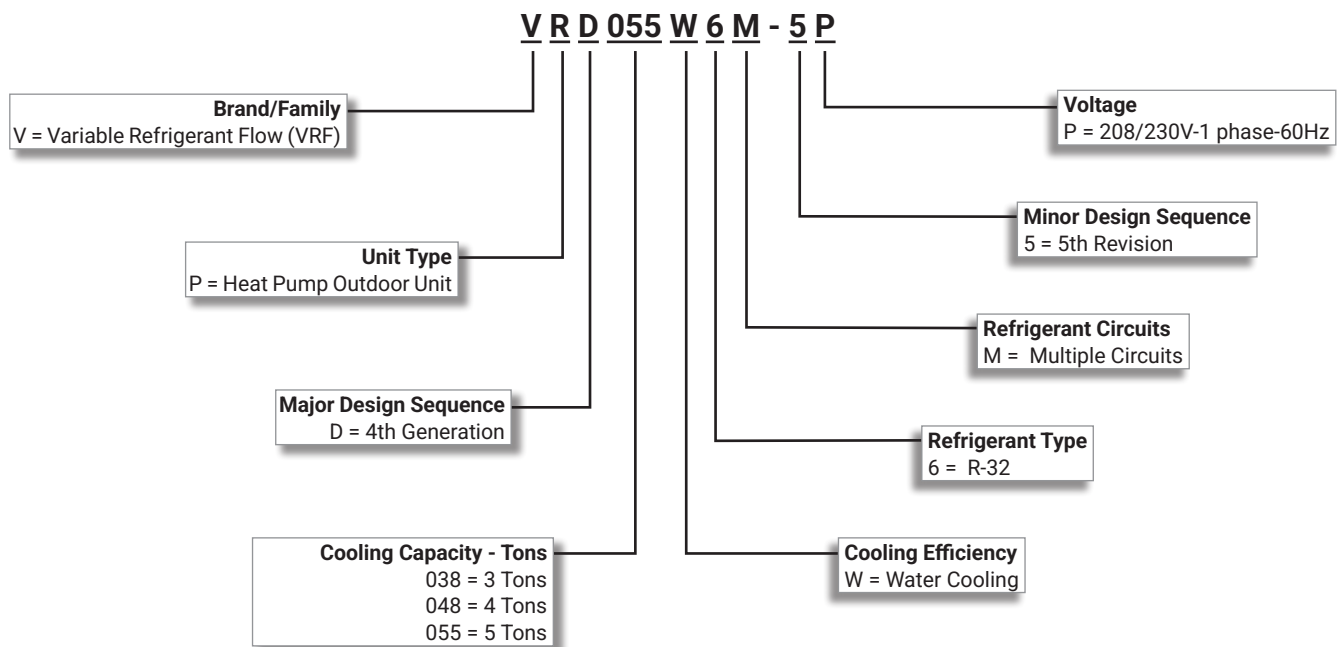


VPD W6M WATERHeat Pump Outdoor Units | 208/230V-1 Phase | **R-32** | 60Hz**3 to 5 tons****COMMERCIAL
PRODUCT SPECIFICATIONS (EHB)****ASHRAE
Standard
90.1****MODEL NUMBER IDENTIFICATION**

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Line-Up

Combination Table

VPD Water Source Heat Pump

System Model					
Capacity Ton	Model code	Number of individual outdoor	3	4	5
3	VPD038W6M-5P	1	1		
4	VPD048W6M-5P	1		1	
5	VPD055W6M-5P	1			1

NOTE

- Make sure to use an indoor unit that is compatible with Water-Cooled VRF-GEO.
 - If the total capacity of the connected indoor units exceeds the indicated maximum capacity, cooling and heating capacity of the indoor unit may decrease.
 - Total capacity of the connected indoor units can be allowed from 50% to 130% of the total outdoor unit capacity.
 $0.5 \times \Sigma(\text{Outdoor unit capacity}) \leq \text{Total capacity of the connected indoor units} \leq 1.3 \times \Sigma(\text{Outdoor unit capacity})$
 - You can connect maximum 64 indoor units to the outdoor unit. Maximum quantity of connectable indoor unit is set to 64 since outdoor unit only support up to 64 communication address. Indoor unit address can be assigned from 0~63.
 If the indoor unit address was assigned from 64~79, E201 error will occur.
 - Maximum 32 Wall-mount type indoor units with EEV (VWMD***S6-5P) can be connected.
 - Do not install MSB for R-410A refrigerant. It is not compatible with R-32 products.
- MSB for R-32, R-410A refrigerant: V*MSBB**HR

Specification

VPD Water Source Heat Pump

Model Code	Outdoor Unit			-	VPD038W6M-5P	VPD048W6M-5P	VPD055W6M-5P
	Outdoor Unit1			-	-	-	-
	Outdoor Unit2			-	-	-	-
	Outdoor Unit3			-	-	-	-
	Outdoor Unit4			-	-	-	-
Power Supply				Φ # V Hz	1 2 208-230 60	1 2 208-230 60	1 2 208-230 60
Mode				-	Heat Pump	Heat Pump	Heat Pump
Performance	Ton				3.0	4.0	5.0
	Capacity	Cooling	Nominal	kW	11.2	14.0	16.0
				Btu/h	38,200	47,800	54,600
			Rated	kW	11.14	14.07	15.97
				Btu/h	38,000	48,000	54,500
		Heating	Nominal	kW	12.48	16.00	17.99
				Btu/h	42,600	54,600	61,400
			Rated	kW	12.31	15.83	17.88
				Btu/h	42,000	54,000	61,000
Connectable indoor units	Maximum number of connectable indoor units			EA	6	8	9
	Total capacity of the connected Indoor Units		Min.	Btu/h	19,100	23,900	27,300
			Max.	Btu/h	49,700	62,100	71,000
Power	Power Input	Cooling	Nominal	kW	2.80	2.80	3.50
		Heating	Nominal	kW	2.40	2.80	3.20
	Current Input	Cooling	Nominal	A	13.20	13.20	16.50
		Heating	Nominal	A	11.30	13.20	15.10
	Current	MCA		A	20.00	24.00	26.00
		MOP		A	35	40	45
Casing	Material	Body		-	EGI steel plate	EGI steel plate	EGI steel plate
		Base		-	EGI steel plate	EGI steel plate	EGI steel plate
Compressor	Model Name			-	UB8TN8300FJUSG	UB5TN5450FJXSG	UB5TN5450FJXSG
	Type			-	ROTARY_INVERTER	ROTARY_INVERTER	ROTARY_INVERTER
	Output			kW	2.91	4.25	4.25
	Oil	Type		-	POE	POE	POE
		Initial Charge		fl oz	40.6	57.5	57.5
Water Side Heat Exchanger	Type			-	PHE	PHE	PHE
	Water Flow Rate			LPM	40.0	50.0	60.0
				GPM	10.5	13.2	15.9
	Pressure Drop(Set. Nominal)			kPa	25.0	20.0	28.0
				ftAq	8.4	6.7	9.4
	Max Operating Pressure			psi	285	285	285
	Pipe connection	Inlet	Diameter	mm	32	32	32
				in	1-1/4	1-1/4	1-1/4
		Outlet	Diameter	mm	32	32	32
				in	1-1/4	1-1/4	1-1/4
	Piping Connections	Liquid Pipe	Type		-	Welding	Welding
Diameter			mm	9.52	9.52	9.52	
			in	3/8	3/8	3/8	
Gas Pipe		Type		-	Welding	Welding	Welding
		Diameter		mm	15.88	15.88	15.88
				in	5/8	5/8	5/8
Heat Insulation			-	All Pipes	All Pipes	All Pipes	
Total piping length (System)		Max.	ft	656	656	656	
Piping length (1st Branch-IDU)		Max.	ft	131	131	131	

Specification

VPD Water Source Heat Pump

Model Code	Outdoor Unit		-	VPD038W6M-5P	VPD048W6M-5P	VPD055W6M-5P
	Outdoor Unit1		-	-	-	-
	Outdoor Unit2		-	-	-	-
	Outdoor Unit3		-	-	-	-
	Outdoor Unit4		-	-	-	-
Piping Connections	Piping length (ODU-IDU)		Max.	ft	246	246
	Piping length (ODU-IDU)	Equivalent	Max.	ft	295	295
	Level difference (IDU-IDU)		Max.	ft	49	49
	Level difference (ODU in highest position)		Max.	ft	98	98
	Level difference (IDU in highest position)		Max.	ft	98	98
Wiring Connection	Transmissi on Cable	Min.	AWG	18	18	18
		Remark	-	F1, F2	F1, F2	F1, F2
Refrigerant	Type		-	R32	R32	R32
	Factory Charge		lbs	2.00	2.90	2.90
Sound Level	Sound Pressure Level	Cooling	dB(A)	47.0	48.0	49.0
		Heating	dB(A)	49.0	50.0	51.0
	Sound Power Level	Cooling	dB(A)	65.0	71.0	71.0
External Dimension	Net Weight		lbs	162.0	189.0	189.0
	Shipping Weight		lbs	177.0	204.0	204.0
	Net Dimensions	W x H x D	mm	750 x 800 x 330	750 x 800 x 330	750 x 800 x 330
			in	29-1/2 x 31-1/2 x 13	29-1/2 x 31-1/2 x 13	29-1/2 x 31-1/2 x 13
	Shipping Dimensions	W x H x D	mm	812 x 950 x 392	812 x 950 x 392	812 x 950 x 392
			in	31-7/8 x 37-3/8 x 15-3/8	31-7/8 x 37-3/8 x 15-3/8	31-7/8 x 37-3/8 x 15-3/8
Operating Water Temp. Range	Cooling	Min. ~ Max.	°F	50 ~ 113	50 ~ 113	50 ~ 113
	Heating	Min. ~ Max.	°F	50 ~ 113	50 ~ 113	50 ~ 113

NOTE

- Specification may be subject to change without prior notice.
- Nominal capacities are based on (Equivalent refrigerant piping : 25ft(7.5m), Level differences : 0ft(0m)
- Cooling : Indoor temperature : 80°F(26.7°C) DB, 67°F(19.4°C) WB / Inlet water temperature : 85°F(29.4°C)
- Heating : Indoor temperature : 70°F(21.1°C) DB, 60°F(15.6°C) WB / Inlet water temperature : 68°F(20°C)
- Rated capacities are based on (Equivalent refrigerant piping : 25ft(7.5m), Level differences : 0ft(0m)
- Cooling : Indoor temperature : 80.6°F(27°C) DB, 66.2°F(19°C) WB / Inlet water temperature : 86°F(30°C)
- Heating : Indoor temperature : 68°F(20°C) DB, 59°F(15°C) WB / Inlet water temperature : 68°F(20°C)
- Sound pressure level is obtained in an anechoic room.
- Sound pressure level is a relative value, depending on the distance and acoustic environment.
- Sound pressure level may differ depending on operation condition.
- dBA = A-weighted sound pressure level
- Reference acoustic pressure 0 dB = 20uPa
- Sound power level is an absolute value that a sound source generates.
- dBA = A-weighted sound power level
- Reference power : 1pW
- Measured according to ISO 3741
- Sound values of multi combination are theoretical values based on sound results of individual installed units.
- These products contain R32 which is fluorinated greenhouse gas.
- Total capacity of the connected indoor units can be allowed from 50% to 130% of the total outdoor unit capacity. $0.5 \times \Sigma(\text{Outdoor unit capacity}) \leq \text{Total capacity of the connected indoor units} \leq 1.3 \times \Sigma(\text{Outdoor unit capacity})$
- You can connect maximum 64 indoor units to the outdoor unit. Maximum quantity of connectable indoor unit is set to 64 since outdoor unit only support up to 64 communication address. Indoor unit address can be assigned from indoor unit address was assigned from 64~79, E201 error will occur.0~63.
- If the indoor unit address was assigned from 64~79, E201 error will occur.

Summary Table

VPD Water Source Heat Pump

Electric Characteristics

Capacity Ton	Model Code	Power Supply		Module #1			
		Hz	Voltage	RLA		Current(A)	
				Comp1	Comp2	MCA	MOP
3.0	VPD038W6M-5P	60	208-230	15.9	-	20.0	35.0
4.0	VPD048W6M-5P	60	208-230	18.9	-	24.0	40.0
5.0	VPD055W6M-5P	60	208-230	20.7	-	26.0	45.0

NOTE

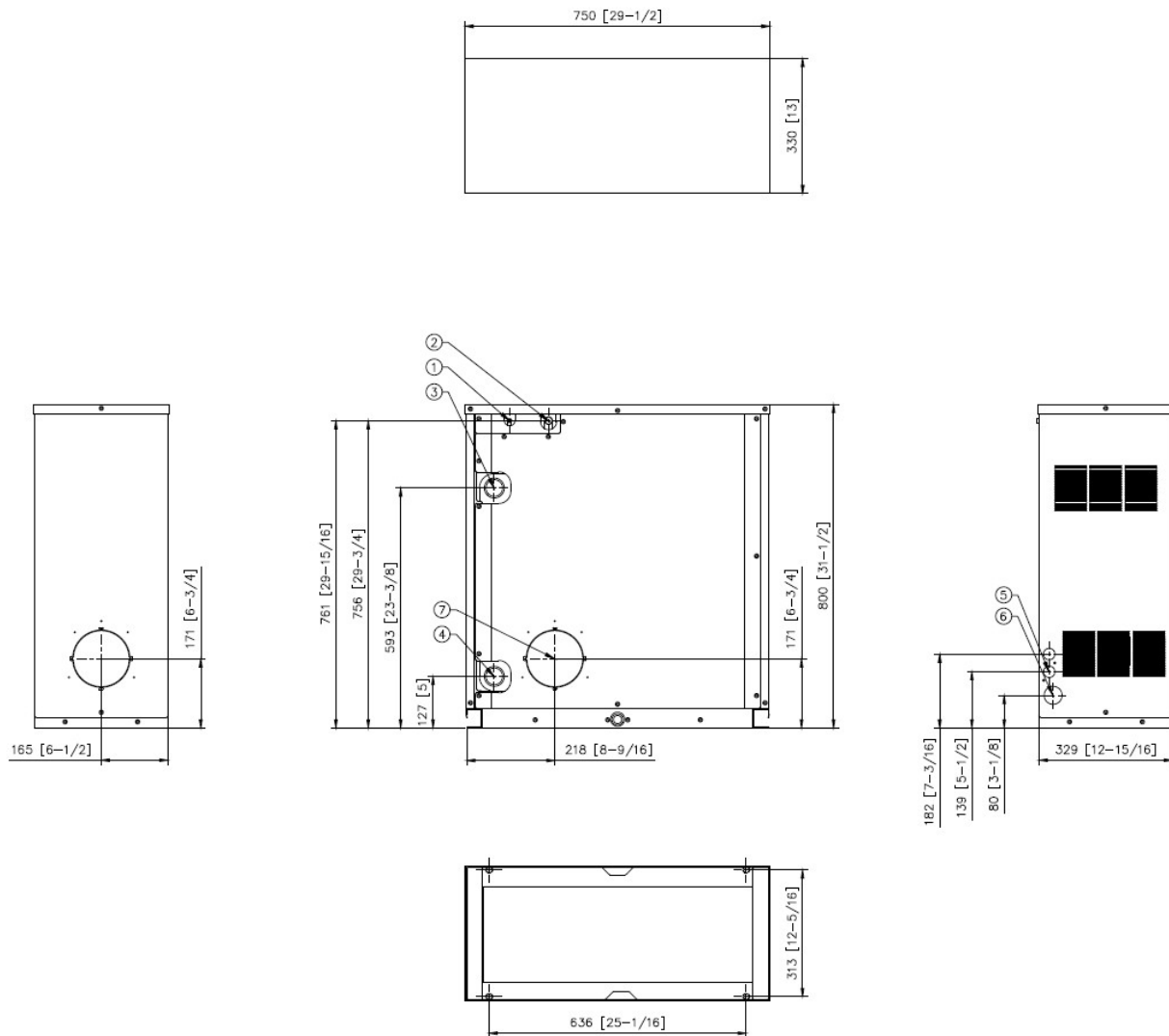
- MCA : Minimum circuit amperes (A)
- MOP : Maximum Overcurrent Protective Device (A)
- RLA : Rated Load Ampere
- Select wire size based on the value of MCA

Dimensional Drawing

Water-Cooled VRF

VPD038W6M-5P, VPD048W6M-5P, VPD055W6M-5P

Unit: mm [inch]

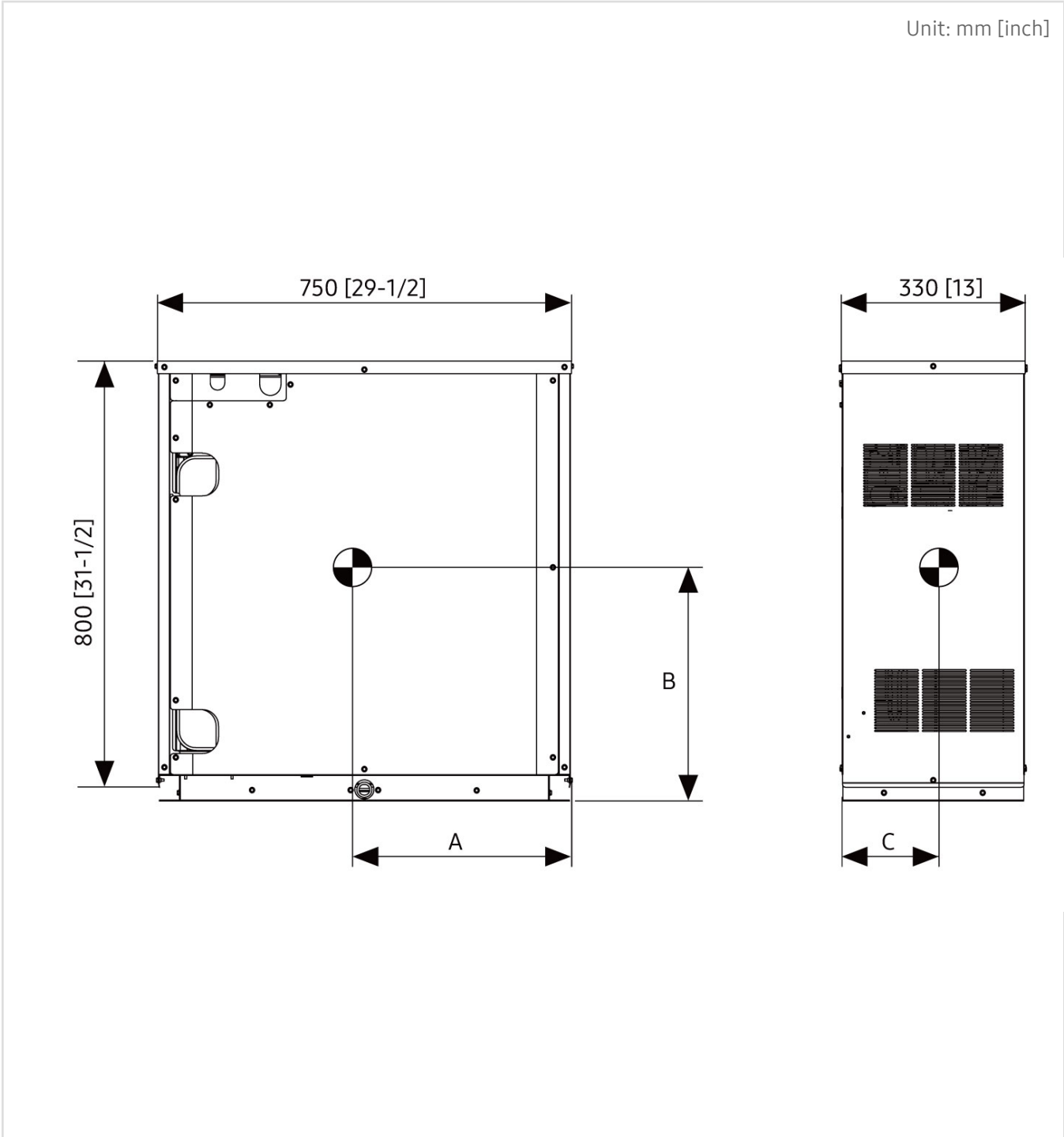


No.	Name	Description
1	Liquid pipe connection	9.52 [3/8]
2	Gas pipe connection	15.88 [5/8]
3	Water outlet pipe connection	32 [1-1/4]
4	Water inlet pipe connection	32 [1-1/4]
5	Communication wiring conduit	-
6	Power supply wiring conduit	-
7	Duct Hole	-

Center of Gravity

Water-Cooled VRF

VPD038W6M-5P, VPD048W6M-5P, VPD055W6M-5P

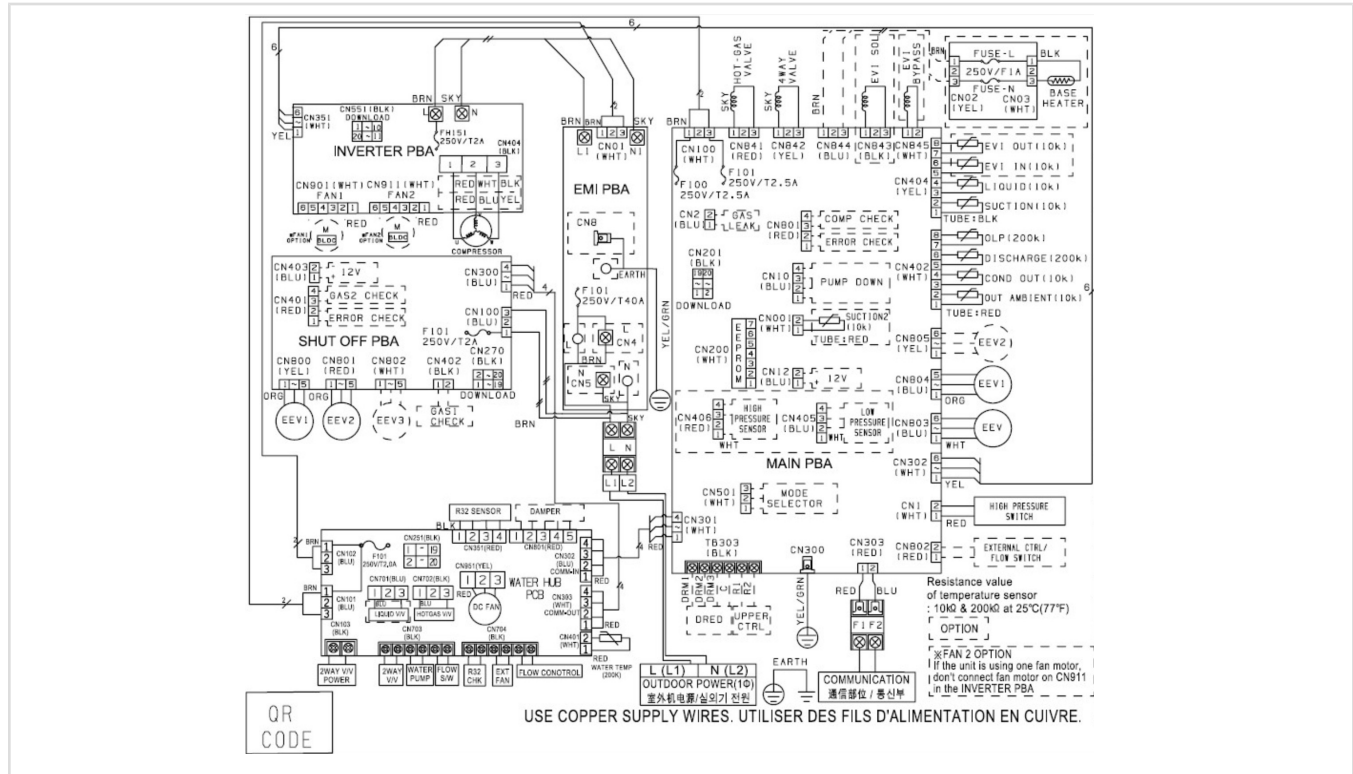


Model	A	B	C
VPD038W6M-5P VPD048W6M-5P VPD055W6M-5P	340 [13-3/8]	300 [11-13/16]	130 [5-1/8]

Electrical Wiring Diagram

Water-Cooled VRF

VPD038W6M-5P, VPD048W6M-5P, VPD055W6M-5P



INV PCB	Printed circuit board (inverter)	FLOW CONTROL	FLOW CONTROL_WATER HUB
SHUT OFF PCB	Printed circuit board (SHUT OFF)	LIQUID V/V	Solenoid valve (LIQUID)_WATER HUB
WATER HUB PCB	Printed circuit board (water hub)	HOTGAS V/V	Solenoid valve (HOTGAS)_WATER HUB
EMI PCB	Printed circuit board (EMI)	EVI BYPASS V/V	Solenoid valve (EVI BYPASS)
MAIN PCB	Printed circuit board (MAIN)	EVI SOL V/V	Solenoid valve (EVI SOL)
COMPRESSOR	MOTOR (compressor)	HOTGAS V/V_MAIN	HOTGAS V/V_MAIN
EEV1	Electronic expansion valve 1_SHUT OFF	4 WAY V/V	4 WAY V/V_MAIN
EEV2	Electronic expansion valve 2_SHUT OFF	COND OUT	Thermistor (10Kohm)_MAIN
250V/40A	FUSE_EMI PBA	OUT AMBIENT	Thermistor (10Kohm)_MAIN
R32 SENSOR	R32 SENSOR	HIGH PRESSURE SWIT CH	HIGH PRESSURE SWITCH
DAMPER	DAMPWER_WATER HUB	EEV1	Electronic expansion valve 1_MAIN
DC FAN	DC FAN_WATER HUB	EEV2	Electronic expansion valve 2_MAIN
WATER TEMP	Thermistor (WATER Temp_200Kohm)_WATER HUB	LIQUID	Thermistor (10kohm)_MAIN
2WAY V/V POWER	2 WAY V/V POWER_WATER HUB	SUCTION	Thermistor (10kohm)_MAIN
2WAY V/V	2 WAY V/V_WATER HUB	OLP	Thermistor (200Kohm)_MAIN
WATER PUMP	WATER PUMP_WATER HUB	DISCHARGE	Thermistor (200Kohm)_MAIN
FLOW S/W	FLOW S/W_WATER HUB	COND OUT	Thermistor (10Kohm)_MAIN
R32 CHK	R32 CHECK_WATER HUB	OUT AMBIENT	Thermistor (10Kohm)_MAIN
EXT FAN	External fan_WATER HUB	HIGH PRESSURE SWIT CH	HIGH PRESSURE SWITCH

NOTE

- This wiring diagram applies only to the outdoor unit.
- Colors BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue
- When operating, don't shortcircuit the protection device (High Pressure switch)
- For connection wiring indoor-outdoor transmission F1-F2, outdoor_outdoor transmission OF1-OF2, refer to the installation manual.
- ⊕ : Protective earth(screw), □ : Connector, ④ : The wire quantity

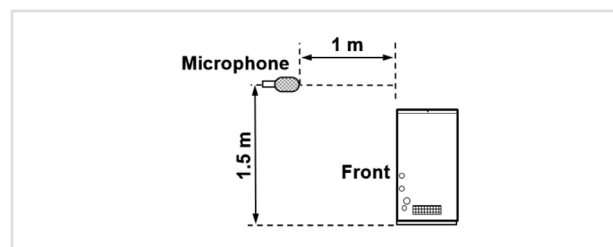
Sound Data

Water-Cooled VRF

Sound Pressure Level

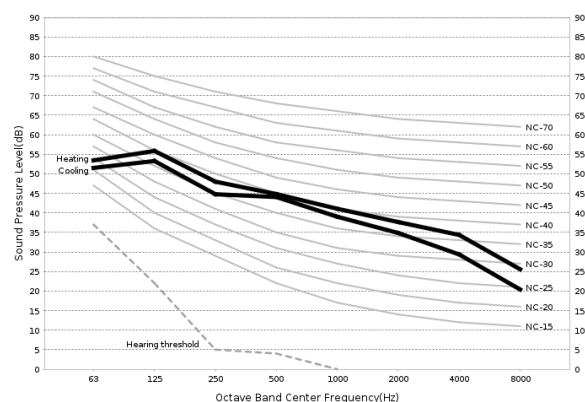
Unit : dB(A)

Model	Cooling	Heating
VPD038W6M-5P	47.0	49.0
VPD048W6M-5P	48.0	50.0
VPD055W6M-5P	49.0	51.0

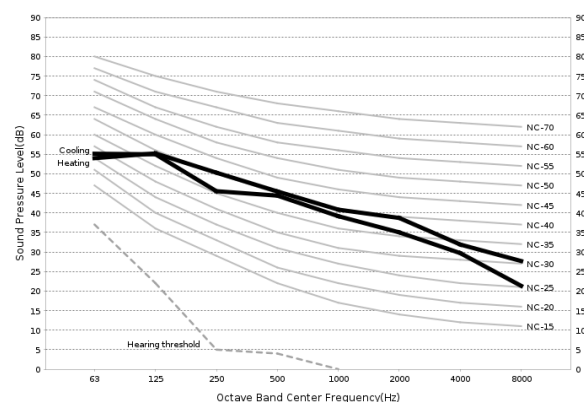


• NC CURVE

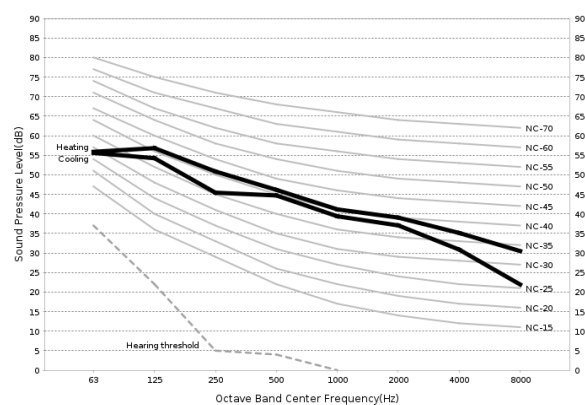
(1) VPD038W6M-5P



(2) VPD048W6M-5P



(3) VPD055W6M-5P



NOTE

- Specifications may be subject to change without prior notice.
- Sound pressure level is obtained in an anechoic room.
- Sound pressure level is a relative value, depending on the distance and acoustic environment.
- Sound pressure level may differ depending on operation condition.
- dBA = A-weighted sound pressure level
- Reference acoustic pressure 0 dB = 20μPa

Sound Data

Water-Cooled VRF

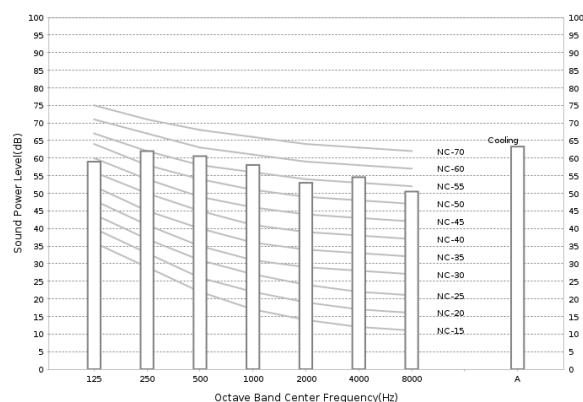
Sound Power Level

Unit : dB(A)

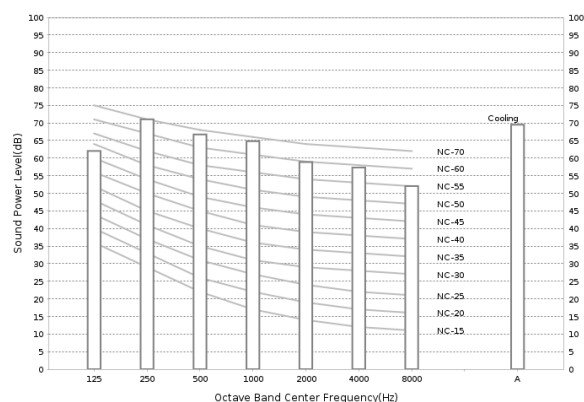
Model	Cooling
VPD038W6M-5P	65.0
VPD048W6M-5P	71.0
VPD055W6M-5P	71.0

• NC CURVE

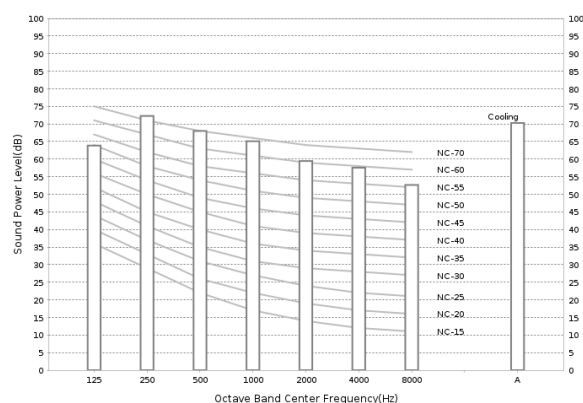
(1) VPD038W6M-5P



(2) VPD048W6M-5P



(3) VPD055W6M-5P



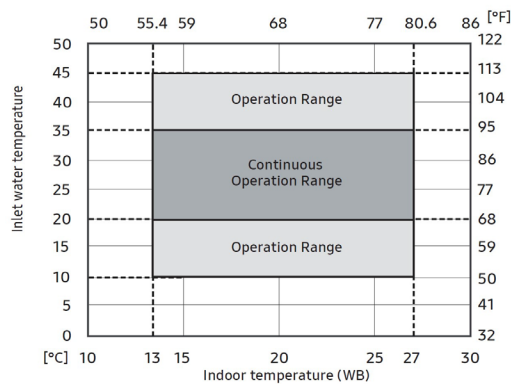
NOTE

- Specifications may be subject to change without prior notice
- Sound power level is an absolute value that a sound source generates.
- dBA = A-weighted sound power level.
- Reference power : 1pW.
- Measured according to ISO 3741.

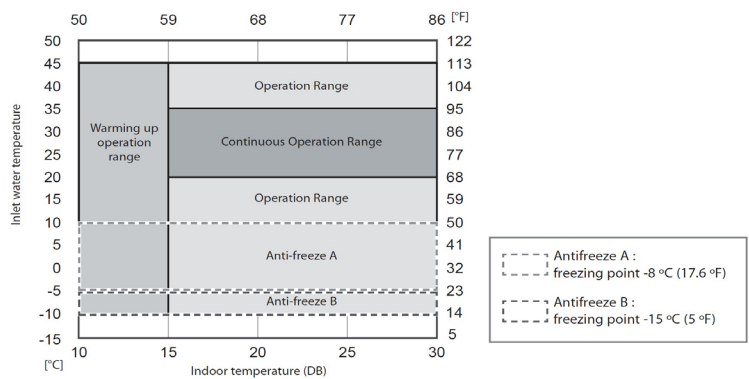
Operation Range

Water-Cooled VRF

• Cooling



• Heating



NOTE

- In the range except for the continuous operation range, the protection control can be active depending on the heat source flow rate. (It is not a failure but a way of cycle protection against hot or cold water.)
- For use in the antifreeze condition, the antifreeze concentration must be rigidly managed.

Operation Range

Water-Cooled VRF

Design condition

Type	Circulating water	Operation	Intel water temperature (°C)	
			Main usage range	Usage range limit ^{Note 3)}
Heat source water	Water loop	Cooling	20 ~ 35 °C (68 ~ 95 °F)	10 ~ 45 °C (50 ~ 113 °F)
		Heating		
Ground heat source ¹⁾	Ground loop	Cooling	15 ~ 35 °C 59 ~ 95 °F)	10 ~ 45 °C (50 ~ 113 °F)
		Heating	5~25	-5 ~ 45 °C (23 ~ 113 °F)
				-10 ~ 45 °C (14 ~ 113 °F) ^{Note 2)}

Note 1): Anti-freeze must be used when temperature of water inlet for heating is below 10 °C (50 °F) or ground heat source is used. Maintain appropriate concentration level of anti-freeze according to temperature of water inlet.

Note 2): Strict management of anti-freeze concentration level is required. Consult Lennox before application.

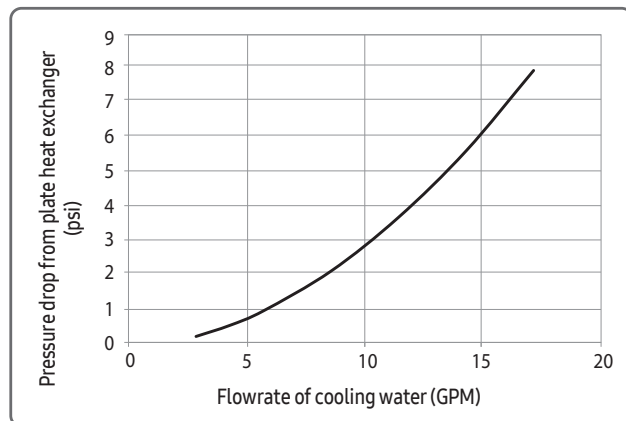
Note 3): When inlet water temperature is outside of limit, consult Lennox before application.

Standard data for status of Anti-freeze [Based on temperature of anti-freeze at 15 °C (59 °F)]

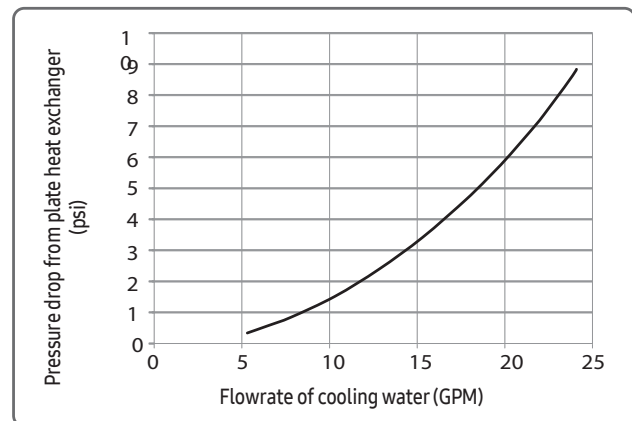
Type of anti-freeze [Based on 15 °C (59 °F)]	Concentration [% Wt.]	Freezing temperature [°C]		Density [kg/m ³]	
		°C	°F	kg/m ³	lb/ft ³
Ethylene glycol	10	-3.2	26.2	1014.87	63.4
	20	-7.8	18.0	1031.39	64.4
	30	-14.1	6.6	1047.07	65.4
	40	-22.3	-8.1	1061.65	66.3
Propylene glycol	10	-3.3	26.1	1009.75	63.0
	20	-7.1	19.2	1020.91	63.7
	30	-12.7	9.1	1030.51	64.3
	40	-21.1	-6.0	1038.65	64.8

Flowrate of cooling water (GPM)				
Model name		VPD038W6M-5P	VPD048W6M-5P	VPD055W6M-5P
Standard condition	Cooling/Heating	10.5	13.2	15.9
Operation range	Cooling/Heating	6.3~12.7	7.9~15.9	9.5~19.0

- VPD038W6M-5P



- VPD048/055W6M-5P

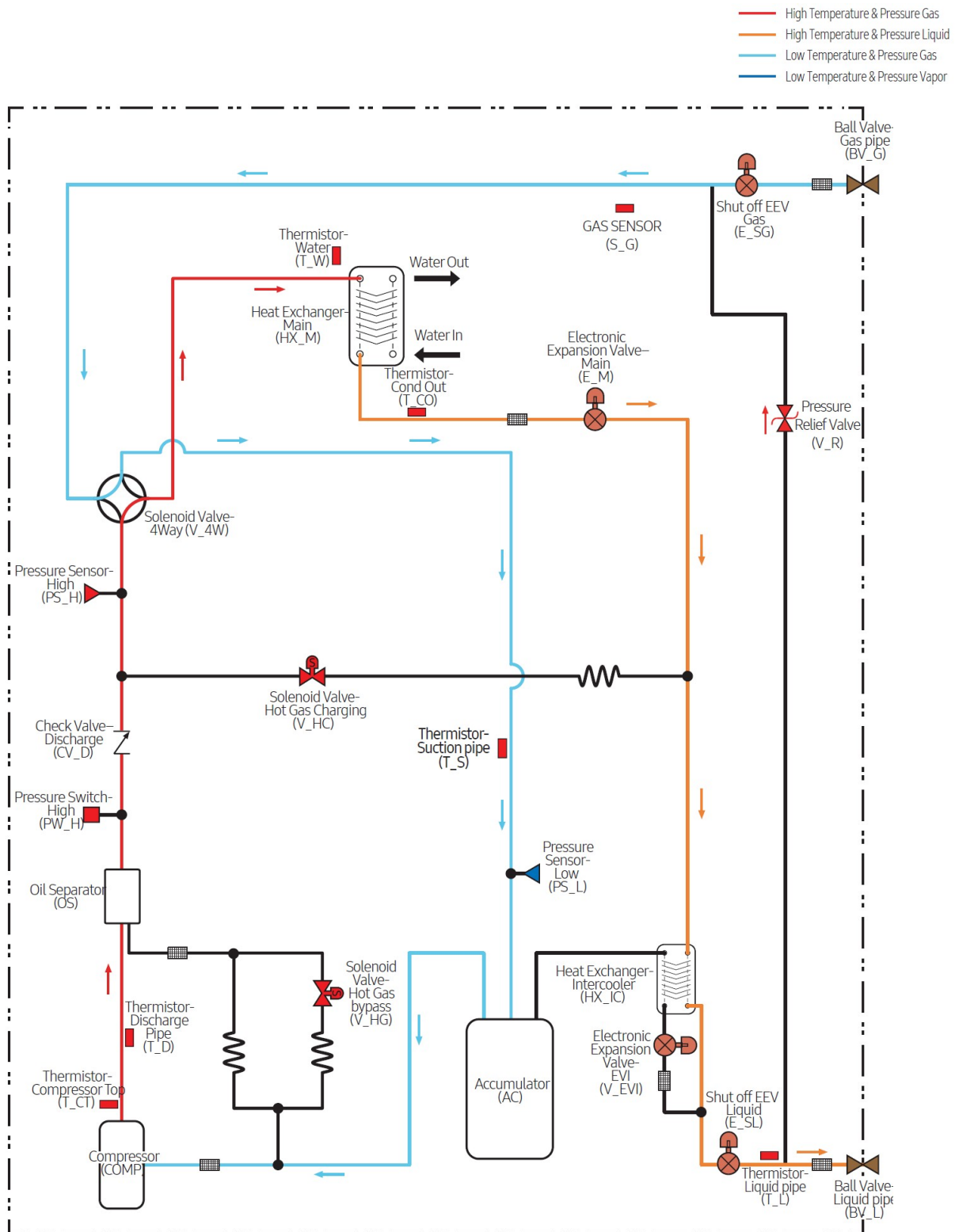


Piping Diagram

Water-Cooled VRF

VPD038W6M-5P, VPD048W6M-5P, VPD055W6M-5P

• Cooling

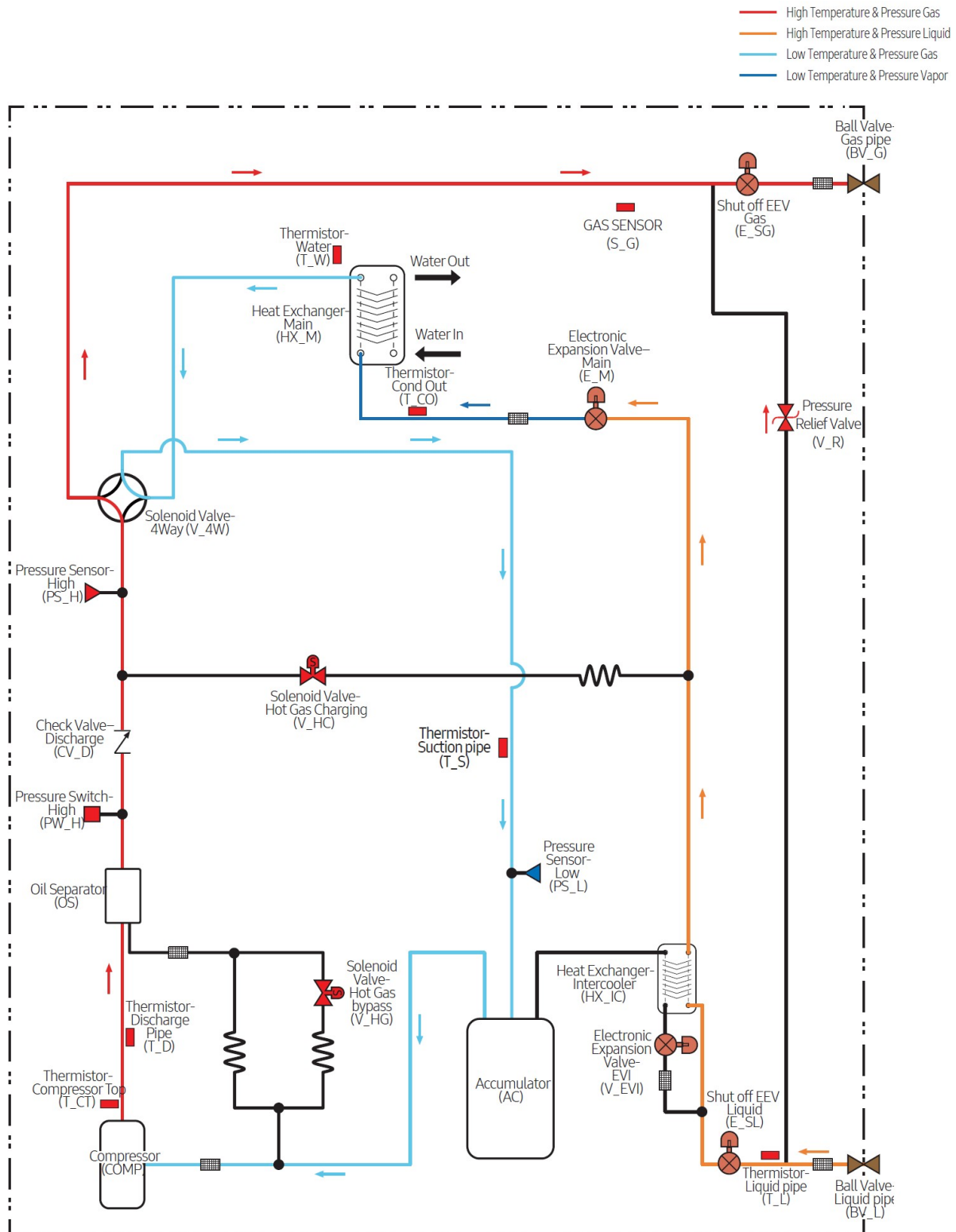


Piping Diagram

Water-Cooled VRF

VPD038W6M-5P, VPD048W6M-5P, VPD055W6M-5P

• Heating



Installation Clearances

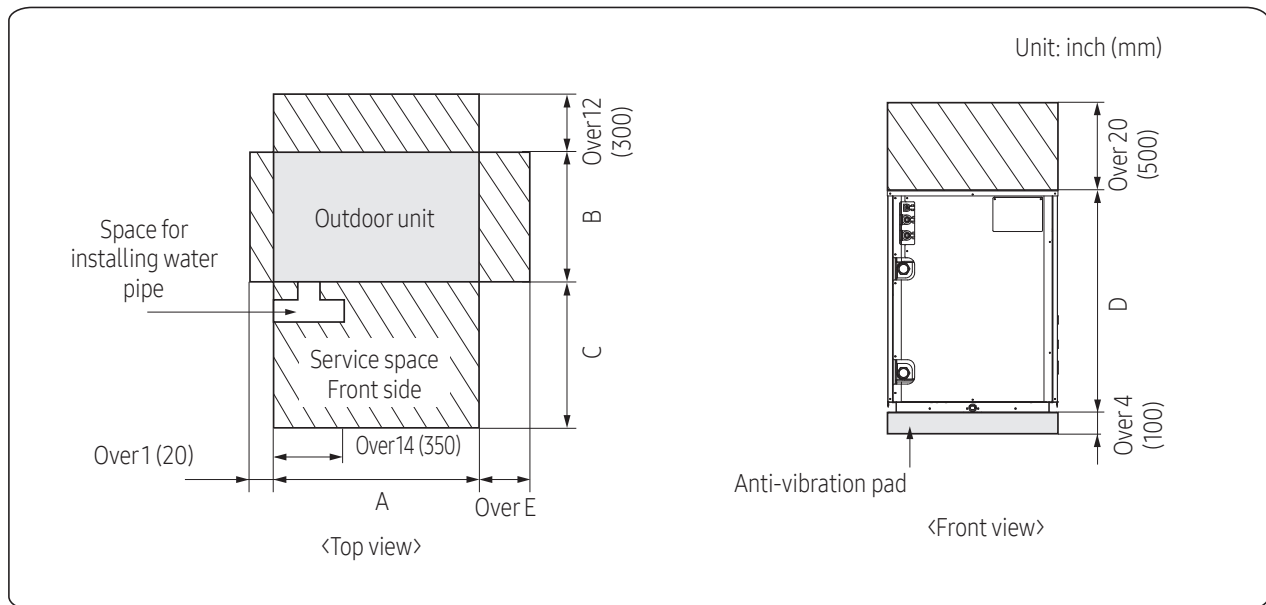
Space requirement for installation

Minimum space requirement for installation

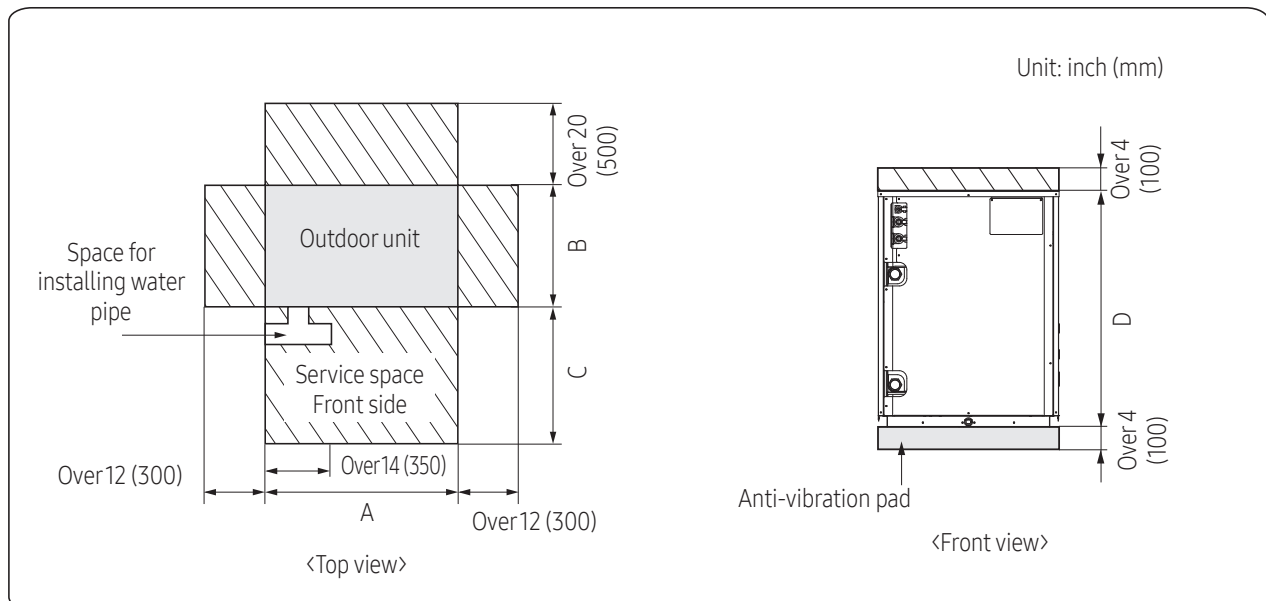
- Secure minimum installation space as shown in the following figures, considering service area and path for people etc.
 - If the installation space is narrow, installer or other worker may get injured during work and may also cause problem to the product.
- If the conditions does not meet the space requirement in this manual, please contact qualified installation agent.
- You must check the required service clearance since it is different for each model.

Single installation

When the water pipe passes through top of the product



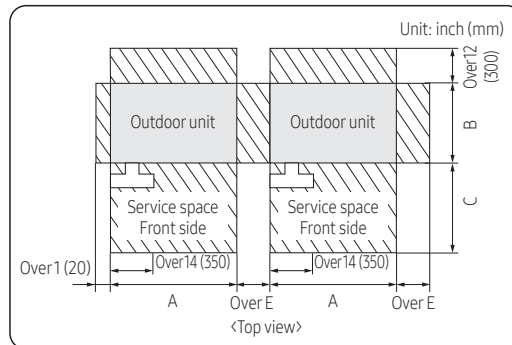
When the water pipe passes through back of the product



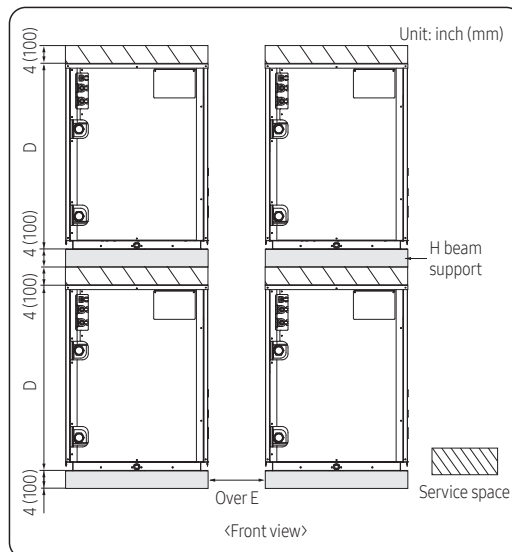
Installation Clearances

Space requirement for installation

Module or continuous installation



Double installation



- For the double installation, service space is required for the front, rear, and sides of the product. For the size of the service space, refer to the service space size of single, module or continuous installation.
- Clear enough space for E (space between outdoor units), so that water pipes connected to outdoor units does not block the front side of the outdoor units next to it.

Unit: inch (mm)

Model name of outdoor unit	A	B	C	D	E
VPD038/048/055W6M-5P	29.5 (750)	13 (330)	19.7 (500)	31.5 (800)	4 (100)
VRD072/096/120W6M-5Y	30.3 (770)	21.5 (545)	23.6 (600)	39.4 (1000)	4 (100)
VRD192/240W6M-5Y	43.3 (1100)	21.5 (545)	23.6 (600)	39.4 (1000)	4 (100)
VRD072/096/120W6M-5G	31.1 (790)	21.5 (545)	23.6 (600)	39.4 (1000)	12 (300)
VRD192/240W6M-5G	44.1 (1120)	21.5 (545)	23.6 (600)	39.4 (1000)	12 (300)

⚠ CAUTION

- If the outdoor unit is needed to be installed close to the walls unavoidably, prevent the vibration from being transferred to the walls with cushioning materials etc.



Visit us at www.lennox.com

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Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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