

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 |
|-----------|-----|

(5) Feature1

| | |
|----------|-----------|
| W | DVM WATER |
|----------|-----------|

(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

| Type | | | DVM S Water | DVM S Water | DVM S Water | | |
|--|--|----------------|---------------|----------------------------|----------------------------|----------------------------|-----------|
| Model Name | Outdoor unit module 1 | | AM038KXWDCH** | AM048KXWDCH** | AM055KXWDCH** | | |
| | Outdoor unit module 2 | | AM038KXWDCH** | AM048KXWDCH** | AM055KXWDCH** | | |
| | Outdoor unit module 3 | | | | | | |
| | Outdoor unit module 4 | | | | | | |
| | | | | | | | |
| Power Supply | | | ø, #, V, Hz | 1, 2, 208~230, 60 | 1, 2, 208~230, 60 | 1, 2, 208~230, 60 | |
| Mode | | | - | HP | HP | HP | |
| Performance | Ton | | Ton | 3 | 4 | 5 | |
| | Capacity (Nominal) ¹⁾ | Cooling | Btu/h | 38,200 | 47,800 | 54,600 | |
| | | Heating | Btu/h | 42,600 | 54,600 | 61,400 | |
| | Capacity (Rated) ²⁾ | Cooling | Btu/h | 38,000 | 48,000 | 54,500 | |
| | | Heating | Btu/h | 42,000 | 54,000 | 61,000 | |
| 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 (Nominal) ¹⁾ | Cooling | kW | 2.09 | 2.66 | 3.27 | |
| | | Heating | | 2.03 | 2.70 | 3.18 | |
| | Current | MCA | A | 20 | 24 | 26 | |
| | | MOP | | 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 | Type | | - | Inverter Rotary | Inverter Rotary | Inverter Rotary | |
| | Output | | kW × n | (2.82) × 1 | (4.11) × 1 | (4.11) × 1 | |
| | Model Name | | - | UG8T300FUBJUSG x 1 | UG5T450FUEJXSG x 1 | UG5T450FUEJXSG x 1 | |
| | Oil | Type | - | PVE | PVE | PVE | |
| | | Initial Charge | Liter | 1.2 | 1.7 | 1.7 | |
| Condenser | Type | | Type | 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 | |
| | Lost Head | | kPa (ftAq) | 25 (8.4) | 20 (6.7) | 28 (9.4) | |
| | Water Flow Rate | | LPM (GPM) | 40 (10.5) | 50 (13.2) | 60 (15.9) | |
| | Max. Pressure | | Mpa (psi) | 1.96 (285) | 1.96 (285) | 1.96 (285) | |
| Piping Connections | Liquid Pipe | Type | | Braze connection | Braze connection | Braze connection | |
| | | ø, mm | | 9.52 | 9.52 | 9.52 | |
| | | ø, inch | | 3/8 | 3/8 | 3/8 | |
| | Gas Pipe | Type | | Braze connection | Braze connection | Braze connection | |
| | | ø, mm | | 15.88 | 19.05 | 19.05 | |
| | | ø, inch | | 5/8 | 3/4 | 3/4 | |
| | Discharge Gas Pipe (HR) | | ø, mm | - | - | - | |
| | | | ø, inch | - | - | - | |
| | Heat insulation | | - | Both liquid and gas pipes | Both liquid and gas pipes | Both liquid and gas pipes | |
| | Piping length (ODU-IDU) | | Max. | m (ft) | 75 (246) | 75 (246) | 75 (246) |
| | Piping length (1st Branch-IDU) | | Max. | m (ft) | 40 (131) | 40 (131) | 40 (131) |
| | Total piping length (System) | | Max. | m (ft) | 200 (656) | 200 (656) | 200 (656) |
| | Level difference (ODU in highest position) | | Max. | m (ft) | 30 (98) | 30 (98) | 30 (98) |
| Level difference (IDU in highest position) | | Max. | m (ft) | 30 (98) | 30 (98) | 30 (98) | |
| Level difference (IDU-IDU) | | Max. | m (ft) | 15 (49) | 15 (49) | 15 (49) | |

2. Specification

| Type | | | | DVM S Water | DVM S Water | DVM S Water |
|-------------------------------------|-----------------------------|---------|----------|----------------|----------------|----------------|
| Model Name | Outdoor unit module 1 | | | AM038KXWDCH** | AM048KXWDCH** | AM055KXWDCH** |
| | Outdoor unit module 2 | | | AM038KXWDCH** | AM048KXWDCH** | AM055KXWDCH** |
| | Outdoor unit module 3 | | | | | |
| | Outdoor unit module 4 | | | | | |
| | | | | | | |
| Wiring connections | Communication | Min. | mm2 | 0.75 | 0.75 | 0.75 |
| | | Remark | - | F1, F2 | F1, F2 | F1, F2 |
| Refrigerant | Type | | - | R410A | R410A | R410A |
| | Factory Charging | | kg (lbs) | 1.1 (2.4) | 1.6 (3.5) | 1.6 (3.5) |
| Sound | Sound Pressure | Cooling | dB(A) | 47 | 48 | 49 |
| | | Heating | | 49 | 50 | 51 |
| | Sound Power | | | | 65 | 71 |
| External Dimension | Net Weight | | kg (lbs) | 73 (161) | 87 (191) | 87 (191) |
| | Shipping Weight | | kg (lbs) | 80 (176) | 94 (207) | 94 (207) |
| | Net Dimensions (WxHxD) | | mm | 750x800x330 | 750x800x330 | 750x800x330 |
| | | | inch | 29.5x31.5x13.0 | 29.5x31.5x13.0 | 29.5x31.5x13.0 |
| | Shipping Dimensions (WxHxD) | | mm | 812x950x392 | 812x950x392 | 812x950x392 |
| | | | inch | 31.9x37.4x15.4 | 31.9x37.4x15.4 | 31.9x37.4x15.4 |
| Operating Temp. Range (Water Temp.) | Cooling | | °C (°F) | 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) |

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** | 1 | 2 | 208~230 | 60 | 187.2 | 253 | 20.0 | 35 |
| 4 | AM048KXWD** | 1 | 2 | 208~230 | 60 | 187.2 | 253 | 24.0 | 40 |
| 5 | AM055KXWD** | 1 | 2 | 208~230 | 60 | 187.2 | 253 | 26.0 | 45 |

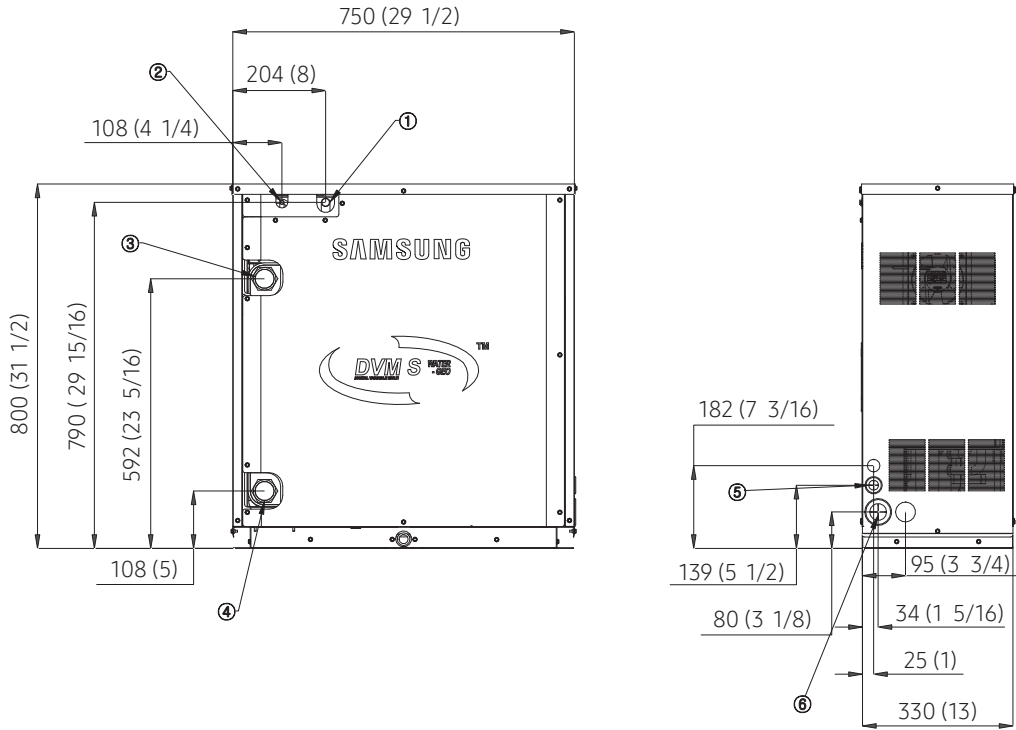
Premium Energy Efficiency Type

| 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

AM038/048/055KXWDCH** (3, 4, 5Ton)

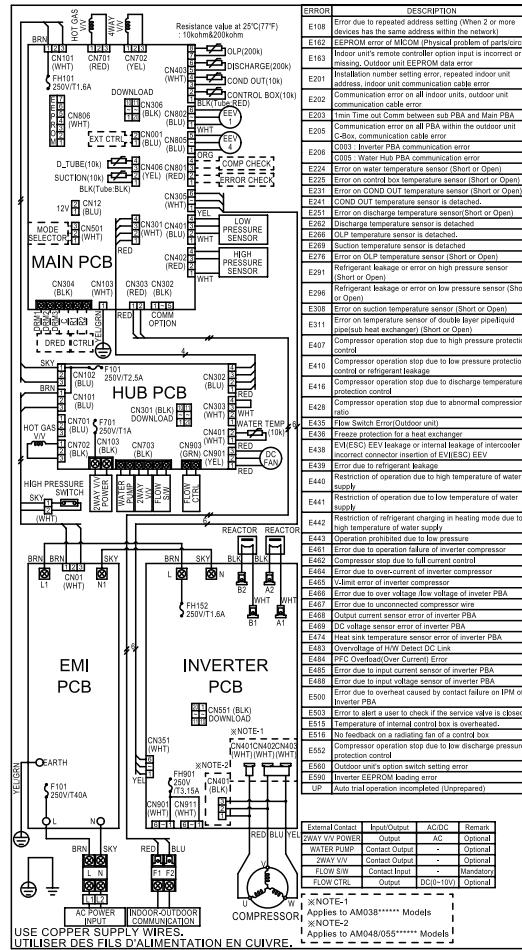
Unit : mm (inches)



| No. | Name | Description | No. | Name | Description |
|-----|-------------------|--------------|-----|----------------------|-------------|
| ① | Gas ref. pipe | 15.88 (5/8") | ④ | Water inlet pipe | NPT 1-1/4 |
| ② | Liquid ref. pipe | 9.52 (3/8") | ⑤ | Communication wiring | - |
| ③ | Water outlet pipe | NPT 1-1/4 | ⑥ | Power wiring | - |

6. Electrical Wiring Diagram

AM038/048/055KXWDCH*^{*}



| | | | |
|-----------------|---------------------------------|------------------|--|
| EMI PCB | Printed circuit board(EMI) | HOT GAS | Solenoid valve(HOT GAS) |
| INVERTER PCB | Printed circuit board(inverter) | 4WAY V/V | Solenoid valve(4WAY) |
| MAIN PCB | Printed circuit board(main) | OLP(200k) | Thermistor (OLP) |
| HUB PCB | Printed circuit board(hub) | DISCHARGE(200k) | Thermistor (DISCHARGE) |
| EEV1 | electronic expansion valve 1 | CONDOUT(200k) | Thermistor (CONDOUT) |
| EEV4 | electronic expansion valve 4 | CONTROL BOX(10k) | Thermistor (CONTROL BOX) |
| WATER TEMP(10k) | Thermistor (WATER TEMP) | EVI EEV | electronic expansion valve(EVI) |
| OLP(200k) | Thermistor (OLP) | EVI V/V 1 | Solenoid valve(Enhanced Vapor Injection_1) |
| EVI EEV | electronic expansion valve(EVI) | EVI V/V 2 | Solenoid valve(Enhanced Vapor Injection_2) |

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, : The wire quantity

7. Sound Data

Summary

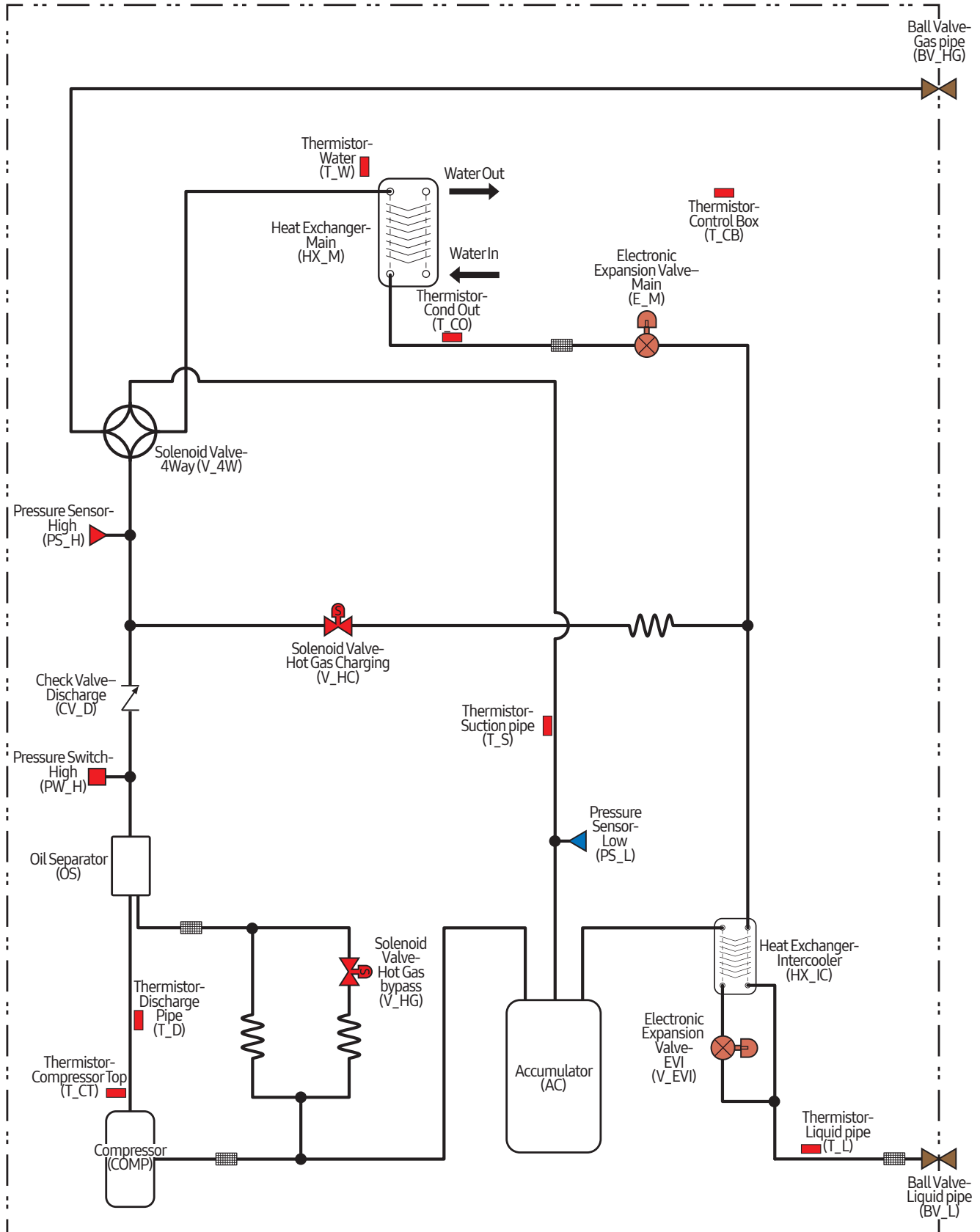
| Capacity Ton | Model | Sound Pressure (dBA) | | Sound Power (dBA) |
|-----------------|-------------|----------------------|---------|-------------------|
| | | Cooling | Heating | |
| 3 | AM038KXWD** | 47 | 49 | 65 |
| 4 | AM048KXWD** | 48 | 50 | 71 |
| 5 | AM055KXWD** | 49 | 51 | 71 |

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 |

9. Piping Diagram

AM038/048/055KXWDCH**





Samsung Electronics Co., LTD.

Head Office (Suwon Korea) 129, Samsung-Ro, Yeongtong-Gu, Suwon City, Gyeonggi-Do, Korea 16677
Website : www.samsung.com, <https://partnerhub.samsung.com> Email : airconditioner@samsung.com
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