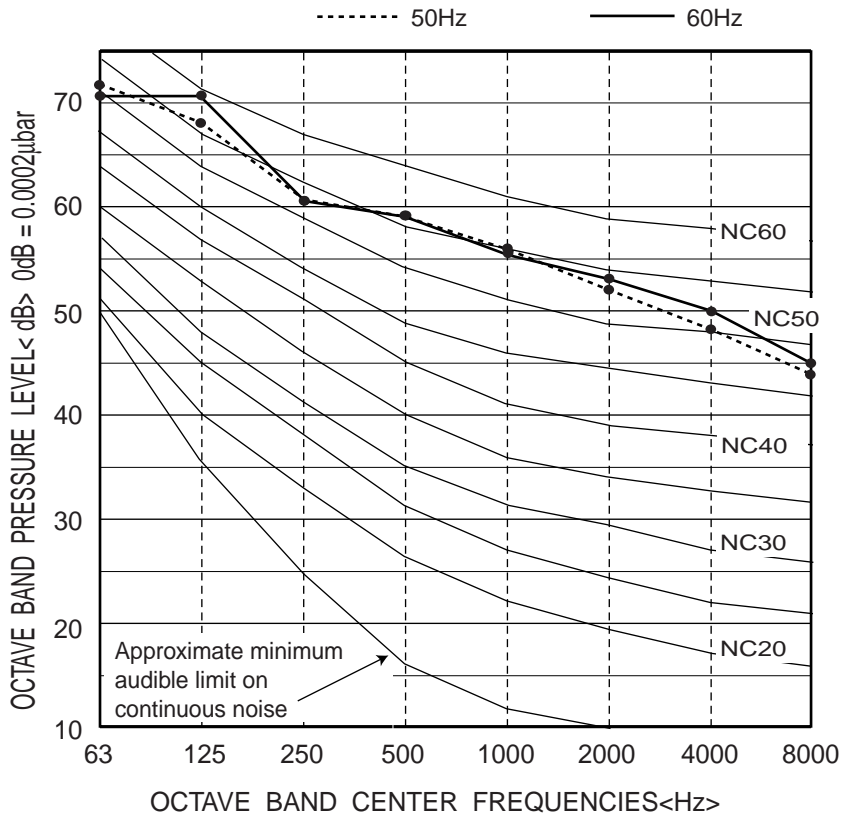
PUHY-P700YSMF-B

Measurement condition



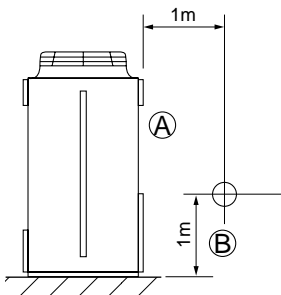
Sound pressure level in anechoic room

61.5 / 62.0 dB (A)



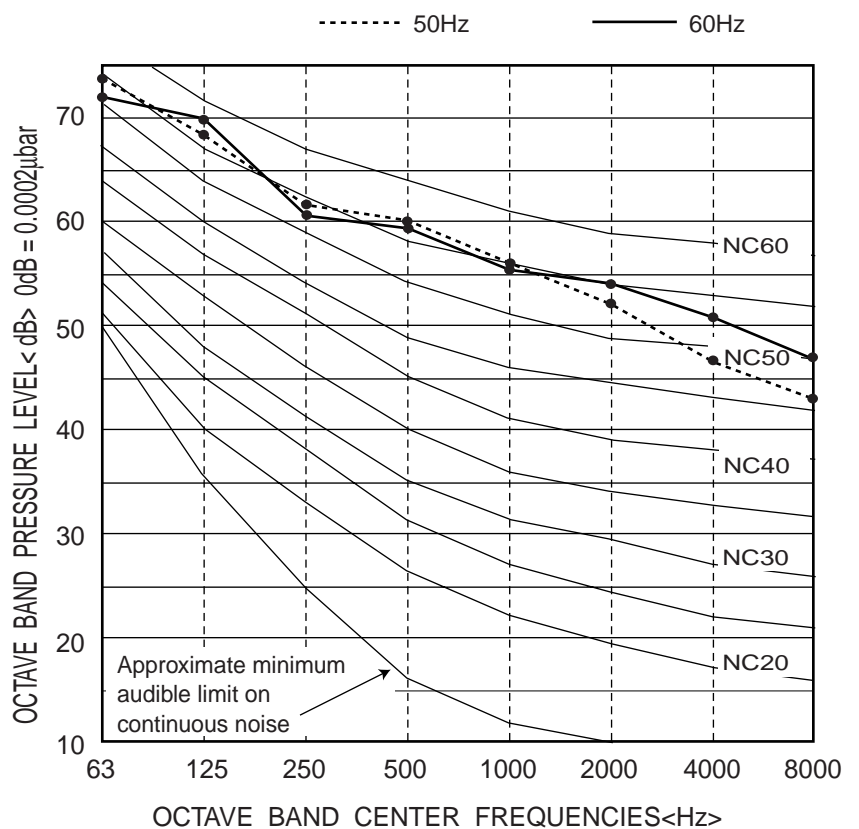
PUHY-P750YSMF-B

Measurement condition



Sound pressure level in anechoic room

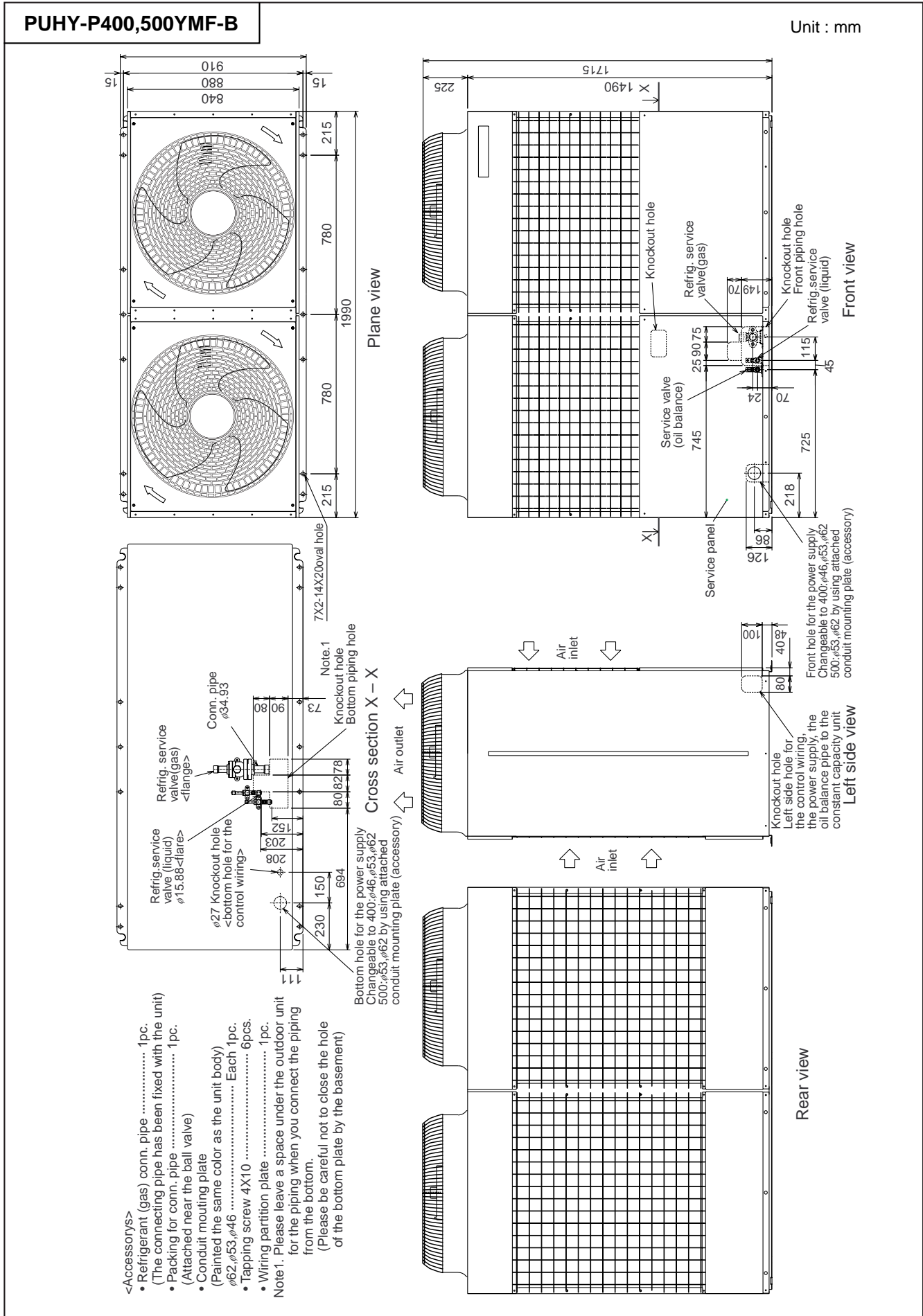
62.0 / 62.5 dB (A)



Super Y(R407C)

4. External dimensions

Super Y(R407C)

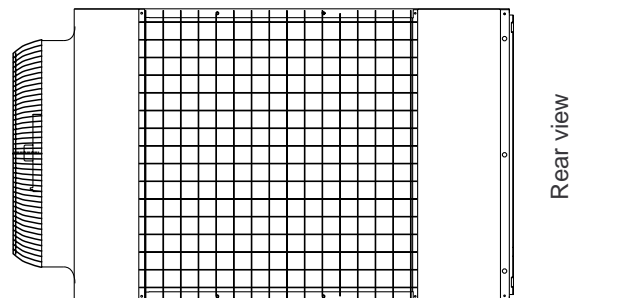
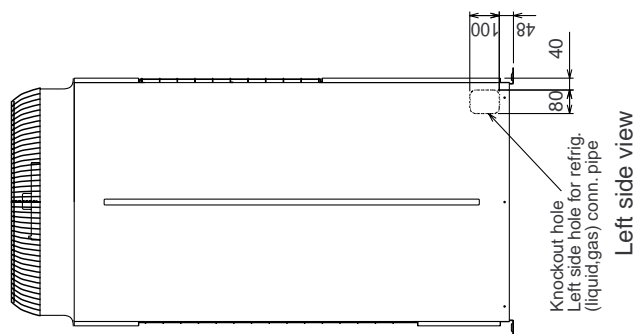
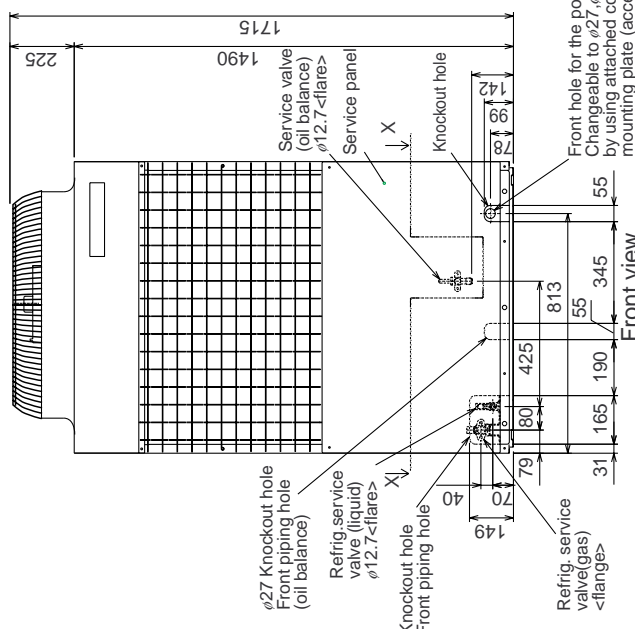
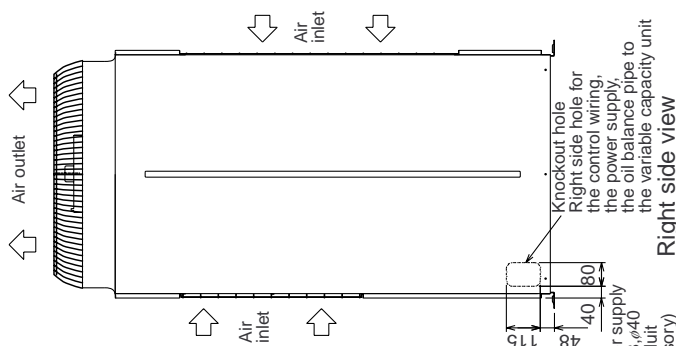
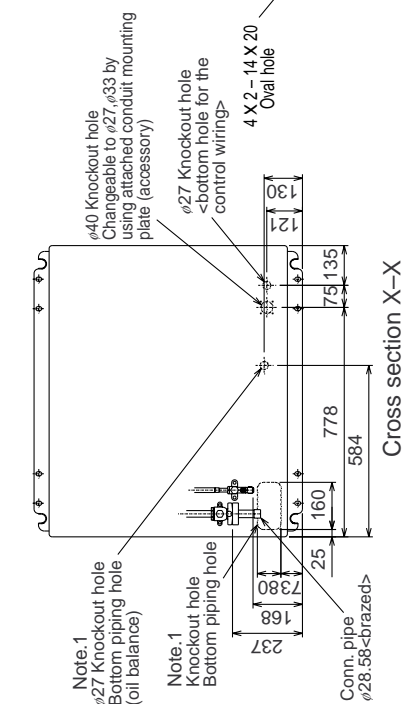
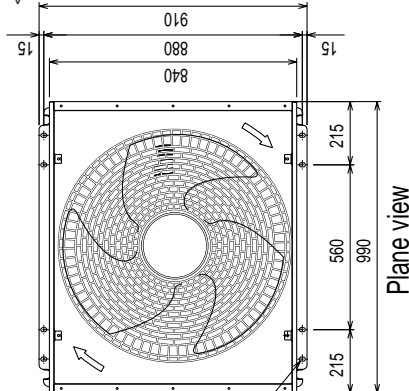


PUHN-P200, 250YMF-B

Unit : mm

- <Accessories>
- Refrigerant conn. pipe.....1pc.
(The connecting pipe has been fixed with the unit)
 - Packing for conn. pipe.....1pc.
(Attached near the ball valve)
 - Conduit mounting plate
(Painted the same color as the unit body)
ø40, ø33, ø27.....Each 1pc.
 - Tapping screw 4X12.....4pcs.
 - Oil balance conn. pipe (to the variable capacity unit through the right side panel knockout hole).....1pc.
 - Sealing.....2pcs.

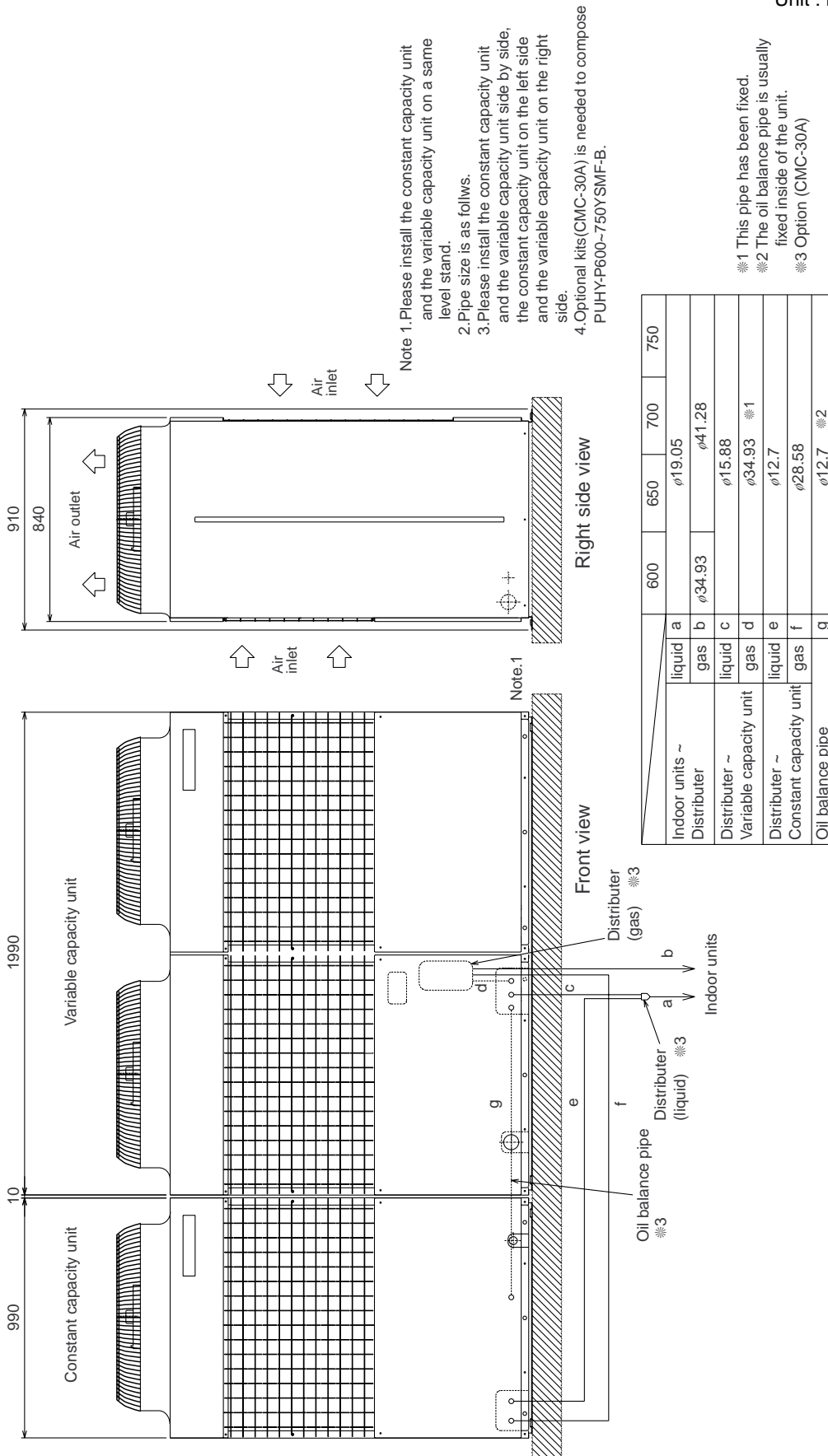
Note 1. Please leave a space under the outdoor unit for the piping when you connect the piping from the bottom.
(Please be careful not to close the hole of the bottom plate by the basement)



Super Y(R407C)

PUHY-P600,650,700,750YSMF-B

Unit : mm



5. Electrical Wiring Diagram

PUHY-P400-500YMF-B

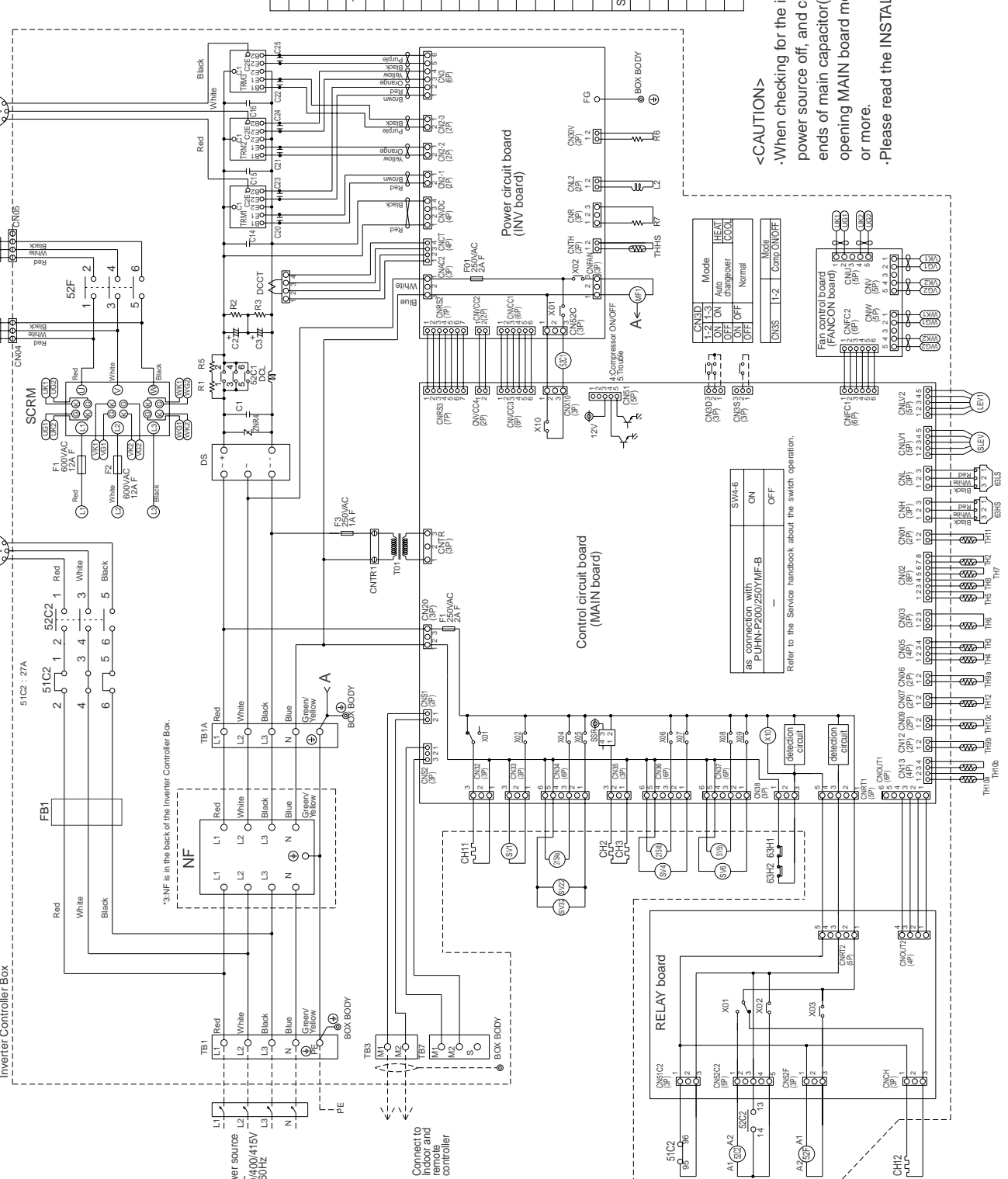
<SYMBOL EXPLANATION>

Symbol	Name
TB1, 1A, 3, 7	Terminal block
DS	Diode stack
NF	Noise Filter
TH2-12, THHS	Thermistor
CH1, 1, 2	Crank case heater (Compressor)
CH2, CH3	Cord heater
63H1, 2	High pressure switch
DCL	DC reactor (Power factor improvement)
DCCT	Current Sensor
ZNR4	Varistor
52C1	Magnetic contactor (Inverter main circuit)
52C2	Magnetic contactor
51C2	Overload Relay
52F	Magnetic contactor
MF1	Fan (Radiator panel)
SSR	Solid state relay
21S4a, b	4-way valve
SV1, 2, 2, 3, 2, 4, 5, 6	Solenoid valve
LEV1, SLEV	Electronic expansion valve
63HS, 63LS	High pressure sensor
L2	Choke coil (Transmission)
TRM1-3	Power transistor module
FB1	Ferrite core
⊕	Earth terminal

<CAUTION>

- When checking for the inside control box, be sure to turn the power source off, and confirm that the voltage at the both ends of main capacitor (C2, C3) is being sufficiently low by opening MAIN board mounting plate after leaving 10 minutes or more.
- Please read the INSTALLATION MANUAL carefully.

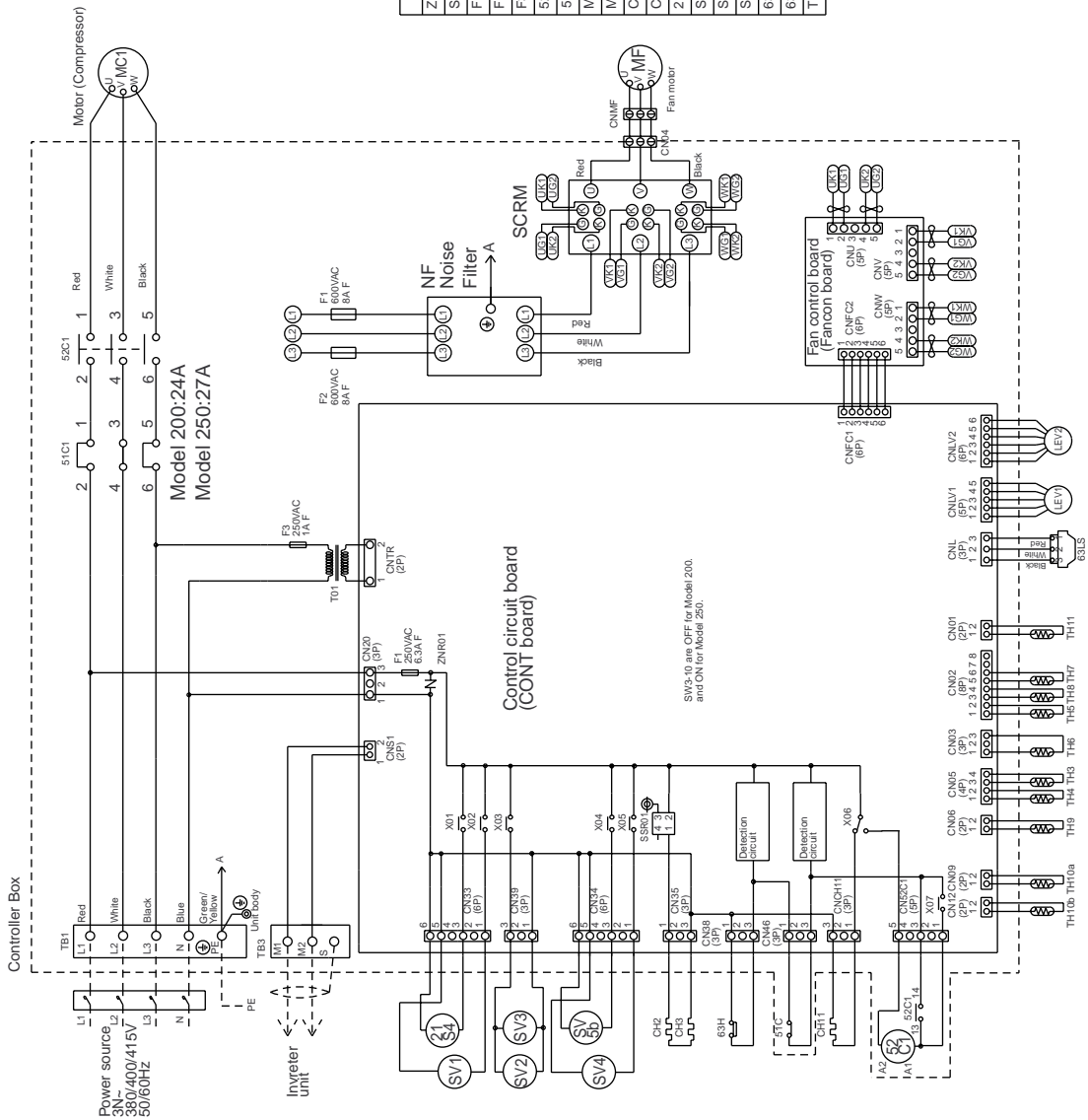
<WIRING DIAGRAM>



Super Y(R407C)

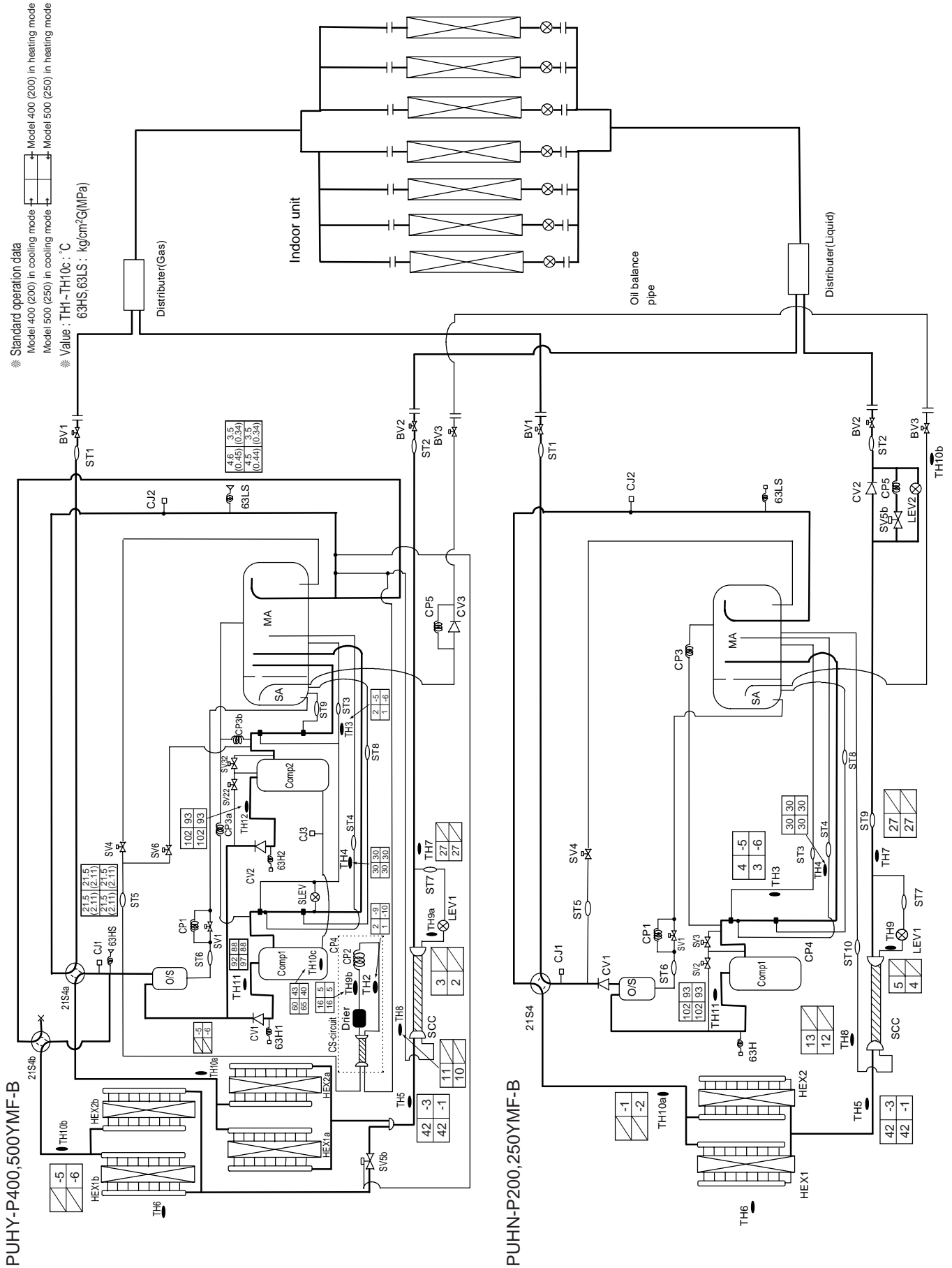
PUHN-P200-250YMF-B

Super Y(R407C)



SYMBOL	NAME	SYMBOL	NAME
ZNR01	VARISTOR	TH3	THERMISTER
SSR	SOLID STATE RELAY	TH4	THERMISTER
F1	FUSE(6.3A)	TH5	THERMISTER
F1,F2	FUSE(8A)	TH6	THERMISTER
F3	FUSE(1A)	TH7	THERMISTER
52C1	MAGNET CONTACTOR	TH8	THERMISTER
51C1	OVER CURRENT RELAY	TH9	THERMISTER
MC1	ELECTRIC MOTOR OF COMPRESSOR	TH10a	THERMISTER
MF	FAN MOTOR(HEAT EXCHANGER)	TH10b	THERMISTER
CH1	CRANK CASE HEATER(COMPRESSOR)	LEV1	ELECTRONIC EXPANSION VALVE
CH2,CH3	CORD HEATER	LEV2	ELECTRONIC EXPANSION VALVE
21S4	4-WAY VALVE	X01~X07	RELAY
SV1,SV4	SOLENOID VALVE	SW1,SW3	SWITCH
SV5b	SOLENOID VALVE	SWU1,2	SWITCH
SV2,SV3	SOLENOID VALVE	TB1	POWER SOURCE TERMINAL BLOCK
68H	HIGH PRESSURE CUT OUT SWITCH		EARTH TERMINAL
63LS	LOW SIDE PRESSURE SENSOR		
TH11	THERMISTER		

6. Refrigerant circuit diagram and Thermal sensor



Super Y(R407C)

