

SAMSUNG

VRF

Technical Data Book

**DVM S Water for America
(R410A, 60Hz, HP/HR)**



Model : AM***KXWD**
Premium Energy Efficiency Type
Premium Compact Type

Nomenclature

Outdoor units

Model name

AM	240	K	X	W	A	F	R	/	AA
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(Buyer)

(1) Classification

AM	DVM
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(5) Feature1

W	DVM WATER
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(2) Capacity

BTU/H (x 1,000) (3digits)

(6) Feature2

A	Standard + General Temp.+ Module
D	STANDARD + GENERAL TEMP. + NON MODULE

(3) Version

F	2013
H	2014
J	2015
K	2016

(7) Rating Voltage

C	1Ø, 208~230V, 60Hz
F	3Ø, 208~230V, 60Hz
J	3Ø, 460V, 60Hz

(4) Product Type

X	Outdoor Unit
N	Indoor Unit

(8) Mode

R	Heat Recovery
H	Heat Pump

2. Specification

Premium Energy Efficiency Type (208~230 V)

Type			DVM S Water	DVM S Water	DVM S Water	DVM S Water	
Model Name	Outdoor unit module 1		AM072HXWAFR**	AM096HXWAFR**	AM120HXWAFR**	AM144HXWAFR2	
	Outdoor unit module 2		AM072HXWAFR**	AM096HXWAFR**	AM120HXWAFR**	AM072HXWAFR**	
	Outdoor unit module 3						
	Outdoor unit module 4					AM072HXWAFR**	
Power Supply			ø, #, V, Hz	3, 3, 208~230, 60	3, 3, 208~230, 60	3, 3, 208~230, 60	
Mode			-	HP, HR	HP, HR	HP, HR	
Performance	Ton		Ton	6	8	10	
	Capacity (Nominal) ¹⁾	Cooling	Btu/h	72,000	96,000	120,000	
		Heating	Btu/h	81,000	108,000	135,000	
	Capacity (Rated) ²⁾	Cooling	Btu/h	69,000	92,000	114,000	
Heating		Btu/h	77,000	103,000	129,000		
Maximum number of connectable indoor units			ea	12	16	20	
	Total capacity of the connected Indoor Units	Min.	Btu/h	36,000	48,000	60,000	
		Max.	Btu/h	93,600	124,800	156,000	
Power	Power Input (Nominal) ¹⁾	Cooling	kW	3.15	4.27	8.50	
		Heating		3.52	4.79	8.19	
	Current	MCA	A	16	23	30	
		MOP		25	40	50	
Casing	Material	Body	-	EGI steel plate	EGI steel plate	EGI steel plate	
		Base	-	EGI steel plate	EGI steel plate	EGI steel plate	
		Type	-	Inverter Scroll	Inverter Scroll	Inverter Scroll	
Compressor	Type	-	-	Inverter Scroll	Inverter Scroll	Inverter Scroll	
	Output	kW × n	(4.96) × 1	(4.96) × 1	(4.96) × 1	(4.96) × 2	
	Model Name	-	DS-GB052FBVASG x 1	DS-GB052FBVASG x 1	DS-GB052FBVASG x 1	DS-GB052FBVASG x 2	
	Oil	Type	-	PVE	PVE	PVE	PVE
Initial Charge		Liter	3.9	3.9	3.9	3.9 × 2	
Condenser	Type	Type	PHE (Plate Heat Exchanger)	PHE (Plate Heat Exchanger)	PHE (Plate Heat Exchanger)	PHE(Plate Heat Exchanger)	
	Pipe Size	ø, inch	NPT 1-1/4	NPT 1-1/4	NPT 1-1/4	NPT 1-1/4 x 2	
	Lost Head	kPa (ftAq)	22 (7.3)	30 (10.0)	43 (14.4)	22 (7.3) + 22 (7.3)	
	Water Flow Rate	LPM (GPM)	80 (21.1)	96 (25.4)	114 (30.1)	80 (21.1) + 80 (21.1)	
	Max. Pressure	Mpa (psi)	1.96 (285)	1.96 (285)	1.96 (285)	1.96 (285)	
Piping Connections	Liquid Pipe	Type	Braze connection	Braze connection	Braze connection	Braze connection	
		ø, mm	9.52	9.52	12.7	12.7	
		ø, inch	3/8"	3/8"	1/2"	1/2"	
	Gas Pipe	Type	Braze connection	Braze connection	Braze connection	Braze connection	
		ø, mm	19.05	22.22	28.58	28.58	
		ø, inch	3/4"	7/8"	1 1/8"	1 1/8"	
	Discharge Gas Pipe (HR)	ø, mm	15.88	19.05	22.22	22.22	
		ø, inch	5/8"	3/4"	7/8"	7/8"	
	Heat insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Piping length (ODU-IDU)	Max.	m (ft)	170 (558)	170 (558)	170 (558)	170 (558)
	Piping length (1st Branch-IDU)	Max.	m (ft)	90 (295)	90 (295)	90 (295)	90 (295)
	Total piping length (System)	Max.	m (ft)	500 (1640)	500 (1640)	500 (1640)	500 (1640)
	Level difference (ODU in highest position)	Max.	m (ft)	50 (164)	50 (164)	50 (164)	50 (164)
Level difference (IDU in highest position)	Max.	m (ft)	40 (131)	40 (131)	40 (131)	40 (131)	
Level difference (IDU-IDU)	Max.	m (ft)	50 (164)	50 (164)	50 (164)	50 (164)	

2. Specification

Premium Energy Efficiency Type (208~230 V)

Type			DVM S Water	DVM S Water	DVM S Water	DVM S Water	
Model Name	Outdoor unit module 1		AM072HXWAFR**	AM096HXWAFR**	AM120HXWAFR**	AM144HXWAFR2	
	Outdoor unit module 2		AM072HXWAFR**	AM096HXWAFR**	AM120HXWAFR**	AM072HXWAFR**	
	Outdoor unit module 3						
	Outdoor unit module 4						
Wiring connections	Communication	Min.	mm2	0.75	0.75	0.75	0.75
		Remark	-	F1, F2	F1, F2	F1, F2	F1, F2
Refrigerant	Type		-	R410A	R410A	R410A	R410A
	Factory Charging		kg (lbs)	5.5 (12.1)	5.8 (12.8)	6.0 (13.2)	5.5 (12.1) x 2
Sound	Sound Pressure	Cooling	dB(A)	48	48	50	51
		Heating		51	51	52	54
	Sound Power			70	70	70	73
External Dimension	Net Weight		kg (lbs)	160 (353)	160 (353)	160 (353)	160 (353) x 2
	Shipping Weight		kg (lbs)	167 (368)	167 (368)	167 (368)	167 (368) x 2
	Net Dimensions (WxHxD)		mm	770x1,000x545	770x1,000x545	770x1,000x545	(770x1,000x545) x 2
			inch	30.3x39.4x21.5	30.3x39.4x21.5	30.3x39.4x21.5	(30.3x39.4x21.5) x 2
	Shipping Dimensions (WxHxD)		mm	840x1,200x620	840x1,200x620	840x1,200x620	(840x1,200x620) x 2
		inch	33.1x47.2x24.4	33.1x47.2x24.4	33.1x47.2x24.4	(33.1x47.2x24.4) x 2	
Operating Temp. Range (Water Temp.)	Cooling		°C (°F)	10~45 (50~113)	10~45 (50~113)	10~45 (50~113)	10~45 (50~113)
	Heating		°C (°F)	10~45 (50~113)	10~45 (50~113)	10~45 (50~113)	10~45 (50~113)

NOTE

- Specification may be subject to change without prior notice.
- 1)* 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)
- 2)* 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 R410A 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.
 $0.5 \times \sum(\text{Outdoor unit capacity}) \leq \text{Total capacity of the connected indoor units} \leq 1.3 \times \sum(\text{Outdoor unit capacity})$
- 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.

3. Electric Characteristics

Capacity Ton	Model	Power Supply				Voltage Range		Current [A]	
		Ø	#	Voltage	Hz	Min. (-10%)	Max. (+10%)	MCA	MOP
3	AM038KXWD*x	1	2	208~230	60	187.2	253	20.0	35
4	AM048KXWD*x	1	2	208~230	60	187.2	253	24.0	40
5	AM055KXWD**	1	2	208~230	60	187.2	253	26.0	45

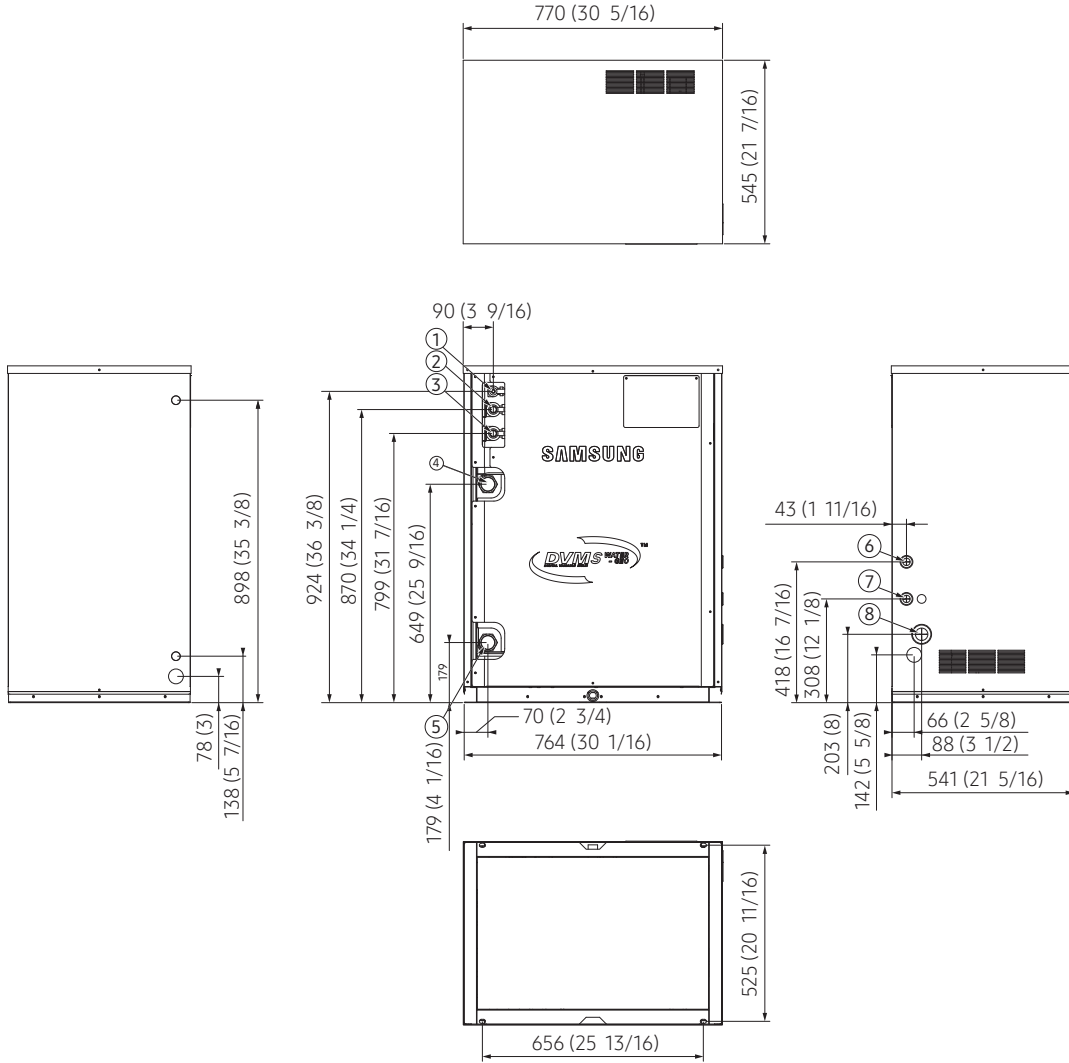
Premium Energy Efficiency Type

Capacity Ton	Model	Power Supply				Voltage Range		Current [A]	
		Ø	#	Voltage	Hz	Min. (-10%)	Max. (+10%)	MCA	MOP
6	AM072HXWAFR	3	3	208~230	60	187.2	253	16.0	25
8	AM096HXWAFR	3	3	208~230	60	187.2	253	23.0	40
10	AM120HXWAFR	3	3	208~230	60	187.2	253	30.0	50
12	AM144HXWAFR2	3	3	208~230	60	187.2	253	32.0	50
14	AM168HXWAFR2	3	3	208~230	60	187.2	253	39.0	65
16	AM192HXWAFR	3	3	208~230	60	187.2	253	39.6	50
18	AM216HXWAFR2	3	3	208~230	60	187.2	253	53.0	90
20	AM240HXWAFR2	3	3	208~230	60	187.2	253	60.0	100
22	AM264HXWAFR2	3	3	208~230	60	187.2	253	55.6	75
24	AM288HXWAFR2	3	3	208~230	60	187.2	253	62.6	90
26	AM312HXWAFR2	3	3	208~230	60	187.2	253	69.6	100
28	AM336HXWAFR2	3	3	208~230	60	187.2	253	71.6	100
30	AM360HXWAFR2	3	3	208~230	60	187.2	253	78.6	115
32	AM384HXWAFR2	3	3	208~230	60	187.2	253	79.2	100
34	AM408HXWAFR2	3	3	208~230	60	187.2	253	92.6	140
36	AM432HXWAFR2	3	3	208~230	60	187.2	253	99.6	150
38	AM456HXWAFR2	3	3	208~230	60	187.2	253	95.2	125
40	AM480HXWAFR2	3	3	208~230	60	187.2	253	102.2	140
42	AM504HXWAFR2	3	3	208~230	60	187.2	253	109.2	150
48	AM576HXWAFR2	3	3	208~230	60	187.2	253	118.8	150

4. Dimensional Drawing

AM072/096/120HXWAFR** (6, 8, 10Ton)

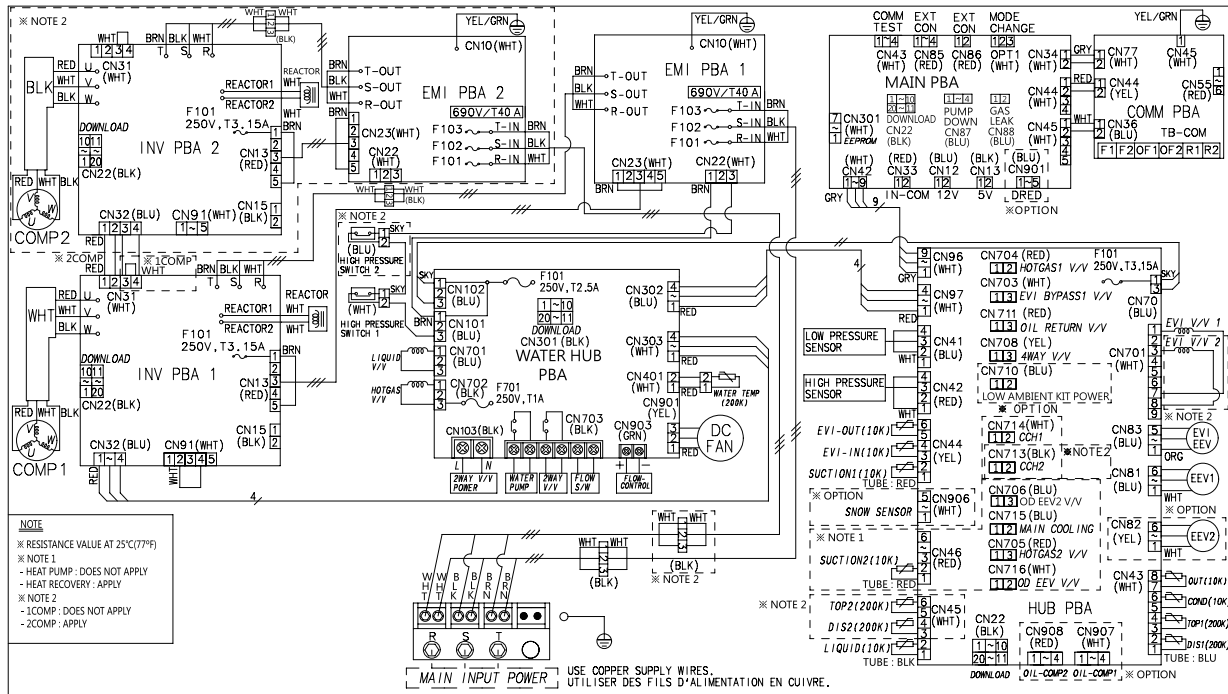
Unit : mm (inches)



No.	Name	Description			No.	Name	Description		
		6Ton	8Ton	10Ton			6Ton	8Ton	10Ton
①	Liquid ref. pipe	9.52 (3/8")	9.52 (3/8")	12.70 (1/2")	⑤	Water inlet pipe	NPT 1-1/4		
②	High pressure gas ref. pipe	15.88 (5/8")	19.05 (3/4")	19.05 (3/4")	⑥	Communication wiring	-		
③	Low pressure gas ref. pipe	19.05 (3/4")	22.22 (7/8")	28.58 (1 1/8")	⑦	External contact wiring	-		
④	Water outlet pipe	NPT 1-1/4			⑧	Power wiring	-		

6. Electrical Wiring Diagram

AM072/096/120/192HXWAFR**



INV PBA1	Printed circuit board(inverter1)	EEV1	electronic expansion valve 1	LIQUID(10K)	Thermistor LIQUID(10K)
INV PBA2	Printed circuit board(inverter2)	EEV2	electronic expansion valve 2	HOTGAS1 V/V	Solenoid valve(HOTGAS1)
EMI PBA1	Printed circuit board(emi1)	EVI-OUT(10K)	Thermistor (Enhanced Vapor Injection_out)	EVI BYPASS V/V	Solenoid valve(EVI BYPASS)
EMI PBA2	Printed circuit board(emi1)	EVI-IN(10K)	Thermistor (Enhanced Vapor Injection_in)	RETURN V/V	Solenoid valve(RETURN)
FAN PBA	Printed circuit board(fan motor)	SUCTION1(10K)	Thermistor (SUCTION1)	4WAY V/V	Solenoid valve(4WAY)
MAIN PBA	Printed circuit board(main)	SUCTION2(10K)	Thermistor (SUCTION2)	CCH1	Crank Case Heater (Compressor1)
HUB PBA	Printed circuit board(hub)	SNOW SENSOR	SNOW SENSOR	CCH2	Crank Case Heater (Compressor1)
COMM PBA	Printed circuit board(communication)	OIL-COMP1	Oil-Sensor(Compressor1)	MAIN COOLING	Solenoid valve(Main cooling)
COMP1	Motor (compressor1)	OIL-COMP2	Oil-Sensor(Compressor2)	HOTGAS2 V/V	Solenoid valve(HOTGAS2)
COMP2	Motor (compressor2)	OUT(10K)	Thermistor (Air)	OD EEV V/V	Solenoid valve(OD EEV)
FAN1	Motor (fan1)	COND(10K)	Thermistor (COND)	F101	FUSE(inverterPBA)
FAN2	Motor (fan2)	TOP2(200K)	Thermistor (Copressor2 TOP)	690V/T40A	FUSE(EMI PBA)
EVI V/V 1	Solenoid valve(Enhanced Vapor Injection_1)	DIS1(200K)	Thermistor DIS1(200K)	MODE CHANGE	Connector (remote switching cool/heat selector)
EVI V/V 2	Solenoid valve(Enhanced Vapor Injection_2)	DIS2(200K)	Thermistor DIS2(200K)	EXT CON	Connector (Output EXT CON)
EVI EEV	electronic expansion valve(EVI)	LIQUID(10K)	Thermistor LIQUID(10K)	ERROR/COMP EXT	Connector (Output ERROR/COMP EXT CON)

NOTE

- This wiring diagram applies only to the water-cooled DVM S Water.
- Colors BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue , ORG: orange, GRN: green
- When operating, don't short circuit 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, $\frac{N}{\times}$: The wire quantity

7. Sound Data

Summary

Capacity Ton	Model	Sound Pressure (dBA)		Sound Power (dBA)
		Cooling	Heating	
3	AM038KXWD**	47	49	65
4	AM048KXWD**	48	50	71
5	AM055KXWD**	49	51	71

Premium Energy Efficiency Type

Capacity Ton	Model	Sound Pressure (dBA)		Sound Power (dBA)
		Cooling	Heating	
6	AM072HXWA*R	48	51	70
8	AM096HXWA*R	48	51	70
10	AM120HXWA*R	50	52	70
12	AM144HXWA*R2	51	54	73
14	AM168HXWA*R2	51	54	73
16	AM192HXWA*R	51	52	73
18	AM216HXWA*R2	52	55	73
20	AM240HXWA*R2	53	55	73
22	AM264HXWA*R2	53	56	75
24	AM288HXWA*R2	53	55	75
26	AM312HXWA*R2	53	55	75
28	AM336HXWA*R2	54	56	75
30	AM360HXWA*R2	54	56	76
32	AM384HXWA*R2	54	55	76
34	AM408HXWA*R2	55	56	76
36	AM432HXWA*R2	55	57	76
38	AM456HXWA*R2	55	56	77
40	AM480HXWA*R2	55	56	77
42	AM504HXWA*R2	55	57	77
48	AM576HXWA*R2	56	57	78

The background of the page is a complex geometric pattern of overlapping triangles and polygons in various shades of blue, ranging from light to dark. The pattern is abstract and modern, filling the upper and left portions of the page.

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