



GMV5 HOME DC INVERTER MULTI VRF UNITS SERVICE MANUAL

T1/R410A /50-60Hz
(GC201509 - I)

CONTENTS

| | |
|---|-----------|
| CHAPTER 1: PRODUCT INTRODUCTION | 1 |
| 1. PRODUCT LIST | 1 |
| 1.1 Outdoor unit | 1 |
| 1.2 Hot water generator | 1 |
| 1.3 Water tank | 2 |
| 2. BASIC PARAMETER OF UNIT | 2 |
| 2.1 Performance parameter of outdoor unit | 2 |
| 2.2 Performance parameter of hot water generator | 3 |
| 2.3 Performance parameter of water tank | 4 |
| 3. PRODUCT FUNCTIONS | 5 |
| 3.1 Outline of Features | 5 |
| 3.2 Description of Features | 5 |
| 4. BASIC OPERATIONAL PRINCIPLE | 6 |
| 4.1 Flow Diagram of System | 6 |
| 4.2 Instruction of flow | 6 |
| 5. NAMING RULES | 7 |
| 5.1 Naming rules of outdoor unit | 7 |
| 5.2 Naming rules of indoor unit | 7 |
| 5.3 Naming rules of hot water generator | 8 |
| 5.4 Naming rules of water tank | 8 |
| 6. PRODUCT MODEL SELECTION AND COLLOCATION | 9 |
| 6.1 Usage mode 1: air conditioner + hot water | 9 |
| 6.2 Usage mode 2: air conditioner + hot water + floor heating | 10 |
| 6.3 Usage mode 3: air conditioner + floor heating | 11 |
| 6.4 Requirement for connecting quantity | 14 |
| 6.5 Notices for model selection | 14 |
| 6.6 Product operating range | 14 |
| 7. REVISION OF PRODUCT CAPACITY | 14 |
| 7.1 Capacity Code | 14 |
| 7.2 Capacity revision method for indoor and outdoor units | 14 |
| 7.3 Revision of ambient temperature and collocation rate capacity | 15 |
| 7.4 Revision coefficient of heating water capacity | 29 |
| 7.5 Revision of floor heating capacity | 31 |
| 7.6 Revision of length and fall difference of connecting pipe | 33 |
| 7.7 Heating frosting revision factor | 34 |
| 8. PRODUCT MODEL SELECTION | 34 |
| 8.1 Notices for model selection | 34 |
| 8.2 Overall Model Selection Steps | 36 |
| 8.3 Model selection example 1: air conditioner + heating water + floor heating, air conditioner + floor heating | 37 |
| 8.4 Model selection example 2: air conditioner + heating water | 44 |
| CHAPTER 2: CONTROL | 45 |
| 1. UNIT CONTROL | 45 |
| 1.1 General Control Method | 45 |
| 1.2 Operation Flowchart | 50 |
| 2. REMOTE CONTROLLER | 63 |
| 3. INDOOR UNIT WIRED CONTROLLER | 64 |
| 3.1 Display | 64 |
| 3.2 Buttons | 66 |
| 3.3 Installation and Debugging of Wired Controller | 66 |
| 4. HYDRO BOX WIRED CONTROLLER | 86 |
| 4.1 Display | 86 |
| 4.2 Buttons | 88 |
| 4.3 Installation and Debugging of Wired Controller | 89 |
| 4.4 Operation Instructions | 96 |
| 4.5 Malfunction Display | 111 |

| | |
|--|------------|
| CHAPTER 3 INSTALLATION | 118 |
| 1. ENGINEERING INSTALLATION FLOWCHART..... | 118 |
| 2.COMMON TOOLS AND DEVICES | 119 |
| 3.PREPARATION BEFORE INSTALLATION | 121 |
| 3.1 Notices for Installation Engineering | 121 |
| 3.2 Onsite Review of Design Drawing | 123 |
| 3.3 Selection of Installation Materials | 124 |
| 4 THREE OPERATION MODES..... | 127 |
| 4.1 Operation mode 1: Air conditioning + water heating..... | 127 |
| 4.2 Operation mode 2: Air conditioning + water heating + floor heating..... | 128 |
| 4.3 Operation mode 3: Air conditioning + floor heating | 129 |
| 5.INSTALLATION OF ODU..... | 132 |
| 5.1 ODU Dimensions and Installation Hole Size | 132 |
| 5.2 Selection of Outdoor Unit Installation Place | 132 |
| 5.3 Installation Space Requirement for ODU..... | 132 |
| 5.4 Installation Foundation of ODU..... | 137 |
| 5.5 Vibration Reduction for ODU | 138 |
| 6.INSTALLATION OF IDU..... | 138 |
| 7.INSTALLATION OF HYDRO BOX..... | 139 |
| 7.1 Outline dimension and installation hole dimension of hydro box..... | 139 |
| 7.2 Installation Position of Hydro Box | 139 |
| 7.3 Requirements for Installation Space of Hydro Box (Unit: mm) | 139 |
| 7.4 Installation Procedures of Hydro Box | 141 |
| 7.5 Internal Structure and Pipeline Instruction of Hydro Box..... | 142 |
| 8. INSTALLATION OF WATER TANK..... | 143 |
| 8.1 Outline Dimension and Installation Dimension of Water Tank..... | 143 |
| 8.2 Installation Position of Water Tank..... | 144 |
| 8.3 Installation Notice for Water Tank | 144 |
| 9.DESIGN, INSTALLATION AND INSULATION OF REFRIGERANT PIPELINE | 145 |
| 9.1 Notices for Pipeline Design..... | 145 |
| 9.2 Schematic Diagram of Refrigerant Piping..... | 146 |
| 9.3 Allowable Length and Height Different of Refrigerant Piping of IDU and ODU | 148 |
| 9.4 Size of Refrigerant Piping | 149 |
| 9.5 Installation and Insulation of Refrigerant Pipe | 152 |
| 10.PIPE INSTALLATION AND INSULATION FOR THE CONDENSATE WATER SYSTEM AND INSULATION FOR THE DUCTS | 160 |
| 10.1 Pipe Installation and Insulation for the Condensate Water System..... | 160 |
| 10.2 Insulation for air ducts..... | 164 |
| 11.INSTALLATION AND INSULATION OF HOT WATER SYSTEM PIPELINE..... | 164 |
| 11.1 Connection of Hot Water System Pipeline..... | 164 |
| 11.2 Connection Requirements of Hydro box and water Tank | 168 |
| 11.3 Installation Requirements of Water System | 168 |
| 11.4 Capacity Setting of Water Tank..... | 168 |
| 11.5 Installation of Floor Heating Performer (floor heating water separation valve)..... | 171 |
| 12. ELECTRIC INSTALLATION | 174 |
| 12.1 Precautions | 174 |
| 12.2 Installation of Power..... | 176 |
| 12.3 Wiring diagram..... | 181 |
| 12.INSTALLATION OF THE COMMUNICATION SYSTEM..... | 182 |
| 12.1 Connection of Communication Cable | 182 |
| 12.2 Setting of Communication Address..... | 184 |
| 12.3 Connection Way and Procedures of Communication Cable | 185 |
| 13.REFRIGERANT CHARGING..... | 191 |
| 13.1 Precautions on Refrigerant Leakage | 191 |
| 13.2 Calculation of Additional Refrigerant Charge Amount | 192 |
| CHAPTER 4 COMMISSIONING OPERATION..... | 194 |
| 1.COMMISSIONING FLOWCHART..... | 194 |
| 2.SAFETY NOTICES | 194 |
| 3.PREPARATION BEFORE COMMISSIONING | 194 |
| 3.1 Preparation of Commissioning Tools | 194 |
| 3.2 Preparation of Commissioning Papers | 195 |

| | |
|--|------------|
| 3.3 Inspection before Commissioning..... | 197 |
| 4.COMMISSIONING OPERATION | 202 |
| 4.1 Commissioning Operation of Hydro Box..... | 202 |
| 4.2 Commissioning Operation of the Entire Unit | 205 |
| 5. DIP SWITCH INSTRUCTIONS OF GMV5 UNIC | 219 |
| 5.1 GMV5 Unic Outdoor Unit (GMV-S224W/A-X,GMV-S280W/A-X) | 219 |
| 5.2 Hydro Box (NRQD16G/A-S) | 241 |
| CHAPTER 5 MAINTENANCE..... | 257 |
| 1. TABLE OF ERROR CODES..... | 257 |
| 2. SETTING OF OUTDOOR UNIT NOISE REDUCTION | 261 |
| 2.1 Setting instruction | 261 |
| 2.2 Effect of quiet mode:..... | 262 |
| 3. INSTRUCTION FOR “LEAVING OUT CHARGING WATER” BETWEEN GENERATOR AND WATER TANK | 263 |
| 3.1 Description of question | 263 |
| 3.2 Analysis..... | 263 |
| 3.3 Troubleshooting | 263 |
| 4. TROUBLESHOOTING..... | 265 |
| 4.1 Analysis in Forms..... | 265 |
| 4.2Flowchart analysis | 287 |
| 5.POWER DISTRIBUTION..... | 309 |
| 5.1 Power distribution method | 309 |
| 5.2 Introduction on key electric parts | 309 |
| 5.3 Circuit Diagram | 310 |
| 6. ASSEMBLY AND DISASSEMBLY OF PARTS | 311 |
| 6.1 Introduction on key parts | 311 |
| 6.2 Assembly and disassembly of key parts | 314 |
| 7. COMMON MAINTENANCE..... | 327 |
| 7.1 Outdoor Unit Heat Exchanger..... | 327 |
| 7.2 Drain Pipe | 327 |
| 7.3 Notice at the beginning of use season..... | 327 |
| 7.4 Maintenance at the end of use season..... | 327 |
| 7.5 Parts Replacement | 327 |
| 7.6 System Leak Detection | 327 |
| 7.7 System Vacuum Pumping..... | 327 |
| 8.EXPLODED VIEWS AND LIST OF SPARE PARTS..... | 329 |
| 8.1 Outdoor Unit..... | 329 |
| 8.2 Hydro Box | 332 |
| CHAPTER 6 CARE | 335 |
| 1.CARE | 335 |
| 1.1 Outdoor Unit Heat Exchanger..... | 335 |
| 1.2 Drain Pipe | 335 |
| 1.3 Notices at the Beginning of Use Season | 335 |
| 1.4 Notices at the End of Use Season..... | 335 |
| 1.5 Parts Replacement | 335 |
| CHAPTER 7 MONITORING SOFTWARE | 336 |
| 1 FUNCTION INTRODUCTION..... | 336 |
| 2 CONNECTION OF COMPUTER AND UNITS..... | 336 |
| 3 HARDWARE INTRODUCTION..... | 337 |
| 3.1 List of parts | 337 |
| 3.2 Gree USB Data Converter | 337 |
| 3.3 Communication Board | 339 |
| 3.4 Communication Wire..... | 339 |
| 4 SOFTWARE INTRODUCTION | 340 |
| 4.1 Installation Requirements | 340 |
| 4.2 Installation Flowchart | 342 |
| 4.3 Installation Procedure | 342 |
| 5. USE OF SOFTWARE | 359 |
| 5.1 Introduction of Functions | 359 |
| 5.2 Operation Methods | 359 |
| 6. DEBUGGING OF SOFTWARE..... | 383 |

| | |
|----------------------------------|-----|
| 6.1 Flowchart of Debugging | 383 |
| 6.2 Troubleshooting | 384 |

SAFETY PRECAUTIONS

Meaning of precautions and symbols

Precautions in this manual are classified according to their seriousness and possibility.



Danger

It means danger. If it is unavoidable, death or serious personal injury will occur.



Warning

It means potential danger. If it is unavoidable, death or serious personal injury may occur.



Caution

It means potential danger. If it is unavoidable, light or medium injury may occur. It is also used to warn against dangerous behavior.



Notice

It means equipment or property loss may occur.



Information

It is used to point out useful or extra information.



Transferring

It is used to transfer to a designated part.

PREFACE



Thank you for choosing Gree GMV5 Home Units.

For correct installation, operation and maintenance and for reaching the expected performance, please read this manual carefully. This manual is applicable to GMV5 Home Units. Professional operators must follow relevant national (local) safety requirements and technical specifications set forth in this manual during operation; otherwise, the air conditioning system may fail or be damaged, and personnel safety accident may also occur.


CHAPTER 1: Product introduction

1. Product List



1.1 Outdoor unit

| Model | Product code | Cooling capacity kW | Heating capacity kW | Power source | Refrigerant | Outside view |
|----------------|--------------|---------------------|---------------------|------------------------------|-------------|--|
| GMV-S120WL/A-S | CN853W0110 | 12.1 | 14.0 | 220-240V~ 50Hz/60HZ | R410a |  |
| GMV-S140WL/A-S | CN853W0120 | 14.0 | 16.5 | | | |
| GMV-S160WL/A-S | CN853W0130 | 16.0 | 18.5 | | | |
| GMV-S224W/A-X | CN853W0140 | 22.4 | 25 | 380~415V 3N~ 50Hz/60HZ | R410a |  |
| GMV-S280W/A-X | CN853W0150 | 28 | 31.5 | | | |

1.2 Hot water generator

| Model | Product code | Capacity range (kW) | Outside view |
|-------------|--------------|---------------------|---|
| NRQD16G/A-S | CN700N0010 | 3.6~16 |  |

1.3 Water tank

| Model | Product code | Capacity of water tank (L) | Outside view |
|-----------------|--------------|----------------------------|---|
| SXVD200LCJ/A-K | ER20000160 | 200 |  |
| SXVD300LCJ/A-K | ER20000180 | 300 | |
| SXVD350LCJ/A-K | ER20000230 | 350 | |
| SXVD400LCJ/A-K | ER20000220 | 400 | |
| SXVD200LCJ2/A-K | ER20000170 | 200 |  |
| SXVD300LCJ2/A-K | ER20000190 | 300 | |
| SXVD350LCJ2/A-K | ER20000200 | 350 | |
| SXVD400LCJ2/A-K | ER20000210 | 400 | |

Notes:

- (1) For specific provided capacity of water tank, please refer to the local climate conditions and suggestion of professional person.
- (2) If specification is changed due to improvement of product, please subject to specific name plate of product.

2. Basic Parameter of Unit

2.1 Performance parameter of outdoor unit

| Model | | GMV-S120 WL/A-S | GMV-S140WL/A-S | GMV-S160WL/A-S | GMV-S224W/A-X | GMV-S280W/A-X | |
|--------------------------|-------------------|---|--------------------|--------------------|------------------------|------------------------|-------|
| Cooling capacity | kW | 12.10 | 14.00 | 16.00 | 22.4 | 28 | |
| Heating capacity | kW | 14.00 | 16.50 | 18.50 | 25 | 31.5 | |
| Noise | dB(A) | 55 | 56 | 58 | 57 | 58 | |
| Water supply temperature | °C | 50 (default), adjustable within 35~55°C | | | | | |
| Power source | | 220-240V~50Hz/60Hz | 220-240V~50Hz/60Hz | 220-240V~50Hz/60Hz | 380V-415V 3N~50Hz/60Hz | 380V-415V 3N~50Hz/60Hz | |
| Air volume | m ³ /h | 6000 | 6300 | 6600 | 14000 | 14000 | |
| External static pressure | Pa | 0 | 0 | 0 | 80 | 80 | |
| Rated power | Cooling | kW | 3.05 | 3.98 | 4.85 | 5.35 | 7.7 |
| | Heating | kW | 3.3 | 4.10 | 4.67 | 5.8 | 7.6 |
| | Heating water | kW | 3.3 | 3.8 | 4.2 | 5.0 | 5.2 |
| Quantity of compressor | set | 1 | 1 | 1 | 1 | 1 | |
| Waterproof level | | IPX4 | IPX4 | IPX4 | IPX4 | IPX4 | |
| Connecting pipe | Liquid pipe | mm | Φ9.52 | Φ9.52 | Φ9.52 | Φ9.52 | Φ9.52 |
| | Air pipe | mm | Φ15.9 | Φ15.9 | Φ19.05 | Φ19.05 | Φ22.2 |
| | High pressure air | mm | Φ12.7 | Φ12.7 | Φ12.7 | Φ15.9 | Φ15.9 |

GMV5 Home DC Inverter Multi VRF Units

| | pipe | | | | | | |
|----------------------------|----------------|--------------|-------------------------|-------------------------|-------------------------|--------------------|--------------------|
| | Connecting way | | Connect with horn mouth | Connect with horn mouth | Connect with horn mouth | Welding connection | Welding connection |
| Net weight | kg | 113 | 113 | 113 | 295 | 295 | |
| Minimum circuit current | A | 27.0 | 31.0 | 33.0 | 16.1 | 20.9 | |
| Maximum fuse current | A | 32.0 | 32.0 | 40.0 | 20.0 | 25.0 | |
| External dimension (WxDxH) | mm | 900×340×1345 | 900×340×1345 | 900×340×1345 | 1340×765×1605 | 1340×765×1605 | |

- 1) Test voltage of GMV-S120WL/A-S, GMV-S140WL/A-S, GMV-S160WL/A-S is 220V~50HZ; test voltage of GMV-S224W/A-X, GMV-S280W/A-X is 380-415V 3N~50/60HZ.
- 2) Test working conditions of the above nominal cooling capacity is: indoor dry bulb/wet bulb temperature (27°C /19°C), outdoor dry bulb/wet bulb temperature (35°C /24°C); Test working conditions of the above nominal heating capacity is: indoor dry bulb/wet bulb temperature (20°C /15°C), outdoor dry bulb/wet bulb temperature (7°C /6°C); Test working conditions of the above nominal water heating capacity is: initial water temperature/terminal water temperature (15°C /52°C), outdoor dry bulb/wet bulb temperature (20°C /15°C).
- 3) Performance parameter of unit will be changed due to improvement of product, there will be no further notification. For specific parameter please subject to name plate of product.
- 4) Heating water power is the average power for collocating with nominal working condition of hot water generator NRQD16G/A-S.
- 5) The noise is measured in laboratory, the noise in actual operation will be slightly high due to change of environment.
- 6) Sectional area of lead is only applicable to the longest distance range of 15 meters, if it is over 15 meters, sectional area of lead should be accordingly increased to avoid overload of current and burning of lead.
- 7) Select air switch according to maximum fuse current, and select electric wire according to minimum circuit current.

2.2 Performance parameter of hot water generator

| Model | | NRQD16G/A-S | |
|-------------------------------------|---|--------------------|-----------|
| Hot water heating capacity | kW | 4.5(3.6-16) | |
| Hot water yielding volume | L/h | 105(75-140) | |
| Floor heating capacity | kW | 16 | |
| Consumed power for electric heating | kW | 3 | |
| Power source | - | 220-240V ~ 50/60Hz | |
| Water pump | Input power | kW | 0.08-0.14 |
| | Water flow | m ³ /h | 1.7 |
| | Delivery lift (available for external pipeline network) | m | 6 |

GMV5 Home DC Inverter Multi VRF Units

| | | | |
|----------------------------------|--|----|----------------------|
| Type of heat exchanger | | - | Plate heat exchanger |
| Connection of water system | Pipe diameter of water inlet/outlet pipe | mm | Φ25 |
| | Specification of screw thread | - | G1 |
| Connection of refrigerant system | Air pipe | mm | Φ15.9 |
| | Liquid pipe | mm | Φ9.52 |
| | High pressure air pipe | mm | Φ12.7 |
| External dimension (W×D×H) | | mm | 500×919×328 |
| Net weight | | kg | 56 |

2.3 Performance parameter of water tank

| Model | | SXVD200LCJ/A-K | SXVD300LCJ/A-K | SXVD350LCJ/A-K | SXVD400LCJ/A-K |
|-------------------------------------|-------------------------------|----------------|----------------|----------------|----------------|
| Capacity | L | 200 | 300 | 350 | 400 |
| Consumed power for electric heating | kW | 3.0 | 3.0 | 3.0 | 3.0 |
| Highest working pressure | MPa | 0.7 | 0.7 | 0.7 | 0.7 |
| Inner pot | Material | - | SUS304L | SUS304L | SUS304L |
| | Thickness | mm | 1.5 | 1.5 | 1.5 |
| Insulating layer | Material | - | Polyurethane | Polyurethane | Polyurethane |
| | Thickness | mm | 50 | 45 | 45 |
| External layer | Material | - | Cold plate | Cold plate | Cold plate |
| | Thickness | mm | 0.8 | 0.8 | 0.8 |
| Circulating water pipe | Pipe diameter | mm | DN20 | DN20 | DN20 |
| | Specification of screw thread | - | G3/4 | G3/4 | G3/4 |
| Cooling water inlet pipe | Pipe diameter | mm | DN15 | DN15 | DN15 |
| | Specification of screw thread | - | G1/2 | G1/2 | G1/2 |
| Hot water outlet pipe | Pipe diameter | mm | DN15 | DN15 | DN15 |
| | Specification of screw thread | - | G1/2 | G1/2 | G1/2 |
| External dimension | External diameter×height | mm | Φ540×1595 | Φ620×1620 | Φ620×1895 |
| Net weight of unit | | kg | 68 | 82 | 96 |

| Model | | SXVD200LCJ2/A-K | SXVD300LCJ2/A-K | SXVD350LCJ2/A-K | SXVD400LCJ2/A-K |
|-------------------------------------|-----------|-----------------|-----------------|-----------------|-----------------|
| Capacity | L | 200 | 300 | 350 | 400 |
| Consumed power for electric heating | kW | 3.0 | 3.0 | 3.0 | 3.0 |
| Highest working pressure | MPa | 0.7 | 0.7 | 0.7 | 0.7 |
| Inner pot | material | - | SUS304L | SUS304L | SUS304L |
| | thickness | mm | 1.5 | 1.5 | 1.5 |
| Insulating layer | material | - | Polyurethane | Polyurethane | Polyurethane |
| | thickness | mm | 50 | 45 | 45 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | |
|--------------------------|-------------------------------|----|------------|------------|------------|------------|
| External layer | material | - | Cold plate | Cold plate | Cold plate | Cold plate |
| | thickness | mm | 0.8 | 0.8 | 0.8 | 0.8 |
| Circulating water pipe | Pipe diameter | mm | DN20 | DN20 | DN20 | DN20 |
| | Specification of screw thread | - | G3/4 | G3/4 | G3/4 | G3/4 |
| Cooling water inlet pipe | Pipe diameter | mm | DN15 | DN15 | DN15 | DN15 |
| | Specification of screw thread | - | G1/2 | G1/2 | G1/2 | G1/2 |
| Hot water outlet pipe | Pipe diameter | mm | DN15 | DN15 | DN15 | DN15 |
| | Specification of screw thread | - | G1/2 | G1/2 | G1/2 | G1/2 |
| External dimension | External diameter×height | mm | Φ540×1595 | Φ620×1620 | Φ620×1895 | Φ620×2125 |
| Net weight of unit | | kg | 71 | 87 | 100 | 110 |

Notes:

Performance parameter of product will be changed due to improvement of product, there will be no further notification. For specific parameter please subject to name plate of product.

3. Product Functions

3.1 Outline of Features

GMV5 Home is Gree's latest self-developed air conditioning unit integrated with "central air conditioner + hot water + floor heating". GMV5 Home is an integrated system that a set of air-cooled outdoor unit connecting to several direct evaporative indoor units with the same or different forms or capacities, and at the same time connecting to one or more hot water generators, which can provide one or more different areas with processed air and hot water. It is mainly applicable for residential use or small commercial locations.

The unit adopts the first-innovated CAN network multi-connection communication technology that its communication response speed is faster and more reliable; it can completely achieve auto addressing function and non-polar freely wire connection. The unit adopts advanced DC inverter technology and PID real-time control technology, which can achieve more powerful performance, higher energy efficiency ratio and more reliable operation.

3.2 Description of Features

High-efficiency and energy-saving

It adopts self-developed DC inverter technology for intelligently and integrately driving the system. Under full heat recovery mode of "cooling + heating water", its ECOP can be up to 7.0; it adopts DC inverter water pump that has good performance in energy consumption, flow-delivery lift adjustment range and performance curve.

Auto quiet mode

The unit has night-time quiet mode and compulsory quiet mode with the lowest operating noise of 45dB (A).

Unique and comfortable function

The unit has cooling auto heat recovery function that can automatically recover the heat to heat water, which is energy-saving and high-efficiency; water heating and floor heating function can be simultaneously turned on with 3D heating, which is comfortable; optimized defrosting function can reduce fluctuation of indoor temperature.

Wired controller of indoor unit can control floor heating

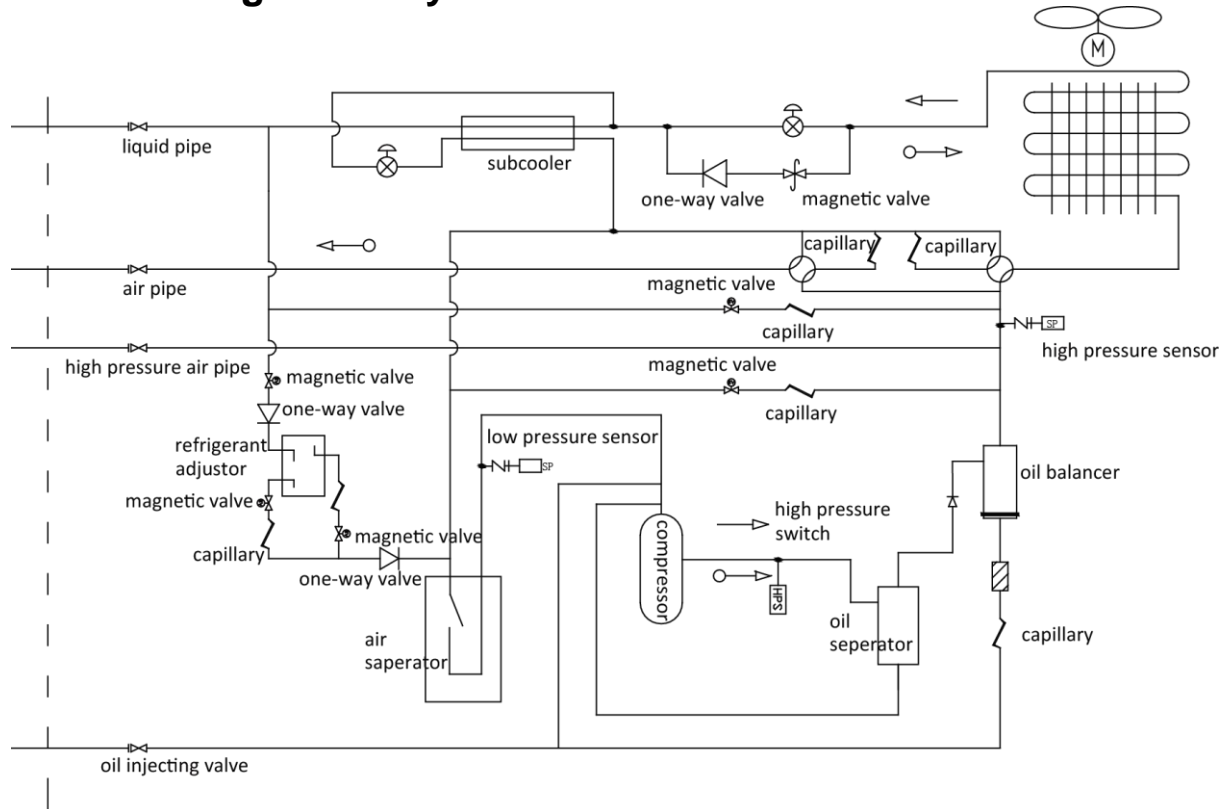
The generator has interface of floor heating performer, it can connect to floor heating performer; wired controller of indoor unit can control on/off of floor heating performer of the room, user needs not to purchase floor heating temperature controller separately;

Other features

The unit has auto addressing distribution function and non-polar communication function; unit has auto debugging and malfunction detection function; the unit adopts first-created CAN network multi-unit communication technology, which is more reliable and has faster response speed;

4. Basic Operational Principle

4.1 Flow Diagram of System



4.2 Instruction of flow

Energize the unit, after the indoor and outdoor unit start to run and conduct cooling, the low-temperature and low-pressure refrigerant gas comes from heat exchangers of different indoor units is converged and compressed into compressor to be high-temperature and high-pressure gas, and then it discharges into heat exchanger of outdoor unit and conducts heat exchange with outdoor air to be refrigerant liquid, the refrigerant liquid will flow to each indoor unit via Y shape branch pipes or branch manifolds, and is decompressed and cooled down by throttling device, finally enters into heat exchanger of indoor unit and conducts heat exchange with adjustable air to be low-temperature and low-pressure refrigerant gas. Circulate repeatedly in this way so as to achieve cooling.

When conduct heating, four-way valve A and four-way valve B will operate to make refrigerant conduct circulation according to converse process of cooling process; refrigerant discharges heat in heat exchanger of indoor unit (electric heating components will also operate and discharge heat under certain conditions), and absorbs heat from heat exchanger of outdoor unit to conduct heat pump heating circulation, so as to achieve heating.

When conduct heating and water heating, four-way valve A and and four-way valve B operate, refrigerant discharges heat in heat exchanger of indoor unit and hot water generator, and absorbs heat from heat exchanger of outdoor unit to conduct heat pump heating and water heating circulation, so as to achieve heating and heating water.

When heating water, four-way valve B operates, four-way valve B operates, refrigerant discharges heat in hot water generator, and absorbs heat in heat exchanger of outdoor unit and conduct heat pump heating and water heating circulation, so as to achieve heating water.

When conduct cooling and heating water, four-way valve B will operate according to actual situation, refrigerant will discharge heat in hot water generator, and absorb heat in heat exchanger

of indoor unit and conduct cooling and heating water circulation, under this mode it can achieve full heat recovery. But when water temperature is high, it can only achieve partial heat recovery. System can identify according to reliable operating range. So as to achieve cooling and heating water.

When conduct floor heating, four-way valve B operates, refrigerant will discharge heat in hot water generator, and absorb heat to conduct heat pump heating and heating water circulation, so as to achieve floor heating.

5. Naming Rules

5.1 Naming rules of outdoor unit

| | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|
| GMV | □ | — | □ | □ | □ | W | □ | / | □ | □ | — | □ |
| 1 | 2 | | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | | 10 |

| No. | Description | Optional Items |
|-----|------------------------------|---|
| 1 | Model | GMV-Gree multi VRF air conditioner |
| 2 | Type of climate | Omitted-T1 work condition; T2-T2 low temperature work condition; T3-T3 high temperature work condition |
| 3 | Model | DC inverter (omitted) |
| 4 | Functional code | Q—heat recovery unit; S—water heater; W—water-cooled chiller; X—fresh air processing unit; omitted—no the above functions |
| 5 | Code of refrigerant capacity | Nominal cooling refrigerant/100(W) |
| 6 | Code of outdoor unit | W—outdoor unit |
| 7 | Classification of struction | M—modulerized (top discharge); L—non-modulerized side discharge; omitted —non-nodulerized top discharge |
| 8 | Type of refrigerant | Omitted: R410A |
| 9 | Design No. | Named as A, B, C..., and then extended with number 1, 2, 3... |
| 10 | Form of power source | X—380~415V-3Ph-50/60Hz; S—220-240V~,50Hz/60Hz; T—applicable to 208-230V~, 60Hz, and 220-240V~, 50Hz; |

5.2 Naming rules of indoor unit

| | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|
| GMV | — | N | □ | □ | □ | □ | □ | / | □ | — | □ |
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | | 9 |

| No. | Description | Optional Items |
|-----|--------------------------|--|
| 1 | Model | GMV-Gree multi VRF air conditioner |
| 2 | Code of indoor unit | N |
| 3 | Form of motor | D-DC motor; omitted-AC motor |
| 4 | Functional code | R-heat pump only; L-cooling only; X-fresh air; W-double heat source; Q-heat recovery; omitted-defaulted electric heating |
| 5 | Code of cooling capacity | Nominal cooling capacity/100(W) |
| 6 | Classification of unit | PL-low static pressure duct type unit; P-standard static pressure duct type unit; PH-high static pressure duct type unit; PB-thin duct type unit; T-four-side cassette type unit; TD-single-side cassette type unit; TS-double-side cassette type unit; C-console type unit; ZD-floor ceiling type unit; G-wall-mounted unit |

GMV5 Home DC Inverter Multi VRF Units

| | | |
|---|------------------------|--|
| 7 | With water pump or not | With water pump-S (cassette type unit is acquiescent to be with water pump without representing S) |
| 8 | Design No. | Named as A, B, C..., and then extended with number 1, 2, 3... |
| 9 | Form of power source | T—applicable to 208-230V~, 60Hz, and 220-240V~, 50Hz; K—220-240V~,50Hz; |

5.3 Naming rules of hot water generator

| | | | | | | | | |
|---|----|---|----|---|---|---|---|---|
| N | RQ | D | 16 | G | / | A | — | □ |
| 1 | 2 | 3 | 4 | 5 | | 6 | | 7 |

| No. | Description | Optional Items |
|-----|------------------------|---|
| 1 | Developmental sequence | N—newly developed |
| 2 | Product code | RQ—hot water generator |
| 3 | Functional features | D—with electric heating function; omitted—no electric heating function |
| 4 | Rated capacity | Rated power of generator (kW) |
| 5 | Code of structure | G—wall-mounted; L--vertical; W--horizontal |
| 6 | Design No. | Arrange in A, B, C... order |
| 7 | Form of power source | S—220-240V~,50Hz/60Hz; T—applicable to 208-230V~, 60Hz, and 220-240V~, 50Hz; |

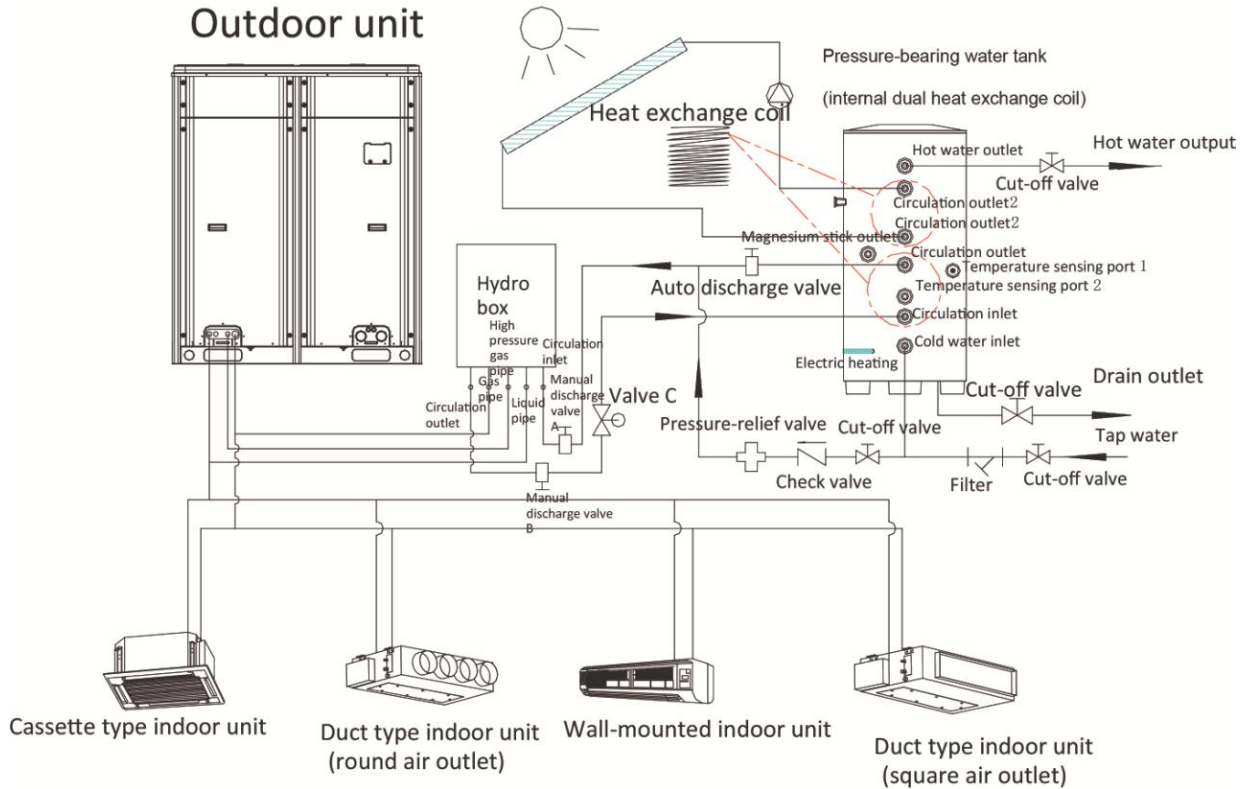
5.4 Naming rules of water tank

| | | | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|----|---|----|
| SX | □ | □ | □ | □ | □ | □ | □ | □ | / | □ | — | □ |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | | 11 |

| No. | Description | Optional Items |
|-----|------------------------------|---|
| 1 | Model | SX-water tank |
| 2 | Type of water tank | V—heat pump water tank for multi VRF unit; common heat pump water tank--obmitted |
| 3 | Functional code | Obmitted—no electric heating; D—with electric heating function; |
| 4 | Capacity of water tank | Unit: L |
| 5 | Form of structure | B—wall-mounted; L—floor standing |
| 6 | With bearing pressure or not | C—with bearing pressure; omitted—no beraing pressure |
| 7 | Form of coil | Omitted—no heat exchange tube; J—static heating mode of built-in coil (J represents single coil, J2 represents double coils); JW—static heating mode of external winding coil; D—coil with floor heating (D represents single coil, D2 represents double coils) |
| 8 | Structure of appearance | Omitted—round; F—square; T—rectangle ; Y—abnormity |
| 9 | Quantity of inner pot | Omitted—one; 2--two |
| 10 | Design No. | Arrange in A, B, C... order |
| 11 | Form of power source | K—220-240V~,50Hz; |

GMV5 Home DC Inverter Multi VRF Units

If it needs to connect to solar energy function, installation methods are as below:

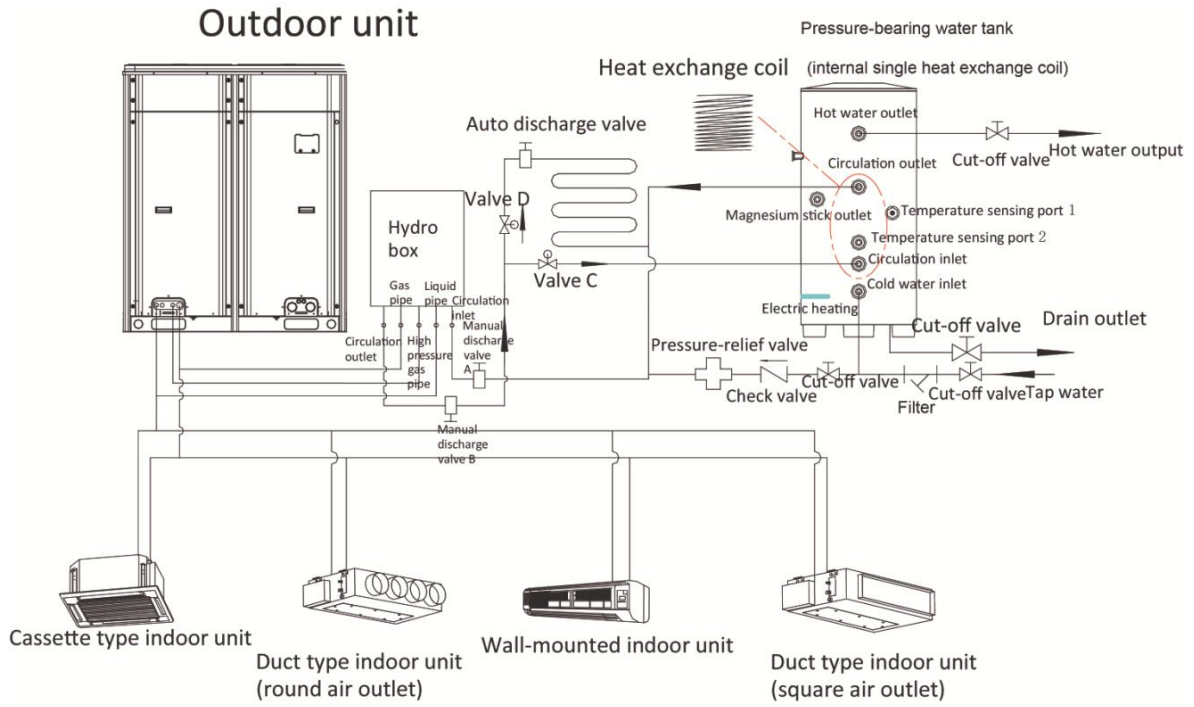


6.2 Usage mode 2: air conditioner + hot water + floor heating

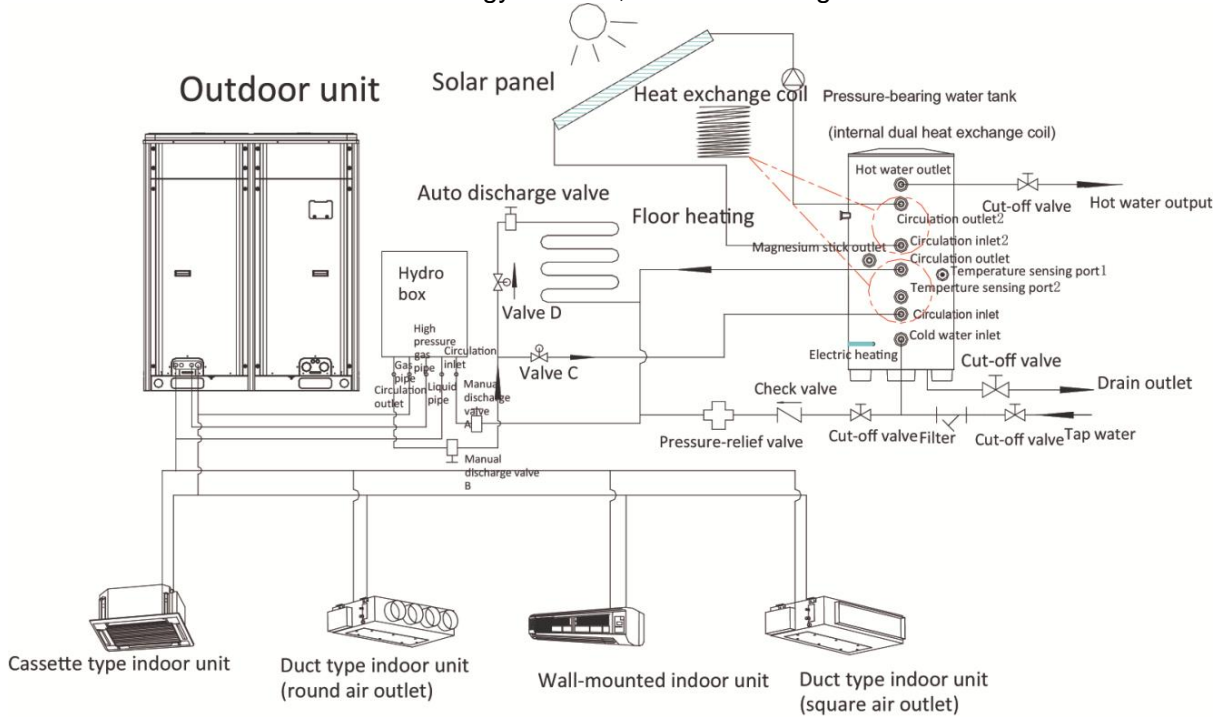
| Model of outdoor unit | | Indoor unit | Hot water generator | Water tank |
|-----------------------|--|-----------------------------|---------------------|---|
| Side discharge | GMV-S120WL/A-S GMV-S140WL/A-S GMV-S160WL/A-S | Related indoor unit of GMV5 | NRQD16G/A-S | (1) Inner-coil water tank SXVD200LCJ/A-K SXVD300LCJ/A-K SXVD350LCJ/A-K SXVD400LCJ/A-K |
| Top discharge | GMV-S224W/A-X GMV-S280W/A-X | | | (2) Inner-coil water tank can connect to solar energy function: SXVD200LCJ2/A-K SXVD300LCJ2/A-K SXVD350LCJ2/A-K SXVD400LCJ2/A-K |

Notes: C valve and D valve should be straight-through magnetic water valve with small resistance

Installation methods are as below:



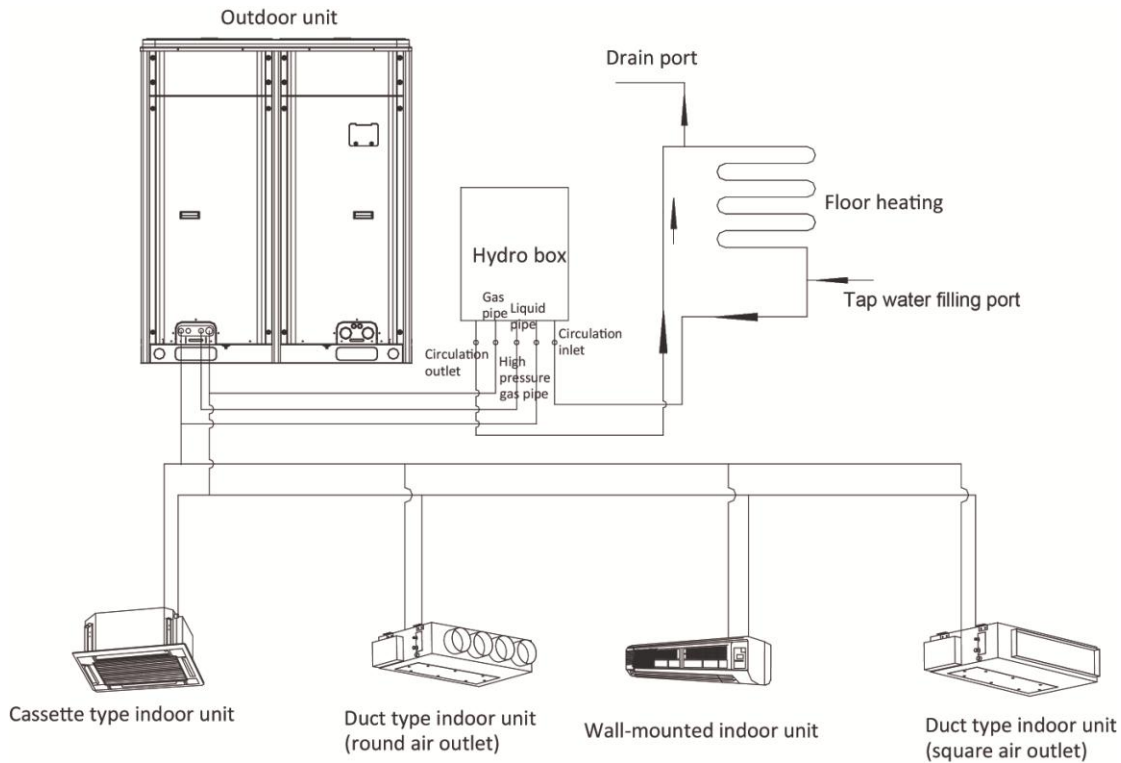
If it needs to connect to solar energy function, then connecting methods are as below:



6.3 Usage mode 3: air conditioner + floor heating

| Usage mode 3: air conditioner + floor heating | | | |
|---|--|-----------------------------|---------------------|
| Model of outdoor unit | | Indoor unit | Hot water generator |
| Side discharge | GMV-S120WL/A-S GMV-S140WL/A-S GMV-S160WL/A-S | Related indoor unit of GMV5 | NRQD16G/A-S |
| Top discharge | GMV-S224W/A-X GMV-S280W/A-X | | |

Installation methods are as below:



 Notes:

- 1) Before installation and debugging, please read these prompts carefully!
- 2) This hot water generator is only used for closed type water system, open type system such as no-coil water tank should not use this hot water generator; it should be installed indoors with ambient temperature of $4^{\circ}\text{C} \sim 35^{\circ}\text{C}$. It is not allowed to install outdoors, otherwise it may cause malfunction.
- 3) If the unit will not be operated for long or the unit is de-energized, please drain the pipelines of generator, water tank and floor heating, otherwise the equipment will be frozen; during installation, please add draw off valve in water inlet and outlet of hot water generation to avoid inadequate drainage and freezing of system.
- 4) Before energizing the unit, please check if "S2" dial code in mainboard is consistent with actual situation of connecting equipment, otherwise it may impact reliability of unit and will give out temperature sensor malfunction.
- 5) If water pressure for water replenishing is larger than 3bar, please install reducing valve in water replenishing inlet of equipment to ensure water pressure of system is $\leq 3\text{bar}$, otherwise atmospheric valve and other valves will open and lead to water leakage;
- 6) Connect to floor heating equipment, if crushing of water system other than hot water generator is larger than 6m, please install engineering water pump.
- 7) Wired controller of air conditioner can control floor heating, for specific setting and operation please carefully read the instruction manual of hot water generator and instruction manual of wired controller.

- 8) When connecting hot water generator with water tank, circulation water outlet of hot water generator should connect to circulation water inlet of hot water generator, and circulation water inlet of water tank should connect to circulation water outlet of water tank, for specific installation please refer to instruction manual of hot water generator.
- 9) If hot water generator needs to connect to floor heating system or water tank, please install water system magnetic valve C and magnetic valve D according to instructional sketch map of unit, and control heating of water tank and water system of floor respectively. C valve and D valve should be straight-through magnetic water valve with small resistance (generator NRQD16G/A-S has been provided with C valve and D valve), and floor heating performer of C valve and D valve should be closed type.
- 10) When the system is connected to floor heating function, the water system and water tank are different water systems, thus it should set tap water inlet and drain interface.
- 11) User can install back water pump to keep water temperature of water pipe.
- 12) Water pipeline should be installed after fixing hot water generator. During the course of installing connecting pipe, please prevent dust or other foreign matters from entering into pipeline system.
- 13) After connecting all the water pipelines, conduct leakage detection first, and then conduct heat insulation for the whole water system, especially for the joints such as valves and pipe junctions. It is suggested to use heat insulating cotton with thickness not less than 15mm.
- 14) Heat insulation bearing pressure water tank provides hot water by depending on pressure of tap water, only under the condition of with tap water can produce hot water. When using the unit, please keep the cut-off valve of cooling water inlet of water tank is open.
- 15) Cooling and floor heating functions cannot be turned on simultaneously. If floor heating function cannot be turned on and the unit displays “mode limitation”, please switch mode of indoor unit to be heating or heating closedown mode.
- 16) Horizontal distance between hot water generator and insulating water tank should not be over 5 meters, and vertical height difference should not be over 3 meters. If it is over the above value, please contact our company. It is suggested to install insulating water tank in lower position and hot water generator in upper position.
- 17) Prepare material according to the above size and specification of joint. If cut-off valve is installed outdoors, it is suggested to use PPR pipe fittings to avoid freezing of pipeline under low temperature.

6.4 Requirement for connecting quantity

| Model | Limit for rated capacity of indoor unit accounting for rated capacity of outdoor unit | Limit for quantity of generator |
|----------------|---|---------------------------------|
| GMV-S120WL/A-S | 80% ~ 100% | 1 |
| GMV-S140WL/A-S | 80% ~ 100% | 1 |
| GMV-S160WL/A-S | 80% ~ 100% | 1 |
| GMV-S224W/A-X | 80% ~ 100% | 2 |
| GMV-S280W/A-X | 80% ~ 100% | 2 |

Notes:

One hot water generator can connect to one inner-coil water tank at most (model: SXVD***LCJ*/A-K).

6.5 Notices for model selection

- 1) This unit must be connected to indoor unit of air conditioner, otherwise the unit cannot be operated; and rated capacity of indoor unit of air conditioner accounts for 80%~100% of rated capacity of outdoor unit;
- 2) Installation for floor heating: space between floor heating tubes is better to be within 100~150mm, and pipe diameter should be as large as possible within the selectable range (it is recommended to select over DN20). Otherwise the oversize of clearance and undersize of pipe diameter will cause increasing of heating load and water resistance, and will reduce heat exchange efficiency and increase energy consumption;

6.6 Product operating range

| | |
|---------------------------------------|-----------------------------------|
| Cooling operating range | Outdoor temperature is -5°C~50°C |
| Heating operating range | Outdoor temperature is -15°C~24°C |
| Cooling+heating water operating range | Outdoor temperature is -5°C~43°C |
| Heating+heating water operating range | Outdoor temperature is -15°C~24°C |
| Heating water operating range | Outdoor temperature is -15°C~43°C |
| Floor heating operating range | Outdoor temperature is -15°C~21°C |

7. Revision of Product Capacity

7.1 Capacity Code

Capacity code of indoor unit=numerical value for rated cooling capacity of indoor unit (take W as unit) ×0.01

Capacity code of outdoor unit=numerical value for rated cooling capacity of outdoor unit (take W as unit) ×0.01

7.2 Capacity revision method for indoor and outdoor units

Actual capacity of each indoor unit=actual capacity of outdoor unit×capacity of indoor unit/maximum capacity of simultaneous operated indoor units

Actual capacity of outdoor unit=capacity of outdoor unit after revision according to collocation rate of indoor and outdoor unit and indoor and outdoor temperature×revision coefficient of pipe distance and height difference between indoor and outdoor units×revision factor for heating and frosting

Notes:

- 1) Capacity of outdoor unit after revision according to collocation rate of indoor and outdoor unit 、 temperature of inside and outside –look up capacity revision table.
- 2) revision factor for heating and frosting—revision factor when select models according heat load .

7.3 Revision of ambient temperature and collocation rate capacity

7.3.1 Revision of cooling capacity

GMV-S120WL/A-S

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | | |
|---|------------------------------------|---------------------------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| Operating capacity (%) | Outdoor ambient temperature (°CDB) | Indoor ambient temperature (°C) | | | | | | | | | | | | | |
| | | 14.0°C WB | | 16.0°C WB | | 18.0°C WB | | 19.0°C WB | | 20.0°C WB | | 22.0°C WB | | 24.0°C WB | |
| | | 20.0°C DB | | 23.0°C DB | | 26.0°C DB | | 27.0°C DB | | 28.0°C DB | | 30.0°C DB | | 32.0°C DB | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | 10 | 7.7 | 1.02 | 9.1 | 1.24 | 10.7 | 1.48 | 11.3 | 1.60 | 12.0 | 1.69 | 13.6 | 1.95 | 14.4 | 1.62 |
| | 12 | 7.7 | 1.04 | 9.1 | 1.26 | 10.7 | 1.50 | 11.3 | 1.62 | 12.0 | 1.75 | 13.6 | 2.00 | 14.1 | 1.64 |
| | 14 | 7.7 | 1.05 | 9.1 | 1.28 | 10.7 | 1.54 | 11.3 | 1.65 | 12.0 | 1.81 | 13.6 | 2.04 | 14.0 | 1.67 |
| | 15 | 7.7 | 1.07 | 9.1 | 1.31 | 10.7 | 1.56 | 11.3 | 1.67 | 12.0 | 1.87 | 13.5 | 2.11 | 13.8 | 1.68 |
| | 18 | 7.7 | 1.10 | 9.1 | 1.33 | 10.7 | 1.60 | 11.3 | 1.71 | 12.0 | 1.97 | 13.3 | 2.19 | 13.6 | 1.73 |
| | 20 | 7.7 | 1.13 | 9.1 | 1.37 | 10.7 | 1.65 | 11.3 | 1.81 | 12.0 | 2.06 | 13.1 | 2.25 | 13.3 | 1.82 |
| | 21 | 7.7 | 1.15 | 9.1 | 1.39 | 10.7 | 1.68 | 11.3 | 1.86 | 12.0 | 2.13 | 13.0 | 2.31 | 13.3 | 1.87 |
| | 23 | 7.7 | 1.18 | 9.1 | 1.44 | 10.7 | 1.81 | 11.3 | 1.95 | 12.0 | 2.18 | 12.9 | 2.40 | 13.0 | 1.97 |
| | 25 | 7.7 | 1.22 | 9.1 | 1.56 | 10.7 | 1.93 | 11.3 | 2.07 | 12.0 | 2.31 | 12.7 | 2.46 | 12.9 | 2.09 |
| | 27 | 7.7 | 1.31 | 9.1 | 1.62 | 10.7 | 2.03 | 11.3 | 2.28 | 12.0 | 2.43 | 12.5 | 2.58 | 12.8 | 2.31 |
| | 29 | 7.7 | 1.37 | 9.1 | 1.81 | 10.7 | 2.20 | 11.3 | 2.45 | 11.9 | 2.57 | 12.3 | 2.70 | 12.6 | 2.47 |
| | 31 | 7.7 | 1.50 | 9.1 | 1.88 | 10.7 | 2.33 | 11.3 | 2.62 | 11.8 | 2.71 | 12.1 | 2.76 | 12.4 | 2.64 |
| | 33 | 7.7 | 1.61 | 9.1 | 2.03 | 10.7 | 2.51 | 11.3 | 2.81 | 11.6 | 2.73 | 11.9 | 2.89 | 12.2 | 2.83 |
| | 35 | 7.7 | 1.68 | 9.1 | 2.15 | 10.7 | 2.69 | 11.3 | 3.02 | 11.4 | 3.03 | 11.7 | 3.04 | 12.1 | 3.05 |
| | 37 | 7.7 | 1.77 | 9.1 | 2.31 | 10.7 | 2.87 | 11.1 | 3.13 | 11.3 | 3.09 | 11.6 | 3.14 | 11.9 | 3.15 |
| | 39 | 7.7 | 1.86 | 9.1 | 2.45 | 10.7 | 3.05 | 11.0 | 3.18 | 11.1 | 3.18 | 11.3 | 3.25 | 11.6 | 3.21 |
| | 41 | 7.7 | 1.94 | 9.1 | 2.51 | 10.7 | 3.11 | 11.0 | 3.23 | 11.1 | 3.26 | 11.3 | 3.31 | 11.5 | 3.27 |
| | 43 | 7.7 | 2.01 | 9.1 | 2.54 | 10.7 | 3.18 | 11.0 | 3.29 | 11.0 | 3.34 | 11.2 | 3.37 | 11.4 | 3.33 |
| 45 | 7.7 | 2.06 | 9.1 | 2.59 | 10.5 | 3.24 | 10.8 | 3.35 | 10.9 | 3.36 | 11.2 | 3.49 | 11.3 | 3.39 | |
| 47 | 7.7 | 2.11 | 9.1 | 2.73 | 10.5 | 3.30 | 10.5 | 3.41 | 10.7 | 3.48 | 11.1 | 3.56 | 11.2 | 3.45 | |
| 48 | 7.7 | 2.19 | 9.1 | 2.76 | 10.3 | 3.37 | 10.5 | 3.47 | 10.6 | 3.60 | 11.0 | 3.65 | 11.1 | 3.52 | |
| 90% | 10 | 6.9 | 0.86 | 8.2 | 1.04 | 9.5 | 1.24 | 10.2 | 1.35 | 10.9 | 1.43 | 12.2 | 1.64 | 13.5 | 1.36 |
| | 12 | 6.9 | 0.87 | 8.2 | 1.06 | 9.5 | 1.26 | 10.2 | 1.37 | 10.9 | 1.48 | 12.2 | 1.68 | 13.4 | 1.38 |
| | 14 | 6.9 | 0.89 | 8.2 | 1.07 | 9.5 | 1.29 | 10.2 | 1.38 | 10.9 | 1.53 | 12.2 | 1.71 | 13.4 | 1.40 |
| | 15 | 6.9 | 0.90 | 8.2 | 1.10 | 9.5 | 1.31 | 10.2 | 1.40 | 10.9 | 1.58 | 12.2 | 1.77 | 13.4 | 1.42 |
| | 18 | 6.9 | 0.92 | 8.2 | 1.11 | 9.5 | 1.35 | 10.2 | 1.43 | 10.9 | 1.65 | 12.2 | 1.85 | 1.3 | 1.45 |
| | 20 | 6.9 | 0.95 | 8.2 | 1.15 | 9.5 | 1.38 | 10.2 | 1.51 | 10.9 | 1.73 | 12.2 | 1.89 | 13.1 | 1.53 |
| | 21 | 6.9 | 0.97 | 8.2 | 1.17 | 9.5 | 1.68 | 10.2 | 1.56 | 10.9 | 1.80 | 12.2 | 1.94 | 13.0 | 1.57 |
| | 23 | 6.9 | 0.98 | 8.2 | 1.21 | 9.5 | 1.51 | 10.2 | 1.64 | 10.9 | 1.83 | 12.2 | 2.01 | 12.8 | 1.66 |
| | 25 | 6.9 | 1.02 | 8.2 | 1.31 | 9.5 | 1.62 | 10.2 | 1.75 | 10.9 | 1.94 | 12.2 | 2.06 | 12.6 | 1.76 |
| | 27 | 6.9 | 1.10 | 8.2 | 1.37 | 9.5 | 1.70 | 10.2 | 1.92 | 10.9 | 2.04 | 12.2 | 2.17 | 12.5 | 1.94 |
| | 29 | 6.9 | 1.15 | 8.2 | 1.52 | 9.5 | 1.85 | 10.2 | 2.06 | 10.9 | 2.16 | 12.1 | 2.27 | 12.3 | 2.07 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | | |
|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 31 | 6.9 | 1.26 | 8.2 | 1.58 | 9.5 | 1.96 | 10.2 | 2.19 | 10.9 | 2.28 | 11.9 | 2.32 | 12.1 | 2.22 |
| | 33 | 6.9 | 1.35 | 8.2 | 1.70 | 9.5 | 2.11 | 10.2 | 2.36 | 10.9 | 2.29 | 11.6 | 2.43 | 11.9 | 2.38 |
| | 35 | 6.9 | 1.42 | 8.2 | 1.81 | 9.5 | 2.26 | 10.2 | 2.54 | 10.9 | 2.55 | 11.4 | 2.55 | 11.7 | 2.57 |
| | 37 | 6.9 | 1.49 | 8.2 | 1.94 | 9.5 | 2.41 | 10.2 | 2.63 | 10.9 | 2.59 | 11.2 | 2.64 | 11.5 | 2.65 |
| | 39 | 6.9 | 1.56 | 8.2 | 2.06 | 9.5 | 2.56 | 10.2 | 2.67 | 10.9 | 2.67 | 11.1 | 2.73 | 11.3 | 2.70 |
| | 41 | 6.9 | 1.63 | 8.2 | 2.11 | 9.5 | 2.62 | 10.2 | 2.72 | 10.8 | 2.74 | 11.0 | 2.78 | 11.2 | 2.75 |
| | 43 | 6.9 | 1.68 | 8.2 | 2.13 | 9.5 | 2.67 | 10.1 | 2.76 | 10.7 | 2.80 | 10.8 | 2.83 | 11.1 | 2.80 |
| | 45 | 6.9 | 1.73 | 8.2 | 2.18 | 9.5 | 2.72 | 9.9 | 2.82 | 10.6 | 2.83 | 10.7 | 2.94 | 11.0 | 2.85 |
| | 47 | 6.9 | 1.77 | 8.2 | 2.29 | 9.5 | 2.77 | 9.8 | 2.87 | 10.4 | 2.93 | 10.6 | 2.99 | 10.9 | 2.90 |
| | 48 | 6.9 | 1.83 | 8.2 | 2.32 | 9.5 | 2.83 | 9.7 | 2.92 | 10.2 | 3.03 | 10.4 | 3.07 | 10.7 | 2.95 |
| 80% | 10 | 6.1 | 0.72 | 7.3 | 0.88 | 8.5 | 1.05 | 9.1 | 1.13 | 9.6 | 1.20 | 10.9 | 1.39 | 12.1 | 1.15 |
| | 12 | 6.0 | 0.74 | 7.3 | 0.90 | 8.5 | 1.07 | 9.1 | 1.16 | 9.6 | 1.24 | 10.9 | 1.42 | 12.0 | 1.17 |
| | 14 | 6.0 | 0.75 | 7.3 | 0.91 | 8.5 | 1.09 | 9.1 | 1.17 | 9.6 | 1.29 | 10.9 | 1.44 | 12.0 | 1.18 |
| | 15 | 6.0 | 0.76 | 7.3 | 0.93 | 8.5 | 1.11 | 9.1 | 1.18 | 9.6 | 1.33 | 10.9 | 1.50 | 12.0 | 1.20 |
| | 18 | 6.0 | 0.78 | 7.3 | 0.94 | 8.5 | 1.14 | 9.1 | 1.22 | 9.6 | 1.40 | 10.9 | 1.56 | 12.0 | 1.23 |
| | 20 | 6.0 | 0.80 | 7.3 | 0.97 | 8.5 | 1.17 | 9.1 | 1.28 | 9.6 | 1.46 | 10.9 | 1.60 | 12.0 | 1.30 |
| | 21 | 6.0 | 0.82 | 7.3 | 0.98 | 8.5 | 1.68 | 9.1 | 1.32 | 9.6 | 1.52 | 10.9 | 1.64 | 12.0 | 1.33 |
| | 23 | 6.0 | 0.83 | 7.3 | 1.02 | 8.5 | 1.28 | 9.1 | 1.38 | 9.6 | 1.55 | 10.9 | 1.70 | 12.0 | 1.40 |
| | 25 | 6.0 | 0.86 | 7.3 | 1.11 | 8.5 | 1.37 | 9.1 | 1.47 | 9.6 | 1.63 | 10.9 | 1.75 | 12.0 | 1.49 |
| | 27 | 6.0 | 0.93 | 7.3 | 1.16 | 8.5 | 1.44 | 9.1 | 1.62 | 9.6 | 1.72 | 10.9 | 1.83 | 12.0 | 1.63 |
| | 29 | 6.0 | 0.97 | 7.3 | 1.28 | 8.5 | 1.56 | 9.1 | 1.74 | 9.6 | 1.83 | 10.9 | 1.92 | 12.0 | 1.75 |
| | 31 | 6.0 | 1.06 | 7.3 | 1.34 | 8.5 | 1.66 | 9.1 | 1.86 | 9.6 | 1.93 | 10.9 | 1.96 | 12.0 | 1.87 |
| | 33 | 6.0 | 1.14 | 7.3 | 1.44 | 8.5 | 1.78 | 9.1 | 2.00 | 9.6 | 1.94 | 10.9 | 2.05 | 12.0 | 2.01 |
| | 35 | 6.0 | 1.20 | 7.3 | 1.53 | 8.5 | 1.91 | 9.1 | 2.14 | 9.6 | 2.15 | 10.9 | 2.16 | 12.0 | 2.17 |
| | 37 | 6.0 | 1.26 | 7.3 | 1.63 | 8.5 | 2.04 | 9.1 | 2.22 | 9.6 | 2.19 | 10.9 | 2.23 | 12.0 | 2.25 |
| | 39 | 6.0 | 1.32 | 7.3 | 1.74 | 8.5 | 2.16 | 9.1 | 2.26 | 9.6 | 2.26 | 10.9 | 2.31 | 12.0 | 2.28 |
| | 41 | 6.0 | 1.37 | 7.3 | 1.78 | 8.5 | 2.21 | 9.1 | 2.30 | 9.6 | 2.32 | 10.8 | 2.35 | 11.9 | 2.32 |
| | 43 | 6.0 | 1.43 | 7.3 | 1.81 | 8.5 | 2.26 | 9.1 | 2.34 | 9.5 | 2.37 | 10.6 | 2.39 | 11.7 | 2.37 |
| | 45 | 6.0 | 1.46 | 7.3 | 1.84 | 8.5 | 2.30 | 8.9 | 2.38 | 9.5 | 2.38 | 10.5 | 2.48 | 11.5 | 2.41 |
| | 47 | 6.0 | 1.49 | 7.3 | 1.94 | 8.5 | 2.34 | 8.8 | 2.43 | 9.4 | 2.47 | 10.3 | 2.52 | 11.4 | 2.45 |
| | 48 | 6.0 | 1.56 | 7.3 | 1.96 | 8.5 | 2.39 | 8.7 | 2.47 | 9.2 | 2.56 | 10.2 | 2.59 | 11.2 | 2.50 |
| | 29 | 3.9 | 0.52 | 4.5 | 0.68 | 5.3 | 0.84 | 5.7 | 0.93 | 6.2 | 0.98 | 6.8 | 1.03 | 7.6 | 0.94 |
| | 31 | 3.9 | 0.57 | 4.5 | 0.72 | 5.3 | 0.89 | 5.7 | 0.99 | 6.2 | 1.03 | 6.8 | 1.05 | 7.6 | 1.00 |
| | 33 | 3.9 | 0.60 | 4.5 | 0.77 | 5.3 | 0.95 | 5.7 | 1.06 | 6.2 | 1.04 | 6.8 | 1.10 | 7.6 | 1.08 |
| | 35 | 3.9 | 0.64 | 4.5 | 0.82 | 5.3 | 1.02 | 5.7 | 1.15 | 6.2 | 1.15 | 6.8 | 1.16 | 7.6 | 1.16 |
| | 37 | 3.9 | 0.67 | 4.5 | 0.87 | 5.3 | 1.09 | 5.7 | 1.19 | 6.2 | 1.18 | 6.8 | 1.19 | 7.6 | 1.20 |
| | 39 | 3.9 | 0.71 | 4.5 | 0.93 | 5.3 | 1.16 | 5.7 | 1.21 | 6.2 | 1.21 | 6.8 | 1.24 | 7.6 | 1.22 |
| | 41 | 3.9 | 0.73 | 4.5 | 0.95 | 5.3 | 1.18 | 5.7 | 1.23 | 6.2 | 1.24 | 6.8 | 1.26 | 7.6 | 1.24 |
| 43 | 3.9 | 0.76 | 4.5 | 0.97 | 5.3 | 1.21 | 5.7 | 1.25 | 6.2 | 1.27 | 6.8 | 1.28 | 7.6 | 1.26 | |
| 45 | 3.9 | 0.79 | 4.5 | 0.98 | 5.3 | 1.24 | 5.7 | 1.28 | 6.2 | 1.28 | 6.8 | 1.33 | 7.6 | 1.29 | |
| 47 | 3.9 | 0.80 | 4.5 | 1.04 | 5.3 | 1.25 | 5.7 | 1.30 | 6.2 | 1.32 | 6.8 | 1.35 | 7.6 | 1.31 | |
| 48 | 3.9 | 0.83 | 4.5 | 1.05 | 5.3 | 1.28 | 5.7 | 1.32 | 6.2 | 1.37 | 6.8 | 1.38 | 7.6 | 1.33 | |

GMV-S140WL/A-S

TC—represents capacity of outdoor unit; PI—represents power of outdoor unit

| Operating capacity (%) | Outdoor ambient temperature (°CDB) | Indoor ambient temperature (°C) | | | | | | | | | | | | | |
|------------------------|------------------------------------|---------------------------------|----|-----------|----|-----------|----|-----------|----|-----------|----|-----------|----|-----------|----|
| | | 14.0°C WB | | 16.0°C WB | | 18.0°C WB | | 19.0°C WB | | 20.0°C WB | | 22.0°C WB | | 24.0°C WB | |
| | | 20.0°C DB | | 23.0°C DB | | 26.0°C DB | | 27.0°C DB | | 28.0°C DB | | 30.0°C DB | | 32.0°C DB | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | | | | | | | | | | | | | | |

GMV5 Home DC Inverter Multi VRF Units

| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 100% | 10 | 8.8 | 1.32 | 10.4 | 1.62 | 12.4 | 1.93 | 13.1 | 2.09 | 13.9 | 2.22 | 15.7 | 2.55 | 16.6 | 2.11 |
| | 12 | 8.8 | 1.36 | 10.4 | 1.65 | 12.4 | 1.96 | 13.1 | 2.13 | 13.9 | 2.29 | 15.7 | 2.60 | 16.3 | 2.14 |
| | 14 | 8.8 | 1.37 | 10.4 | 1.66 | 12.4 | 2.00 | 13.1 | 2.15 | 13.9 | 2.37 | 15.7 | 2.66 | 16.2 | 2.17 |
| | 15 | 8.8 | 1.40 | 10.4 | 1.71 | 12.4 | 2.04 | 13.1 | 2.18 | 13.9 | 2.45 | 15.6 | 2.76 | 15.9 | 2.20 |
| | 18 | 8.8 | 1.43 | 10.4 | 1.73 | 12.4 | 2.09 | 13.1 | 2.23 | 13.9 | 2.57 | 15.5 | 2.87 | 15.8 | 2.25 |
| | 20 | 8.8 | 1.47 | 10.4 | 1.78 | 12.4 | 2.15 | 13.1 | 2.35 | 13.9 | 2.69 | 15.2 | 2.93 | 15.5 | 2.37 |
| | 21 | 8.8 | 1.50 | 10.4 | 1.82 | 12.4 | 2.21 | 13.1 | 2.42 | 13.9 | 2.79 | 15.1 | 3.01 | 15.4 | 2.44 |
| | 23 | 8.8 | 1.53 | 10.4 | 1.88 | 12.4 | 2.35 | 13.1 | 2.54 | 13.9 | 2.85 | 14.9 | 3.13 | 15.1 | 2.57 |
| | 25 | 8.8 | 1.58 | 10.4 | 2.04 | 12.4 | 2.51 | 13.1 | 2.70 | 13.9 | 3.00 | 14.6 | 3.21 | 15.0 | 2.73 |
| | 27 | 8.8 | 1.71 | 10.4 | 2.13 | 12.4 | 2.65 | 13.1 | 2.98 | 13.9 | 3.17 | 14.5 | 3.36 | 14.8 | 3.00 |
| | 29 | 8.8 | 1.78 | 10.4 | 2.35 | 12.4 | 2.88 | 13.1 | 3.19 | 13.8 | 3.36 | 14.3 | 3.53 | 14.5 | 3.22 |
| | 31 | 8.8 | 1.96 | 10.4 | 2.45 | 12.4 | 3.04 | 13.1 | 3.41 | 13.7 | 3.54 | 14.0 | 3.61 | 14.3 | 3.45 |
| | 33 | 8.8 | 2.09 | 10.4 | 2.65 | 12.4 | 3.27 | 13.1 | 3.66 | 13.5 | 3.55 | 13.8 | 3.76 | 14.1 | 3.70 |
| | 35 | 8.8 | 2.20 | 10.4 | 2.80 | 12.4 | 3.50 | 13.1 | 3.94 | 13.2 | 3.95 | 13.5 | 3.96 | 14.0 | 3.98 |
| | 37 | 8.8 | 2.31 | 10.4 | 3.00 | 12.4 | 3.74 | 12.8 | 4.08 | 13.1 | 4.03 | 13.4 | 4.10 | 13.7 | 4.12 |
| | 39 | 8.8 | 2.42 | 10.4 | 3.19 | 12.4 | 3.97 | 12.6 | 4.14 | 12.8 | 4.15 | 13.1 | 4.24 | 13.5 | 4.19 |
| | 41 | 8.8 | 2.53 | 10.4 | 3.27 | 12.4 | 4.06 | 12.6 | 4.22 | 12.8 | 4.25 | 13.1 | 4.32 | 13.4 | 4.26 |
| | 43 | 8.8 | 2.62 | 10.4 | 3.32 | 12.4 | 4.14 | 12.6 | 4.30 | 12.6 | 4.35 | 13.0 | 4.40 | 13.2 | 4.34 |
| 45 | 8.8 | 2.69 | 10.4 | 3.38 | 12.2 | 4.22 | 12.4 | 4.38 | 12.5 | 4.39 | 12.9 | 4.56 | 13.1 | 4.42 | |
| 47 | 8.8 | 2.75 | 10.4 | 3.56 | 12.1 | 4.31 | 12.2 | 4.46 | 12.4 | 4.54 | 12.8 | 4.64 | 12.9 | 4.50 | |
| 48 | 8.8 | 2.85 | 10.4 | 3.61 | 12.0 | 4.40 | 12.1 | 4.53 | 12.3 | 4.70 | 12.7 | 4.76 | 12.8 | 4.58 | |
| 90% | 10 | 8.0 | 1.11 | 9.5 | 1.36 | 11.0 | 1.62 | 11.8 | 1.75 | 12.6 | 1.86 | 14.2 | 2.14 | 15.6 | 1.77 |
| | 12 | 8.0 | 1.14 | 9.5 | 1.38 | 11.0 | 1.65 | 11.8 | 1.78 | 12.6 | 1.93 | 14.2 | 2.19 | 15.6 | 1.80 |
| | 14 | 8.0 | 1.16 | 9.5 | 1.40 | 11.0 | 1.68 | 11.8 | 1.81 | 12.6 | 1.99 | 14.2 | 2.23 | 15.6 | 1.83 |
| | 15 | 8.0 | 1.18 | 9.5 | 1.44 | 11.0 | 1.72 | 11.8 | 1.83 | 12.6 | 2.06 | 14.2 | 2.32 | 15.6 | 1.85 |
| | 18 | 8.0 | 1.20 | 9.5 | 1.46 | 11.0 | 1.75 | 11.8 | 1.87 | 12.6 | 2.16 | 14.2 | 2.41 | 1.6 | 1.89 |
| | 20 | 8.0 | 1.24 | 9.5 | 1.49 | 11.0 | 1.81 | 11.8 | 1.97 | 12.6 | 2.26 | 14.2 | 2.46 | 15.2 | 1.99 |
| | 21 | 8.0 | 1.26 | 9.5 | 1.52 | 11.0 | 2.21 | 11.8 | 2.04 | 12.6 | 2.34 | 14.2 | 2.53 | 15.1 | 2.05 |
| | 23 | 8.0 | 1.28 | 9.5 | 1.57 | 11.0 | 1.97 | 11.8 | 2.13 | 12.6 | 2.39 | 14.2 | 2.63 | 14.7 | 2.16 |
| | 25 | 8.0 | 1.33 | 9.5 | 1.71 | 11.0 | 2.12 | 11.8 | 2.27 | 12.6 | 2.52 | 14.2 | 2.70 | 14.5 | 2.30 |
| | 27 | 8.0 | 1.44 | 9.5 | 1.78 | 11.0 | 2.23 | 11.8 | 2.51 | 12.6 | 2.66 | 14.1 | 2.83 | 14.4 | 2.52 |
| | 29 | 8.0 | 1.50 | 9.5 | 1.98 | 11.0 | 2.42 | 11.8 | 2.68 | 12.6 | 2.82 | 14.0 | 2.97 | 14.3 | 2.70 |
| | 31 | 8.0 | 1.65 | 9.5 | 2.06 | 11.0 | 2.55 | 11.8 | 2.87 | 12.6 | 2.97 | 13.8 | 3.03 | 14.0 | 2.89 |
| | 33 | 8.0 | 1.75 | 9.5 | 2.23 | 11.0 | 2.74 | 11.8 | 3.08 | 12.6 | 2.98 | 13.5 | 3.17 | 13.8 | 3.10 |
| | 35 | 8.0 | 1.85 | 9.5 | 2.35 | 11.0 | 2.94 | 11.8 | 3.31 | 12.6 | 3.32 | 13.3 | 3.33 | 13.6 | 3.35 |
| | 37 | 8.0 | 1.94 | 9.5 | 2.52 | 11.0 | 3.15 | 11.8 | 3.43 | 12.6 | 3.38 | 12.9 | 3.45 | 13.3 | 3.46 |
| | 39 | 8.0 | 2.04 | 9.5 | 2.68 | 11.0 | 3.34 | 11.8 | 3.48 | 12.6 | 3.48 | 12.8 | 3.56 | 13.1 | 3.52 |
| | 41 | 8.0 | 2.13 | 9.5 | 2.75 | 11.0 | 3.41 | 11.8 | 3.55 | 12.4 | 3.57 | 12.6 | 3.63 | 13.0 | 3.58 |
| | 43 | 8.0 | 2.20 | 9.5 | 2.79 | 11.0 | 3.48 | 11.7 | 3.61 | 12.4 | 3.65 | 12.5 | 3.70 | 12.8 | 3.65 |
| 45 | 8.0 | 2.25 | 9.5 | 2.84 | 11.0 | 3.55 | 11.5 | 3.68 | 12.3 | 3.68 | 12.4 | 3.83 | 12.7 | 3.72 | |
| 47 | 8.0 | 2.31 | 9.5 | 2.99 | 11.0 | 3.62 | 11.3 | 3.74 | 12.1 | 3.82 | 12.2 | 3.90 | 12.5 | 3.78 | |
| 48 | 8.0 | 2.40 | 9.5 | 3.03 | 11.0 | 3.69 | 11.3 | 3.81 | 11.9 | 3.95 | 12.1 | 4.00 | 12.4 | 3.84 | |
| 80% | 10 | 7.0 | 0.94 | 8.4 | 1.15 | 9.9 | 1.37 | 10.5 | 1.48 | 11.2 | 1.57 | 12.6 | 1.81 | 14.0 | 1.49 |
| | 12 | 7.0 | 0.97 | 8.4 | 1.17 | 9.9 | 1.39 | 10.5 | 1.51 | 11.2 | 1.63 | 12.6 | 1.85 | 13.9 | 1.52 |
| | 14 | 7.0 | 0.98 | 8.4 | 1.18 | 9.9 | 1.42 | 10.5 | 1.53 | 11.2 | 1.68 | 12.6 | 1.88 | 13.9 | 1.54 |
| | 15 | 7.0 | 0.99 | 8.4 | 1.21 | 9.9 | 1.46 | 10.5 | 1.55 | 11.2 | 1.74 | 12.6 | 1.95 | 13.9 | 1.56 |
| | 18 | 7.0 | 1.01 | 8.4 | 1.23 | 9.9 | 1.48 | 10.5 | 1.58 | 11.2 | 1.83 | 12.6 | 2.04 | 13.9 | 1.60 |
| | 20 | 7.0 | 1.05 | 8.4 | 1.27 | 9.9 | 1.53 | 10.5 | 1.67 | 11.2 | 1.91 | 12.6 | 2.08 | 13.9 | 1.68 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | | |
|--|----|-----|------|-----|------|-----|------|------|------|------|------|------|------|------|------|
| | 21 | 7.0 | 1.07 | 8.4 | 1.28 | 9.9 | 2.21 | 10.5 | 1.72 | 11.2 | 1.98 | 12.6 | 2.13 | 13.9 | 1.74 |
| | 23 | 7.0 | 1.09 | 8.4 | 1.33 | 9.9 | 1.66 | 10.5 | 1.81 | 11.2 | 2.02 | 12.6 | 2.23 | 13.9 | 1.83 |
| | 25 | 7.0 | 1.12 | 8.4 | 1.45 | 9.9 | 1.79 | 10.5 | 1.92 | 11.2 | 2.13 | 12.6 | 2.28 | 13.9 | 1.94 |
| | 27 | 7.0 | 1.21 | 8.4 | 1.51 | 9.9 | 1.88 | 10.5 | 2.12 | 11.2 | 2.24 | 12.6 | 2.39 | 13.9 | 2.13 |
| | 29 | 7.0 | 1.27 | 8.4 | 1.67 | 9.9 | 2.04 | 10.5 | 2.26 | 11.2 | 2.39 | 12.6 | 2.51 | 13.9 | 2.29 |
| | 31 | 7.0 | 1.39 | 8.4 | 1.75 | 9.9 | 2.16 | 10.5 | 2.42 | 11.2 | 2.51 | 12.6 | 2.56 | 13.9 | 2.44 |
| | 33 | 7.0 | 1.48 | 8.4 | 1.88 | 9.9 | 2.32 | 10.5 | 2.60 | 11.2 | 2.52 | 12.6 | 2.68 | 13.9 | 2.62 |
| | 35 | 7.0 | 1.56 | 8.4 | 1.99 | 9.9 | 2.49 | 10.5 | 2.80 | 11.2 | 2.80 | 12.6 | 2.81 | 13.9 | 2.83 |
| | 37 | 7.0 | 1.64 | 8.4 | 2.13 | 9.9 | 2.66 | 10.5 | 2.89 | 11.2 | 2.86 | 12.6 | 2.91 | 13.9 | 2.92 |
| | 39 | 7.0 | 1.72 | 8.4 | 2.26 | 9.9 | 2.82 | 10.5 | 2.94 | 11.2 | 2.95 | 12.6 | 3.01 | 13.9 | 2.98 |
| | 41 | 7.0 | 1.80 | 8.4 | 2.32 | 9.9 | 2.89 | 10.5 | 2.99 | 11.2 | 3.01 | 12.4 | 3.07 | 13.7 | 3.03 |
| | 43 | 7.0 | 1.86 | 8.4 | 2.35 | 9.9 | 2.94 | 10.5 | 3.05 | 11.1 | 3.08 | 12.3 | 3.12 | 13.5 | 3.08 |
| | 45 | 7.0 | 1.91 | 8.4 | 2.40 | 9.9 | 3.00 | 10.3 | 3.11 | 11.0 | 3.11 | 12.1 | 3.24 | 13.4 | 3.14 |
| | 47 | 7.0 | 1.95 | 8.4 | 2.53 | 9.9 | 3.06 | 10.2 | 3.17 | 10.8 | 3.23 | 12.0 | 3.29 | 13.2 | 3.19 |
| | 48 | 7.0 | 2.03 | 8.4 | 2.56 | 9.9 | 3.12 | 10.1 | 3.22 | 10.6 | 3.34 | 11.8 | 3.37 | 13.0 | 3.26 |

GMV-S160WL/A-S

TC—represents capacity of outdoor unit; PI—represents power of outdoor unit

| Operating capacity | Outdoor ambient temperature (°CDB) | Indoor ambient temperature (°C) | | | | | | | | | | | | | |
|--------------------|------------------------------------|---------------------------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| | | 14.0°C WB | | 16.0°C WB | | 18.0°C WB | | 19.0°C WB | | 20.0°C WB | | 22.0°C WB | | 24.0°C WB | |
| | | 20.0°C DB | | 23.0°C DB | | 26.0°C DB | | 27.0°C DB | | 28.0°C DB | | 30.0°C DB | | 32.0°C DB | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | 10 | 10.1 | 1.61 | 12.0 | 1.97 | 14.1 | 2.35 | 15.1 | 2.54 | 16.0 | 2.69 | 18.0 | 3.10 | 19.0 | 2.56 |
| | 12 | 10.1 | 1.65 | 12.0 | 2.01 | 14.1 | 2.39 | 15.1 | 2.58 | 16.0 | 2.79 | 18.0 | 3.17 | 18.7 | 2.61 |
| | 14 | 10.1 | 1.68 | 12.0 | 2.02 | 14.1 | 2.44 | 15.1 | 2.61 | 16.0 | 2.88 | 18.0 | 3.23 | 18.5 | 2.64 |
| | 15 | 10.1 | 1.71 | 12.0 | 2.08 | 14.1 | 2.49 | 15.1 | 2.65 | 16.0 | 2.98 | 17.9 | 3.35 | 18.3 | 2.68 |
| | 18 | 10.1 | 1.74 | 12.0 | 2.10 | 14.1 | 2.54 | 15.1 | 2.72 | 16.0 | 3.12 | 17.7 | 3.49 | 18.2 | 2.75 |
| | 20 | 10.1 | 1.79 | 12.0 | 2.16 | 14.1 | 2.62 | 15.1 | 2.86 | 16.0 | 3.27 | 17.4 | 3.57 | 17.8 | 2.89 |
| | 21 | 10.1 | 1.83 | 12.0 | 2.21 | 14.1 | 2.68 | 15.1 | 2.95 | 16.0 | 3.39 | 17.3 | 3.66 | 17.6 | 2.98 |
| | 23 | 10.1 | 1.86 | 12.0 | 2.28 | 14.1 | 2.86 | 15.1 | 3.09 | 16.0 | 3.46 | 17.1 | 3.81 | 17.4 | 3.12 |
| | 25 | 10.1 | 1.93 | 12.0 | 2.48 | 14.1 | 3.07 | 15.1 | 3.30 | 16.0 | 3.65 | 16.8 | 3.90 | 17.2 | 3.33 |
| | 27 | 10.1 | 2.08 | 12.0 | 2.58 | 14.1 | 3.22 | 15.1 | 3.62 | 16.0 | 3.85 | 16.6 | 4.10 | 17.0 | 3.66 |
| | 29 | 10.1 | 2.17 | 12.0 | 2.86 | 14.1 | 3.50 | 15.1 | 3.88 | 15.9 | 4.09 | 16.4 | 4.29 | 16.7 | 3.92 |
| | 31 | 10.1 | 2.38 | 12.0 | 2.99 | 14.1 | 3.70 | 15.1 | 4.15 | 15.7 | 4.31 | 16.1 | 4.39 | 16.4 | 4.19 |
| | 33 | 10.1 | 2.54 | 12.0 | 3.22 | 14.1 | 3.98 | 15.1 | 4.45 | 15.4 | 4.33 | 15.9 | 4.58 | 16.2 | 4.50 |
| | 35 | 10.1 | 2.68 | 12.0 | 3.41 | 14.1 | 4.26 | 15.1 | 4.80 | 15.2 | 4.81 | 15.5 | 4.82 | 16.0 | 4.85 |
| | 37 | 10.1 | 2.81 | 12.0 | 3.66 | 14.1 | 4.56 | 14.8 | 4.96 | 15.0 | 4.91 | 15.3 | 4.98 | 15.7 | 5.01 |
| | 39 | 10.1 | 2.95 | 12.0 | 3.88 | 14.1 | 4.84 | 14.5 | 5.04 | 14.7 | 5.05 | 15.1 | 5.16 | 15.4 | 5.10 |
| | 41 | 10.1 | 3.08 | 12.0 | 3.99 | 14.1 | 4.95 | 14.5 | 5.14 | 14.7 | 5.17 | 15.1 | 5.26 | 15.3 | 5.19 |
| | 43 | 10.1 | 3.19 | 12.0 | 4.04 | 14.1 | 5.04 | 14.5 | 5.23 | 14.5 | 5.29 | 15.0 | 5.36 | 15.2 | 5.28 |
| 45 | 10.1 | 3.27 | 12.0 | 4.12 | 14.0 | 5.15 | 14.2 | 5.33 | 14.4 | 5.34 | 14.9 | 5.55 | 15.1 | 5.38 | |
| 47 | 10.1 | 3.35 | 12.0 | 4.34 | 13.8 | 5.24 | 14.0 | 5.43 | 14.1 | 5.53 | 14.7 | 5.65 | 14.9 | 5.48 | |
| 48 | 10.1 | 3.47 | 12.0 | 4.40 | 13.7 | 5.35 | 13.8 | 5.52 | 14.0 | 5.73 | 14.6 | 5.79 | 14.8 | 5.57 | |
| 90% | 10 | 9.1 | 1.36 | 11.0 | 1.65 | 12.6 | 1.98 | 13.6 | 2.13 | 14.5 | 2.27 | 16.3 | 2.60 | 17.9 | 2.15 |
| | 12 | 9.1 | 1.39 | 11.0 | 1.69 | 12.6 | 2.01 | 13.6 | 2.17 | 14.5 | 2.34 | 16.3 | 2.67 | 17.9 | 2.19 |
| | 14 | 9.1 | 1.41 | 11.0 | 1.71 | 12.6 | 2.04 | 13.6 | 2.20 | 14.5 | 2.42 | 16.3 | 2.72 | 17.9 | 2.22 |
| | 15 | 9.1 | 1.44 | 11.0 | 1.74 | 12.6 | 2.09 | 13.6 | 2.23 | 14.5 | 2.51 | 16.3 | 2.81 | 17.9 | 2.25 |
| | 18 | 9.1 | 1.47 | 11.0 | 1.77 | 12.6 | 2.13 | 13.6 | 2.28 | 14.5 | 2.62 | 16.3 | 2.93 | 1.8 | 2.30 |
| | 20 | 9.1 | 1.50 | 11.0 | 1.82 | 12.6 | 2.20 | 13.6 | 2.40 | 14.5 | 2.75 | 16.3 | 3.00 | 17.5 | 2.43 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | | |
|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 21 | 9.1 | 1.53 | 11.0 | 1.85 | 12.6 | 2.68 | 13.6 | 2.48 | 14.5 | 2.84 | 16.3 | 3.08 | 17.3 | 2.50 |
| | 23 | 9.1 | 1.56 | 11.0 | 1.92 | 12.6 | 2.40 | 13.6 | 2.60 | 14.5 | 2.91 | 16.3 | 3.20 | 16.9 | 2.63 |
| | 25 | 9.1 | 1.62 | 11.0 | 2.08 | 12.6 | 2.57 | 13.6 | 2.77 | 14.5 | 3.08 | 16.3 | 3.29 | 16.7 | 2.80 |
| | 27 | 9.1 | 1.74 | 11.0 | 2.17 | 12.6 | 2.71 | 13.6 | 3.05 | 14.5 | 3.23 | 16.2 | 3.44 | 16.5 | 3.08 |
| | 29 | 9.1 | 1.82 | 11.0 | 2.41 | 12.6 | 2.94 | 13.6 | 3.26 | 14.5 | 3.43 | 16.1 | 3.61 | 16.4 | 3.30 |
| | 31 | 9.1 | 2.01 | 11.0 | 2.51 | 12.6 | 3.10 | 13.6 | 3.49 | 14.5 | 3.62 | 15.8 | 3.69 | 16.0 | 3.52 |
| | 33 | 9.1 | 2.14 | 11.0 | 2.71 | 12.6 | 3.35 | 13.6 | 3.74 | 14.5 | 3.63 | 15.5 | 3.85 | 15.9 | 3.78 |
| | 35 | 9.1 | 2.25 | 11.0 | 2.86 | 12.6 | 3.58 | 13.6 | 4.03 | 14.5 | 4.04 | 15.2 | 4.05 | 15.6 | 4.07 |
| | 37 | 9.1 | 2.36 | 11.0 | 3.08 | 12.6 | 3.83 | 13.6 | 4.17 | 14.5 | 4.13 | 14.9 | 4.19 | 15.2 | 4.21 |
| | 39 | 9.1 | 2.48 | 11.0 | 3.26 | 12.6 | 4.07 | 13.6 | 4.24 | 14.5 | 4.24 | 14.7 | 4.34 | 15.1 | 4.28 |
| | 41 | 9.1 | 2.58 | 11.0 | 3.35 | 12.6 | 4.15 | 13.6 | 4.32 | 14.2 | 4.35 | 14.5 | 4.42 | 14.9 | 4.36 |
| | 43 | 9.1 | 2.68 | 11.0 | 3.39 | 12.6 | 4.23 | 13.5 | 4.40 | 14.1 | 4.44 | 14.3 | 4.50 | 14.7 | 4.44 |
| | 45 | 9.1 | 2.75 | 11.0 | 3.45 | 12.6 | 4.32 | 13.3 | 4.47 | 14.0 | 4.48 | 14.2 | 4.66 | 14.6 | 4.52 |
| | 47 | 9.1 | 2.81 | 11.0 | 3.64 | 12.6 | 4.41 | 13.0 | 4.56 | 13.8 | 4.65 | 14.0 | 4.74 | 14.4 | 4.60 |
| | 48 | 9.1 | 2.91 | 11.0 | 3.69 | 12.6 | 4.49 | 13.0 | 4.64 | 13.6 | 4.81 | 13.8 | 4.86 | 14.2 | 4.69 |
| 80% | 10 | 8.1 | 1.15 | 9.7 | 1.40 | 11.3 | 1.67 | 12.0 | 1.80 | 12.8 | 1.91 | 14.5 | 2.20 | 16.0 | 1.82 |
| | 12 | 8.1 | 1.18 | 9.7 | 1.43 | 11.3 | 1.70 | 12.0 | 1.83 | 12.8 | 1.98 | 14.5 | 2.26 | 16.0 | 1.85 |
| | 14 | 8.1 | 1.19 | 9.7 | 1.44 | 11.3 | 1.74 | 12.0 | 1.86 | 12.8 | 2.05 | 14.5 | 2.29 | 16.0 | 1.88 |
| | 15 | 8.1 | 1.21 | 9.7 | 1.47 | 11.3 | 1.76 | 12.0 | 1.88 | 12.8 | 2.12 | 14.5 | 2.38 | 16.0 | 1.90 |
| | 18 | 8.1 | 1.23 | 9.7 | 1.49 | 11.3 | 1.80 | 12.0 | 1.93 | 12.8 | 2.22 | 14.5 | 2.48 | 16.0 | 1.95 |
| | 20 | 8.1 | 1.27 | 9.7 | 1.53 | 11.3 | 1.86 | 12.0 | 2.03 | 12.8 | 2.32 | 14.5 | 2.54 | 16.0 | 2.05 |
| | 21 | 8.1 | 1.30 | 9.7 | 1.57 | 11.3 | 2.68 | 12.0 | 2.09 | 12.8 | 2.41 | 14.5 | 2.60 | 16.0 | 2.11 |
| | 23 | 8.1 | 1.32 | 9.7 | 1.62 | 11.3 | 2.03 | 12.0 | 2.20 | 12.8 | 2.46 | 14.5 | 2.71 | 16.0 | 2.22 |
| | 25 | 8.1 | 1.37 | 9.7 | 1.76 | 11.3 | 2.18 | 12.0 | 2.34 | 12.8 | 2.59 | 14.5 | 2.78 | 16.0 | 2.36 |
| | 27 | 8.1 | 1.47 | 9.7 | 1.83 | 11.3 | 2.28 | 12.0 | 2.57 | 12.8 | 2.73 | 14.5 | 2.91 | 16.0 | 2.60 |
| | 29 | 8.1 | 1.54 | 9.7 | 2.03 | 11.3 | 2.49 | 12.0 | 2.76 | 12.8 | 2.90 | 14.5 | 3.05 | 16.0 | 2.79 |
| | 31 | 8.1 | 1.70 | 9.7 | 2.12 | 11.3 | 2.63 | 12.0 | 2.95 | 12.8 | 3.06 | 14.5 | 3.11 | 16.0 | 2.98 |
| | 33 | 8.1 | 1.80 | 9.7 | 2.28 | 11.3 | 2.82 | 12.0 | 3.16 | 12.8 | 3.08 | 14.5 | 3.26 | 16.0 | 3.19 |
| | 35 | 8.1 | 1.90 | 9.7 | 2.42 | 11.3 | 3.03 | 12.0 | 3.41 | 12.8 | 3.41 | 14.5 | 3.42 | 16.0 | 3.44 |
| | 37 | 8.1 | 2.00 | 9.7 | 2.59 | 11.3 | 3.24 | 12.0 | 3.53 | 12.8 | 3.48 | 14.5 | 3.54 | 16.0 | 3.56 |
| 39 | 8.1 | 2.09 | 9.7 | 2.76 | 11.3 | 3.43 | 12.0 | 3.59 | 12.8 | 3.59 | 14.5 | 3.66 | 16.0 | 3.62 | |
| 41 | 8.1 | 2.19 | 9.7 | 2.83 | 11.3 | 3.51 | 12.0 | 3.64 | 12.8 | 3.67 | 14.3 | 3.73 | 15.8 | 3.68 | |
| 43 | 8.1 | 2.27 | 9.7 | 2.86 | 11.3 | 3.58 | 12.0 | 3.71 | 12.7 | 3.76 | 14.1 | 3.80 | 15.5 | 3.75 | |
| 45 | 8.1 | 2.32 | 9.7 | 2.92 | 11.3 | 3.65 | 11.9 | 3.78 | 12.6 | 3.79 | 13.9 | 3.94 | 15.3 | 3.82 | |
| 47 | 8.1 | 2.38 | 9.7 | 3.08 | 11.3 | 3.72 | 11.6 | 3.86 | 12.4 | 3.92 | 13.7 | 4.01 | 15.2 | 3.89 | |
| 48 | 8.1 | 2.46 | 9.7 | 3.12 | 11.3 | 3.80 | 11.5 | 3.92 | 12.2 | 4.07 | 13.6 | 4.11 | 15.0 | 3.96 | |

GMV-S224W/A-X

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | | |
|---|-------------------------------------|----------------------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| Capacity collocation rate of indoor and outdoor units | Outdoor ambient temperature (°C DB) | Indoor ambient temperature | | | | | | | | | | | | | |
| | | 14.0°C WB | | 16.0°C WB | | 18.0°C WB | | 19.0°C WB | | 20.0°C WB | | 22.0°C WB | | 24.0°C WB | |
| | | 20.0°C DB | | 23.0°C DB | | 26.0°C DB | | 27.0°C DB | | 28.0°C DB | | 30.0°C DB | | 32.0°C DB | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | |
| 100% | 10 | 15.1 | 1.85 | 18.0 | 2.24 | 21.0 | 2.65 | 22.4 | 2.86 | 23.8 | 3.09 | 26.8 | 3.50 | 28.3 | 3.64 |
| | 12 | 15.1 | 1.87 | 18.0 | 2.27 | 21.0 | 2.69 | 22.4 | 2.90 | 23.8 | 3.15 | 26.8 | 3.56 | 27.9 | 3.61 |
| | 14 | 15.1 | 1.90 | 18.0 | 2.31 | 21.0 | 2.73 | 22.4 | 2.95 | 23.8 | 3.21 | 26.8 | 3.62 | 27.6 | 3.58 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 16 | 15.1 | 1.95 | 18.0 | 2.36 | 21.0 | 2.80 | 22.4 | 3.02 | 23.8 | 3.28 | 26.7 | 3.70 | 27.2 | 3.66 |
| | 18 | 15.1 | 1.99 | 18.0 | 2.42 | 21.0 | 2.85 | 22.4 | 3.08 | 23.8 | 3.35 | 26.3 | 3.78 | 26.9 | 3.83 |
| | 20 | 15.1 | 2.02 | 18.0 | 2.45 | 21.0 | 2.94 | 22.4 | 3.24 | 23.8 | 3.56 | 25.9 | 3.97 | 26.5 | 4.03 |
| | 21 | 15.1 | 2.04 | 18.0 | 2.48 | 21.0 | 3.04 | 22.4 | 3.35 | 23.8 | 3.68 | 25.8 | 4.11 | 26.3 | 4.15 |
| | 23 | 15.1 | 2.09 | 18.0 | 2.65 | 21.0 | 3.27 | 22.4 | 3.60 | 23.8 | 3.96 | 25.4 | 4.35 | 25.9 | 4.39 |
| | 25 | 15.1 | 2.23 | 18.0 | 2.82 | 21.0 | 3.48 | 22.4 | 3.83 | 23.8 | 4.23 | 25.0 | 4.51 | 25.6 | 4.55 |
| | 27 | 15.1 | 2.38 | 18.0 | 3.01 | 21.0 | 3.74 | 22.4 | 4.11 | 23.8 | 4.54 | 24.6 | 4.67 | 25.2 | 4.71 |
| | 29 | 15.1 | 2.52 | 18.0 | 3.21 | 21.0 | 4.00 | 22.4 | 4.40 | 23.8 | 4.81 | 24.3 | 4.89 | 24.9 | 4.93 |
| | 31 | 15.1 | 2.68 | 18.0 | 3.42 | 21.0 | 4.26 | 22.4 | 4.74 | 23.5 | 5.01 | 23.7 | 5.09 | 24.5 | 5.13 |
| | 33 | 15.1 | 2.85 | 18.0 | 3.65 | 21.0 | 4.54 | 22.4 | 5.02 | 23.0 | 5.19 | 23.6 | 5.24 | 24.1 | 5.28 |
| | 35 | 15.1 | 3.03 | 18.0 | 3.88 | 21.0 | 4.84 | 22.4 | 5.35 | 22.6 | 5.38 | 23.2 | 5.43 | 23.7 | 5.47 |
| | 37 | 15.1 | 3.23 | 18.0 | 4.14 | 21.0 | 5.16 | 22.0 | 5.54 | 22.4 | 5.57 | 22.8 | 5.61 | 23.4 | 5.66 |
| | 39 | 15.1 | 3.44 | 18.0 | 4.40 | 21.0 | 5.49 | 21.7 | 5.73 | 21.8 | 5.75 | 22.6 | 5.79 | 22.8 | 5.85 |
| 90% | 10 | 13.6 | 1.61 | 16.2 | 1.93 | 18.9 | 2.27 | 20.2 | 2.55 | 21.5 | 2.72 | 24.1 | 3.11 | 26.7 | 3.53 |
| | 12 | 13.6 | 1.63 | 16.2 | 1.96 | 18.9 | 2.29 | 20.2 | 2.59 | 21.5 | 2.77 | 24.1 | 3.17 | 26.7 | 3.57 |
| | 14 | 13.6 | 1.66 | 16.2 | 1.99 | 18.9 | 2.33 | 20.2 | 2.62 | 21.5 | 2.82 | 24.1 | 3.22 | 26.7 | 3.63 |
| | 16 | 13.6 | 1.70 | 16.2 | 2.04 | 18.9 | 2.39 | 20.2 | 2.68 | 21.5 | 2.88 | 24.1 | 3.29 | 26.6 | 3.70 |
| | 18 | 13.6 | 1.74 | 16.2 | 2.08 | 18.9 | 2.43 | 20.2 | 2.74 | 21.5 | 2.94 | 24.1 | 3.37 | 26.4 | 3.84 |
| | 20 | 13.6 | 1.76 | 16.2 | 2.12 | 18.9 | 2.51 | 20.2 | 2.79 | 21.5 | 3.06 | 24.1 | 3.62 | 32.4 | 4.00 |
| | 21 | 13.6 | 1.78 | 16.2 | 2.14 | 18.9 | 2.60 | 20.2 | 2.88 | 21.5 | 3.16 | 24.1 | 3.74 | 32.2 | 4.09 |
| | 23 | 13.6 | 1.83 | 16.2 | 2.28 | 18.9 | 2.80 | 20.2 | 3.10 | 21.5 | 3.39 | 24.1 | 4.02 | 31.7 | 4.30 |
| | 25 | 13.6 | 1.94 | 16.2 | 2.43 | 18.9 | 2.97 | 20.2 | 3.31 | 21.5 | 3.62 | 24.1 | 4.30 | 31.3 | 4.47 |
| | 27 | 13.6 | 2.07 | 16.2 | 2.60 | 18.9 | 3.19 | 20.2 | 3.53 | 21.5 | 3.88 | 24.1 | 4.59 | 30.8 | 4.67 |
| | 29 | 13.6 | 2.20 | 16.2 | 2.77 | 18.9 | 3.41 | 20.2 | 3.77 | 21.5 | 4.14 | 29.8 | 4.81 | 30.4 | 4.86 |
| | 31 | 13.6 | 2.34 | 16.2 | 2.95 | 18.9 | 3.64 | 20.2 | 4.03 | 21.5 | 4.42 | 29.3 | 4.99 | 29.9 | 5.05 |
| | 33 | 13.6 | 2.49 | 16.2 | 3.14 | 18.9 | 3.88 | 20.2 | 4.29 | 21.5 | 4.70 | 28.9 | 5.19 | 29.5 | 5.24 |
| 35 | 13.6 | 2.65 | 16.2 | 3.35 | 18.9 | 4.13 | 20.2 | 4.57 | 21.5 | 5.03 | 28.4 | 5.38 | 29.0 | 5.43 | |
| 37 | 13.6 | 2.82 | 16.2 | 3.57 | 18.9 | 4.40 | 19.8 | 4.73 | 21.5 | 5.38 | 27.9 | 5.57 | 28.6 | 5.56 | |
| 39 | 13.6 | 3.00 | 16.2 | 3.80 | 18.9 | 4.69 | 19.5 | 4.89 | 21.5 | 5.70 | 27.5 | 5.78 | 28.1 | 5.76 | |
| 80% | 10 | 12.1 | 2.03 | 14.4 | 2.43 | 16.8 | 2.86 | 17.9 | 3.08 | 19.1 | 2.38 | 21.4 | 2.72 | 29.7 | 3.15 |
| | 12 | 12.1 | 2.06 | 14.4 | 2.47 | 16.8 | 2.91 | 17.9 | 3.14 | 19.1 | 2.42 | 21.4 | 2.76 | 29.7 | 3.13 |
| | 14 | 12.1 | 2.10 | 14.4 | 2.52 | 16.8 | 2.96 | 17.9 | 3.19 | 19.1 | 2.47 | 21.4 | 2.81 | 29.7 | 3.20 |
| | 16 | 12.1 | 2.13 | 14.4 | 2.56 | 16.8 | 3.02 | 17.9 | 3.25 | 19.1 | 2.51 | 21.4 | 2.87 | 29.7 | 3.32 |
| | 18 | 12.1 | 2.17 | 14.4 | 2.61 | 16.8 | 3.09 | 17.9 | 3.32 | 19.1 | 2.55 | 21.4 | 2.94 | 29.7 | 3.55 |
| | 20 | 12.1 | 2.21 | 14.4 | 2.66 | 16.8 | 3.14 | 17.9 | 3.38 | 19.1 | 2.61 | 21.4 | 3.05 | 29.7 | 3.68 |
| | 21 | 12.1 | 2.23 | 14.4 | 2.68 | 16.8 | 3.17 | 17.9 | 3.42 | 19.1 | 2.67 | 21.4 | 3.16 | 29.7 | 3.93 |
| | 23 | 12.1 | 2.27 | 14.4 | 2.74 | 16.8 | 3.32 | 17.9 | 3.64 | 19.1 | 2.86 | 21.4 | 3.38 | 29.7 | 4.21 |
| | 25 | 12.1 | 2.34 | 14.4 | 2.91 | 16.8 | 3.55 | 17.9 | 3.89 | 19.1 | 3.05 | 21.4 | 3.61 | 29.7 | 4.49 |
| | 27 | 12.1 | 2.49 | 14.4 | 3.10 | 16.8 | 3.78 | 17.9 | 4.15 | 19.1 | 3.27 | 21.4 | 3.86 | 29.7 | 4.65 |
| | 29 | 12.1 | 2.65 | 14.4 | 3.30 | 16.8 | 4.03 | 17.9 | 4.42 | 19.0 | 3.49 | 21.4 | 4.12 | 29.7 | 4.82 |
| | 31 | 12.1 | 2.81 | 14.4 | 3.51 | 16.8 | 4.29 | 17.9 | 4.71 | 19.0 | 3.72 | 21.4 | 4.39 | 29.2 | 4.99 |
| | 33 | 12.1 | 2.99 | 14.4 | 3.91 | 16.8 | 4.57 | 17.9 | 3.62 | 19.0 | 3.96 | 21.4 | 4.69 | 28.8 | 5.17 |
| 35 | 12.1 | 3.17 | 14.4 | 3.91 | 16.8 | 4.86 | 17.9 | 3.86 | 19.0 | 4.22 | 21.4 | 5.00 | 28.3 | 5.36 | |
| 37 | 12.1 | 3.36 | 14.4 | 4.21 | 16.8 | 5.17 | 17.6 | 4.11 | 19.0 | 4.49 | 21.4 | 5.33 | 27.9 | 5.56 | |
| 39 | 12.1 | 3.56 | 14.4 | 4.47 | 16.8 | 5.50 | 17.4 | 4.38 | 19.0 | 4.78 | 21.4 | 5.68 | 27.4 | 5.77 | |

GMV5 Home DC Inverter Multi VRF Units

GMV-S280W/A-X

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | | |
|---|-------------------------------------|----------------------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| Capacity collocation rate of indoor and outdoor unit | Outdoor ambient temperature (°C DB) | Indoor ambient temperature | | | | | | | | | | | | | |
| | | 14.0°C WB | | 16.0°C WB | | 18.0°C WB | | 19.0°C WB | | 20.0°C WB | | 22.0°C WB | | 24.0°C WB | |
| | | 20.0°C DB | | 23.0°C DB | | 26.0°C DB | | 27.0°C DB | | 28.0°C DB | | 30.0°C DB | | 32.0°C DB | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | |
| 100% | 10 | 18.9 | 2.66 | 22.5 | 3.23 | 26.2 | 3.82 | 28.0 | 4.12 | 29.8 | 4.45 | 33.5 | 5.04 | 35.4 | 5.24 |
| | 12 | 18.9 | 2.69 | 22.5 | 3.27 | 26.2 | 3.87 | 28.0 | 4.18 | 29.8 | 4.54 | 33.5 | 5.12 | 34.9 | 5.19 |
| | 14 | 18.9 | 2.74 | 22.5 | 3.33 | 26.2 | 3.93 | 28.0 | 4.25 | 29.8 | 4.62 | 33.5 | 5.21 | 34.5 | 5.15 |
| | 16 | 18.9 | 2.80 | 22.5 | 3.40 | 26.2 | 4.02 | 28.0 | 4.35 | 29.8 | 4.72 | 33.4 | 5.33 | 34.0 | 5.27 |
| | 18 | 18.9 | 2.86 | 22.5 | 3.48 | 26.2 | 4.10 | 28.0 | 4.43 | 29.8 | 4.82 | 32.9 | 5.43 | 33.6 | 5.52 |
| | 20 | 18.9 | 2.91 | 22.5 | 3.53 | 26.2 | 4.24 | 28.0 | 4.67 | 29.8 | 5.12 | 32.4 | 5.72 | 33.1 | 5.81 |
| | 21 | 18.9 | 2.94 | 22.5 | 3.57 | 26.2 | 4.38 | 28.0 | 4.83 | 29.8 | 5.30 | 32.2 | 5.91 | 32.9 | 5.97 |
| | 23 | 18.9 | 3.01 | 22.5 | 3.81 | 26.2 | 4.71 | 28.0 | 5.19 | 29.8 | 5.70 | 31.8 | 6.26 | 32.4 | 6.32 |
| | 25 | 18.9 | 3.20 | 22.5 | 4.05 | 26.2 | 5.01 | 28.0 | 5.52 | 29.8 | 6.09 | 31.3 | 6.49 | 32.0 | 6.54 |
| | 27 | 18.9 | 3.42 | 22.5 | 4.33 | 26.2 | 5.38 | 28.0 | 5.92 | 29.8 | 6.54 | 30.8 | 6.71 | 31.5 | 6.77 |
| | 29 | 18.9 | 3.63 | 22.5 | 4.63 | 26.2 | 5.75 | 28.0 | 6.33 | 29.7 | 6.93 | 30.4 | 7.04 | 31.1 | 7.10 |
| | 31 | 18.9 | 3.86 | 22.5 | 4.93 | 26.2 | 6.13 | 28.0 | 6.83 | 29.3 | 7.21 | 29.7 | 7.32 | 30.6 | 7.39 |
| | 33 | 18.9 | 4.10 | 22.5 | 5.25 | 26.2 | 6.54 | 28.0 | 7.22 | 28.8 | 7.47 | 29.5 | 7.53 | 30.2 | 7.60 |
| | 35 | 18.9 | 4.36 | 22.5 | 5.59 | 26.2 | 6.97 | 28.0 | 7.70 | 28.3 | 7.74 | 29.0 | 7.81 | 29.7 | 7.88 |
| | 37 | 18.9 | 4.65 | 22.5 | 5.95 | 26.2 | 7.42 | 27.5 | 7.98 | 27.9 | 8.02 | 28.6 | 8.07 | 29.3 | 8.15 |
| 39 | 18.9 | 4.95 | 22.5 | 6.34 | 26.2 | 7.90 | 27.1 | 8.24 | 27.3 | 8.28 | 28.2 | 8.34 | 28.6 | 8.42 | |
| 90% | 10 | 17.0 | 2.32 | 20.2 | 2.78 | 23.6 | 3.26 | 25.2 | 3.67 | 26.8 | 3.91 | 30.1 | 4.48 | 33.4 | 5.08 |
| | 12 | 17.0 | 2.35 | 20.2 | 2.82 | 23.6 | 3.30 | 25.2 | 3.72 | 26.8 | 3.99 | 30.1 | 4.56 | 33.4 | 5.14 |
| | 14 | 17.0 | 2.39 | 20.2 | 2.87 | 23.6 | 3.36 | 25.2 | 3.78 | 26.8 | 4.05 | 30.1 | 4.64 | 33.4 | 5.23 |
| | 16 | 17.0 | 2.44 | 20.2 | 2.93 | 23.6 | 3.44 | 25.2 | 3.86 | 26.8 | 4.15 | 30.1 | 4.74 | 33.3 | 5.33 |
| | 18 | 17.0 | 2.50 | 20.2 | 3.00 | 23.6 | 3.50 | 25.2 | 3.94 | 26.8 | 4.23 | 30.1 | 4.85 | 33.0 | 5.52 |
| | 20 | 17.0 | 2.54 | 20.2 | 3.05 | 23.6 | 3.62 | 25.2 | 4.02 | 26.8 | 4.40 | 30.1 | 5.21 | 32.4 | 5.75 |
| | 21 | 17.0 | 2.56 | 20.2 | 3.08 | 23.6 | 3.74 | 25.2 | 4.15 | 26.8 | 4.55 | 30.1 | 5.39 | 32.2 | 5.88 |
| | 23 | 17.0 | 2.63 | 20.2 | 3.29 | 23.6 | 4.02 | 25.2 | 4.46 | 26.8 | 4.87 | 30.1 | 5.79 | 31.7 | 6.18 |
| | 25 | 17.0 | 2.79 | 20.2 | 3.50 | 23.6 | 4.28 | 25.2 | 4.76 | 26.8 | 5.21 | 30.1 | 6.19 | 31.3 | 6.43 |
| | 27 | 17.0 | 2.99 | 20.2 | 3.74 | 23.6 | 4.59 | 25.2 | 5.09 | 26.8 | 5.58 | 30.1 | 6.61 | 30.8 | 6.72 |
| | 29 | 17.0 | 3.16 | 20.2 | 3.99 | 23.6 | 4.91 | 25.2 | 5.43 | 26.8 | 5.96 | 29.8 | 6.93 | 30.4 | 6.99 |
| | 31 | 17.0 | 3.36 | 20.2 | 4.25 | 23.6 | 5.24 | 25.2 | 5.80 | 26.8 | 6.36 | 29.3 | 7.18 | 29.9 | 7.27 |
| | 33 | 17.0 | 3.58 | 20.2 | 4.53 | 23.6 | 5.58 | 25.2 | 6.17 | 26.8 | 6.76 | 28.9 | 7.47 | 29.5 | 7.54 |
| | 35 | 17.0 | 3.81 | 20.2 | 4.82 | 23.6 | 5.95 | 25.2 | 6.58 | 26.8 | 7.23 | 28.4 | 7.74 | 29.0 | 7.81 |
| | 37 | 17.0 | 4.06 | 20.2 | 5.13 | 23.6 | 6.34 | 24.7 | 6.81 | 26.8 | 7.74 | 27.9 | 8.02 | 28.6 | 8.00 |
| 39 | 17.0 | 4.32 | 20.2 | 5.47 | 23.6 | 6.75 | 24.4 | 7.04 | 26.8 | 8.20 | 27.5 | 8.32 | 28.1 | 8.29 | |
| 80% | 10 | 15.1 | 2.03 | 18.0 | 2.43 | 21.0 | 2.86 | 22.4 | 3.08 | 23.8 | 3.42 | 26.8 | 3.91 | 29.7 | 4.54 |
| | 12 | 15.1 | 2.06 | 18.0 | 2.47 | 21.0 | 2.91 | 22.4 | 3.14 | 23.8 | 3.49 | 26.8 | 3.98 | 29.7 | 4.50 |
| | 14 | 15.1 | 2.10 | 18.0 | 2.52 | 21.0 | 2.96 | 22.4 | 3.19 | 23.8 | 3.55 | 26.8 | 4.05 | 29.7 | 4.61 |
| | 16 | 15.1 | 2.13 | 18.0 | 2.56 | 21.0 | 3.02 | 22.4 | 3.25 | 23.8 | 3.61 | 26.8 | 4.14 | 29.7 | 4.77 |
| | 18 | 15.1 | 2.17 | 18.0 | 2.61 | 21.0 | 3.09 | 22.4 | 3.32 | 23.8 | 3.68 | 26.8 | 4.23 | 29.7 | 5.10 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | | |
|--|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 20 | 15.1 | 2.21 | 18.0 | 2.66 | 21.0 | 3.14 | 22.4 | 3.38 | 23.8 | 3.76 | 26.8 | 4.38 | 29.7 | 5.29 |
| | 21 | 15.1 | 2.23 | 18.0 | 2.68 | 21.0 | 3.17 | 22.4 | 3.42 | 23.8 | 3.84 | 26.8 | 4.54 | 29.7 | 5.66 |
| | 23 | 15.1 | 2.27 | 18.0 | 2.74 | 21.0 | 3.32 | 22.4 | 3.64 | 23.8 | 4.11 | 26.8 | 4.86 | 29.7 | 6.06 |
| | 25 | 15.1 | 2.34 | 18.0 | 2.91 | 21.0 | 3.55 | 22.4 | 3.89 | 23.8 | 4.39 | 26.8 | 5.20 | 29.7 | 6.46 |
| | 27 | 15.1 | 2.49 | 18.0 | 3.10 | 21.0 | 3.78 | 22.4 | 4.15 | 23.8 | 4.71 | 26.8 | 5.55 | 29.7 | 6.69 |
| | 29 | 15.1 | 2.65 | 18.0 | 3.30 | 21.0 | 4.03 | 22.4 | 4.42 | 23.8 | 5.02 | 26.8 | 5.93 | 29.7 | 6.93 |
| | 31 | 15.1 | 2.81 | 18.0 | 3.51 | 21.0 | 4.29 | 22.4 | 4.71 | 23.8 | 5.35 | 26.8 | 6.32 | 29.2 | 7.19 |
| | 33 | 15.1 | 2.99 | 18.0 | 3.91 | 21.0 | 4.57 | 22.4 | 5.21 | 23.8 | 5.70 | 26.8 | 6.75 | 28.8 | 7.45 |
| | 35 | 15.1 | 3.17 | 18.0 | 3.91 | 21.0 | 4.86 | 22.4 | 5.55 | 23.8 | 6.07 | 26.8 | 7.20 | 28.3 | 7.72 |
| | 37 | 15.1 | 3.36 | 18.0 | 4.21 | 21.0 | 5.17 | 22.0 | 5.91 | 23.8 | 6.46 | 26.8 | 7.67 | 27.9 | 8.00 |
| | 39 | 15.1 | 3.56 | 18.0 | 4.47 | 21.0 | 5.50 | 21.7 | 6.30 | 23.8 | 6.88 | 26.8 | 8.17 | 27.4 | 8.30 |

7.3.2 Revision of heating capacity

GMV-S120WL/A-S

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | |
|---|-----------------------------|-------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Capacity collocation rate of indoor and outdoor units | Outdoor ambient temperature | | Indoor ambient temperature °C DB | | | | | | | | | | | |
| | | | 16 | | 18 | | 20 | | 21 | | 22 | | 24 | |
| | °C DB | °C WB | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| 100% | -19.8 | -20.0 | 5.6 | 2.36 | 5.6 | 2.48 | 5.6 | 2.73 | 5.6 | 2.80 | 5.6 | 2.81 | 5.6 | 2.89 |
| | -18.8 | -19.0 | 6.8 | 2.43 | 6.7 | 2.67 | 6.7 | 2.83 | 6.7 | 2.91 | 6.7 | 2.92 | 6.7 | 2.94 |
| | -16.7 | -17.0 | 7.7 | 2.47 | 7.7 | 2.73 | 7.7 | 2.93 | 7.7 | 2.96 | 7.7 | 2.97 | 7.6 | 2.99 |
| | -13.7 | -15.0 | 8.8 | 2.57 | 8.8 | 2.84 | 8.8 | 2.99 | 8.8 | 3.01 | 8.8 | 3.02 | 8.8 | 3.01 |
| | -11.8 | -13.0 | 9.5 | 2.64 | 9.5 | 2.94 | 9.5 | 3.03 | 9.5 | 3.06 | 9.5 | 3.04 | 9.5 | 3.06 |
| | -9.8 | -11.0 | 9.8 | 2.74 | 9.8 | 2.99 | 9.8 | 3.06 | 9.8 | 3.07 | 9.8 | 3.08 | 9.8 | 3.12 |
| | -9.5 | -10.0 | 10.5 | 2.83 | 10.5 | 3.03 | 10.5 | 3.10 | 10.5 | 3.10 | 10.5 | 3.15 | 10.4 | 3.17 |
| | -8.5 | -9.1 | 10.9 | 2.88 | 10.9 | 3.06 | 10.9 | 3.17 | 10.9 | 3.17 | 10.9 | 3.19 | 10.7 | 3.21 |
| | -7.0 | -7.6 | 11.3 | 2.93 | 11.3 | 3.11 | 11.3 | 3.21 | 11.3 | 3.21 | 11.3 | 3.24 | 11.3 | 3.24 |
| | -5.0 | -5.6 | 11.9 | 2.95 | 11.9 | 3.18 | 11.9 | 3.26 | 11.9 | 3.25 | 11.9 | 3.27 | 11.8 | 3.31 |
| | -3.0 | -3.7 | 12.3 | 3.00 | 12.3 | 3.22 | 12.2 | 3.29 | 12.3 | 3.29 | 12.3 | 3.34 | 12.2 | 3.37 |
| | 0.0 | -0.7 | 13 | 3.07 | 13 | 3.26 | 13 | 3.36 | 13 | 3.35 | 13 | 3.40 | 12.2 | 3.30 |
| | 3.0 | 2.2 | 13.7 | 3.10 | 13.7 | 3.3 | 13.7 | 3.40 | 13.6 | 3.34 | 13.1 | 3.33 | 12.2 | 3.25 |
| | 5.0 | 4.1 | 14.2 | 3.15 | 14.2 | 3.36 | 14 | 3.34 | 13.6 | 3.28 | 13.1 | 3.28 | 12.2 | 3.16 |
| | 7.0 | 6.0 | 14.7 | 3.18 | 14.7 | 3.42 | 14 | 3.30 | 13.6 | 3.23 | 13.1 | 3.19 | 12.2 | 2.99 |
| | 9.0 | 7.9 | 15.2 | 3.24 | 14.7 | 3.35 | 14 | 3.20 | 13.6 | 3.14 | 13.1 | 3.02 | 12.2 | 2.94 |
| 11.0 | 9.8 | 15.6 | 3.30 | 14.7 | 3.3 | 14 | 3.04 | 13.6 | 2.98 | 13.1 | 2.97 | 12.2 | 2.92 | |
| 13.0 | 11.8 | 15.8 | 3.23 | 14.7 | 3.21 | 14 | 2.99 | 13.6 | 2.94 | 13.1 | 2.93 | 12.2 | 2.86 | |
| 15.0 | 13.7 | 15.8 | 3.19 | 14.7 | 3.04 | 14 | 2.96 | 13.6 | 2.90 | 13.1 | 2.89 | 12.2 | 2.75 | |
| 90% | -19.8 | -20.0 | 5.6 | 2.57 | 5.6 | 2.83 | 5.6 | 2.85 | 5.6 | 2.95 | 5.6 | 2.94 | 5.6 | 2.99 |
| | -18.8 | -19.0 | 6.8 | 2.64 | 6.7 | 2.93 | 6.7 | 2.90 | 6.7 | 3.00 | 6.7 | 2.98 | 6.7 | 3.04 |
| | -16.7 | -17.0 | 7.7 | 2.74 | 7.7 | 2.98 | 7.7 | 2.94 | 7.7 | 3.04 | 7.7 | 3.01 | 7.6 | 3.10 |
| | -13.7 | -15.0 | 8.8 | 2.83 | 8.8 | 3.03 | 8.8 | 2.96 | 8.8 | 3.07 | 8.8 | 3.06 | 8.8 | 3.14 |
| | -11.8 | -13.0 | 9.5 | 2.88 | 9.5 | 3.05 | 9.5 | 3.02 | 9.5 | 3.08 | 9.5 | 3.12 | 9.5 | 3.19 |
| | -9.8 | -11.0 | 9.8 | 2.93 | 9.8 | 3.1 | 9.8 | 3.07 | 9.8 | 3.15 | 9.8 | 3.16 | 9.8 | 3.22 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | |
|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -9.5 | -10.0 | 10.5 | 2.95 | 10.5 | 3.17 | 10.5 | 3.12 | 10.5 | 3.19 | 10.5 | 3.21 | 10.4 | 3.29 |
| | -8.5 | -9.1 | 10.9 | 3.00 | 10.9 | 3.21 | 10.9 | 3.16 | 10.9 | 3.24 | 10.9 | 3.24 | 10.7 | 3.34 |
| | -7.0 | -7.6 | 11.3 | 3.07 | 11.3 | 3.26 | 11.3 | 3.19 | 11.3 | 3.27 | 11.3 | 3.30 | 10.7 | 3.28 |
| | -5.0 | -5.6 | 11.9 | 3.10 | 11.9 | 3.29 | 11.9 | 3.26 | 11.9 | 3.33 | 11.9 | 3.36 | 10.7 | 3.23 |
| | -3.0 | -3.7 | 12.3 | 3.14 | 12.3 | 3.35 | 12.3 | 3.31 | 12.3 | 3.33 | 11.9 | 3.29 | 10.7 | 3.14 |
| | 0.0 | -0.7 | 13 | 3.18 | 13 | 3.41 | 12.6 | 3.24 | 12.3 | 3.26 | 11.9 | 3.25 | 10.7 | 2.98 |
| | 3.0 | 2.2 | 13.7 | 3.24 | 13.7 | 3.34 | 12.6 | 3.20 | 12.3 | 3.21 | 11.9 | 3.15 | 10.7 | 2.92 |
| | 5.0 | 4.1 | 13.9 | 3.30 | 13.7 | 3.3 | 12.6 | 3.11 | 12.3 | 3.12 | 11.9 | 2.99 | 10.7 | 2.90 |
| | 7.0 | 6.0 | 14.2 | 3.23 | 13.7 | 3.2 | 12.6 | 2.95 | 12.3 | 2.96 | 11.9 | 2.94 | 10.7 | 2.84 |
| | 9.0 | 7.9 | 14.2 | 3.18 | 13.7 | 3.03 | 12.6 | 2.90 | 12.3 | 2.91 | 11.9 | 2.91 | 10.7 | 2.74 |
| | 11.0 | 9.8 | 14.2 | 3.09 | 13.7 | 2.98 | 12.6 | 2.87 | 12.3 | 2.88 | 11.9 | 2.86 | 10.7 | 2.62 |
| | 13.0 | 11.8 | 14.2 | 2.93 | 13.7 | 2.96 | 12.6 | 2.82 | 12.3 | 2.83 | 11.9 | 2.75 | 10.7 | 2.53 |
| | 15.0 | 13.7 | 14.2 | 2.88 | 13.7 | 2.9 | 12.6 | 2.72 | 12.3 | 2.73 | 11.9 | 2.64 | 10.7 | 2.44 |
| 80% | -19.8 | -20.0 | 5.6 | 2.83 | 5.6 | 2.97 | 5.6 | 2.94 | 5.6 | 2.97 | 5.6 | 3.03 | 5.6 | 3.09 |
| | -18.8 | -19.0 | 6.8 | 2.88 | 6.7 | 3.02 | 6.7 | 2.96 | 6.7 | 3.02 | 6.7 | 3.09 | 6.7 | 3.14 |
| | -16.7 | -17.0 | 7.7 | 2.92 | 7.7 | 3.04 | 7.7 | 3.02 | 7.7 | 3.08 | 7.7 | 3.13 | 7.6 | 3.18 |
| | -13.7 | -15.0 | 8.8 | 2.95 | 8.8 | 3.09 | 8.8 | 3.07 | 8.8 | 3.12 | 8.8 | 3.17 | 8.8 | 3.22 |
| | -11.8 | -13.0 | 9.5 | 3.00 | 9.5 | 3.16 | 9.5 | 3.12 | 9.5 | 3.17 | 9.5 | 3.21 | 9.5 | 3.28 |
| | -9.8 | -11.0 | 9.8 | 3.06 | 9.8 | 3.2 | 9.8 | 3.16 | 9.8 | 3.20 | 9.8 | 3.27 | 9.8 | 3.34 |
| | -9.5 | -10.0 | 10.5 | 3.09 | 10.5 | 3.25 | 10.5 | 3.19 | 10.5 | 3.26 | 10.5 | 3.33 | 9.8 | 3.27 |
| | -8.5 | -9.1 | 10.9 | 3.14 | 10.9 | 3.28 | 10.9 | 3.26 | 10.9 | 3.32 | 10.5 | 3.26 | 9.8 | 3.22 |
| | -7.0 | -7.6 | 11.3 | 3.17 | 11.3 | 3.34 | 11.3 | 3.31 | 10.9 | 3.25 | 10.5 | 3.21 | 9.8 | 3.13 |
| | -5.0 | -5.6 | 11.9 | 3.23 | 11.9 | 3.4 | 11.3 | 3.24 | 10.9 | 3.21 | 10.5 | 3.12 | 9.8 | 2.97 |
| | -3.0 | -3.7 | 12.3 | 3.29 | 11.9 | 3.33 | 11.3 | 3.20 | 10.9 | 3.12 | 10.5 | 2.96 | 9.8 | 2.92 |
| | 0.0 | -0.7 | 13 | 3.22 | 11.9 | 3.29 | 11.3 | 3.11 | 10.9 | 2.96 | 10.5 | 2.91 | 9.8 | 2.89 |
| | 3.0 | 2.2 | 13 | 3.18 | 11.9 | 3.2 | 11.3 | 2.95 | 10.9 | 2.90 | 10.5 | 2.88 | 9.8 | 2.84 |
| | 5.0 | 4.1 | 13 | 3.09 | 11.9 | 3.03 | 11.3 | 2.90 | 10.9 | 2.88 | 10.5 | 2.83 | 9.8 | 2.74 |
| | 7.0 | 6.0 | 13 | 2.93 | 11.9 | 2.97 | 11.3 | 2.87 | 10.9 | 2.83 | 10.5 | 2.73 | 9.8 | 2.62 |
| | 9.0 | 7.9 | 13 | 2.88 | 11.9 | 2.95 | 11.3 | 2.82 | 10.9 | 2.73 | 10.5 | 2.61 | 9.8 | 2.52 |
| 11.0 | 9.8 | 13 | 2.85 | 11.9 | 2.9 | 11.3 | 2.72 | 10.9 | 2.61 | 10.5 | 2.52 | 9.8 | 2.43 | |
| 13.0 | 11.8 | 13 | 2.80 | 11.9 | 2.79 | 11.3 | 2.60 | 10.9 | 2.51 | 10.5 | 2.43 | 9.8 | 2.37 | |
| 15.0 | 13.7 | 13 | 2.70 | 11.9 | 2.67 | 11.3 | 2.51 | 10.9 | 2.43 | 10.5 | 2.36 | 9.8 | 2.27 | |

GMV-S140WL/A-S

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | |
|---|----------------------------|-------|----------------------------------|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| Capacity collocation rate of indoor and outdoor units | Outdoor ambiet temperature | | Indoor ambient temperature °C DB | | | | | | | | | | | |
| | | | 16 | | 18 | | 20 | | 21 | | 22 | | 24 | |
| | °C DB | °C WB | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| 100% | -19.8 | -20.0 | 6.6 | 2.93 | 6.6 | 3.09 | 6.6 | 3.39 | 6.6 | 3.49 | 6.6 | 3.50 | 6.5 | 3.59 |
| | -18.8 | -19.0 | 7.9 | 3.02 | 7.9 | 3.22 | 7.9 | 3.52 | 7.9 | 3.62 | 7.9 | 3.62 | 7.8 | 3.65 |
| | -16.7 | -17.0 | 9.1 | 3.08 | 9.1 | 3.30 | 9.1 | 3.64 | 9.1 | 3.67 | 9.1 | 3.68 | 9.0 | 3.71 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | |
|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -13.7 | -15.0 | 10.4 | 3.20 | 10.4 | 3.42 | 10.4 | 3.70 | 10.4 | 3.74 | 10.4 | 3.74 | 10.4 | 3.74 |
| | -11.8 | -13.0 | 11.2 | 3.28 | 11.2 | 3.54 | 11.1 | 3.76 | 11.2 | 3.80 | 11.2 | 3.77 | 11.1 | 3.81 |
| | -9.8 | -11.0 | 11.6 | 3.40 | 11.6 | 3.60 | 11.6 | 3.80 | 11.6 | 3.83 | 11.6 | 3.84 | 11.6 | 3.89 |
| | -9.5 | -10.0 | 12.3 | 3.52 | 12.3 | 3.66 | 12.4 | 3.86 | 12.3 | 3.86 | 12.3 | 3.92 | 12.3 | 3.94 |
| | -8.5 | -9.1 | 12.8 | 3.58 | 12.8 | 3.68 | 12.8 | 3.94 | 12.8 | 3.94 | 12.8 | 3.97 | 12.6 | 3.99 |
| | -7.0 | -7.6 | 13.4 | 3.64 | 13.4 | 3.74 | 13.4 | 3.99 | 13.4 | 3.99 | 13.4 | 4.03 | 13.3 | 4.03 |
| | -5.0 | -5.6 | 14.0 | 3.66 | 14.0 | 3.84 | 14.0 | 4.05 | 14.0 | 4.05 | 14.0 | 4.07 | 13.9 | 4.11 |
| | -3.0 | -3.7 | 14.4 | 3.73 | 14.4 | 3.88 | 14.4 | 4.09 | 14.4 | 4.09 | 14.4 | 4.14 | 14.3 | 4.18 |
| | 0.0 | -0.7 | 15.3 | 3.82 | 15.3 | 3.94 | 15.3 | 4.17 | 15.3 | 4.16 | 15.3 | 4.22 | 14.3 | 4.10 |
| | 3.0 | 2.2 | 16.2 | 3.87 | 16.2 | 3.98 | 16.2 | 4.24 | 15.9 | 4.15 | 15.4 | 4.13 | 14.3 | 4.04 |
| | 5.0 | 4.1 | 16.7 | 3.92 | 16.7 | 4.05 | 16.5 | 4.15 | 15.9 | 4.07 | 15.4 | 4.08 | 14.3 | 3.93 |
| | 7.0 | 6.0 | 17.3 | 3.96 | 17.2 | 4.12 | 16.5 | 4.10 | 15.9 | 4.02 | 15.4 | 3.97 | 14.3 | 3.71 |
| | 9.0 | 7.9 | 17.9 | 4.03 | 17.2 | 4.04 | 16.5 | 3.99 | 15.9 | 3.91 | 15.4 | 3.75 | 14.3 | 3.65 |
| | 11.0 | 9.8 | 18.4 | 4.10 | 17.2 | 3.99 | 16.5 | 3.77 | 15.9 | 3.69 | 15.4 | 3.68 | 14.3 | 3.62 |
| | 13.0 | 11.8 | 18.6 | 4.02 | 17.2 | 3.88 | 16.5 | 3.70 | 15.9 | 3.65 | 15.4 | 3.64 | 14.3 | 3.56 |
| | 15.0 | 13.7 | 18.6 | 3.97 | 17.2 | 3.66 | 16.5 | 3.67 | 15.9 | 3.60 | 15.4 | 3.59 | 14.3 | 3.43 |
| 90% | -19.8 | -20.0 | 6.6 | 3.19 | 6.6 | 3.41 | 6.6 | 3.54 | 6.6 | 3.66 | 6.6 | 3.65 | 6.5 | 3.71 |
| | -18.8 | -19.0 | 7.9 | 3.28 | 7.9 | 3.53 | 7.9 | 3.60 | 7.9 | 3.72 | 7.9 | 3.70 | 7.8 | 3.77 |
| | -16.7 | -17.0 | 9.1 | 3.40 | 9.1 | 3.59 | 9.1 | 3.65 | 9.1 | 3.77 | 9.1 | 3.73 | 9.0 | 3.87 |
| | -13.7 | -15.0 | 10.4 | 3.52 | 10.4 | 3.65 | 10.4 | 3.68 | 10.4 | 3.81 | 10.4 | 3.80 | 10.4 | 3.91 |
| | -11.8 | -13.0 | 11.2 | 3.58 | 11.2 | 3.67 | 11.2 | 3.74 | 11.2 | 3.84 | 11.2 | 3.88 | 11.1 | 3.97 |
| | -9.8 | -11.0 | 11.6 | 3.63 | 11.6 | 3.74 | 11.6 | 3.83 | 11.6 | 3.92 | 11.6 | 3.93 | 11.6 | 4.01 |
| | -9.5 | -10.0 | 12.3 | 3.66 | 12.3 | 3.83 | 12.3 | 3.88 | 12.3 | 3.97 | 12.3 | 3.99 | 12.3 | 4.08 |
| | -8.5 | -9.1 | 12.8 | 3.72 | 12.8 | 3.88 | 12.8 | 3.93 | 12.8 | 4.03 | 12.8 | 4.03 | 12.6 | 4.15 |
| | -7.0 | -7.6 | 13.4 | 3.81 | 13.4 | 3.93 | 13.4 | 3.97 | 13.4 | 4.07 | 13.4 | 4.10 | 12.6 | 4.07 |
| | -5.0 | -5.6 | 14.0 | 3.86 | 14.0 | 3.97 | 14.0 | 4.05 | 14.0 | 4.13 | 14.0 | 4.17 | 12.6 | 4.02 |
| | -3.0 | -3.7 | 14.4 | 3.91 | 14.4 | 4.04 | 14.4 | 4.12 | 14.4 | 4.13 | 14.0 | 4.09 | 12.6 | 3.91 |
| | 0.0 | -0.7 | 15.3 | 3.95 | 15.3 | 4.11 | 14.9 | 4.03 | 14.4 | 4.05 | 14.0 | 4.04 | 12.6 | 3.69 |
| | 3.0 | 2.2 | 16.2 | 4.03 | 16.2 | 4.03 | 14.9 | 3.98 | 14.4 | 4.00 | 14.0 | 3.93 | 12.6 | 3.63 |
| | 5.0 | 4.1 | 16.4 | 4.09 | 16.2 | 3.98 | 14.9 | 3.87 | 14.4 | 3.89 | 14.0 | 3.71 | 12.6 | 3.60 |
| | 7.0 | 6.0 | 16.7 | 4.01 | 16.2 | 3.87 | 14.9 | 3.66 | 14.4 | 3.67 | 14.0 | 3.65 | 12.6 | 3.54 |
| | 9.0 | 7.9 | 16.7 | 3.96 | 16.2 | 3.65 | 14.9 | 3.60 | 14.4 | 3.61 | 14.0 | 3.62 | 12.6 | 3.40 |
| 11.0 | 9.8 | 16.7 | 3.85 | 16.2 | 3.59 | 14.9 | 3.57 | 14.4 | 3.58 | 14.0 | 3.55 | 12.6 | 3.26 | |
| 13.0 | 11.8 | 16.7 | 3.64 | 16.2 | 3.56 | 14.9 | 3.50 | 14.4 | 3.52 | 14.0 | 3.42 | 12.6 | 3.15 | |
| 15.0 | 13.7 | 16.7 | 3.58 | 16.2 | 3.50 | 14.9 | 3.37 | 14.4 | 3.39 | 14.0 | 3.28 | 12.6 | 3.04 | |
| 80% | -19.8 | -20.0 | 6.6 | 3.51 | 6.6 | 3.58 | 6.6 | 3.65 | 6.6 | 3.69 | 6.6 | 3.75 | 6.5 | 3.86 |
| | -18.8 | -19.0 | 7.9 | 3.57 | 7.9 | 3.64 | 7.9 | 3.68 | 7.9 | 3.75 | 7.9 | 3.85 | 7.8 | 3.90 |
| | -16.7 | -17.0 | 9.1 | 3.63 | 9.1 | 3.66 | 9.1 | 3.74 | 9.1 | 3.84 | 9.1 | 3.89 | 9.0 | 3.96 |
| | -13.7 | -15.0 | 10.4 | 3.66 | 10.4 | 3.73 | 10.4 | 3.83 | 10.4 | 3.89 | 10.4 | 3.95 | 10.4 | 4.00 |
| | -11.8 | -13.0 | 11.2 | 3.72 | 11.2 | 3.82 | 11.2 | 3.88 | 11.2 | 3.94 | 11.2 | 3.99 | 11.1 | 4.07 |
| | -9.8 | -11.0 | 11.6 | 3.81 | 11.6 | 3.87 | 11.6 | 3.93 | 11.6 | 3.98 | 11.6 | 4.06 | 11.6 | 4.14 |
| | -9.5 | -10.0 | 12.3 | 3.86 | 12.3 | 3.92 | 12.3 | 3.97 | 12.3 | 4.06 | 12.3 | 4.13 | 11.6 | 4.06 |
| | -8.5 | -9.1 | 12.8 | 3.91 | 12.8 | 3.96 | 12.8 | 4.05 | 12.8 | 4.13 | 12.3 | 4.05 | 11.6 | 4.01 |
| | -7.0 | -7.6 | 13.4 | 3.95 | 13.4 | 4.03 | 13.4 | 4.12 | 12.8 | 4.04 | 12.3 | 4.00 | 11.6 | 3.90 |
| | -5.0 | -5.6 | 14.0 | 4.02 | 14.0 | 4.10 | 13.4 | 4.03 | 12.8 | 3.99 | 12.3 | 3.89 | 11.6 | 3.68 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -3.0 | -3.7 | 14.4 | 4.09 | 14.0 | 4.02 | 13.4 | 3.98 | 12.8 | 3.88 | 12.3 | 3.67 | 11.6 | 3.62 |
| | 0.0 | -0.7 | 15.3 | 4.01 | 14.0 | 3.97 | 13.4 | 3.87 | 12.8 | 3.67 | 12.3 | 3.61 | 11.6 | 3.59 |
| | 3.0 | 2.2 | 15.3 | 3.96 | 14.0 | 3.86 | 13.4 | 3.66 | 12.8 | 3.61 | 12.3 | 3.58 | 11.6 | 3.53 |
| | 5.0 | 4.1 | 15.3 | 3.85 | 14.0 | 3.64 | 13.4 | 3.60 | 12.8 | 3.58 | 12.3 | 3.52 | 11.6 | 3.40 |
| | 7.0 | 6.0 | 15.3 | 3.64 | 14.0 | 3.58 | 13.4 | 3.57 | 12.8 | 3.51 | 12.3 | 3.39 | 11.6 | 3.25 |
| | 9.0 | 7.9 | 15.3 | 3.57 | 14.0 | 3.56 | 13.4 | 3.50 | 12.8 | 3.38 | 12.3 | 3.24 | 11.6 | 3.14 |
| | 11.0 | 9.8 | 15.3 | 3.55 | 14.0 | 3.49 | 13.4 | 3.37 | 12.8 | 3.24 | 12.3 | 3.13 | 11.6 | 3.04 |
| | 13.0 | 11.8 | 15.3 | 3.48 | 14.0 | 3.36 | 13.4 | 3.23 | 12.8 | 3.13 | 12.3 | 3.03 | 11.6 | 2.94 |
| | 15.0 | 13.7 | 15.3 | 3.35 | 14.0 | 3.22 | 13.4 | 3.12 | 12.8 | 3.02 | 12.3 | 2.93 | 11.6 | 2.81 |

GMV-S160WL/A-S

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | |
|---|-----------------------------|-------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Capacity collocation rate of indoor and outdoor units | Outdoor ambient temperature | | Indoor ambient temperature °C DB | | | | | | | | | | | |
| | | | 16 | | 18 | | 20 | | 21 | | 22 | | 24 | |
| | °C DB | °C WB | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| 100% | -19.8 | -20.0 | 7.5 | 3.34 | 7.4 | 3.52 | 7.4 | 3.86 | 7.4 | 3.97 | 7.4 | 3.98 | 7.4 | 4.09 |
| | -18.8 | -19.0 | 8.9 | 3.42 | 8.8 | 3.66 | 8.8 | 4.00 | 8.8 | 4.12 | 8.8 | 4.13 | 8.8 | 4.17 |
| | -16.7 | -17.0 | 10.2 | 3.50 | 10.2 | 3.75 | 10.2 | 4.15 | 10.2 | 4.18 | 10.2 | 4.19 | 10.1 | 4.22 |
| | -13.7 | -15.0 | 11.7 | 3.64 | 11.7 | 3.90 | 11.7 | 4.22 | 11.7 | 4.26 | 11.7 | 4.26 | 11.7 | 4.26 |
| | -11.8 | -13.0 | 12.6 | 3.73 | 12.6 | 4.03 | 12.5 | 4.28 | 12.6 | 4.32 | 12.6 | 4.29 | 12.5 | 4.33 |
| | -9.8 | -11.0 | 12.9 | 3.88 | 12.9 | 4.11 | 12.9 | 4.32 | 12.9 | 4.36 | 12.9 | 4.37 | 12.9 | 4.43 |
| | -9.5 | -10.0 | 13.9 | 4.01 | 13.9 | 4.17 | 13.9 | 4.39 | 13.9 | 4.39 | 13.9 | 4.46 | 13.8 | 4.48 |
| | -8.5 | -9.1 | 14.4 | 4.08 | 14.4 | 4.19 | 14.4 | 4.48 | 14.4 | 4.48 | 14.4 | 4.52 | 14.2 | 4.54 |
| | -7.0 | -7.6 | 14.9 | 4.15 | 14.9 | 4.27 | 15.0 | 4.54 | 14.9 | 4.54 | 14.9 | 4.58 | 14.9 | 4.59 |
| | -5.0 | -5.6 | 15.7 | 4.18 | 15.7 | 4.36 | 15.7 | 4.61 | 15.7 | 4.61 | 15.7 | 4.63 | 15.6 | 4.68 |
| | -3.0 | -3.7 | 16.2 | 4.24 | 16.2 | 4.42 | 16.2 | 4.66 | 16.2 | 4.66 | 16.2 | 4.71 | 16.2 | 4.75 |
| | 0.0 | -0.7 | 17.2 | 4.34 | 17.2 | 4.48 | 17.2 | 4.74 | 17.2 | 4.73 | 17.2 | 4.80 | 16.2 | 4.67 |
| | 3.0 | 2.2 | 18.2 | 4.40 | 18.2 | 4.52 | 18.1 | 4.82 | 17.9 | 4.72 | 17.3 | 4.70 | 16.2 | 4.60 |
| | 5.0 | 4.1 | 18.8 | 4.45 | 18.8 | 4.61 | 18.5 | 4.72 | 17.9 | 4.63 | 17.3 | 4.64 | 16.2 | 4.47 |
| | 7.0 | 6.0 | 19.4 | 4.50 | 19.3 | 4.69 | 18.5 | 4.67 | 17.9 | 4.57 | 17.3 | 4.51 | 16.2 | 4.23 |
| | 9.0 | 7.9 | 20.1 | 4.59 | 19.3 | 4.60 | 18.5 | 4.53 | 17.9 | 4.44 | 17.3 | 4.27 | 16.2 | 4.17 |
| 11.0 | 9.8 | 20.7 | 4.67 | 19.3 | 4.53 | 18.5 | 4.29 | 17.9 | 4.20 | 17.3 | 4.19 | 16.2 | 4.13 | |
| 13.0 | 11.8 | 20.8 | 4.57 | 19.3 | 4.41 | 18.5 | 4.22 | 17.9 | 4.16 | 17.3 | 4.15 | 16.2 | 4.05 | |
| 15.0 | 13.7 | 20.8 | 4.51 | 19.3 | 4.18 | 18.5 | 4.18 | 17.9 | 4.10 | 17.3 | 4.09 | 16.2 | 3.90 | |
| 90% | -19.8 | -20.0 | 7.5 | 3.64 | 7.4 | 3.89 | 7.4 | 4.03 | 7.4 | 4.17 | 7.4 | 4.16 | 7.4 | 4.23 |
| | -18.8 | -19.0 | 8.9 | 3.72 | 8.8 | 4.02 | 8.8 | 4.10 | 8.8 | 4.24 | 8.8 | 4.22 | 8.8 | 4.30 |
| | -16.7 | -17.0 | 10.2 | 3.87 | 10.2 | 4.09 | 10.2 | 4.16 | 10.2 | 4.30 | 10.2 | 4.25 | 10.1 | 4.40 |
| | -13.7 | -15.0 | 11.7 | 4.01 | 11.7 | 4.16 | 11.7 | 4.19 | 11.7 | 4.34 | 11.7 | 4.32 | 11.7 | 4.45 |
| | -11.8 | -13.0 | 12.6 | 4.08 | 12.6 | 4.18 | 12.6 | 4.26 | 12.6 | 4.37 | 12.6 | 4.42 | 12.5 | 4.51 |
| | -9.8 | -11.0 | 12.9 | 4.14 | 12.9 | 4.25 | 12.9 | 4.36 | 12.9 | 4.46 | 12.9 | 4.47 | 12.9 | 4.56 |
| | -9.5 | -10.0 | 13.9 | 4.18 | 13.9 | 4.35 | 13.9 | 4.42 | 13.9 | 4.52 | 13.9 | 4.54 | 13.8 | 4.65 |
| -8.5 | -9.1 | 14.4 | 4.24 | 14.4 | 4.41 | 14.4 | 4.47 | 14.4 | 4.58 | 14.4 | 4.59 | 14.2 | 4.72 | |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | |
|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -7.0 | -7.6 | 14.9 | 4.33 | 14.9 | 4.46 | 14.9 | 4.52 | 14.9 | 4.63 | 14.9 | 4.67 | 14.2 | 4.63 |
| | -5.0 | -5.6 | 15.7 | 4.39 | 15.7 | 4.51 | 15.7 | 4.61 | 15.7 | 4.70 | 15.7 | 4.75 | 14.2 | 4.57 |
| | -3.0 | -3.7 | 16.2 | 4.45 | 16.2 | 4.60 | 16.2 | 4.68 | 16.2 | 4.70 | 15.7 | 4.66 | 14.2 | 4.44 |
| | 0.0 | -0.7 | 17.2 | 4.49 | 17.2 | 4.68 | 16.7 | 4.59 | 16.2 | 4.61 | 15.7 | 4.60 | 14.2 | 4.20 |
| | 3.0 | 2.2 | 18.2 | 4.58 | 18.2 | 4.59 | 16.7 | 4.53 | 16.2 | 4.55 | 15.7 | 4.46 | 14.2 | 4.14 |
| | 5.0 | 4.1 | 18.3 | 4.66 | 18.2 | 4.52 | 16.7 | 4.41 | 16.2 | 4.42 | 15.7 | 4.22 | 14.2 | 4.10 |
| | 7.0 | 6.0 | 18.8 | 4.57 | 18.2 | 4.40 | 16.7 | 4.17 | 16.2 | 4.18 | 15.7 | 4.16 | 14.2 | 4.03 |
| | 9.0 | 7.9 | 18.8 | 4.50 | 18.2 | 4.17 | 16.7 | 4.10 | 16.2 | 4.12 | 15.7 | 4.13 | 14.2 | 3.88 |
| | 11.0 | 9.8 | 18.8 | 4.38 | 18.2 | 4.09 | 16.7 | 4.07 | 16.2 | 4.08 | 15.7 | 4.05 | 14.2 | 3.71 |
| | 13.0 | 11.8 | 18.8 | 4.15 | 18.2 | 4.06 | 16.7 | 3.99 | 16.2 | 4.00 | 15.7 | 3.90 | 14.2 | 3.58 |
| | 15.0 | 13.7 | 18.8 | 4.08 | 18.2 | 3.98 | 16.7 | 3.84 | 16.2 | 3.86 | 15.7 | 3.73 | 14.2 | 3.46 |
| 80% | -19.8 | -20.0 | 7.5 | 4.00 | 7.4 | 4.08 | 7.4 | 4.16 | 7.4 | 4.20 | 7.4 | 4.28 | 7.4 | 4.39 |
| | -18.8 | -19.0 | 8.9 | 4.07 | 8.8 | 4.15 | 8.8 | 4.19 | 8.8 | 4.27 | 8.8 | 4.38 | 8.8 | 4.44 |
| | -16.7 | -17.0 | 10.2 | 4.14 | 10.2 | 4.18 | 10.2 | 4.26 | 10.2 | 4.37 | 10.2 | 4.43 | 10.1 | 4.50 |
| | -13.7 | -15.0 | 11.7 | 4.17 | 11.7 | 4.24 | 11.7 | 4.36 | 11.7 | 4.43 | 11.7 | 4.49 | 11.7 | 4.55 |
| | -11.8 | -13.0 | 12.6 | 4.23 | 12.6 | 4.34 | 12.6 | 4.42 | 12.6 | 4.48 | 12.6 | 4.54 | 12.5 | 4.64 |
| | -9.8 | -11.0 | 12.9 | 4.33 | 12.9 | 4.40 | 12.9 | 4.47 | 12.9 | 4.53 | 12.9 | 4.62 | 12.9 | 4.71 |
| | -9.5 | -10.0 | 13.9 | 4.39 | 13.9 | 4.45 | 13.9 | 4.52 | 13.9 | 4.62 | 13.9 | 4.70 | 12.9 | 4.62 |
| | -8.5 | -9.1 | 14.4 | 4.44 | 14.4 | 4.50 | 14.4 | 4.61 | 14.4 | 4.69 | 13.9 | 4.61 | 12.9 | 4.56 |
| | -7.0 | -7.6 | 14.9 | 4.49 | 14.9 | 4.59 | 14.9 | 4.68 | 14.4 | 4.60 | 13.9 | 4.55 | 12.9 | 4.43 |
| | -5.0 | -5.6 | 15.7 | 4.58 | 15.7 | 4.67 | 14.9 | 4.59 | 14.4 | 4.54 | 13.9 | 4.42 | 12.9 | 4.19 |
| | -3.0 | -3.7 | 16.2 | 4.66 | 15.7 | 4.57 | 14.9 | 4.53 | 14.4 | 4.42 | 13.9 | 4.18 | 12.9 | 4.13 |
| | 0.0 | -0.7 | 17.2 | 4.56 | 15.7 | 4.51 | 14.9 | 4.41 | 14.4 | 4.18 | 13.9 | 4.12 | 12.9 | 4.09 |
| | 3.0 | 2.2 | 17.2 | 4.50 | 15.7 | 4.39 | 14.9 | 4.17 | 14.4 | 4.11 | 13.9 | 4.08 | 12.9 | 4.02 |
| | 5.0 | 4.1 | 17.2 | 4.38 | 15.7 | 4.16 | 14.9 | 4.10 | 14.4 | 4.08 | 13.9 | 4.00 | 12.9 | 3.87 |
| | 7.0 | 6.0 | 17.2 | 4.15 | 15.7 | 4.08 | 14.9 | 4.07 | 14.4 | 4.00 | 13.9 | 3.86 | 12.9 | 3.70 |
| | 9.0 | 7.9 | 17.2 | 4.07 | 15.7 | 4.05 | 14.9 | 3.99 | 14.4 | 3.85 | 13.9 | 3.69 | 12.9 | 3.57 |
| 11.0 | 9.8 | 17.2 | 4.04 | 15.7 | 3.97 | 14.9 | 3.84 | 14.4 | 3.68 | 13.9 | 3.56 | 12.9 | 3.45 | |
| 13.0 | 11.8 | 17.2 | 3.96 | 15.7 | 3.83 | 14.9 | 3.67 | 14.4 | 3.56 | 13.9 | 3.44 | 12.9 | 3.35 | |
| 15.0 | 13.7 | 17.2 | 3.82 | 15.7 | 3.67 | 14.9 | 3.55 | 14.4 | 3.43 | 13.9 | 3.34 | 12.9 | 3.20 | |

GMV-S224W/A-X

| TC—represents capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | | | | | | |
|---|-----------------------------|-------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Capacity collocation rate of indoor and outdoor units | Outdoor ambient temperature | | Indoor ambient temperature °C DB | | | | | | | | | | | |
| | | | 16 | | 18 | | 20 | | 21 | | 22 | | 24 | |
| | °C DB | °C WB | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| 100% | -19.8 | -20.0 | 16.0 | 5.27 | 15.9 | 5.49 | 15.9 | 5.72 | 15.8 | 5.83 | 15.8 | 5.94 | 15.7 | 6.16 |
| | -18.8 | -19.0 | 16.2 | 5.34 | 16.2 | 5.56 | 16.1 | 5.78 | 16.1 | 5.89 | 16.0 | 6.00 | 16.0 | 6.22 |
| | -16.7 | -17.0 | 16.8 | 5.49 | 16.7 | 5.70 | 16.7 | 5.91 | 16.7 | 6.02 | 16.7 | 6.12 | 16.7 | 6.33 |
| | -13.7 | -15.0 | 17.5 | 5.65 | 17.5 | 5.85 | 17.5 | 6.06 | 17.4 | 6.16 | 17.4 | 6.26 | 17.3 | 6.46 |
| | -11.8 | -13.0 | 18.3 | 5.82 | 18.3 | 6.00 | 18.2 | 6.20 | 18.2 | 6.30 | 18.2 | 6.17 | 18.1 | 6.59 |
| | -9.8 | -11.0 | 19.1 | 5.97 | 19.0 | 6.16 | 19.0 | 6.34 | 19.0 | 6.44 | 19.0 | 6.53 | 19.0 | 6.71 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | |
|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -9.5 | -10.0 | 19.6 | 6.06 | 19.5 | 6.24 | 19.5 | 6.42 | 19.4 | 6.51 | 19.4 | 6.60 | 19.4 | 6.78 |
| | -8.5 | -9.1 | 20.0 | 6.12 | 20.0 | 6.30 | 19.9 | 6.48 | 19.9 | 6.57 | 19.8 | 6.66 | 19.8 | 6.83 |
| | -7.0 | -7.6 | 20.7 | 6.24 | 20.7 | 6.42 | 20.6 | 6.58 | 20.6 | 6.67 | 20.6 | 6.76 | 20.6 | 6.93 |
| | -5.0 | -5.6 | 21.8 | 6.40 | 21.7 | 6.56 | 21.7 | 6.73 | 21.7 | 6.81 | 21.7 | 6.88 | 21.7 | 7.05 |
| | -3.0 | -3.7 | 22.9 | 6.55 | 22.9 | 6.70 | 22.8 | 6.85 | 22.8 | 6.93 | 22.8 | 7.01 | 21.8 | 6.71 |
| | 0.0 | -0.7 | 24.7 | 6.76 | 24.7 | 6.90 | 24.6 | 7.04 | 24.2 | 6.93 | 23.4 | 6.64 | 21.8 | 6.10 |
| | 3.0 | 2.2 | 26.7 | 6.95 | 26.6 | 7.08 | 25.0 | 6.55 | 24.2 | 6.30 | 23.4 | 6.05 | 21.8 | 5.55 |
| | 5.0 | 4.1 | 28.0 | 7.08 | 26.6 | 6.65 | 25.0 | 6.16 | 24.2 | 5.93 | 23.4 | 5.69 | 21.8 | 5.24 |
| | 7.0 | 6.0 | 28.2 | 6.72 | 26.6 | 6.25 | 25.0 | 5.80 | 24.2 | 5.58 | 23.4 | 5.36 | 21.8 | 4.93 |
| | 9.0 | 7.9 | 28.2 | 6.31 | 26.6 | 5.88 | 25.0 | 5.46 | 24.2 | 5.26 | 23.4 | 5.05 | 21.8 | 4.66 |
| | 11.0 | 9.8 | 28.2 | 5.94 | 26.6 | 5.54 | 25.0 | 5.15 | 24.2 | 4.96 | 23.4 | 4.77 | 21.8 | 4.40 |
| | 13.0 | 11.8 | 28.2 | 5.58 | 26.6 | 5.21 | 25.0 | 4.85 | 24.2 | 4.67 | 23.4 | 4.50 | 21.8 | 4.15 |
| | 15.0 | 13.7 | 28.2 | 5.27 | 26.6 | 4.92 | 25.0 | 4.58 | 24.2 | 4.41 | 23.4 | 4.25 | 21.8 | 3.93 |
| 90% | -19.8 | -20.0 | 15.9 | 5.66 | 15.8 | 5.86 | 15.8 | 6.06 | 15.7 | 6.16 | 15.7 | 6.27 | 15.7 | 6.46 |
| | -18.8 | -19.0 | 16.1 | 5.72 | 16.1 | 5.93 | 16.0 | 6.12 | 16.0 | 6.22 | 16.0 | 6.32 | 16.0 | 6.52 |
| | -16.7 | -17.0 | 16.7 | 5.87 | 16.7 | 6.06 | 16.7 | 6.24 | 16.7 | 6.34 | 16.6 | 6.43 | 16.6 | 6.62 |
| | -13.7 | -15.0 | 17.5 | 6.01 | 17.4 | 6.19 | 17.4 | 6.37 | 17.3 | 6.40 | 17.3 | 6.55 | 17.3 | 6.73 |
| | -11.8 | -13.0 | 18.2 | 6.15 | 18.2 | 6.33 | 18.1 | 6.50 | 18.1 | 6.59 | 18.1 | 6.67 | 18.0 | 6.85 |
| | -9.8 | -11.0 | 19.0 | 6.30 | 19.0 | 6.46 | 19.0 | 6.63 | 19.0 | 6.72 | 19.0 | 6.80 | 18.9 | 6.97 |
| | -9.5 | -10.0 | 19.5 | 6.37 | 19.4 | 6.54 | 19.4 | 6.70 | 19.4 | 6.78 | 19.4 | 6.86 | 19.4 | 7.02 |
| | -8.5 | -9.1 | 19.9 | 6.44 | 19.9 | 6.60 | 19.8 | 6.76 | 19.8 | 6.83 | 19.8 | 6.91 | 19.6 | 6.98 |
| | -7.0 | -7.6 | 20.6 | 6.55 | 20.6 | 6.70 | 20.6 | 6.85 | 20.6 | 6.93 | 20.6 | 7.01 | 19.6 | 6.67 |
| | -5.0 | -5.6 | 21.7 | 6.69 | 21.7 | 6.83 | 21.7 | 6.98 | 21.7 | 7.05 | 21.0 | 6.83 | 19.6 | 6.27 |
| | -3.0 | -3.7 | 22.8 | 6.82 | 22.8 | 6.20 | 22.5 | 6.98 | 21.7 | 6.70 | 21.0 | 6.43 | 19.6 | 5.91 |
| | 0.0 | -0.7 | 24.7 | 7.01 | 24.0 | 6.09 | 22.5 | 6.33 | 21.7 | 6.09 | 21.0 | 5.85 | 19.6 | 5.37 |
| | 3.0 | 2.2 | 25.4 | 6.68 | 24.0 | 6.22 | 22.5 | 5.77 | 21.7 | 5.55 | 21.0 | 5.33 | 19.6 | 4.91 |
| | 5.0 | 4.1 | 25.4 | 6.28 | 24.0 | 5.85 | 22.5 | 5.44 | 21.7 | 5.23 | 21.0 | 5.03 | 19.6 | 4.63 |
| | 7.0 | 6.0 | 25.4 | 5.91 | 24.0 | 5.51 | 22.5 | 5.12 | 21.7 | 4.93 | 21.0 | 4.75 | 19.6 | 4.38 |
| | 9.0 | 7.9 | 25.4 | 5.57 | 24.0 | 5.19 | 22.5 | 4.83 | 21.7 | 4.66 | 21.0 | 4.48 | 19.6 | 4.14 |
| 11.0 | 9.8 | 25.4 | 5.24 | 24.0 | 4.90 | 22.5 | 4.56 | 21.7 | 4.40 | 21.0 | 4.23 | 19.6 | 3.92 | |
| 13.0 | 11.8 | 25.4 | 4.93 | 24.0 | 4.62 | 22.5 | 4.30 | 21.7 | 4.15 | 21.0 | 4.00 | 19.6 | 3.70 | |
| 15.0 | 13.7 | 25.4 | 4.66 | 24.0 | 4.36 | 22.5 | 4.08 | 21.7 | 3.92 | 21.0 | 3.79 | 19.6 | 3.51 | |
| 80% | -19.8 | -20.0 | 15.8 | 6.06 | 15.7 | 6.23 | 15.7 | 6.41 | 15.7 | 6.50 | 15.6 | 6.59 | 15.6 | 6.76 |
| | -18.8 | -19.0 | 16.0 | 6.11 | 16.0 | 6.29 | 16.0 | 6.46 | 16.0 | 6.55 | 16.0 | 6.64 | 15.9 | 6.82 |
| | -16.7 | -17.0 | 16.7 | 6.24 | 16.6 | 6.40 | 16.6 | 6.58 | 16.6 | 6.66 | 16.6 | 6.74 | 16.5 | 6.91 |
| | -13.7 | -15.0 | 17.4 | 6.37 | 17.3 | 6.52 | 17.3 | 6.69 | 17.3 | 6.76 | 17.2 | 6.85 | 17.2 | 7.01 |
| | -11.8 | -13.0 | 18.1 | 6.49 | 18.1 | 6.65 | 18.0 | 6.80 | 18.0 | 6.88 | 18.0 | 6.96 | 17.5 | 6.77 |
| | -9.8 | -11.0 | 19.0 | 6.62 | 19.0 | 6.77 | 18.9 | 6.92 | 18.9 | 6.99 | 18.7 | 6.98 | 17.5 | 6.40 |
| | -9.5 | -10.0 | 19.4 | 6.69 | 19.4 | 6.83 | 19.4 | 6.98 | 19.4 | 7.05 | 18.7 | 6.77 | 17.5 | 6.21 |
| | -8.5 | -9.1 | 19.8 | 6.75 | 19.8 | 6.89 | 19.8 | 7.03 | 19.4 | 6.88 | 18.7 | 6.59 | 17.5 | 6.04 |
| | -7.0 | -7.6 | 20.6 | 6.85 | 20.6 | 6.98 | 20.0 | 6.83 | 19.4 | 6.56 | 18.7 | 6.30 | 17.5 | 5.80 |
| | -5.0 | -5.6 | 21.7 | 6.21 | 21.3 | 6.93 | 20.0 | 6.42 | 19.4 | 6.17 | 18.7 | 5.92 | 17.5 | 5.44 |
| | -3.0 | -3.7 | 22.5 | 6.25 | 21.3 | 6.52 | 20.0 | 6.04 | 19.4 | 5.84 | 18.7 | 5.58 | 17.5 | 5.14 |
| | 0.0 | -0.7 | 22.5 | 6.36 | 21.3 | 5.92 | 20.0 | 5.50 | 19.4 | 5.30 | 18.7 | 5.08 | 17.5 | 4.69 |
| 3.0 | 2.2 | 22.5 | 5.79 | 21.3 | 5.40 | 20.0 | 5.02 | 19.4 | 4.84 | 18.7 | 4.66 | 17.5 | 4.29 | |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 5.0 | 4.1 | 22.5 | 5.45 | 21.3 | 5.09 | 20.0 | 4.74 | 19.4 | 4.56 | 18.7 | 4.40 | 17.5 | 4.06 |
| | 7.0 | 6.0 | 22.5 | 5.14 | 21.3 | 4.81 | 20.0 | 4.47 | 19.4 | 4.32 | 18.7 | 4.16 | 17.5 | 3.84 |
| | 9.0 | 7.9 | 22.5 | 4.85 | 21.3 | 4.53 | 20.0 | 4.25 | 19.4 | 4.08 | 18.7 | 3.93 | 17.5 | 3.64 |
| | 11.0 | 9.8 | 22.5 | 4.58 | 21.3 | 4.29 | 20.0 | 4.00 | 19.4 | 3.86 | 18.7 | 3.72 | 17.5 | 3.45 |
| | 13.0 | 11.8 | 22.5 | 4.32 | 21.3 | 4.05 | 20.0 | 3.78 | 19.4 | 3.65 | 18.7 | 3.52 | 17.5 | 3.26 |
| | 15.0 | 13.7 | 22.5 | 4.08 | 21.3 | 3.83 | 20.0 | 3.59 | 19.4 | 3.46 | 18.7 | 3.34 | 17.5 | 3.10 |

GMV-S280W/A-X

TC—represents capacity of outdoor unit; PI—represents power of outdoor unit

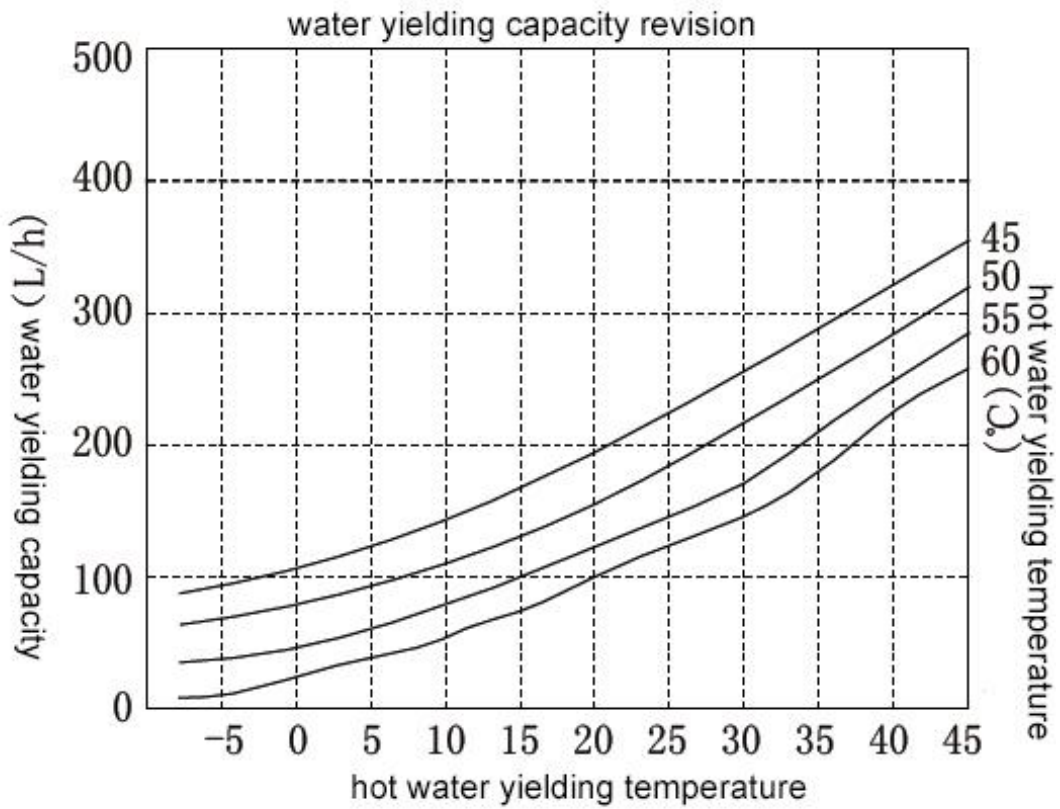
| Capacity collocation rate of indoor and outdoor units | Outdoor ambient temperature | | Indoor ambient temperature °C DB | | | | | | | | | | | |
|---|-----------------------------|-------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | | | 16 | | 18 | | 20 | | 21 | | 22 | | 24 | |
| | °C | DB | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -19.8 | -20.0 | 20.1 | 6.91 | 20.0 | 7.19 | 20.0 | 7.49 | 19.9 | 7.64 | 19.9 | 7.78 | 19.8 | 8.07 |
| | -18.8 | -19.0 | 20.4 | 7.00 | 20.4 | 7.28 | 20.3 | 7.57 | 20.3 | 7.72 | 20.2 | 7.87 | 20.2 | 8.15 |
| | -16.7 | -17.0 | 21.2 | 7.19 | 21.1 | 7.47 | 21.1 | 7.75 | 21.1 | 7.89 | 21.0 | 8.02 | 21.0 | 8.30 |
| | -13.7 | -15.0 | 22.1 | 7.40 | 22.0 | 7.67 | 22.0 | 7.94 | 21.9 | 8.07 | 21.9 | 8.20 | 21.8 | 8.47 |
| | -11.8 | -13.0 | 23.0 | 7.62 | 23.0 | 7.87 | 22.9 | 8.12 | 22.9 | 8.25 | 22.9 | 8.08 | 22.8 | 8.64 |
| | -9.8 | -11.0 | 24.1 | 7.83 | 24.0 | 8.07 | 24.0 | 8.31 | 24.0 | 8.44 | 23.9 | 8.56 | 23.9 | 8.79 |
| | -9.5 | -10.0 | 24.7 | 7.94 | 24.6 | 8.17 | 24.6 | 8.41 | 24.5 | 8.53 | 24.5 | 8.65 | 24.4 | 8.88 |
| | -8.5 | -9.1 | 25.2 | 8.02 | 25.2 | 8.26 | 25.1 | 8.49 | 25.1 | 8.61 | 25.0 | 8.72 | 25.0 | 8.95 |
| | -7.0 | -7.6 | 26.1 | 8.18 | 26.1 | 8.41 | 26.0 | 8.63 | 26.0 | 8.74 | 26.0 | 8.85 | 25.9 | 9.08 |
| | -5.0 | -5.6 | 27.5 | 8.39 | 27.4 | 8.60 | 27.4 | 8.81 | 27.3 | 8.92 | 27.3 | 9.02 | 27.3 | 9.24 |
| | -3.0 | -3.7 | 28.8 | 8.58 | 28.8 | 8.77 | 28.7 | 8.98 | 28.7 | 9.08 | 28.7 | 9.18 | 27.5 | 8.79 |
| | 0.0 | -0.7 | 31.1 | 8.86 | 31.1 | 9.04 | 31.0 | 9.23 | 30.5 | 9.08 | 29.5 | 8.70 | 27.5 | 7.99 |
| | 3.0 | 2.2 | 33.6 | 9.11 | 33.5 | 9.28 | 31.5 | 8.59 | 30.5 | 8.25 | 29.5 | 7.93 | 27.5 | 7.27 |
| | 5.0 | 4.1 | 35.3 | 9.28 | 33.5 | 8.71 | 31.5 | 8.07 | 30.5 | 7.77 | 29.5 | 7.46 | 27.5 | 6.86 |
| | 7.0 | 6.0 | 35.5 | 8.80 | 33.5 | 8.19 | 31.5 | 7.60 | 30.5 | 7.31 | 29.5 | 7.03 | 27.5 | 6.46 |
| | 9.0 | 7.9 | 35.5 | 8.27 | 33.5 | 7.71 | 31.5 | 7.16 | 30.5 | 6.89 | 29.5 | 6.62 | 27.5 | 6.10 |
| 11.0 | 9.8 | 35.5 | 7.79 | 33.5 | 7.26 | 31.5 | 6.75 | 30.5 | 6.49 | 29.5 | 6.25 | 27.5 | 5.76 | |
| 13.0 | 11.8 | 35.5 | 7.31 | 33.5 | 6.83 | 31.5 | 6.36 | 30.5 | 6.12 | 29.5 | 5.89 | 27.5 | 5.44 | |
| 15.0 | 13.7 | 35.5 | 6.90 | 33.5 | 6.44 | 31.5 | 6.00 | 30.5 | 5.78 | 29.5 | 5.57 | 27.5 | 5.15 | |
| 90% | -19.8 | -20.0 | 20.0 | 7.42 | 19.9 | 7.68 | 19.9 | 7.95 | 19.8 | 8.07 | 19.8 | 8.21 | 19.8 | 8.47 |
| | -18.8 | -19.0 | 20.3 | 7.50 | 20.3 | 7.77 | 20.2 | 8.02 | 20.2 | 8.15 | 20.2 | 8.28 | 20.1 | 8.54 |
| | -16.7 | -17.0 | 21.1 | 7.69 | 21.0 | 7.94 | 21.0 | 8.18 | 21.0 | 8.31 | 20.9 | 8.43 | 20.9 | 8.68 |
| | -13.7 | -15.0 | 22.0 | 7.88 | 21.9 | 8.11 | 21.9 | 8.35 | 21.8 | 8.39 | 21.8 | 8.59 | 21.8 | 8.82 |
| | -11.8 | -13.0 | 22.9 | 8.06 | 22.9 | 8.29 | 22.8 | 8.52 | 22.8 | 8.64 | 22.8 | 8.74 | 22.7 | 8.97 |
| | -9.8 | -11.0 | 24.0 | 8.25 | 24.0 | 8.47 | 23.9 | 8.69 | 23.9 | 8.80 | 23.9 | 8.91 | 23.8 | 9.13 |
| | -9.5 | -10.0 | 24.6 | 8.35 | 24.5 | 8.57 | 24.5 | 8.77 | 24.4 | 8.88 | 24.4 | 8.99 | 24.4 | 9.20 |
| | -8.5 | -9.1 | 25.1 | 8.44 | 25.1 | 8.65 | 25.0 | 8.85 | 25.0 | 8.95 | 25.0 | 9.06 | 24.7 | 9.15 |
| | -7.0 | -7.6 | 26.0 | 8.58 | 26.0 | 8.77 | 25.9 | 8.98 | 25.9 | 9.08 | 25.9 | 9.18 | 24.7 | 8.73 |
| | -5.0 | -5.6 | 27.4 | 8.76 | 27.3 | 8.95 | 27.3 | 9.14 | 27.3 | 9.24 | 26.5 | 8.95 | 24.7 | 8.21 |
| | -3.0 | -3.7 | 28.7 | 8.93 | 28.7 | 8.12 | 28.4 | 9.15 | 27.4 | 8.78 | 26.5 | 8.43 | 24.7 | 7.74 |
| 0.0 | -0.7 | 31.1 | 9.19 | 30.2 | 7.97 | 28.4 | 8.30 | 27.4 | 7.97 | 26.5 | 7.66 | 24.7 | 7.04 | |

GMV5 Home DC Inverter Multi VRF Units

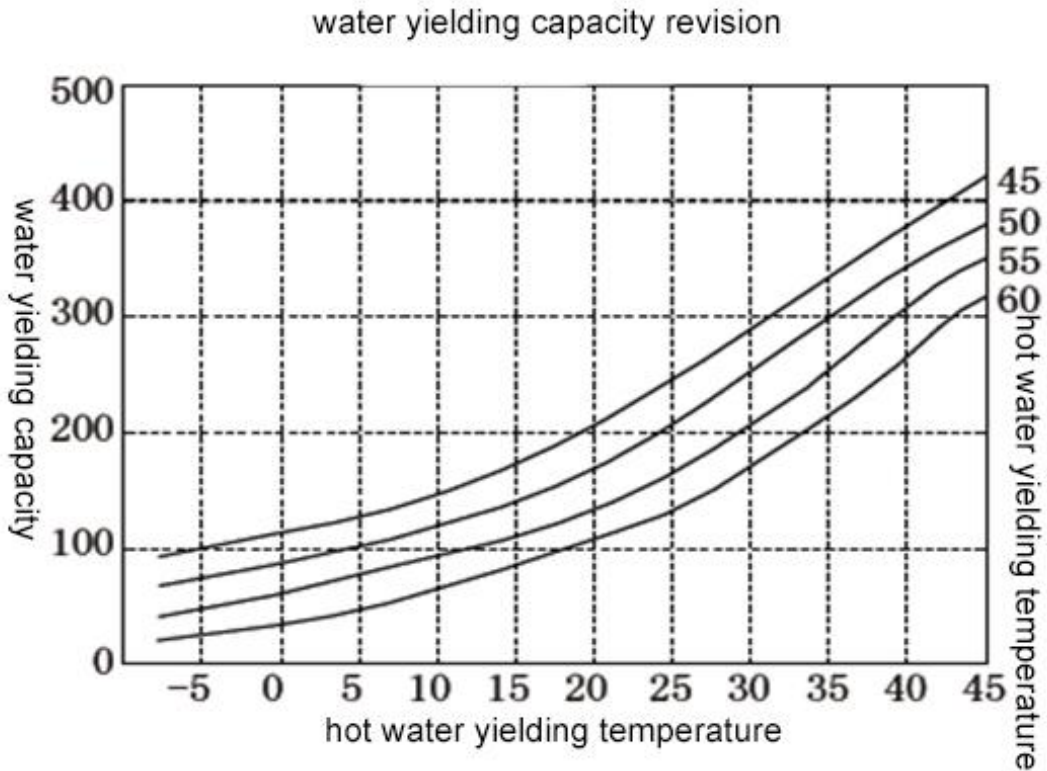
| | | | | | | | | | | | | | | |
|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 3.0 | 2.2 | 32.0 | 8.75 | 30.2 | 8.15 | 28.4 | 7.56 | 27.4 | 7.27 | 26.5 | 6.99 | 24.7 | 6.43 |
| | 5.0 | 4.1 | 32.0 | 8.23 | 30.2 | 7.67 | 28.4 | 7.13 | 27.4 | 6.85 | 26.5 | 6.59 | 24.7 | 6.07 |
| | 7.0 | 6.0 | 32.0 | 7.74 | 30.2 | 7.22 | 28.4 | 6.71 | 27.4 | 6.46 | 26.5 | 6.22 | 24.7 | 5.73 |
| | 9.0 | 7.9 | 32.0 | 7.29 | 30.2 | 6.80 | 28.4 | 6.33 | 27.4 | 6.10 | 26.5 | 5.87 | 24.7 | 5.42 |
| | 11.0 | 9.8 | 32.0 | 6.87 | 30.2 | 6.42 | 28.4 | 5.98 | 27.4 | 5.76 | 26.5 | 5.55 | 24.7 | 5.13 |
| | 13.0 | 11.8 | 32.0 | 6.46 | 30.2 | 6.05 | 28.4 | 5.64 | 27.4 | 5.44 | 26.5 | 5.24 | 24.7 | 4.85 |
| | 15.0 | 13.7 | 32.0 | 6.11 | 30.2 | 5.71 | 28.4 | 5.34 | 27.4 | 5.13 | 26.5 | 4.96 | 24.7 | 4.60 |
| 80% | -19.8 | -20.0 | 19.9 | 7.94 | 19.8 | 8.16 | 19.8 | 8.40 | 19.8 | 8.52 | 19.7 | 8.64 | 19.7 | 8.86 |
| | -18.8 | -19.0 | 20.2 | 8.00 | 20.2 | 8.24 | 20.1 | 8.47 | 20.1 | 8.59 | 20.1 | 8.70 | 20.0 | 8.93 |
| | -16.7 | -17.0 | 21.0 | 8.17 | 20.9 | 8.39 | 20.9 | 8.62 | 20.9 | 8.72 | 20.9 | 8.83 | 20.8 | 9.05 |
| | -13.7 | -15.0 | 21.9 | 8.34 | 21.8 | 8.55 | 21.8 | 8.76 | 21.8 | 8.86 | 21.7 | 8.97 | 21.7 | 9.19 |
| | -11.8 | -13.0 | 22.8 | 8.51 | 22.8 | 8.71 | 22.7 | 8.91 | 22.7 | 9.01 | 22.7 | 9.12 | 22.0 | 8.87 |
| | -9.8 | -11.0 | 23.9 | 8.68 | 23.9 | 8.87 | 23.8 | 9.07 | 23.8 | 9.16 | 23.6 | 9.14 | 22.0 | 8.38 |
| | -9.5 | -10.0 | 24.5 | 8.76 | 24.4 | 8.95 | 24.4 | 9.14 | 24.4 | 9.24 | 23.6 | 8.87 | 22.0 | 8.13 |
| | -8.5 | -9.1 | 25.0 | 8.84 | 25.0 | 9.03 | 24.9 | 9.21 | 24.4 | 9.01 | 23.6 | 8.64 | 22.0 | 7.92 |
| | -7.0 | -7.6 | 25.9 | 8.97 | 25.9 | 9.15 | 25.2 | 8.95 | 24.4 | 8.60 | 23.6 | 8.25 | 22.0 | 7.60 |
| | -5.0 | -5.6 | 27.3 | 8.14 | 26.8 | 9.08 | 25.2 | 8.41 | 24.4 | 8.08 | 23.6 | 7.76 | 22.0 | 7.13 |
| | -3.0 | -3.7 | 28.4 | 8.19 | 26.8 | 8.55 | 25.2 | 7.92 | 24.4 | 7.65 | 23.6 | 7.31 | 22.0 | 6.73 |
| | 0.0 | -0.7 | 28.4 | 8.33 | 26.8 | 7.76 | 25.2 | 7.20 | 24.4 | 6.94 | 23.6 | 6.66 | 22.0 | 6.14 |
| | 3.0 | 2.2 | 28.4 | 7.59 | 26.8 | 7.08 | 25.2 | 6.58 | 24.4 | 6.34 | 23.6 | 6.10 | 22.0 | 5.63 |
| | 5.0 | 4.1 | 28.4 | 7.15 | 26.8 | 6.67 | 25.2 | 6.21 | 24.4 | 5.98 | 23.6 | 5.76 | 22.0 | 5.32 |
| | 7.0 | 6.0 | 28.4 | 6.73 | 26.8 | 6.31 | 25.2 | 5.86 | 24.4 | 5.66 | 23.6 | 5.45 | 22.0 | 5.03 |
| | 9.0 | 7.9 | 28.4 | 6.36 | 26.8 | 5.94 | 25.2 | 5.57 | 24.4 | 5.34 | 23.6 | 5.15 | 22.0 | 4.77 |
| | 11.0 | 9.8 | 28.4 | 6.00 | 26.8 | 5.62 | 25.2 | 5.24 | 24.4 | 5.05 | 23.6 | 4.88 | 22.0 | 4.52 |
| 13.0 | 11.8 | 28.4 | 5.66 | 26.8 | 5.30 | 25.2 | 4.95 | 24.4 | 4.78 | 23.6 | 4.61 | 22.0 | 4.27 | |
| 15.0 | 13.7 | 28.4 | 5.35 | 26.8 | 5.02 | 25.2 | 4.70 | 24.4 | 4.53 | 23.6 | 4.37 | 22.0 | 4.07 | |

7.4 Revision coefficient of heating water capacity

GMV-S120WL/A-S、GMV-S140WL/A-S、GMV-S160WL/A-S

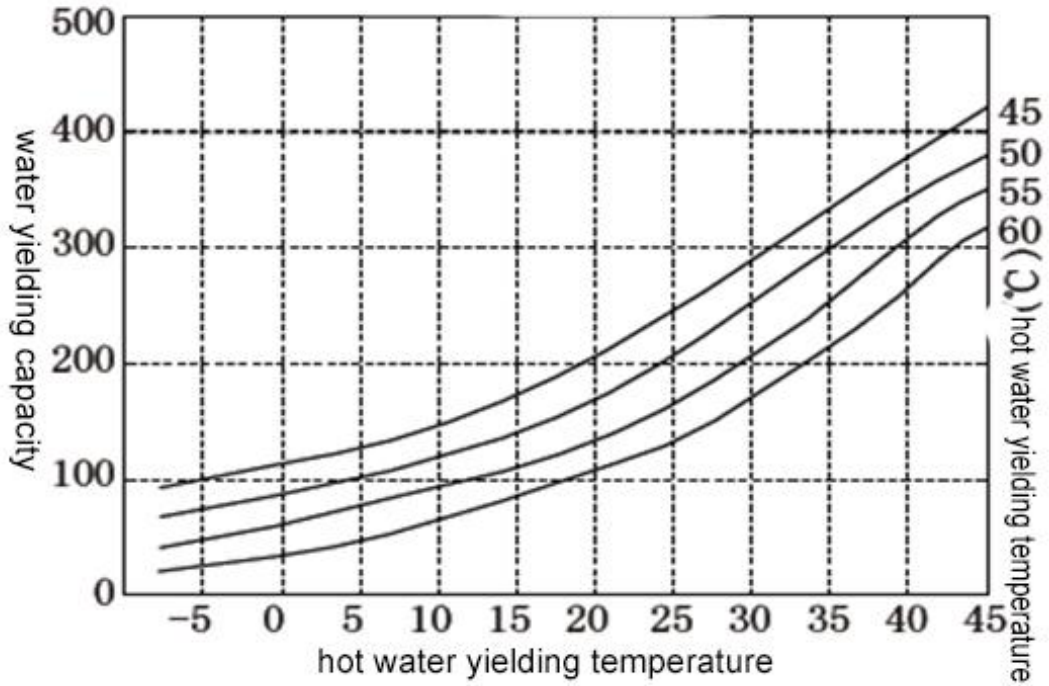


Outdoor unit: GMV-S224W/A-X



Outdoor unit: GMV-S280W/A-X

water yielding capacity revision



7.5 Revision of floor heating capacity

Outdoor unit: GMV-S120WL/A-S

| Outdoor temperature | | Water yielding temperature (°C) | | | | | | | |
|---------------------|------|---------------------------------|-------|----------|-------|----------|-------|----------|-------|
| | | 30 | | 35 | | 40 | | 45 | |
| DB°C | WB°C | Capacity | Power | Capacity | Power | Capacity | Power | Capacity | Power |
| -9.8 | -11 | 9.2 | 2.94 | 7.7 | 2.45 | 6.1 | 2.47 | 7.1 | 2.89 |
| -9.5 | -10 | 9.5 | 2.97 | 8.0 | 2.48 | 6.5 | 2.50 | 7.0 | 2.86 |
| -8.5 | -9.1 | 9.9 | 3.01 | 8.2 | 2.50 | 6.9 | 2.53 | 6.9 | 2.83 |
| -5 | -5.6 | 10.8 | 3.10 | 9.0 | 2.59 | 8.0 | 2.62 | 6.8 | 2.72 |
| -3 | -3.7 | 10.4 | 3.07 | 8.7 | 2.56 | 7.9 | 2.62 | 7.1 | 2.78 |
| 0 | -0.7 | 9.9 | 3.02 | 8.3 | 2.52 | 7.7 | 2.61 | 7.5 | 2.87 |
| 3 | 2.2 | 11.9 | 3.15 | 9.9 | 2.63 | 9.6 | 2.92 | 9.1 | 3.04 |
| 5 | 4.1 | 13.2 | 3.24 | 11.0 | 2.70 | 10.8 | 3.13 | 10.2 | 3.16 |
| 7 | 6 | 14.5 | 3.33 | 12.1 | 2.77 | 12.0 | 3.34 | 11.3 | 3.27 |
| 9 | 7.9 | 14.6 | 3.39 | 13.5 | 2.83 | 12.8 | 3.16 | 12.3 | 3.32 |
| 15 | 13.7 | 14.6 | 3.42 | 14.6 | 2.87 | 14.6 | 3.17 | 14.6 | 3.44 |

Outdoor unit: GMV-S140WL/A-S

| Outdoor temperature | | Water yielding temperature (°C) | | | | | | | |
|---------------------|------|---------------------------------|-------|----------|-------|----------|-------|----------|-------|
| | | 30 | | 35 | | 40 | | 45 | |
| DB°C | WB°C | Capacity | Power | Capacity | Power | Capacity | Power | Capacity | Power |
| -9.8 | -11 | 10.8 | 3.52 | 9.0 | 2.94 | 7.1 | 2.96 | 8.2 | 3.47 |
| -9.5 | -10 | 11.1 | 3.56 | 9.3 | 2.97 | 7.6 | 3.00 | 8.2 | 3.43 |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| -8.5 | -9.1 | 11.5 | 3.60 | 9.6 | 3.00 | 8.0 | 3.03 | 8.1 | 3.38 |
| -5 | -5.6 | 12.6 | 3.71 | 10.5 | 3.10 | 9.4 | 3.14 | 7.9 | 3.26 |
| -3 | -3.7 | 12.2 | 3.68 | 10.1 | 3.06 | 9.2 | 3.13 | 8.2 | 3.33 |
| 0 | -0.7 | 11.6 | 3.62 | 9.7 | 3.02 | 9.0 | 3.13 | 8.7 | 3.43 |
| 3 | 2.2 | 13.9 | 3.78 | 11.6 | 3.15 | 11.2 | 3.50 | 10.7 | 3.64 |
| 5 | 4.1 | 15.4 | 3.88 | 12.8 | 3.23 | 12.6 | 3.75 | 11.9 | 3.78 |
| 7 | 6 | 16.9 | 3.98 | 14.1 | 3.32 | 14.0 | 4.00 | 13.2 | 3.92 |
| 9 | 7.9 | 17.1 | 4.06 | 15.7 | 3.38 | 14.9 | 3.79 | 14.3 | 3.98 |
| 15 | 13.7 | 17.1 | 4.09 | 17.1 | 3.43 | 17.1 | 3.79 | 17.1 | 4.12 |

Outdoor unit: GMV-S160WL/A-S

| Outdoor temperature | | Water yielding temperature (°C) | | | | | | | |
|---------------------|------|---------------------------------|-------|----------|-------|----------|-------|----------|-------|
| | | 30 | | 35 | | 40 | | 45 | |
| DB°C | WB°C | Capacity | Power | Capacity | Power | Capacity | Power | Capacity | Power |
| -9.8 | -11 | 12.3 | 4.14 | 10.3 | 3.45 | 8.2 | 3.49 | 9.4 | 4.08 |
| -9.5 | -10 | 12.7 | 4.19 | 10.6 | 3.49 | 8.7 | 3.53 | 9.3 | 4.03 |
| -8.5 | -9.1 | 13.1 | 4.23 | 10.9 | 3.53 | 9.2 | 3.57 | 9.3 | 3.98 |
| -5 | -5.6 | 14.3 | 4.37 | 12.0 | 3.64 | 10.7 | 3.69 | 9.0 | 3.84 |
| -3 | -3.7 | 13.9 | 4.32 | 11.6 | 3.60 | 10.5 | 3.69 | 9.4 | 3.92 |
| 0 | -0.7 | 13.3 | 4.26 | 11.1 | 3.55 | 10.3 | 3.68 | 10.0 | 4.04 |
| 3 | 2.2 | 15.8 | 4.44 | 13.2 | 3.70 | 12.7 | 4.12 | 12.2 | 4.28 |
| 5 | 4.1 | 17.6 | 4.56 | 14.6 | 3.80 | 14.4 | 4.41 | 13.6 | 4.45 |
| 7 | 6 | 19.3 | 4.69 | 16.1 | 3.91 | 16.0 | 4.71 | 15.1 | 4.61 |
| 9 | 7.9 | 19.5 | 4.78 | 17.9 | 3.98 | 17.1 | 4.46 | 16.4 | 4.68 |
| 15 | 13.7 | 19.5 | 4.81 | 19.5 | 4.04 | 19.5 | 4.46 | 19.5 | 4.85 |

Outdoor unit: GMV-S224W/A-X

TC—represents floor heating capacity of outdoor unit; PI—represents power of outdoor unit

| Outdoor ambient temperature °C | | Water yielding temperature °C | | | | | | | |
|--------------------------------|-------|-------------------------------|------|------|------|------|------|------|------|
| | | 30 | | 35 | | 40 | | 45 | |
| °C DB | °C WB | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW |
| -7 | -7.6 | 19.7 | 4.86 | 19.3 | 5.86 | 18.8 | 6.48 | 18.1 | 7.01 |
| -5 | -5.6 | 19.9 | 4.95 | 19.7 | 5.96 | 19.3 | 6.59 | 18.6 | 7.14 |
| -3 | -3.7 | 20.4 | 5.01 | 20.2 | 6.04 | 19.7 | 6.68 | 19.0 | 7.25 |
| 0 | -0.7 | 21.3 | 4.71 | 20.8 | 5.89 | 20.4 | 6.71 | 19.5 | 7.94 |
| 3 | 2.2 | 22.4 | 4.40 | 22.4 | 5.49 | 22.4 | 6.26 | 20.2 | 7.14 |
| 5 | 4.1 | 22.4 | 4.23 | 22.4 | 5.29 | 22.4 | 6.03 | 22.4 | 6.88 |
| 7 | 6 | 22.4 | 4.07 | 22.4 | 5.09 | 22.4 | 5.80 | 22.4 | 6.61 |
| 9 | 7.9 | 22.4 | 3.92 | 22.4 | 4.90 | 22.4 | 5.59 | 22.4 | 6.37 |
| 11 | 9.8 | 22.4 | 3.78 | 22.4 | 4.72 | 22.4 | 5.38 | 22.4 | 6.14 |
| 13 | 11.8 | 22.4 | 3.64 | 22.4 | 4.55 | 22.4 | 5.19 | 22.4 | 5.92 |
| 15 | 13.7 | 22.4 | 3.52 | 22.4 | 4.40 | 22.4 | 5.02 | 22.4 | 5.73 |

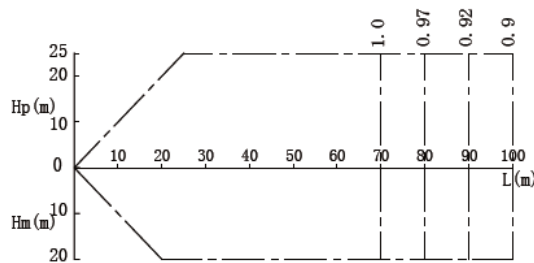
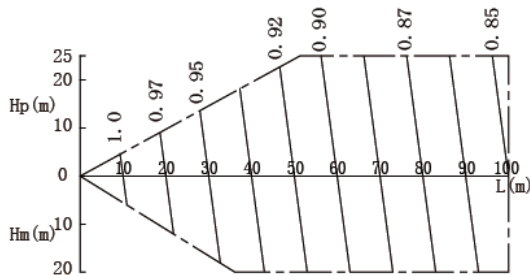
GMV5 Home DC Inverter Multi VRF Units

Outdoor unit: GMV-S280W/A-X

| TC—represents floor heating capacity of outdoor unit; PI—represents power of outdoor unit | | | | | | | | | |
|---|-------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|
| Outdoor ambient temperature °C | | Water yielding temperature °C | | | | | | | |
| | | 30 | | 35 | | 40 | | 45 | |
| °C DB | °C WB | TC kW | PI kW | TC kW | PI kW | TC kW | PI kW | TC kW | PI kW |
| -7 | -7.6 | 24.6 | 6.37 | 24.1 | 7.68 | 23.5 | 8.50 | 22.7 | 9.19 |
| -5 | -5.6 | 24.9 | 6.48 | 24.6 | 7.81 | 24.1 | 8.64 | 23.2 | 9.36 |
| -3 | -3.7 | 25.5 | 6.56 | 25.2 | 7.92 | 24.6 | 8.76 | 23.8 | 9.50 |
| 0 | -0.7 | 26.6 | 6.17 | 26.0 | 7.71 | 25.5 | 8.79 | 24.4 | 10.40 |
| 3 | 2.2 | 28.0 | 5.76 | 28.0 | 7.20 | 28.0 | 8.21 | 25.2 | 9.36 |
| 5 | 4.1 | 28.0 | 5.55 | 28.0 | 6.93 | 28.0 | 7.90 | 28.0 | 9.01 |
| 7 | 6 | 28.0 | 5.33 | 28.0 | 6.67 | 28.0 | 7.60 | 28.0 | 8.67 |
| 9 | 7.9 | 28.0 | 5.14 | 28.0 | 6.42 | 28.0 | 7.32 | 28.0 | 8.35 |
| 11 | 9.8 | 28.0 | 4.95 | 28.0 | 6.19 | 28.0 | 7.05 | 28.0 | 8.05 |
| 13 | 11.8 | 28.0 | 4.77 | 28.0 | 5.97 | 28.0 | 6.80 | 28.0 | 7.76 |
| 15 | 13.7 | 28.0 | 4.61 | 28.0 | 5.77 | 28.0 | 6.57 | 28.0 | 7.51 |

7.6 Revision of length and fall difference of connecting pipe

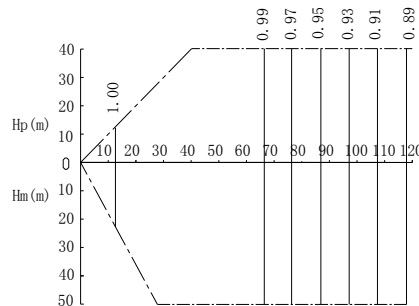
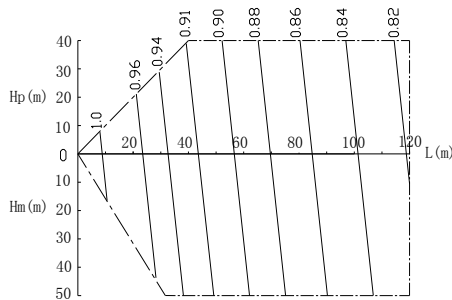
GMV-S120WL/A-S, GMV-S140WL/A-S, GMV-S160WL/A-S



1) Change rate of cooling capacity

GMV-S224W/A-X, GMV-S280W/A-X

2) Change rate of heating capacity



1) Change rate of cooling capacity

2) Change rate of heating capacity

Instruction:

- Hp: Height difference (m) between two units when indoor unit is in lower position of outdoor unit;

- 4) Hm: Height difference (m) between two units when indoor unit is in higher position of outdoor unit;
- 5) L: One way equivalent pipe length

7.7 Heating frosting revision factor

When outdoor environment satisfies certain conditions (temperature and humidity conditions), unit may appear frosting or defrosting situation, which will weaken heating capacity of whole unit, thus please calculate frosting revision factor for heating load model selection.

Frosting revision factor is as below:

| | | | | | | | | | |
|---|-----|------|------|------|------|-----|------|-----|---|
| Air inlet dry bulb temperature of outdoor heat exchanger (°C/RH85%) | -11 | -9 | -7 | -5 | -3 | 0 | 3 | 5 | 7 |
| Revision factor of whole unit (defrosting) capacity | 1 | 0.98 | 0.96 | 0.94 | 0.88 | 0.8 | 0.84 | 0.9 | 1 |

8. Product Model Selection

8.1 Notices for model selection

8.1.1 Model selection and installation

| Item | Contents | Instruction |
|----------------------------------|---|--|
| Model selection and installation | This unit must connect to indoor unit of air conditioner, and total rated capacity of indoor unit should account for 80%~100% of rated capacity of outdoor unit | If it's too low, it will impact defrosting effect, and if it's too high, it will increase energy consumption of heating water in winter; |
| | For design and installation of embedding pipe of floor heating: clearance between floor heating pipes should be within 100~150mm, and pipe diameter should be as large as possible within the selectable range (it is recommended to be over DN20); | 1. Heat pump belongs to low-temperature heat source, the water yielding temperature can be 35~40°C under high energy efficiency. So when designing floor heating, please do not design according to centralized heating of boiler. 2. If clearance between floor heating pipes is too large, and pipe diameter is too small, it will increase heat load and water resistance, which will cause low heat exchange efficiency and increase of energy consumption. |
| | Floor heating should be controlled by different rooms, and install floor heating shunt valve (floor heating performer). Floor heating can be controlled for designated room. New generation hot water generator can directly control floor heating shunt valve, for specific operation can refer to instruction manual of hot water generator. | It can avoid turning on floor heating of all the rooms. This function is energy-saving. |

GMV5 Home DC Inverter Multi VRF Units

| | | |
|--|--|--|
| | <p>Route quantity of water knockout drum and water collector should not be over 6, if it's over 6, it should be divided or combined. Water knockout drum (floor heating shunt valve) should install electric shunt valve (single phase 220V~, normally closed type), and should connect power cord to electric box of Gree generator, and automatically controlled by generator. Set wired controller of air conditioner to control shunt valve of designated room. For specific operation please refer to circuit diagram of generator and instruction manual of generator.</p> | <p>It can avoid turning on floor heating of all the rooms. This function is energy-saving. Wired controller for controlling on and off of shunt valve of designated room is provided by Gree (it should set linkage function). There is no need for users to purchase floor heating temperature controller separately.</p> |
| | <p>When installing floor heating, resistance of water system should be calculated to decide whether it needs to install engineering water pump. Generator provides external pipelines with 1.7m³/flow and 6m delivery lift. When water pump in generator cannot satisfy the requirement of delivery lift, it can externally connect to engineering water pump. Recommended model of engineering water pump: Wilo RL-25/7.5. Engineering water pump should connect to electric box of Gree generator, and is automatically controlled by generator, for specific operation please refer to circuit diagram of generator;</p> | <p>If resistance of water system is great and there is no engineering water pump, or delivery lift of engineering water pump is relatively low, it will cause small water flow and poor heating effect that cannot reach the setting heating temperature, and energy consumption of unit will be large;</p> |
| | <p>Install 3 kg-force dropping valve in closed circulating water system between water tank and hot water generator. Dropping valve has been packed with generator as accessory.</p> | <p>When water pressure becomes large, safety valve of hot water generator will leak water and will impact water heating effect;</p> |
| | <p>In package of generator, there are C valve and D valve for water system, please install according to actual situation; please note that even only install water tank or only install floor heating for generator, C valve and D valve should be installed.</p> | <p>Install C valve and D valve in water system can switch between heating water mode and floor heating mode. Please note that if it only installs water tank, C valve should be installed. If it only installs floor heating function, D valve should be installed.</p> |

8.1.2 Usage

| Item | Contents |
|---------------------|---|
| Using hot water | It is suggested that in summer, temperature of hot water can be set around 45°C; in winter, temperature of hot water can be set to be 50°C or below 50°C. |
| | It's better to use hot water in higher temperature of a day in winter (It can set via preset, timer, sunflower and related functions, preset and timer functions are circularly effective). |
| Using floor heating | Before using floor heating function, please start up the function for preheating. Please conduct preheating 4~6 hours before using the floor heating function; debugging should be conducted 12 hours before using floor heating function, and should use after the walls are dried, which is more energy-saving; |
| | If user wants to turn on "air conditioner heating and floor heating", then the total load should not be over rated heating capacity of outdoor unit, otherwise the heating effect will be weakened. |
| | If floor heating effect is poor, please turn off the air conditioner in the same room, or turn on the air conditioner and floor heating in other rooms. |

8.2 Overall Model Selection Steps

8.2.1 Air conditioner+heating water+floor heating, air conditioner+floor heating

- 1) Define using demand as: air conditioner+heating water+floor heating, air conditioner+floor heating.
- 2) For defining model selection and collocation of outdoor unit, indoor unit, generator and water tank, please refer to "VI. Product model selection and collocation".
- 3) Model selection of air conditioner (indoor unit, outdoor unit) ——according to air conditioning load of room (according to cooling load or heating load), and then select indoor unit and outdoor unit; procedures for model selection are the same as that of general multi VRF unit.
- 4) Model selection of generator——according to floor heating load of room to select generator; quantity of generator should be ≤ maximum allowable quantity of generator for connecting outdoor unit; actual floor heating capacity of generator should satisfy requirement of floor heating load.
- 5) Model selection of water tank——according to hot water using demand of user to select model of water tank; quantity of water tank should be ≤ quantity of generator; if using method is "air conditioner+floor heating", then skip this step.
- 6) Floor heating engineering design (pipe distance, pipe diameter, route quantity of coil pipes of each room, quantity and layout of)

8.2.2 Air conditioner+heating water

- 1) Define using demand of user as: air conditioner + heating water.
- 2) For defining model selection and collocation of outdoor unit, indoor unit, generator and water tank, please refer to "VI. Product model selection and collocation".
- 3) Model selection of air conditioner (indoor unit, outdoor unit) ——according to air conditioning load of room (according to cooling load or heating load), and then select

indoor unit and outdoor unit; procedures for model selection are the same as that of general multi VRF unit.

- 4) Model selection of water tank——select model of water tank according to water using demand of user; capacity of inner-coil water tank (tie-in generator) is 200/300/350/400L.
- 5) Model selection of generator——select generator according to quantity of water tank; quantity of inner-coil water tank should equal to quantity of generator; quantity of generator should be ≤ maximum allowable quantity of generator for connecting outdoor unit.

8.3 Model selection example 1: air conditioner + heating water + floor heating, air conditioner + floor heating

8.3.1 Basic conditions

Applicable location: general villa.

Temperature conditions: take cooling load as principle of model selection --- outdoor temperature: 35°CDB; indoor wet bulb temperature: 21°CWB.

Cooling load:

| Room | Room A | Room B | Room C | Room D | Room E | Room F | Room G | Room H |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Load (kW) | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 |

Equivalent length of longest pipeline from outdoor unit to indoor unit: 30m, height difference between indoor and outdoor unit: 10m (outdoor unit is in lower position).

Condition of floor heating:

| | Room A | Room B | Room C | Room D | Room E | Room F | Room G | Room H |
|---------------------------|--------|--------|--------|------------|------------|------------|--------------|--------|
| Area m ² | / | / | 15 | 15 | 15 | 15 | 20 | / |
| Purpose | / | / | Study | Guest room | Guest room | Guest room | Main bedroom | / |
| With floor heating or not | No | No | Yes | Yes | Yes | Yes | Yes | No |

Water using condition: there are five persons; one bathtub (with shower), two showers, three washbasins.

8.3.2 Define using demand of user

According to the above conditions we can define the using demand of user is: air conditioner+heating water+floor heating.

8.3.3 Define collocation method of unit

For defining model selection and collocation of outdoor unit, indoor unit, generator and water tank, please refer to “VI. Product model selection and collocation”.

8.3.4 Model selection of air conditioner

According to air conditioning load of room (according to cooling load or heating load), and then select indoor unit and outdoor unit; procedures for model selection are the same as that of general multi VRF unit.

8.3.4.1 Initial selection of indoor unit

Due to long pipeline distance and there is a certain height difference between indoor and outdoor unit, first user can select the indoor unit with rated cooling capacity larger than cooling load of room, selected results are as below:

| | Room A | Room B | Room C | Room D | Room E | Room F | Room G | Room H |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
|--|--------|--------|--------|--------|--------|--------|--------|--------|

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | | | |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Load (kW) | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 |
| Specification | 25 type | 25 type | 36 type | 36 type | 36 type | 36 type | 36 type | 45 type |
| Capacity code | 25 | 25 | 36 | 36 | 36 | 36 | 36 | 45 |

8.3.4.2 Initial selection of outdoor unit

(1) Basic principle for model selection of outdoor unit:

- 1) Know well about using habit of user, before using the unit, total capacity of indoor units operated simultaneously should not be larger than capacity of outdoor unit, otherwise it may cause deficiency in cooling (heating) of indoor units.
- 2) Sum of capacity codes of indoor unit should be within 80%~100% of capacity of selected outdoor unit.
- 3) According to different factors in actual installation, it is suggested that capacity code of outdoor unit should not be less than sum of capacity code of indoor units.

(2) Initial selection of capacity of outdoor unit

1) Calculate demand of total cooling capacity of indoor unit

Sum of the above capacity code of indoor units is $25 \times 2 + 36 \times 5 + 45 = 275$, that is, the actual cooling capacity is 27.5kW.

2) Define simultaneous utilization rate

According to actual using demand of user, all of the above indoor unit are turned on and used at the same time (simultaneous utilization rate is 1), so the rated capacity of selected outdoor unit should not be less than $27.5 \times 1 = 27.5\text{kW}$, otherwise it will cause poor cooling/heating effect in actual utilization.

Notes:

simultaneous utilization rate = $\frac{\text{sum of rated capacity of simultaneously operated indoor units}}{\text{sum of rated capacity of all the indoor units}}$.

(3) Selection of capacity of outdoor unit

Inquire rated capacity sheet of outdoor unit, capacity code of outdoor unit which is larger than 27.5kW and has smaller upper deviation is 280, that is to select outdoor unit with rated cooling capacity of 28kW.

(4) Calculate rated capacity ratio of indoor and outdoor unit

Rated capacity ratio of indoor and outdoor unit is $27.5/28 \times 100\% = 98\%$, the value is within 80%~100%, then the initial selected outdoor unit with capacity of 28kW is in conformity with requirements of model selection.

(5) Define model of whole unit

The model of outdoor unit that satisfies 28kW is GMV-S280W/A-X, therefore the selected model of whole unit is GMV-S280W/A-X.

8.3.4.3 Capacity revision of outdoor unit

Actual output capacity of outdoor unit will be affected by many factors such as installation (pipe length, height difference) and actual ambient temperature, thus rated capacity should be revised according to actual situation.

(1) Collocation rate of unit

Collocation rate of unit = $\frac{\text{sum of rated capacity of indoor units}}{\text{rated capacity of outdoor unit}}$
 Calculate collocation rate of unit is: $(25 \times 2 + 36 \times 5 + 45) / 280 = 98\%$

(2) Capacity revision coefficient of ambient temperature

Inquire cooling capacity revision sheet related to temperature, under the condition of outdoor temperature of 35°CDB, indoor temperature of 29°CDB, collocation rate of unit is 98%, cooling capacity is 28.6kW. **【For specific capacity revision data please see ralted instruction manual】**

(3) Capacity revision coefficient of pipe length and height difference

Upon inquiry, for the corresponding length of pipe is 30m and height difference between indoor and outdoor unit is 10m (outdoor unit is in lower position), the revision coefficient is 0.95.

【For specific revision contents of connecting pipe please see related instruction manual】

(4) Calculation of actual capacity of outdoor unit

Actual capacity of outdoor unit=calculated rated capacity of outdoor unit×capacity revision coefficient of pipe length and height difference

$$\text{Actual capacity of outdoor unit}=28.6 \times 0.95=27.17\text{kW}$$

8.3.4.4 Checkup of actual output capacity of each indoor unit

(1) Calculate actual output capacity of each indoor unit

Actual output capacity of each indoor unit=actual capacity of indoor unit×rated capacity of indoor unit/total rated capacity of indoor unit.

In this example, actual output capacity of each indoor unit is as below:

$$\text{GMV-NHD25PL/A-T: } 27.17 \times 25 / 275 = 2.47\text{kW}$$

$$\text{GMV-NHD36PL/A-T: } 27.17 \times 36 / 275 = 3.56\text{kW}$$

$$\text{GMV-NHD45PL/A-T: } 27.17 \times 45 / 275 = 4.45\text{kW}$$

(2) Checkup of capacity of indoor unit

Checkup principle: actual output cooling capacity of each indoor unit is larger or equal to 100% of heating load of room

Comparison of load of room and indoor unit are as below:

| | Room A | Room B | Room C | Room D | Room E | Room F | Room G | Room H |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Load (kW) | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 |
| Actual output capacity of indoor unit (kW) | 2.47 | 2.47 | 3.56 | 3.56 | 3.56 | 3.56 | 3.56 | 4.45 |

From the above sheet we can see that all the model selections for rooms have satisfied the requirements.

If it cannot satisfy requirement, please calculate from the second step till it satisfies the requirement.

8.3.5 Model selection of generator

8.3.5.1 Calculation of floor heating load

Select generator according to floor heating load of room; it is required that quantity of generator should be ≤ maximum allowable connecting quantity of generator for outdoor unit

Model selection principle is based on floor heating load: outdoor temperature: -3°CDB; water supply temperature of generator: 40°C.

For defining unit of floor heating load, according to empirical value, floor heating load of general residences are as below:

| | Residence | Villa |
|--------------------------------|-----------|---------|
| Restaurant (W/m ²) | 120~150 | 140~170 |
| Bedroom (W/m ²) | 120~140 | 130~150 |
| Guest room (W/m ²) | 130~160 | 130~160 |
| Study (W/m ²) | 120~140 | 130~150 |

Notes:

- (1) Generally load of villa is larger than that of residential house, take median value to upper limit value.
- (2) Load of top floor of villa should be larger than middle floors or ground floor, take upper limit value.

- (3) Load of guest room is generally large, take median value to upper limit value.
- (4) For the room with many exterior walls, with large area or large area of glass, it is suggested to calculate the load.
- (5) Floor heating load of toilet should take 500W/room.

Calculation result of floor heating load of different rooms are as below:

| | Room A | Room B | Room C | Room D | Room E | Room F | Room G | Room H |
|----------------------------|--------|--------|--------|------------|------------|------------|--------------|--------|
| Area m ² | / | / | 15 | 15 | 15 | 15 | 20 | / |
| Purpose | / | / | Study | Guest room | Guest room | Guest room | Main bedroom | / |
| With floor heating or not | No | No | Yes | Yes | Yes | Yes | Yes | No |
| Load of floor heating (kW) | / | / | 2.25 | 2.25 | 2.25 | 2.25 | 3 | / |

8.3.5.3 Initial selection of generator

Calculate according to the above floor heating load, the total floor heating load is: $2.25 \times 4 + 3 = 12\text{kW}$. Initial selected generator is: one 16kW NRQD16G/A-S generator.

In addition, in initial selection of generator, it can also conduct initial selection according to floor heating area. At present, the generator of our company is NRQD16G/A-S, one generator can serve the area of about 100 m².

8.3.5.3 Checkup of quantity and capacity of generator

According to model selection of air conditioner, outdoor unit GMV-S280W/A-X with 25kW is selected.

| Model | Limit for rated capacity of indoor unit accounting for rated capacity of outdoor unit | Limit for quantity of generator |
|----------------|---|---------------------------------|
| GMV-S120WL/A-S | 80% ~ 100% | 1 |
| GMV-S140WL/A-S | 80% ~ 100% | 1 |
| GMV-S160WL/A-S | 80% ~ 100% | 1 |
| GMV-S224W/A-X | 80% ~ 100% | 2 |
| GMV-S280W/A-X | 80% ~ 100% | 2 |

Checkup of floor heating capacity of generator should calculate according to floor heating capacity of outdoor unit.

Floor heating capacity of each generator = revised floor heating capacity of outdoor unit / quantity of generator, but the maximum capacity should not be over 16kW. So actual floor heating load of each generator should be basically equal.

Floor heating capacity of outdoor unit is calculated according to “revised floor heating capacity”:

In this example, actual floor heating capacity of generator = 16kW, (calculating value = $24.6 / 1 = 24.6\text{kW}$, but the maximum capacity should be 16kW). Then actual floor heating capacity of generator $16\text{kW} \geq$ floor heating load 12kW . So the selected model of generator is passed.

If the calculated floor heating capacity of generator (add 3kW electric heating capacity) is less than floor heating load, then user should reselect outdoor unit (select outdoor unit with larger capacity).

8.3.6 Model selection of water tank

(If using way of user is “air conditioner+floor heating”, then please skip this step) ——select model of water tank according to water using demand of user;

It is required that quantity of water tank is \leq quantity of generator;

Model selection principle: calculate “water consumption of user” according to “number of people and per capita water consumption” and “water consumption of bathroom accessories” respectively, and take the larger value. And then calculate “water storage capacity of water tank”, that is, cubic capacity of water tank.

8.3.6.1 Calculation of water consumption

According to related standard or experience

(1) According to per capita water consumption

| Construction | Unit | Designed daily water consumption (L) | Using water temperature (°C) |
|--------------|---------------------|--------------------------------------|------------------------------|
| Residence | Per day, per capita | 40~80 | 60 |
| Villa | Per day, per capita | 70~110 | 60 |

(2) According to water consumption of bathroom accessories

| Bathroom accessory | Using water temperature (°C) | One-time water consumption (L) |
|--------------------------|------------------------------|--------------------------------|
| Bathtub (with shower) | 40 | 150 |
| Bathtub (without shower) | 40 | 125 |
| Shower | 37~40 | 70~100 |
| Washbasin | 30 | 3 |

In this case, there are five persons; one bathtub (with shower), two showers, three washbasins;

Calculate “water consumption of user” according to “number of people and per capita water consumption”: $5 \times 70 = 350L$;

Calculate “water consumption of user” according to “water consumption of bathroom accessories”: $150 + 70 \times 2 + 3 \times 3 = 299L$;

Take simultaneous utilization rate as 0.7; then total water consumption of user $= 350L \times 0.7 = 245L$;

| Calculation for water consumption of user | | |
|---|---|--|
| According to per capita consumption | | |
| Item | Quantity | Per capita water consumption (per day, per capita) L |
| People | 5 persons | 70 |
| Total water consumption | $5 \times 70 = 350L$; | |
| According to bathroom accessories | | |
| Item | Quantity | One-time water consumption of unit quantity (L) |
| Bathtub (with shower) | One | 150 |
| Shower | Two | 70 |
| Washbasin | Three | 3 |
| Total water consumption | $150 + 70 \times 2 + 3 \times 3 = 299L$ | |
| Simultaneous utilization rate: 0.7 at most | | |
| Final defined total water consumption: $350L \times 0.7 = 245L$ | | |

8.3.6.2 Calculation for water storage capacity (cubic capacity) of water tank

Water storage capacity of water tank = $(t_{\text{model selection designed water temperature}} - t_{\text{cooling water entering temperature}}) \times \text{total water consumption of user} / (t_{\text{heating temperature of water tank}} - t_{\text{cooling water entering temperature}})$

$t_{\text{model selection designed water temperature}}$ — in consideration of the temperature when

using the water, generally it takes 60°C;

t cooling water entering temperature——cooling water entering temperature is selected according to regions; east China region can take 5°C;

t heating temperature of water tank—— in consideration of energy-saving purpose, generally it takes 50°C.

In this example, water storage capacity of water tank is $245L * (60-5) / (50-5) = 299L$.

8.3.6.3 Define model of water tank

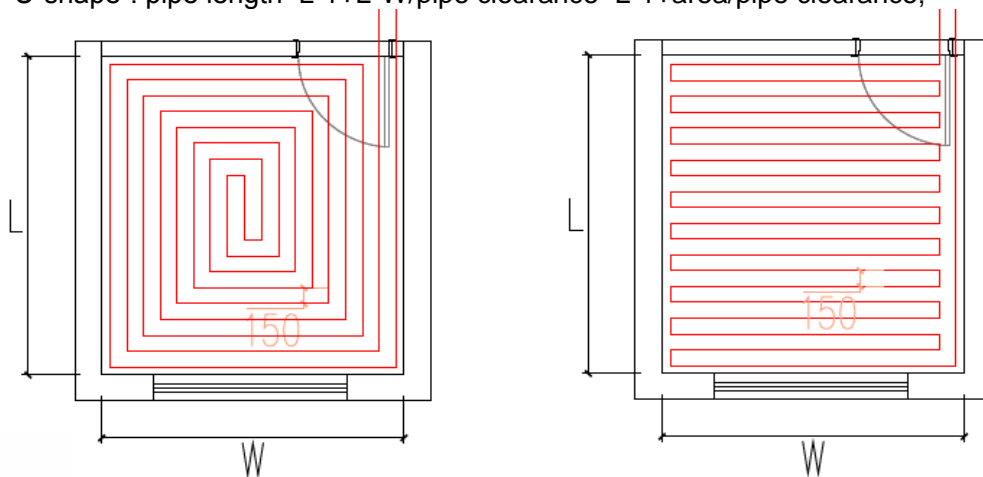
Select corresponding model of water tank according to the above calculation and combining with collocation relationship of unit. In this example, select one set of SXVD300LCJ/A-K water tank and used it by collocating with generator.

8.3.7 Design of floor heating engineering

Floor heating design is to design water supply temperature, pipe clearance, pipe diameter, route quantity of coil pipes in each room, quantity of water knockout drum and water collector and layout method.

For contents of this part please refer to related design instruction and criterion. The following are points for attention in design of floor heating engineering:

- (1) Floor heating water supply temperature: in consideration of feature of air sourced heat pump water heater and energy-saving purpose, generally it is designed as 40°C, highest temperature is 45°C;
- (2) Pipe clearance/pipe diameter: pipe clearance is better to be within 100~150mm; pipe diameter should be as large as possible within the selectable range (it is recommended to be over DN20). Otherwise, the oversize of clearance or undersize of pipe diameter will cause increase of heating load and water resistance, and the heat exchange efficiency will be lowered, energy consumption is greatly increased.
- (3) Layout of pipeline in the room: generally there are “rectangular-ambulatory-plane” and “U-shape” layout, “rectangular-ambulatory-plane” is recommended.
 “rectangular-ambulatory-plane”: pipe length=L*W/pipe clearance=area/pipe clearance;
 “U-shape”: pipe length=L-1+L*W/pipe clearance=L-1+area/pipe clearance;



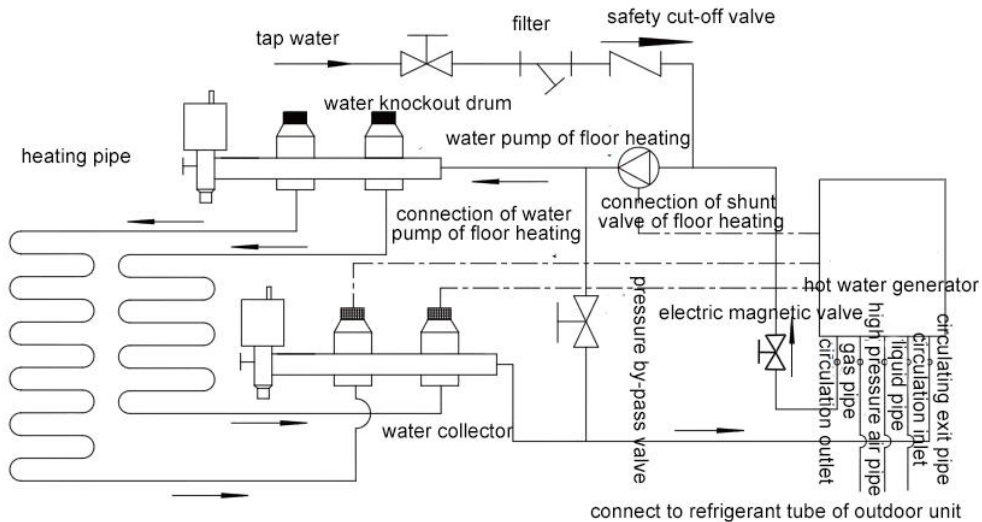
“rectangular-ambulatory-plane”

“U-shape”

- 1) Pipe length of single water loop should not be over 100m, if it's over the length, it should be divided into several loops; length of each branch pipe should be equally the same as much as possible;
- 2) Route quantity of water knockout drum and water collector should not be over 6, if it's over 6, it should be divided or combined. Water knockout drum (floor heating shunt

valve) should install electric shunt valve (single phase 220V~, normally closed type), and should connect power cord to electric box of Gree generator, and automatically controlled by generator. Set wired controller of air conditioner to control shunt valve of designated room. For specific operation please refer to circuit diagram of generator and instruction manual of generator.

Sketch map is as below:



- 3) Branch pipe of water knockout drum and water collector should not cross the floor, if it needs to install in two floors, two sets of water knockout drum and water collector should be adopted. Generally water knockout drum and water collector can be installed near the walls such as equipment room, kitchen, passageway, etc.
- 4) Generator: generally it will not install by crossing the floors. If it needs to cross the floors, water power should be calculated, or two sets of generators can be adopted.
- 5) Generator: provide external pipe network with 1.7m³/h flow and 6m delivery lift. When water pump of generator cannot satisfy requirement of delivery lift, it can externally connect to engineering water pump. Recommended model of engineering water pump: Wilo RL-25/7.5. Engineering water pump should connect to electric box of Gree generator, and is automatically controlled by generator, for specific operation please refer to circuit diagram of generator;
- 6) Before model selection and installation, please read the instruction manual of unit carefully.

8.3.8 Final conclusion for model selection of whole unit

| Usage mode: air conditioner+heating water+floor heating | | | | |
|---|---------------|---|-------------|--|
| Model of outdoor unit | | Indoor unit | Generator | Water tank |
| Top discharge | GMV-S280W/A-X | GMV-ND25PL/A-T: 2 GMV-ND36PL/A-T: 5 GMV-ND45PL/A-T: 1 | NRQD16G/A-S | SXVD300LCJ/A-K: 1 SXVD300LCJ/A-K: 1 |

8.4 Model selection example 2: air conditioner + heating water

8.4.1 Basic conditions

Applicable location: general villa.

Temperature conditions: take cooling load as principle of model selection --- outdoor temperature: 35°CDB; indoor wet bulb temperature: 21°CWB.

Cooling load:

| Room | Room A | Room B | Room C | Room D | Room E | Room F | Room G | Room H |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Load (kW) | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 |

Equivalent length of longest pipeline from outdoor unit to indoor unit: 30m, height difference between indoor and outdoor unit: 10m (outdoor unit is in lower position).

Water using condition: there are five persons; one bathtub (with shower), two showers, three washbasins.

Floor heating: no.

8.4.2 Define using demand of user

According to the above conditions, the using demand of user is: air conditioner+heating water.

8.4.3 Define collocation method of unit

For defining model selection and collocation of outdoor unit, indoor unit, generator, and water tank, please see "VI. Product model selection and collocation".

8.4.4 Model selection of air conditioner

Select indoor unit and outdoor unit according to air conditioning load of room (according to cooling load or heating load); the steps for model selection are the same as that of general multi VRF unit;

For specific information please refer to instruction and example illustrated in "8.3.4 Model selection of air conditioner".

In this example, selected models of outdoor and indoor units are as below:

| Model of outdoor unit | | Indoor unit |
|-----------------------|---------------|---|
| Top discharge | GMV-S280W/A-X | GMV-ND25PL/A-T: 2 GMV-ND36PL/A-T: 5 GMV-ND45PL/A-T: 1 |

8.4.5 Model selection of water tank

Select model of water tank according to hot water using demand of user; capacity of inner-coil water tank (tie-in generator) is 200/300/350/400L.

For specific information please refer to instruction and example illustrated in "8.3.6 Model selection of water tank".

In this example, water storage capacity of water tank is $245L * (60-5) / (50-5) = 299L$; so select one set of water tank with model of SXVD300LCJ/A-K, which is used by collocating with generator.

8.4.6 Model selection of generator

Select generator according to quantity of water tank;

It is required that quantity of inner-coil water tank = quantity of generator;

Quantity of generator ≤ maximum allowable connecting quantity of generator for outdoor unit

In this example, the selected water tank is SXVD300LCJ/A-K, quantity is one; thus model selection of generator is: NRQD16G/A-S, quantity is one.

8.4.7 Final conclusion for model selection of whole unit

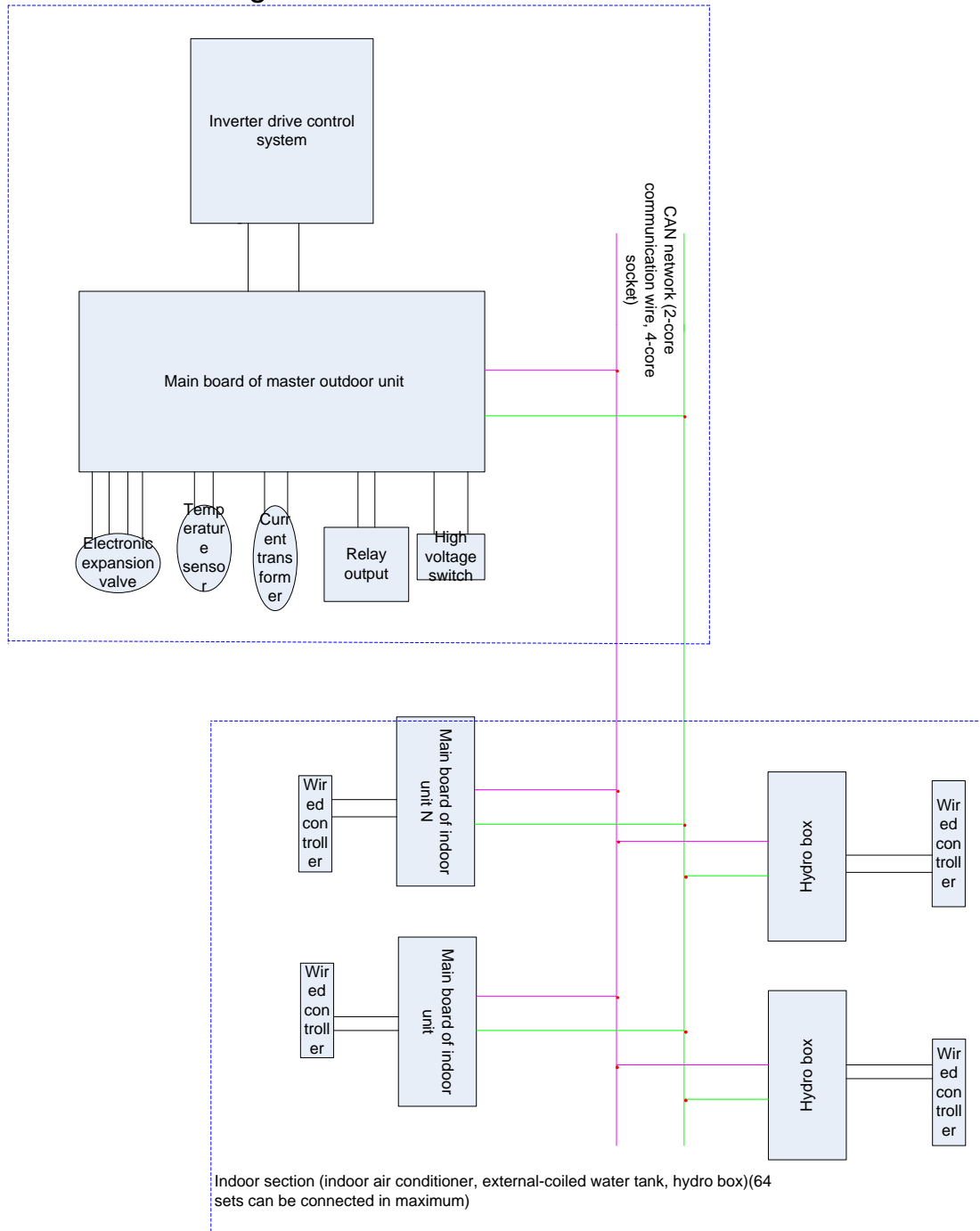
| Usage mode: air conditioner+heating water | | | | |
|---|---------------|---|----------------|-------------------|
| Model of outdoor unit | | Indoor unit | Generator | Water tank |
| Top discharge | GMV-S280W/A-X | GMV-ND25PL/A-T: 2 GMV-ND36PL/A-T: 5 GMV-ND36PL/A-T: 1 | NRQD16G/A-S: 1 | SXVD300LCJ/A-K: 1 |

Chapter 2: Control

1. Unit Control

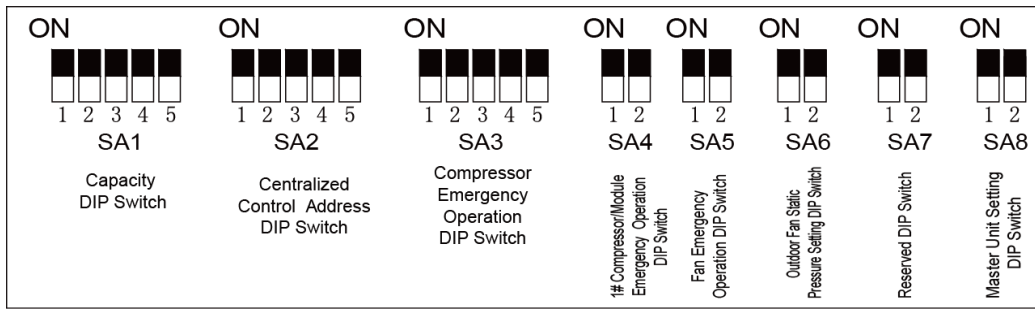
1.1 General Control Method

1.1.1 Schematic Diagram of Unit Control



GMV5 Home System includes one outdoor unit and 64 indoor units (indoor air conditioner, external-coiled water tank and hydro box). Up to 6 external-coiled water tanks and hydro boxes can be connected. Communication between indoor units and outdoor unit is connected by CAN network 2-core (4-core needle stand) communication wire. It adopts non-polar auto addressing method to realize communication, no need of setting address manually. During engineering installation, it is necessary to set up outdoor unit main board DIP switch correctly to define the special application functions. Below are the definitions:

GMV5 Home DC Inverter Multi VRF Units



Capacity DIP Switch (SA1):

| Outdoor capacity code | DIP switch (5 digits) | | | | |
|-----------------------|-----------------------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 224 | 0 | 1 | 0 | 0 | 1 |
| 280 | 0 | 1 | 0 | 1 | 1 |
| 335 | 0 | 1 | 1 | 0 | 1 |
| 400 | 0 | 1 | 1 | 1 | 1 |
| 450 | 1 | 0 | 0 | 0 | 0 |
| 504 | 1 | 0 | 0 | 0 | 1 |

Remark: Only when the outdoor unit capacity DIP switch is correctly set, will the unit be able to run normally. If setting is wrong, outdoor unit will report capacity DIP switch error.

Centralized Control Address DIP Switch (CAN network address, SA2)

| CAN2 address | DIP switch (5 digits) | | | | |
|--------------|-----------------------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Address 0 | 0 | 0 | 0 | 0 | x |
| Address 1 | 1 | 0 | 0 | 0 | x |
| Address 2 | 0 | 1 | 0 | 0 | x |
| Address 3 | 1 | 1 | 0 | 0 | x |
| Address 4 | 0 | 0 | 1 | 0 | x |
| Address 5 | 1 | 0 | 1 | 0 | x |
| Address 6 | 0 | 1 | 1 | 0 | x |
| Address 7 | 1 | 1 | 1 | 0 | x |
| Address 8 | 0 | 0 | 0 | 1 | x |
| Address 9 | 1 | 0 | 0 | 1 | x |
| Address 10 | 0 | 1 | 0 | 1 | x |
| Address 11 | 1 | 1 | 0 | 1 | x |
| Address 12 | 0 | 0 | 1 | 1 | x |
| Address 13 | 1 | 0 | 1 | 1 | x |
| Address 14 | 0 | 1 | 1 | 1 | x |
| Address 15 | 1 | 1 | 1 | 1 | x |

Remark: If there are multiple systems, CAN2 network address should be set correctly. The address of one system must be set to 0, which means the master control system. All the other systems are slave systems. The centralized control address DIP switch cannot be the same among different systems. Otherwise, address conflicts may occur (It is a factory setting, no need of change).

Fan Emergency Operation DIP Switch (SA5)

| Fan emergency operation DIP switch SA5 | | |
|--|---------------------------|-------------------------------|
| Fan 1 emergency operation | Fan 2 emergency operation | Remark |
| DIP1 | DIP2 | |
| 0 | 0 | No fan in emergency operation |
| 1 | 0 | Error of fan 1 |

| | | |
|---|---|----------------|
| 0 | 1 | Error of fan 2 |
|---|---|----------------|

Remark: Only one fan can be set to emergency mode. If two or more fans are set to emergency mode, outdoor unit will report emergency operation setting error.

Static Pressure Setting DIP Switch (SA6)

| Static pressure setting DIP switch SA6 | | Static pressure(Pa) |
|--|------|---------------------|
| DIP1 | DIP2 | |
| 0 | 0 | 0 |
| 1 | 0 | 20 |
| 0 | 1 | 50 |
| 1 | 1 | 80 |

Master Unit Setting DIP Switch (SA8)

If you turn the SA8 DIP switch on main board from position “1” to position “0”, the corresponding unit will become the master unit. “1” means slave unit while “2” is a null digit. Only one master unit is allowed for one system. The rest of the units should be slave units. Otherwise, outdoor unit will report “No Master Unit” or “Multiple Master Units” error (It is a factory setting, no need of change).

Explanation on Schematic Diagram

Master Control System

- ◆ Function: It is connected with the indoor section through 2-core (4-core needle stand) communication wire. When it receives on or off signal, mode signal, set temperature, ambient temperature from indoor unit, it will decide the operating mode of outdoor unit and calculate the proper operating frequency according to capacity, which will be sent back to the drive control system through 2-core (4-core needle stand) communication wire. It will also adjust fan speed according to system pressure and monitor the temperature sensed by each temperature sensor, the operating status and protection in real time, so as to make sure the whole system can work normally and reliably. If malfunction occurs, LED digital tubes of master control board will display the corresponding protection code. If malfunction occurs to drive, digital tubes of indoor unit will display drive malfunction code and LED digital tubes of master control board will display the specific malfunction type.

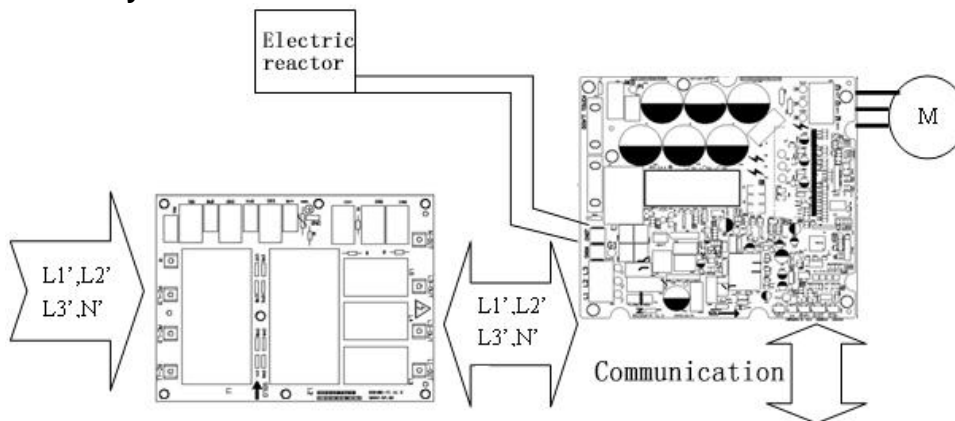
Input and Output Control Quantity:

- ◆ High voltage switch is used to identify system high voltage. When the high voltage is too high, high voltage switch will be disconnected. Main board receives the signal of high voltage switch breaking, and then transfers the signal to controller, which will display the error code. Unit won't start up.
- ◆ Ambient temperature sensor id used to sense the ambient temperature of outdoor unit. Controller will calculate the corresponding capacity according to the sensed ambient temperature.
- ◆ Defrosting temperature sensor is used to sense the actual temperature of the liquid side of outdoor unit condenser. Controller will judge according to the sensed temperature whether it is necessary to defrost or not.
- ◆ Condenser tube inlet temperature sensor is used to sense the refrigerant gas temperature of condenser and judge the heating evaporation temperature.
- ◆ Condenser tube outlet temperature sensor is used to sense the liquid side temperature of condenser for controlling the degree of sub-cooling.
- ◆ Gas separator inlet temperature sensor
- ◆ Gas separator outlet temperature sensor
- ◆ Sub-cooler liquid-extracting temperature sensor is used to sense the liquid outlet tube temperature of sub-cooler and judge the sub-cooling status in order to calculate the degree of sub-cooling.
- ◆ Sub-cooler gas outlet temperature is used to sense the gas outlet tube temperature of sub-cooler for controlling the degree of superheating of sub-cooler bypass flow.
- ◆ Discharge temperature sensor is used to sense the discharge temperature of outdoor

unit. Controller will adjust the compressor frequency according to the sensed temperature.

- ◆ High pressure sensor is used to sense the discharge pressure of outdoor unit. Controller will judge the corresponding fan speed, compressor frequency, electronic expansion valve opening position according to the sensed high pressure. When the high pressure is too high, unit will enter high pressure protection and controller will display the error code. Unit won't start up.
- ◆ Low pressure sensor is used to sense the low pressure of outdoor unit. Controller will judge the corresponding fan speed, etc. according to the sensed low pressure. When the low pressure is too low, unit will enter low pressure protection and controller will display the error code. Unit won't start up.
- ◆ The output of fan speed is controlled according to unit's operating mode, high pressure value and low pressure value.
- ◆ The on and off of 4-way valve A is controlled according to unit's operating mode. It's used to control heat exchanger of indoor unit.
- ◆ The on and off of 4-way valve B is controlled according to unit's operating mode. It's used to control heat exchanger of outdoor unit.
- ◆ The main electronic expansion valve is used to control the throttling flow of outdoor heat exchanger in heat mode.
- ◆ The slave electronic expansion valve or the sub-cooler electronic expansion valve is used to the control the throttling evaporation flow of the gas side of sub-cooler.
- ◆ The outdoor throttling solenoid valve: It is used for outdoor unit condenser. When it is necessary to control flow, it will cut off the 1-way valve that is in parallel with EXV1.
- ◆ Solenoid valve (inlet 1): Inlet 1 solenoid valve of refrigerant regulator
- ◆ Solenoid valve (inlet 2): Inlet 2 solenoid valve of refrigerant regulator
- ◆ Solenoid valve (top discharge): Gas outlet solenoid valve of refrigerant regulator
- ◆ Solenoid valve (bottom discharge): Oil outlet solenoid valve of refrigerant regulator
- ◆ Gas bypass valve: Open once energized to realize hot gas bypass
- ◆ Pressure balance valve: It is used to reduce difference between high pressure and low pressure
- ◆ Output of compressor capacity is based on the capacity calculated by outdoor unit and will be sent to drive control. Drive control will output the actual compressor frequency according to the received frequency.
- ◆ Output of fan frequency is adjusted according to different mode, pressure and capacity.

Drive Control System



A. Filter Board: One of its purposes is to filter power interference when unit is under poor power quality condition. The other purpose is to prevent unit from interfering other electrical appliances, such as television. Because of the working mode of inverter, unit is sensitive to power interference and therefore filter board is needed. This unit adopts 3-phase power supply, so the filter board is a 3-phase filter board, whose input terminals are AC-L1, AC-L2, AC-L3 and N. The corresponding output terminals are L1-OUT, L2-OUT, L3-OUT and N-OUT.

B. Drive Board: It is a key element of the control system. It is used to receive signals from master control unit and transfer the 380V, 50Hz 3-phase power supply into alternate current whose amplitude and frequency are adjustable and drives the compressor to work.

Hydro Box Control System

Main board of hydro box: It communicates with outdoor unit, long-distance monitor and indoor air conditioners through the CAN bus. Besides, it supplies power to and communicates with wired controllers through HBS bus. On the main board, the 4-digit DIP switch is used to select hydro box model while the 5-digit DIP switch is used to select the capacity of hydro box. The sensing quantity of main board includes lower water temperature, upper water temperature, back water temperature, refrigerant inlet tube temperature, and refrigerant outlet tube temperature. Main board sends its status information to outdoor unit and receives control information from outdoor unit. It is also linked with the on and off, mode, set temperature and other data of indoor unit. It is used for floor heating as well.

Extension board of hydro box: It is used to sense the entering and leaving water temperature of hydro box, solar power water temperature, water flow switch, etc. and at the same time control floor heating performer, solar power water pump, hydro box electric heater, valve C and valve D.

Input and Output Control Quantity:

Water tank lower water temperature: The heating of water tank and water volume display are controlled according to the water temperature at the upper and lower part of the water tank,

Water tank upper water temperature: Water temperature at the upper part of water tank is sensed.

Water tank back water temperature: Cycle pump is controlled according to water tank back water temperature and water tank lower water temperature.

Refrigerant inlet tube temperature: Refrigerant temperature at the tube inlet will be sensed.

Refrigerant outlet tube temperature: Refrigerant temperature at the tube outlet will be sensed.

Hydro box entering water temperature: Entering water temperature of circulating water will be sensed. Floor heating is controlled according to the entering water temperature and leaving water temperature of hydro box.

Hydro box leaving water temperature: Leaving water temperature of circulating water will be sensed.

Solar power water temperature: Solar power water temperature will be sensed.

Water flow switch: It is used to protect the water pump when water flow is too small.

Valve A and valve B: They control the direction of refrigerant flow.

Electronic expansion valve: They control the volume of refrigerant flow.

Cycle pump: It controls the water temperature at user side.

Electric heater: It is used to heat water quickly or provide hot water quickly.

Floor heating performer: It is used to control floor heating room by room.

Solar power water pump: It controls the exchange between solar power hot water and water tank hot water.

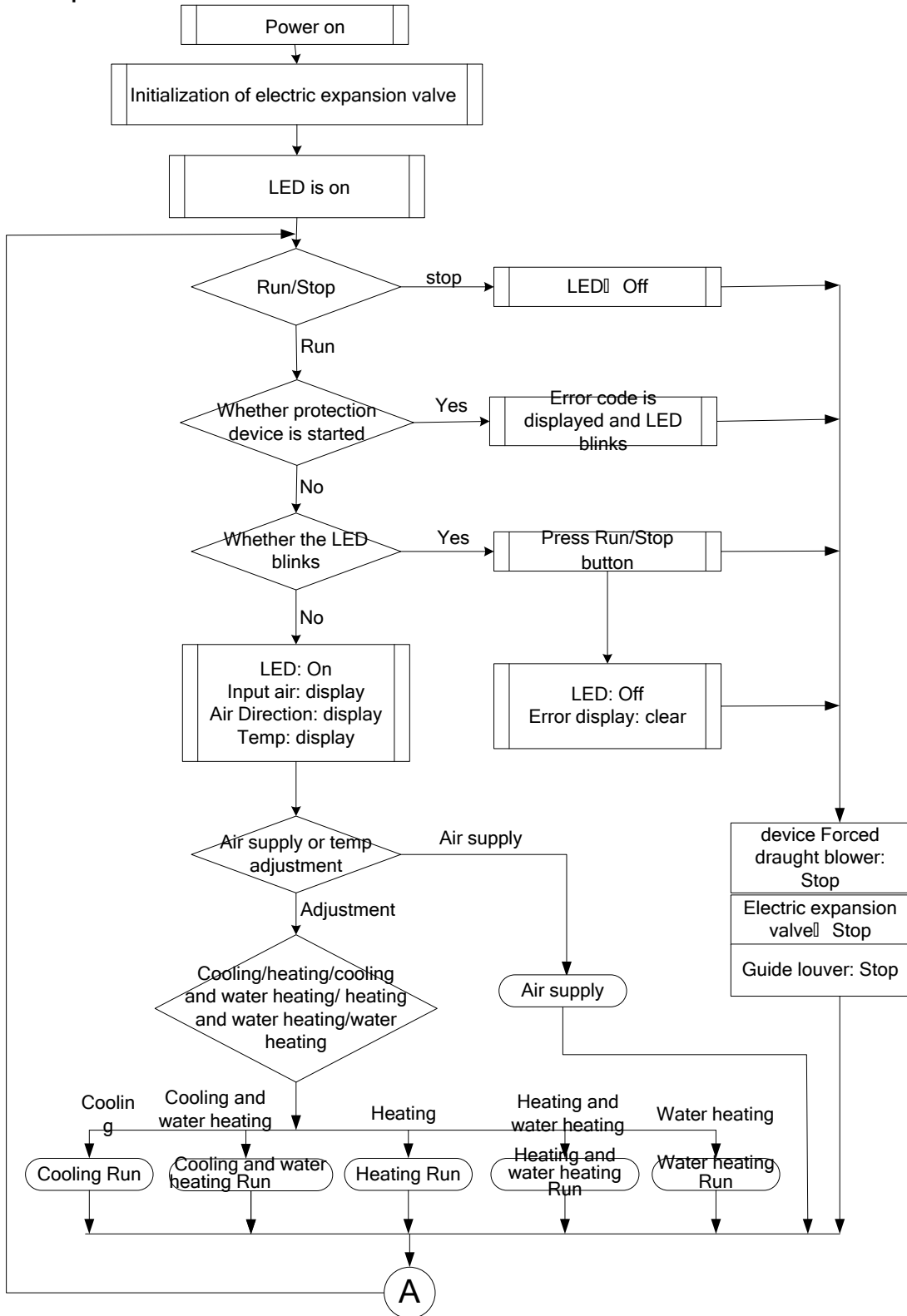
Hydro box electric heater: It is used to control quick floor heating.

Valve C: It is used to control heating of internal-coiled water tank.

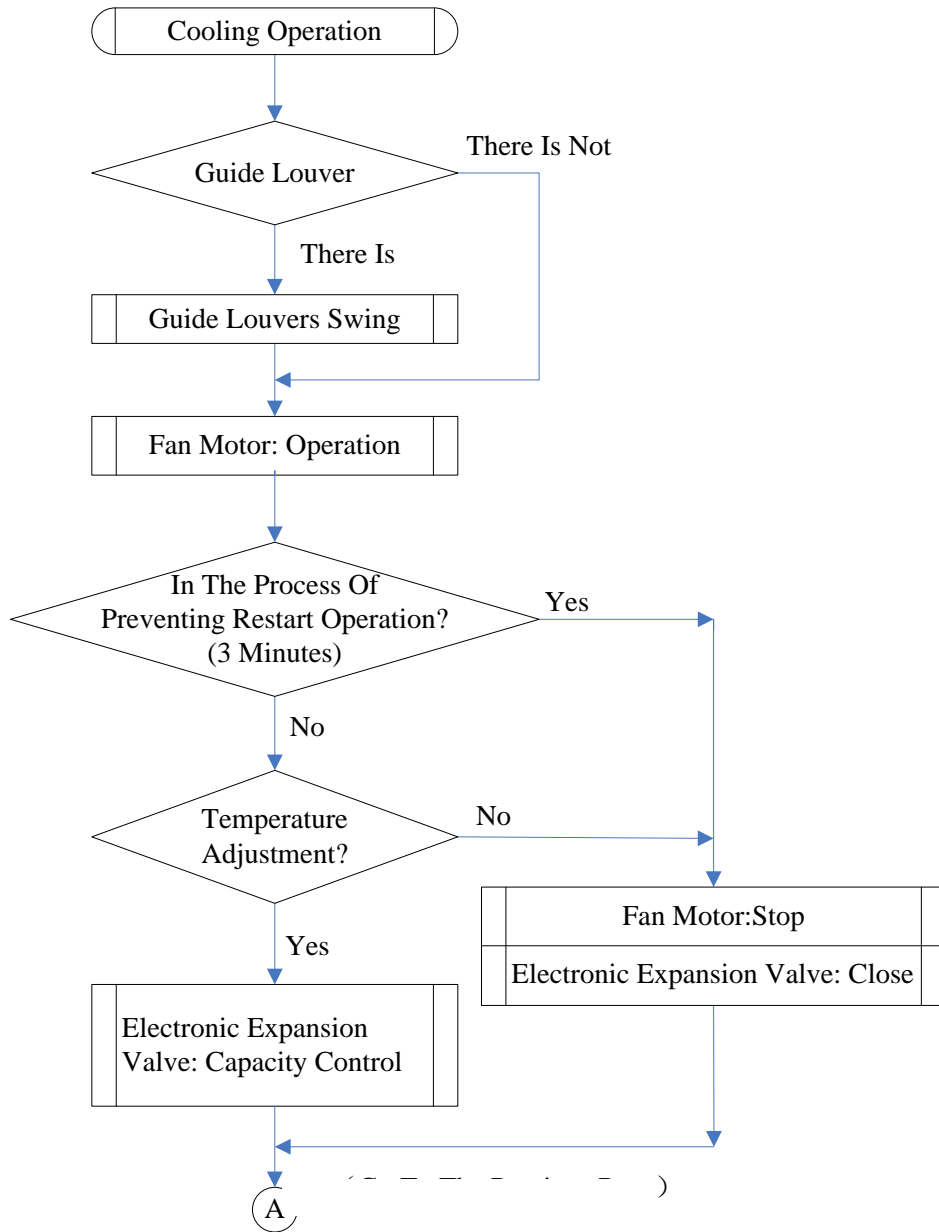
Valve D: It is used to control floor heating.

1.2 Operation Flowchart

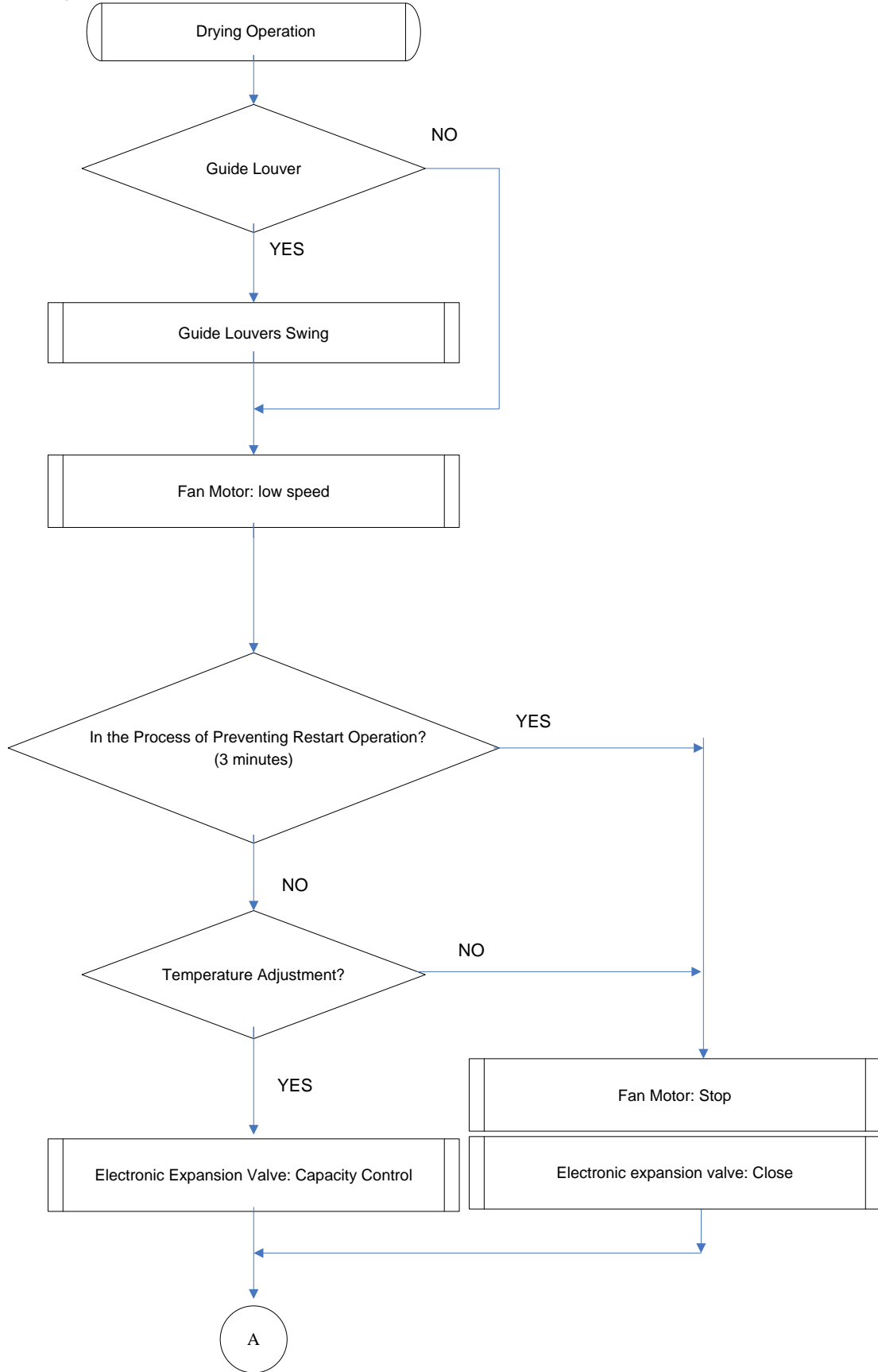
1.2.1 Operation Flowchart of Indoor Air Conditioner



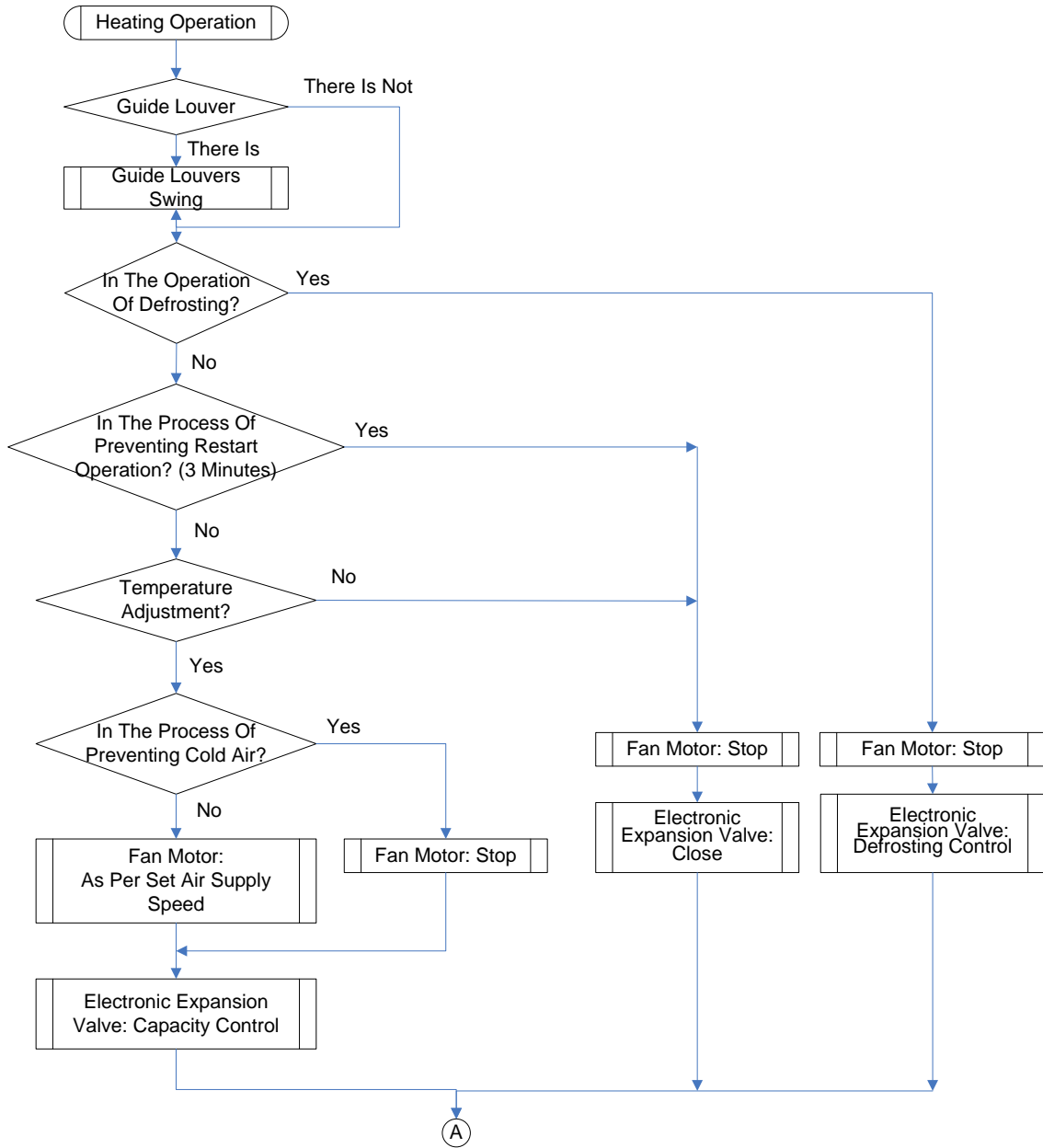
Cooling Operation



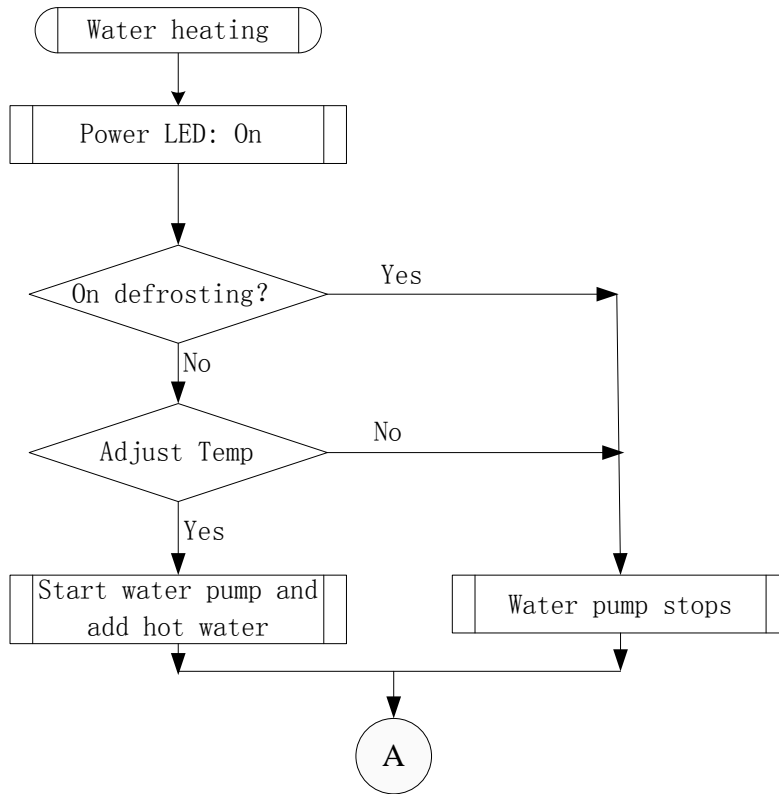
● Drying Operation



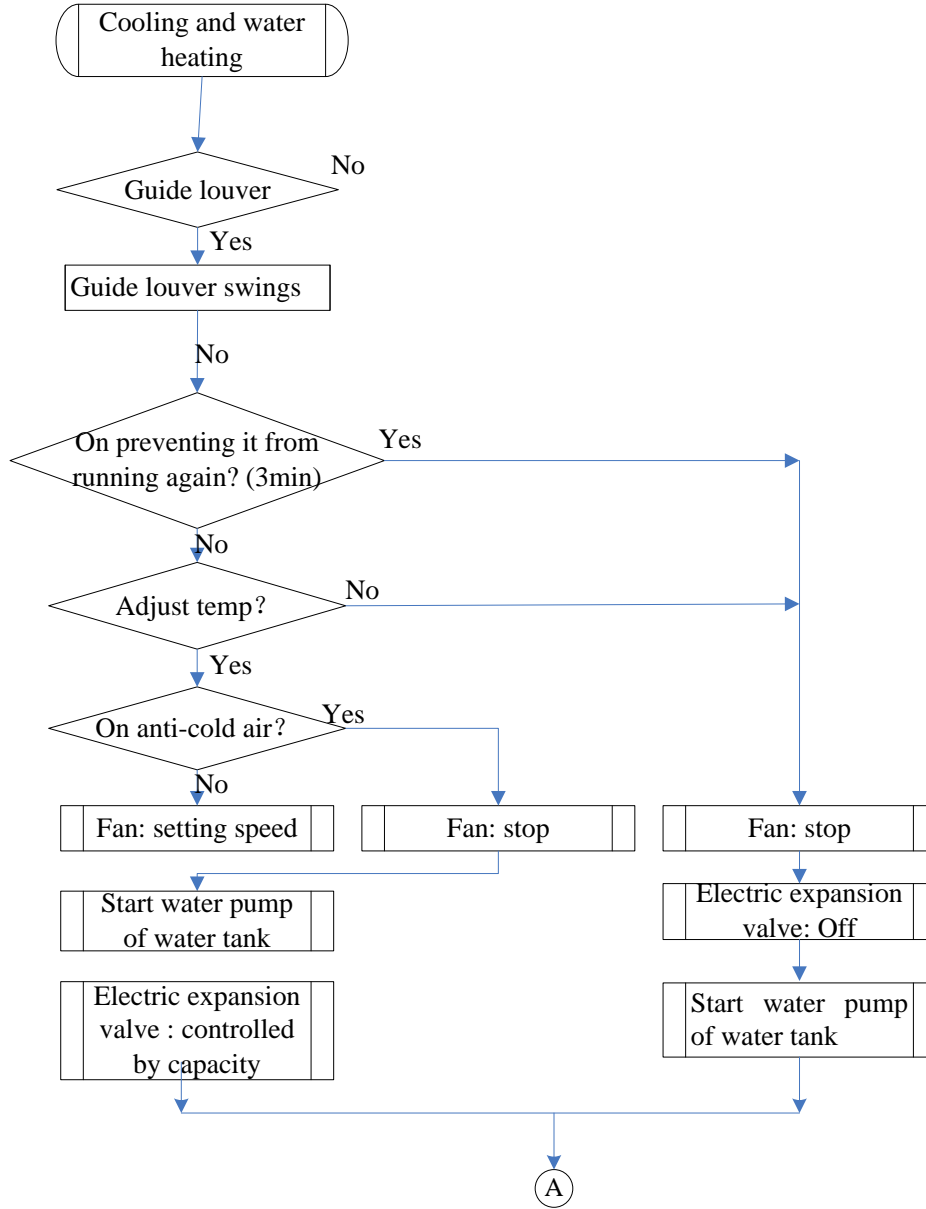
● Heating Operation



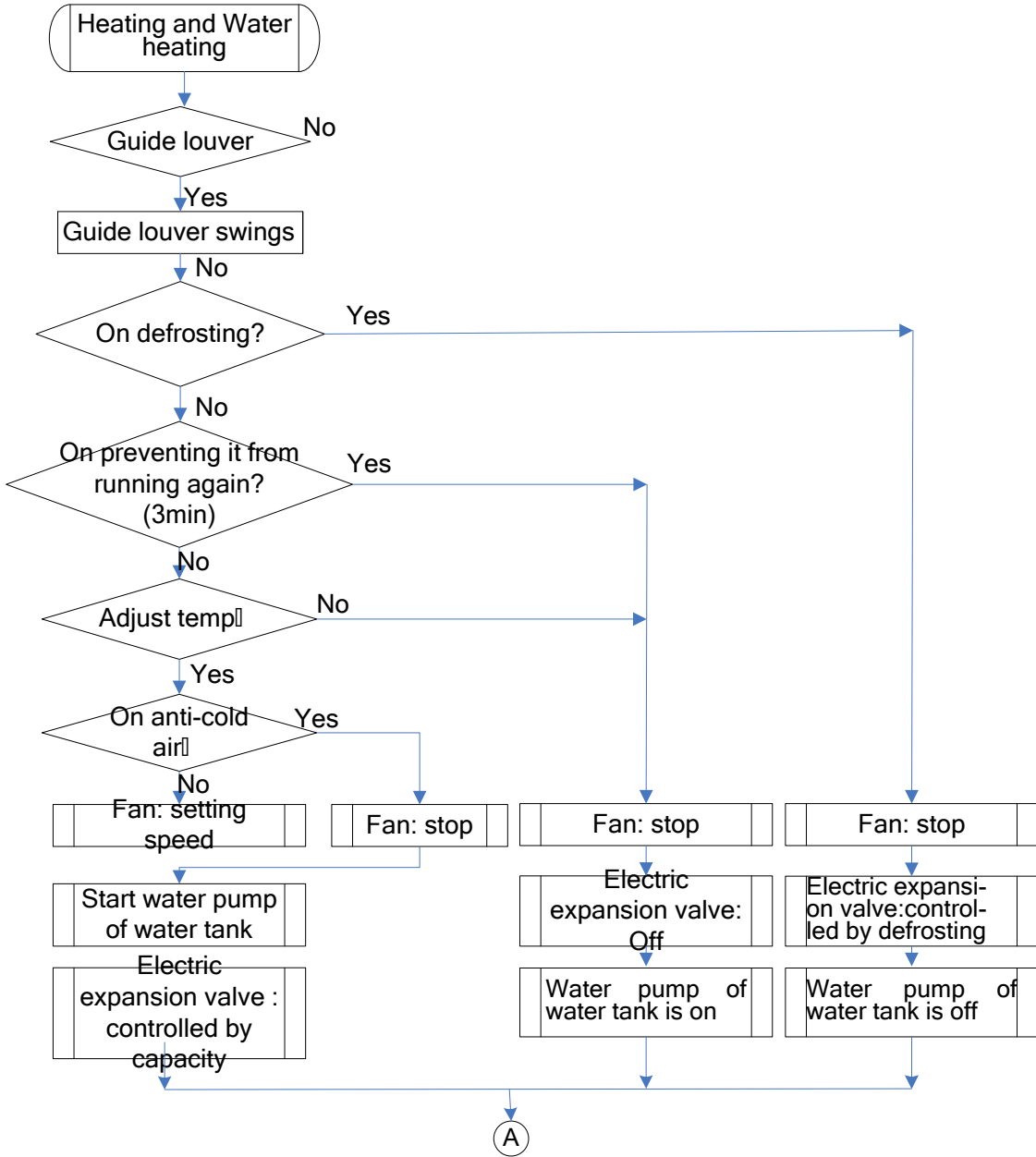
● Water Heating Operation



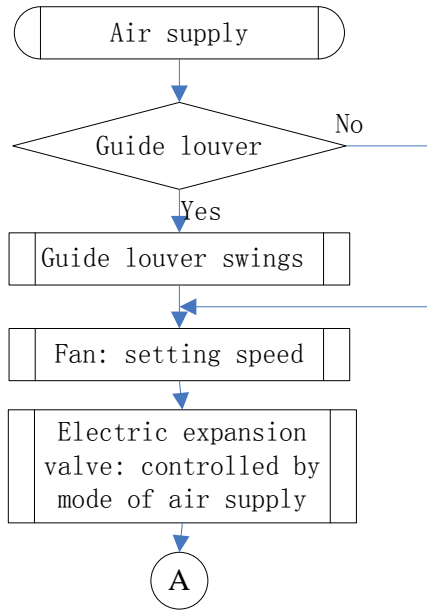
Cooling and Water Heating Operation



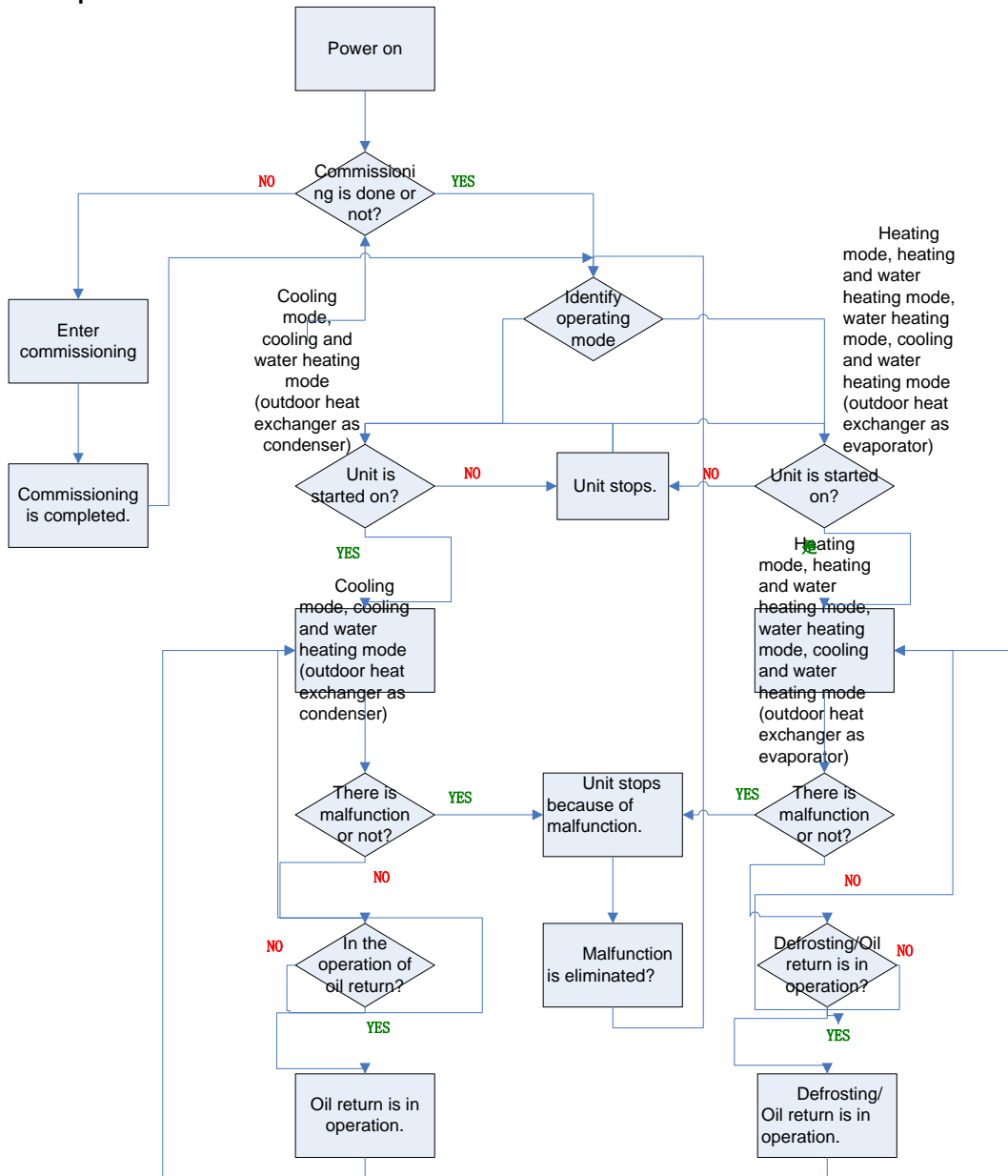
● Heating and Water Heating Operation



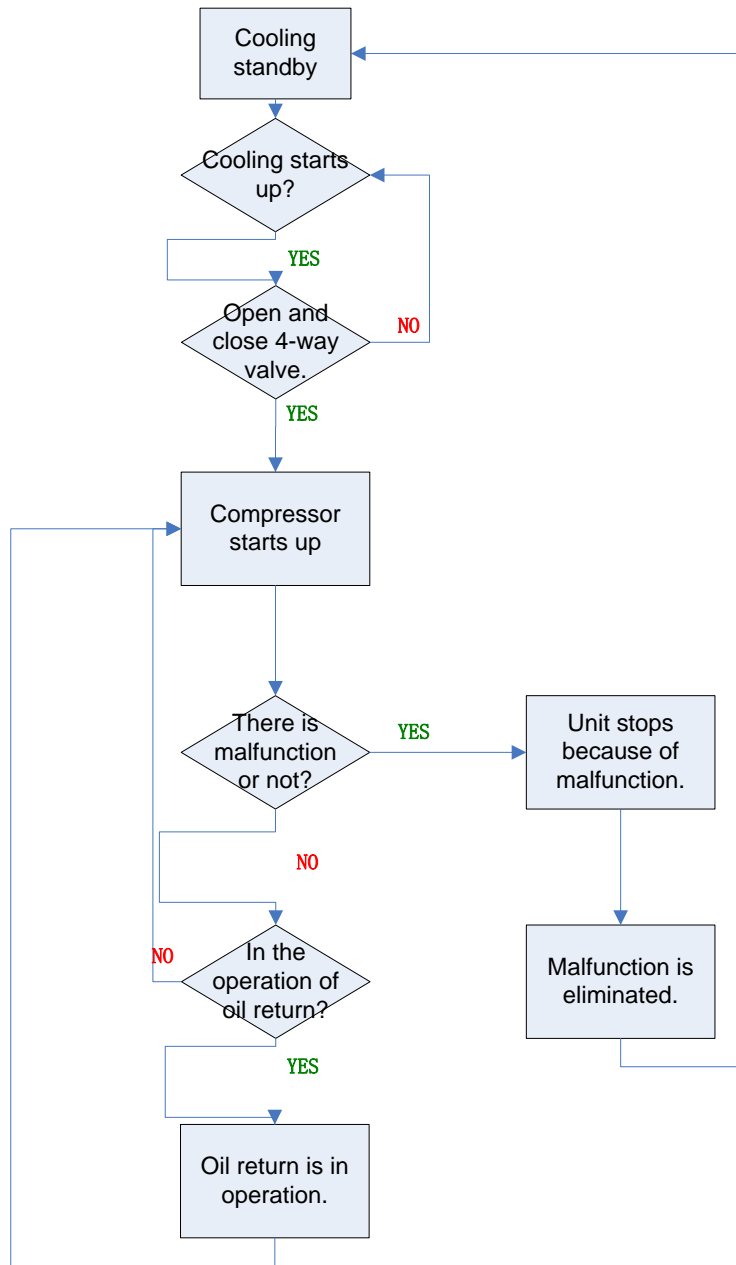
● Air Supply Operation



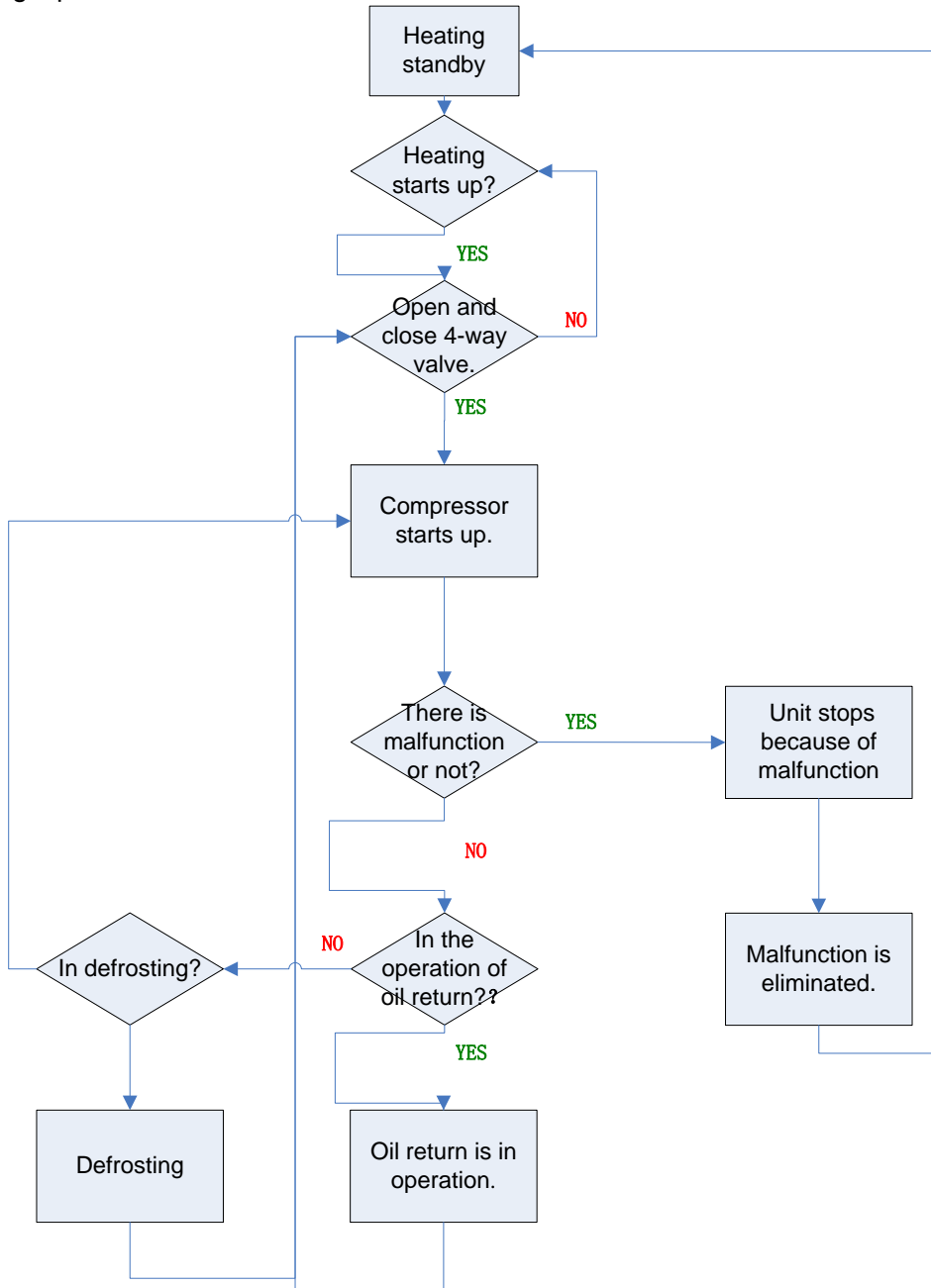
1.2.2 Operation Flow of Outdoor Unit



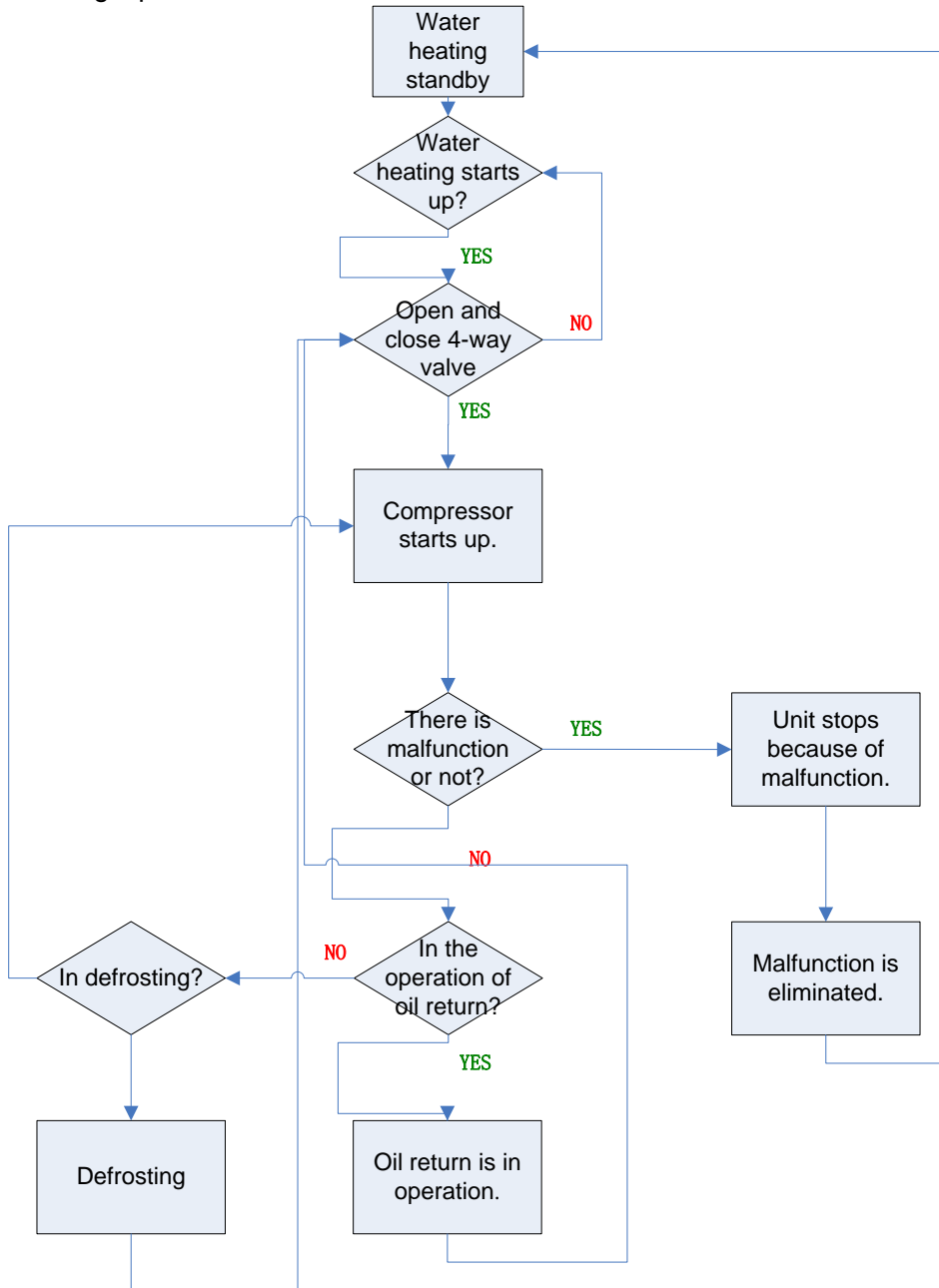
● Cooling Operation



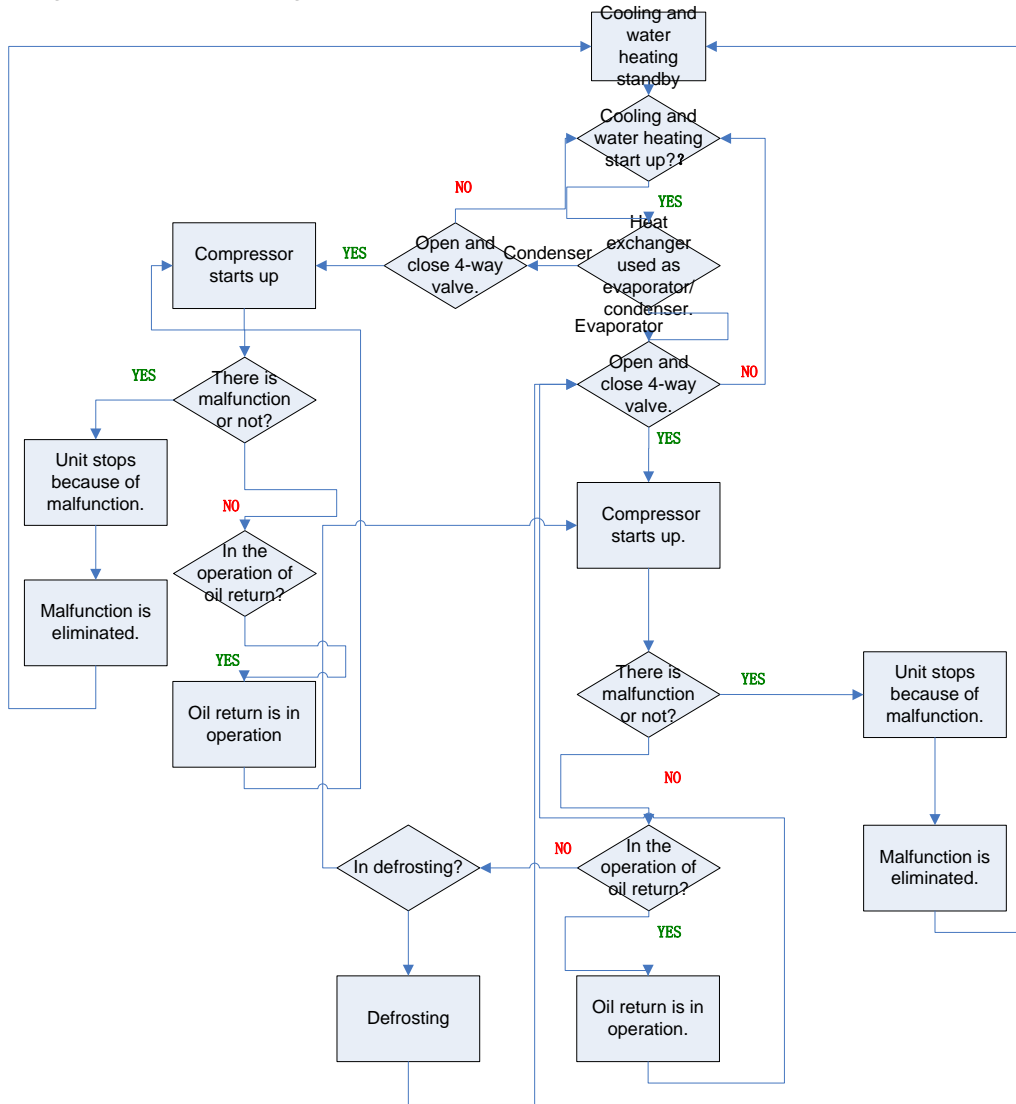
● Heating Operation



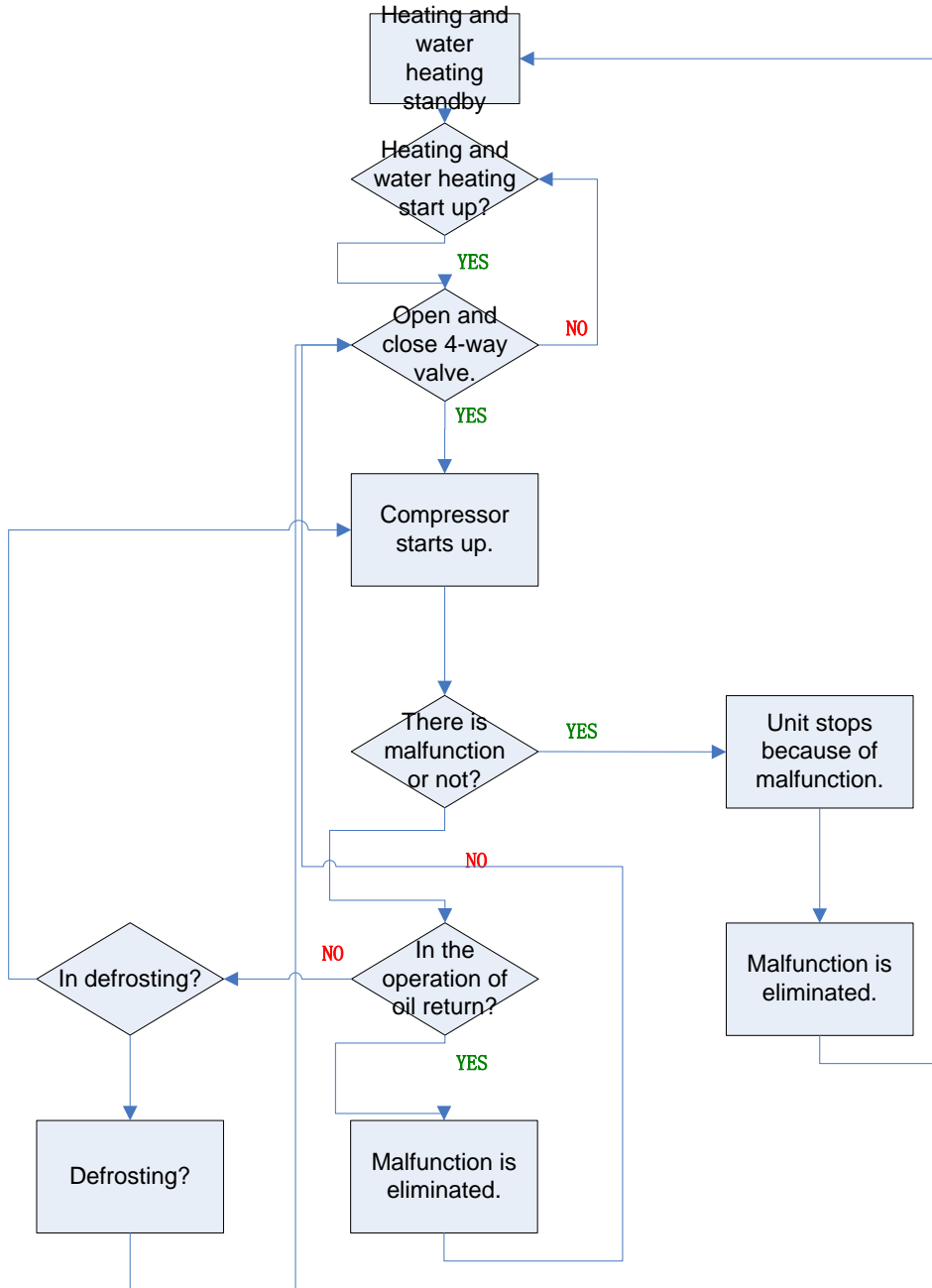
● Water Heating Operation



● Cooling and Water Heating Operation






● Heating and Water Heating Operation



2. Remote Controller



| No. | Button name | Function |
|-----|---|--|
| 1 | ON/OFF | Turn on or turn off the unit |
| 2 | TURBO | Set turbo function |
| 3 | MODE | Set operation mode |
| 4 |  | Set up&down swing status |
| 5 | I FEEL | Set I FEEL function |
| 6 | TEMP | Switch temperature displaying type on the unit's display |
| 7 |  | Set health function and air function |
| 8 | LIGHT | Set light function |
| 9 | X-FAN | Set X-FAN function |
| 10 | SLEEP | Set sleep function |
| 11 | CLOCK | Set clock of the system |
| 12 | TOFF | Set timer off function |

| | | |
|----|---|-----------------------------|
| 13 | TON | Set timer on function |
| 14 |  | Set left&right swing status |
| 15 | FAN | Set fan speed |
| 16 | / | Set temperature and time |

3. Indoor Unit Wired Controller

3.1 Display



Fig.1.1 Wired Controller

3.1.1 LCD of Wired Controller

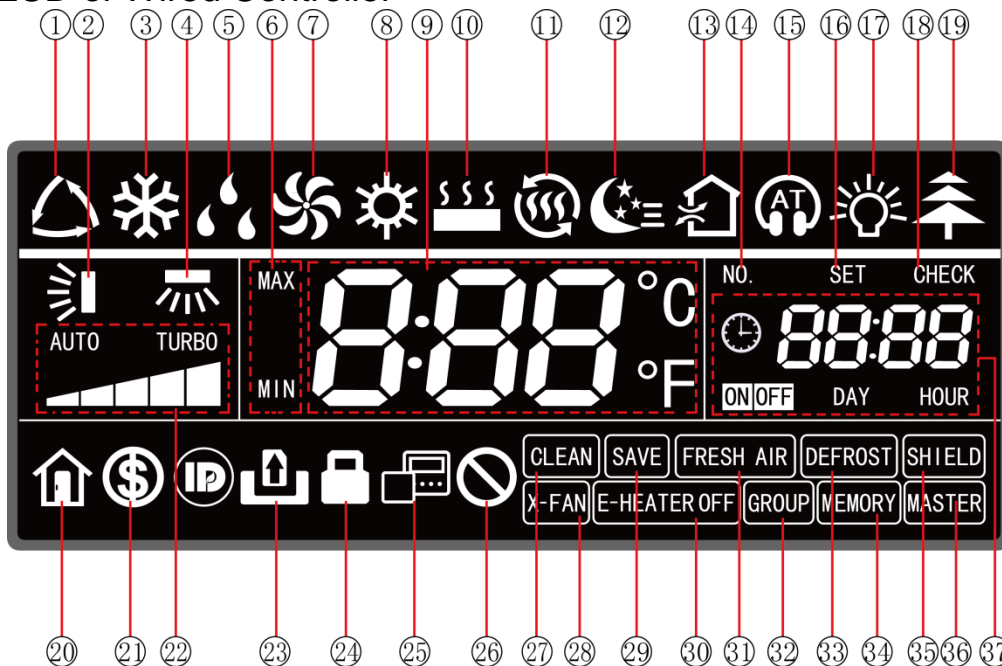


Fig.1.2 LCD Display of Wired Controller

3.1.2 LCD Display Instructions

Table 1.1 LCD Display Instructions

GMV5 Home DC Inverter Multi VRF Units

| No. | Name | Instructions |
|-----|---------------------------------|--|
| 1 | Auto* | Auto mode (Under Auto mode, indoor units will automatically select their operating mode as per the temperature change so as to provide comfort.) |
| 2 | Up and down swing | Up and down swing function |
| 3 | Cooling | Cooling mode |
| 4 | Left and right swing* | Left and right swing function |
| 5 | Drying | Drying mode |
| 6 | Maximum and minimum temperature | It's valid under Save mode and displays during setting. Temperature lower limit for Cooling: Limit the minimum temperature value under Cooling or Drying mode. Temperature upper limit for Heating: Limit the maximum temperature value under Heating, 3D Heating, Warming mode. |
| 7 | Fan | Air supplying mode |
| 8 | Heating | Heating mode |
| 9 | Temperature zone | It shows the setting temperature value (If the wired controller controls a fresh air blower, it will show "FAP"). |
| 10 | Floor heating* | Floor heating mode (When Heating and Floor Heating simultaneously show up, it indicates 3D Heating is activated.) |
| 11 | Warming* | Warming mode |
| 12 | Sleep | Sleep status |
| 13 | Air* | Air exchange status. It's an optional function for indoor unit. |
| 14 | No. | When inquiring or setting project number of indoor unit, it displays "No." icon. |
| 15 | Quiet | Quiet status (including Quiet and Auto Quiet modes) |
| 16 | Set | It displays "Set" icon under parameter setting interface. |
| 17 | Light | It is displayed when light board of indoor unit is on. |
| 18 | Check | It displays "Check" icon under parameter query interface. |
| 19 | Health* | It is displayed when Health function is set. It is an optional function for indoor unit. |
| 20 | Absence | It is displayed when Absence function is set. |
| 21 | Save | Indoor unit is running in an energy-saving mode. |
| 22 | Fan speed | It indicates the current set fan speed (including 7 types of speed: Auto, Low Speed, Medium-low Speed, Medium Speed, Medium-high Speed, High Speed and Turbo Speed) |
| 23 | Gate | Gate-control card is out. |
| 24 | Child lock | Child Lock status. |
| 25 | Slave wired controller | It indicates the current wired controller is a slave wired controller (address of wired controller is 02). |
| 26 | Invalid | It is displayed when operation is invalid. |
| 27 | Clean | Remind to clean the filter. |
| 28 | X-FAN | It is displayed when X-fan function is set. |
| 29 | Save | Outdoor unit is running in energy-saving mode/System capacity upper limit is less than 100%/Long-distance energy saving status |
| 30 | E-HEATER* | Allow auxiliary electric heating to be on. |
| 31 | Fresh air | Reserved |
| 32 | Group | It is displayed when one wired controller controls multiple indoor units. |
| 33 | Defrost | Outdoor unit is in defrosting status. |
| 34 | Memory | Memory status (Indoor unit resumes the original setting state after power is recovered from power failure). |
| 35 | Shield | Shielding status |
| 36 | Master | It is displayed when the current wired controller connects the master indoor unit. |
| 37 | Timer zone | It displays system clock and timer status. |

Remark: When wired controller is connected with different indoor unit, some function will be different.

3.2 Buttons

3.2.1 Graphics of Buttons

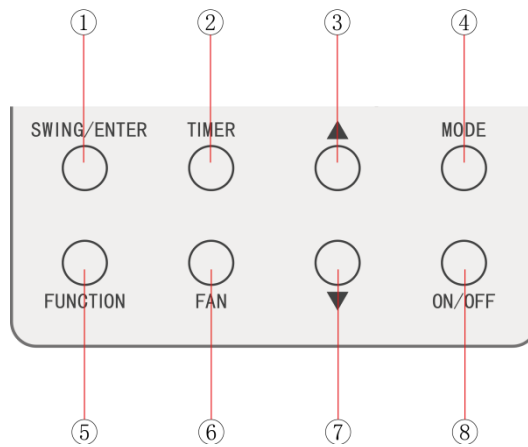


Fig.2.1 Graphics of Buttons

3.2.2 Function Instructions of Buttons

Table 2.1 Function Instructions of Buttons

| No. | Name | Functions |
|-------|-------------|--|
| 1 | Swing/Enter | (1) Set up & down swing function (2) Select and cancel function |
| 2 | Timer | Timer setting |
| 3 | Increase | (1) Set operating temperature of indoor unit (2) Set Timer |
| 7 | Decrease | (3) Switch among Quiet mode, Air grade, Clean grade and set the maximum and minimum temperature under Save mode. (4) Set and inquire parameters |
| 4 | Mode | Switch among Auto, Cooling, Drying, Fan, Heating, Floor Heating, 3D Heating and Warming modes. (Note: Floor Heating, 3D Heating and Warming will show up when the unit has those functions.) |
| 5 | Function | Switch among Air, Quiet, Light, Health, Absence, Save, Clean, E-heater and X-fan functions. |
| 6 | Fan | Switch among Auto, Low Speed, Medium-low Speed, Medium Speed, Medium-high Speed, High Speed and Turbo Speed. |
| 8 | On/Off | Indoor unit On/Off |
| 3 + 7 | Child lock | Press and hold Increase button and Decrease button for 5 seconds to enter or cancel Child Lock function. |

3.3 Installation and Debugging of Wired Controller

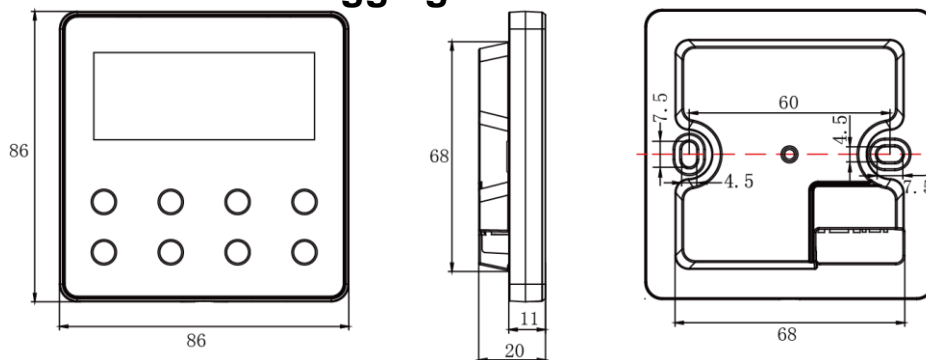


Fig.3.1 Dimension of Wired Controller

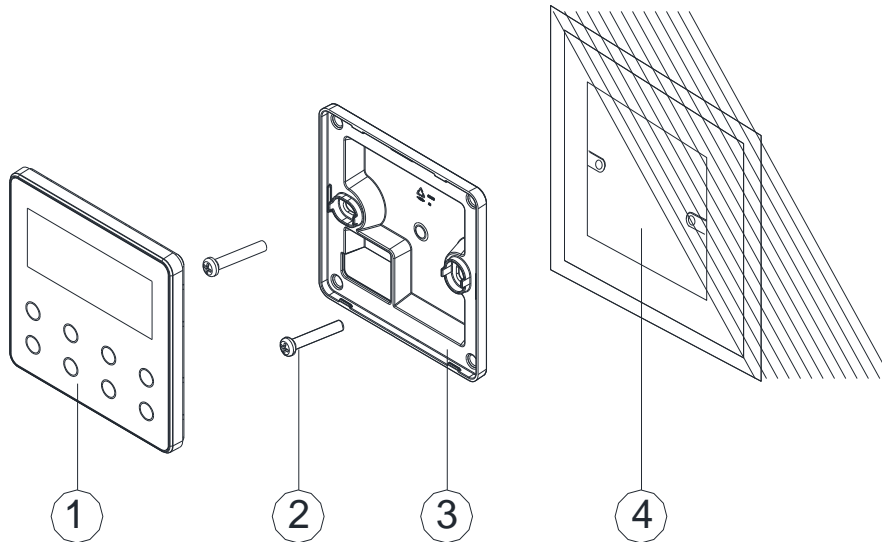


Fig.3.2 Parts of Wired Controller

| | | | | |
|----------|---------------------------|-------------|-------------------------------|--------------------------------|
| No. | 1 | 2 | 3 | 4 |
| Name | Panel of wired controller | Screw M4X25 | Soleplate of wired controller | Wiring box mounted in the wall |
| Quantity | 1 pc | 2 pc | 1 pc | Prepared by user |

3.3.1 Installation of Wired Controller

3.3.1.1 Selection of Communication Wire

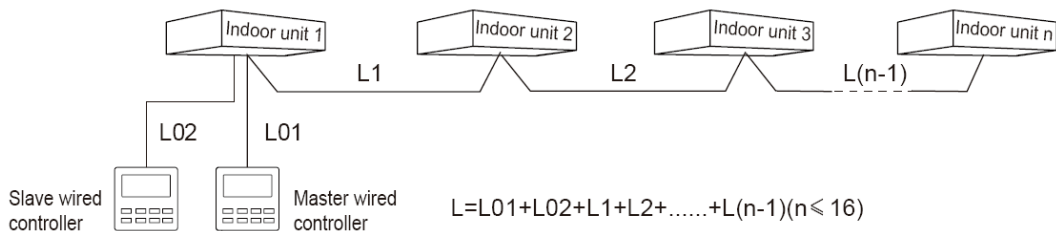


Fig.3.3 Length of Communication Wire

| Wire material type | Total length of communication wire between indoor unit and wired controller L(m) | Wire size (mm ²) | Material standard | Remarks |
|--|--|------------------------------|-------------------|---|
| Light/Ordinary polyvinyl chloride sheathed twisted copper cord (RVVS) | L≤250 | 2x0.75~ 2x1.25 | GB/T 5023.5-2008 | Total length of communication wire can't exceed 250m. |
| Shielding light/Ordinary polyvinyl chloride sheathed twisted copper cord (RVVSP) | L≤250 | 2x0.75~ 2x1.25 | GB/T 5023.5-2008 | If unit is installed in a place with strong electromagnetic interference, use shielding wire (RVVSP) as the communication wire of the wired controller. |

△ Notice:

① If air conditioner is installed in a place with strong electromagnetic interference, communication wire of wired controller must be shielding twisted pair.

② Materials of communication wire for wired controller must be selected according to this manual strictly.

3.3.1.2 Installation Requirements

- (1) Never install the wired controller at wet places.
- (2) Never install the wired controller under direct sunlight.
- (3) Never install the wired controller at a place near high temperature objects or water-splashing places.
- (4) Never install the wired controller at a place that faces toward a window to prevent abnormal work due to the interference from other wired controllers around.

3.3.1.3 Wiring Requirements

There are four network wiring methods between wired controller and indoor unit:

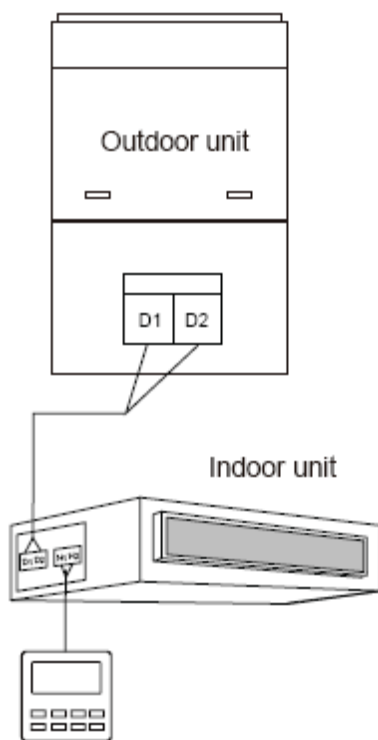


Fig.3.4 One Wired Controller Controls One Indoor Unit

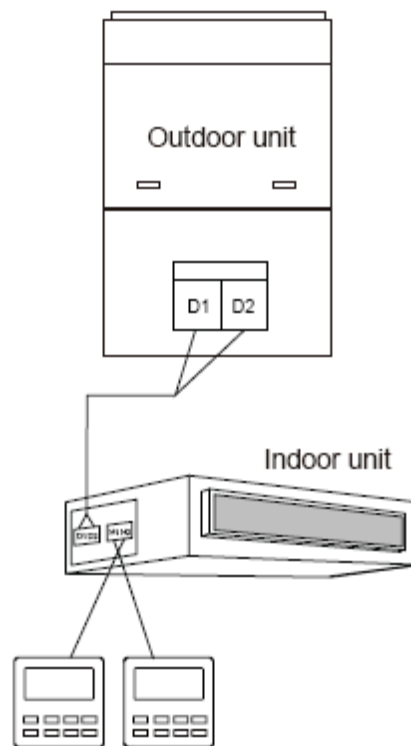


Fig.3.5 Two Wired Controllers Control One Indoor Unit

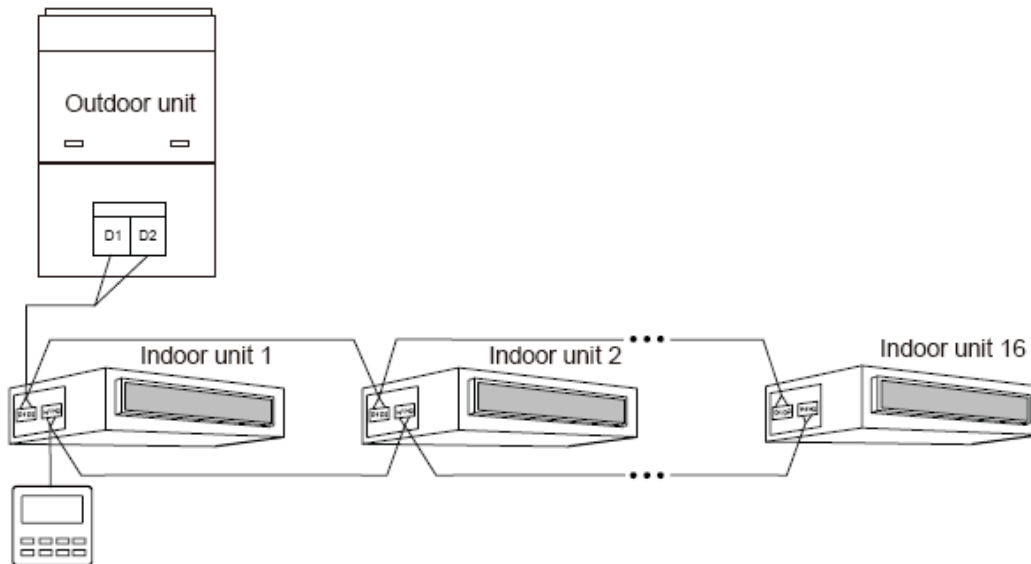


Fig.3.6 One Wired Controller Controls Multiple Indoor Units Simultaneously

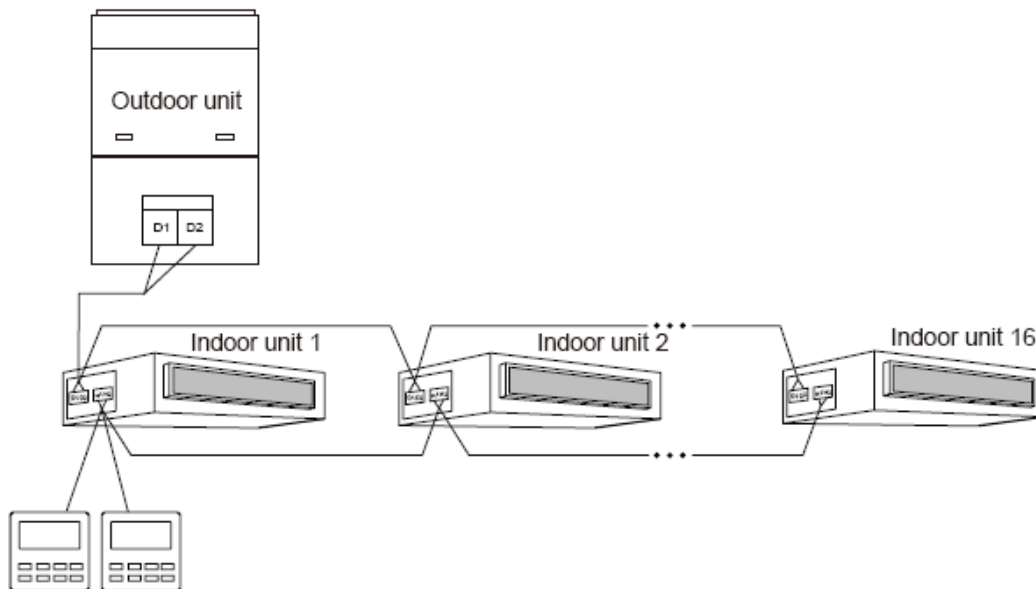


Fig.3.7 Two Wired Controllers Control Multiple Indoor Units Simultaneously

Wiring instructions:

- (1) When one wired controller controls multiple indoor units simultaneously, the wired controller can connect to any one indoor unit, but the connected indoor unit must be the same series indoor unit. The total quantity of indoor unit controlled by wired controller can't exceed 16 sets, and the connected indoor unit must be within the same indoor unit's network. Please refer to section 3.2.3 for the setting method.
- (2) When two wired controllers control one indoor unit, the addresses of those two wired controllers should be different. Please refer to section 3.2.3 for the setting method.
- (3) When two wired controllers control multiple indoor units, wired controller can connect to any one indoor unit, while the connected indoor unit should be the same series indoor unit. The addresses of those two wired controllers should be different. Please refer to section 3.2.3 for the setting method. The total quantity of indoor unit controlled by wired

controller can't be more than 16 sets and all connected indoor units must be within the same indoor unit network. Number of indoor units of group control must be set for wired controller. Please refer to section 3.2.3.

- (4) When one (or two) wired controller(s) control(s) multiple indoor units at the same time, the controlled indoor unit's setting should be the same.
- (5) Network wiring between wired controller and indoor unit must follow one of the four wiring methods as shown in Fig 3.4-3.7. As for the connection method shown in Fig 3.5 and 3.7, there should be only one master wired controller (address 01) and one slave wired controller (address 02). There can't be more than 2 wired controllers.

Note:

Series of indoor unit include: ①Common Multi VRF Indoor Units; ②Fresh Air Indoor Units; ③Double Heat Sources Indoor Units; ④Combining Type Indoor Units; Units except for fresh air units, double heat sources units, combining units are common multi VRF.

3.3.1.4 Installation

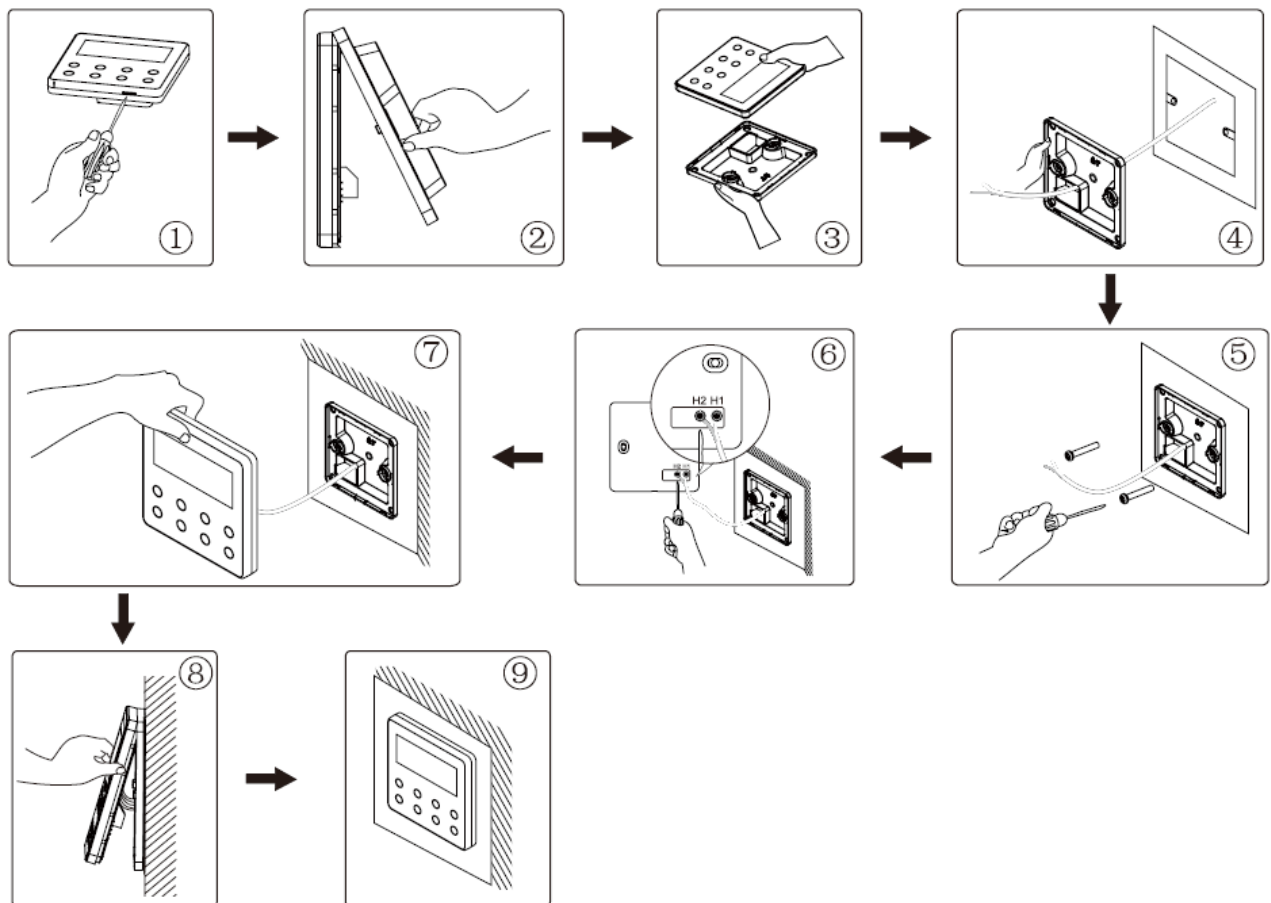


Fig.3.8 Installation of Wired Controller

Fig.3.8 is a simple installation process of wired controller. Please pay attention to the following matters:

- (1) Before installation, please cut off the power for indoor units.
- (2) Pull out the 2-core twisted pair from the installation hole on wall, and then pull this wire through the wiring hole at the rear side of the soleplate of wired controller.
- (3) Stick the soleplate of wired controller on the wall and use screw M4x25 to fix the soleplate onto the installation hole on wall.
- (4) Connect the 2-core twisted pair to H1 and H2 wiring column and then tighten up the screws.
- (5) Bundle the panel and soleplate of wired controller together.

3.3.1.5 Disassembly

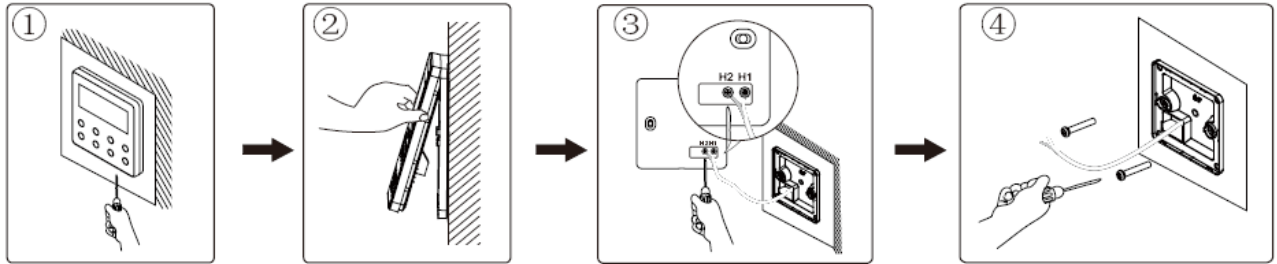


Fig.3.9 Disassembly of Wired Controller

3.3.2 Debugging

3.3.2.1 Set Master Indoor Unit

Under Off status, long press "MODE" button for 5s to set the corresponding indoor unit of wired controller as master indoor unit. When it is successfully set, "MASTER" icon will light up.

Note:

- (1) If master indoor unit already exists in the network, you can also set the other unit to be a master unit. In this case, the original master unit will become slave unit.
- (2) Only one master indoor unit is allowed in a network. If several units are set to be master units, system will automatically designate the unit with the smallest project number as master unit.

3.3.2.2 User Parameter Query

User parameters can be queried under power-on or power-off status.

- (1) Press and hold "FUNCTION" button for 5 seconds to enter the interface of user parameter query. "C00" is displayed in temperature zone and "Check" icon is on;
- (2) Press "▲" or "▼" button to select a parameter code.
- (3) Press "SWING/ENTER" button to return to the previous step until exiting the interface of parameter query.

The user parameter query list is as below:

Table 3.1 List of User Parameter Query

| Parameter code | Parameter name | Parameter range | Query method |
|----------------|--|--|---|
| C00 | Parameter setting ingress | - | <p>Display mode:</p> <p>Timer zone displays the project number of current indoor unit. Note: If current HBS network consists of several indoor units, then only the smallest project number will be shown.</p> |
| C01 | Project number query of indoor unit and location of a faulty indoor unit | 1-255: Project number of online indoor unit | <p>Operation method:</p> <p>Enter query: Press "MODE" button in "C01" status to enter the interface of indoor unit project number query. Press "▲" or "▼" button to select an indoor unit.</p> <p>Display mode:</p> <p>Temperature zone displays the error of the current indoor unit (If there are several errors, they are circularly displayed every 3 seconds).</p> <p>Timer zone displays (project number conflict C5 error) / project number of the current indoor unit (numbers are arranged from small to large).</p> <p>Special operation:</p> <p>After user presses the "MODE" button to enter project number</p> |

GMV5 Home DC Inverter Multi VRF Units

| | | | |
|-----|---|--|--|
| | | | query, buzzer of the indoor unit operated by the wired controller will ring until user quits "C01" query or switches to the next indoor unit. |
| C03 | Indoor unit quantity query in the system network | 1-80 | Timer zone displays the total number of indoor units in the system. |
| C06 | Preferential operation query | 00: Common operation 01: Preferential operation | <p>Operation method: In "C06" status, press "MODE" button to enter the interface of preferential operation query. Press "▲" or "▼" button to select an indoor unit.</p> <p>Display mode: Temperature zone displays the project number of current indoor unit. Timer zone displays the preferential operation setting value of current indoor unit.</p> |
| C07 | Indoor ambient temperature query | - | <p>Operation method: In "C07" status, press "MODE" button to enter the interface of indoor ambient temperature query. Press "▲" or "▼" button to select an indoor unit.</p> <p>Display mode: Temperature zone displays the project number of current indoor unit Timer zone displays the temperature value of indoor ambient temperature sensor after replenishment.</p> |
| C08 | Prompt time query for air filter cleaning | 4-416: days | Timer zone displays the prompt time for air filter cleaning. |
| C09 | Wired controller address query | 01, 02 | Timer zone displays the address of current wired controller. |
| C11 | Indoor unit quantity query in the case that one wired controller controls many indoor units | 1-16 | Timer zone displays the total number of indoor units controlled by the wired controller. |
| C12 | Outdoor ambient temperature query | - | Timer zone displays the temperature value of the ambient temperature sensor of master outdoor unit. |
| C17 | Indoor relative humidity query | 20~90 | <p>Operation method: In "C17" status, press "MODE" button to enter the interface of indoor relative humidity query. Press "▲" or "▼" button to select an indoor unit.</p> <p>Display mode: Temperature zone displays the relative humidity value. Timer zone displays the project number of indoor unit (numbers are arranged from small to large). If HBS network consists of only one indoor unit, the timer zone will directly display the relative humidity value of that indoor</p> |

GMV5 Home DC Inverter Multi VRF Units

| | | | unit in the interface of "C17". |
|-----|---|-------|---|
| C18 | Indoor unit project number query in the communication network | 1~255 | <p>Operation method ("C18" function is not available for slave wired controller):</p> <p>Setting: In "C18" status, press "MODE" button to enter the interface of indoor unit project code query. Press "▲" or "▼" button to select an indoor unit.</p> <p>Cancellation:</p> <p>①If user quits the "C18" query interface within 20 seconds, the project number display is cancelled.</p> <p>②If the query interface exits after 20 seconds upon time out, press "ON/OFF" button in power-on or power-off status to cancel the project number display.</p> <p>③The method for cancelling the project number display on any wired controller in the network is the same as ②.</p> <p>Display mode:</p> <p>Temperature zone displays the number of current indoor unit (numbers are arranged from small to large).</p> <p>Timer zone displays the project number of indoor unit.</p> <p>Each indoor unit and wired controller in the network will display its own project number (Wired controller will display project numbers of indoor unit circularly every 3 seconds from small to large).</p> |
| C20 | Fresh air indoor unit air discharge temperature query | -9~99 | <p>Operation method:</p> <p>In "C20" status, press "MODE" button to enter the interface of fresh air indoor unit temperature query. Press "▲" or "▼" button to select an indoor unit.</p> <p>Display mode:</p> <p>Temperature zone displays the project number of current indoor unit (numbers 1~16 are arranged from small to large).</p> <p>Timer zone displays the air discharge temperature of fresh air indoor unit.</p> <p>If HBS network consists of only one indoor unit, the timer zone will directly display the air discharge temperature of that fresh air unit in the interface of "C20".</p> |

Note:

- ①In parameter query status, "FAN" and "TIMER" buttons are invalid. By pressing "ON/OFF" button, user can return to the main interface but not power on or off the unit.
- ②In parameter query status, signals of remote controller are invalid.

3.3.2.3 User Parameter Settings

User parameters can be set in power-on or power-off status.

1. Press and hold "FUNCTION" button for 5 seconds, the temperature zone will display "C00". Then press and hold the "FUNCTION" button for another 5 seconds to enter the interface of wired controller parameter settings. Temperature zone will display "P00".

2. Select a parameter code by pressing "▲" or "▼". Press "MODE" button to switch to parameter value settings. The parameter value blinks. Adjust the parameter value by pressing "▲" or "▼". Then press "SWING/ENTER" button to complete the setting.

3. Press "SWING/ENTER" button to return to the previous step until exiting parameter settings.

The user parameter setting list is as below:

Table 3.2 List of User Parameter Settings

| Parameter code | Parameter name | Parameter range | Default value | Remarks |
|----------------|---|---|---------------|---|
| P10 | Setting of master indoor unit | 00: No change to the current master/slave status of indoor units 01: Set the current indoor to be master indoor unit | 00 | After the indoor unit connected with the current wired controller is successfully set as master indoor unit, "MASTER" on the wired controller will be lit up. |
| P11 | Infrared connection setting of wired controller | 00: Disabled 01: Enabled | 01 | This setting can only be enabled through the master wired controller. When the infrared remote receiving function of wired controller is disabled, neither the master nor slave wired controller can receive remote signals. The wired controllers can only be operated by pressing. |
| P13 | Wired controller address setting | 01: Master wired controller 02: Slave wired controller | 01 | When two wired controllers simultaneously control one or more indoor units, the two wired controller should use different addresses. The slave wired controller (address: 02) doesn't have the function of unit parameter setting except the function of setting its own address. |
| P14 | Quantity setting of group-controlled indoor units | 00: Disabled 01-16: Number of indoor units | 01 | This value is set based on the number of connected indoor units. If the current value is inconsistent with the actual number of group-controlled indoor units, "L9" error will occur. |
| P30 | Static pressure setting for indoor fan | Type 1: 03.04.05.06.07 Type 2: 01.02.03.04.05.06 .07.08.09 | 05 | There are 2 types of indoor unit static pressure: 5 levels: 03, 04, 05, 06, 07 9 levels: 01, 02, 03, 04, 05, 06, 07, 08, 09 All wired controllers can set static pressure in level 1~9. When the indoor unit with 5 levels of static pressure receives signal from wired controller, signal of level 01, 02, 03 will be taken as level 03 and signal of level 07, 08, 09 will be taken as level 07 by the indoor unit. |
| P31 | High ceiling installation | 00: Standard height of ceiling installation | 00 | |

GMV5 Home DC Inverter Multi VRF Units

| | | | | |
|-----|--|---|------|--|
| | | 01: High height of ceiling installation | | |
| P33 | Setting of timer function | 00: Common timing 01: Time-point timing | 00 | |
| P34 | Effectiveness of repeated time-point timing | 00: Single timing 01: Repeat every day | 00 | This setting is valid only when the timer function is set to time-point timing. |
| P37 | Cooling temperature setting for auto mode | 17°C~30°C | 25 | Cooling set temperature – Heating set temperature ≥1 Note: The two settings are still valid in remote shielding status. |
| P38 | Heating temperature setting for auto mode | 16°C~29°C | 20 | |
| P43 | Setting of preferential operation | 00: Common operation 01: Preferential operation | 00 | When power supply is insufficient, indoor units that are set with preferential operation can be turned on or off at will while other indoor units will be powered off forcibly. Error code will be displayed on the unit that is forcibly stopped. |
| P46 | Clearing of accumulated time for air filter cleaning | 00: Not cleared 01: Cleared | 00 | |
| P47 | Setting of superfast defrosting | 00: Common defrosting 01: Superfast defrosting 1 02: Superfast defrosting 2 | 00 | Note: Superfast defrosting function is only applicable to models whose jumper cap is 10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 |
| P49 | Setting of opening angle for indoor unit air return panel | 01: Angle 1 (25°) 02: Angle 2 (30°) 03: Angle 3 (35°) | 01 | Only applicable to some models |
| P50 | Setting of cooling air discharge temperature for fresh air indoor unit | 16°C~30°C | 18°C | Only applicable to fresh air indoor unit |
| P51 | Setting of heating air discharge temperature for fresh air indoor | 16°C~30°C | 22°C | Only applicable to fresh air indoor unit |

GMV5 Home DC Inverter Multi VRF Units

| | unit | | | |
|-----|--|---|----|---|
| P54 | Setting of linkage for fresh air indoor unit | 00: No linked control 01: Linked control | 00 | After linkage function is set, fresh air indoor unit will be powered on or off with the power-on or power-off of common indoor units. They can also be powered on or off manually. Note: This setting is only applicable to fresh air indoor unit. |

Note:

In parameter setting status, "FAN" and "TIMER" buttons are invalid. By pressing "ON/OFF" button, user can return to the main interface but not power on or off the unit.

In parameter setting status, signals of remote controller are invalid.

3.3.2.4 Engineering Parameter Query

Engineering parameters can be queried in power-on or power-off status.

- (1) Press and hold "FUNCTION" button for 5 seconds to enter the interface of engineering parameter query. "C00" is displayed in temperature zone and "CHECK" icon is on;
- (2) After "C00" is displayed, continuously press "MODE" button for 3 times to enter engineering parameter query.
- (3) Press "▲" or "▼" button to select a parameter code.
- (4) Press "SWING/ENTER" button to return to the previous step until exiting parameter query.

In the engineering parameter query interface, user can also query user parameters as listed in table 3.1.

The list of engineering parameter query is as below:

Table 3.3 List of Engineering Parameter Query

| Parameter code | Parameter name | Parameter range | Query method |
|----------------|-------------------------------------|-----------------|--|
| C00 | Parameter setting ingress (default) | - | Display mode: Timer zone displays the project number of the current indoor unit. Note: If the current HBS network consists of several indoor units, only the indoor unit that has the smallest project number is displayed. |
| C02 | Indoor unit capacity query | - | Operation method: In "C02" status, press "MODE" button to enter the interface of preferential operation query. Press "▲" or "▼" to switch the project number of indoor unit. Display mode: Temperature zone displays the project number of the current indoor unit. Timer zone displays the current indoor unit capacity/ indoor unit capacity after adjustment. |

GMV5 Home DC Inverter Multi VRF Units

| | | | |
|-----|--|--|--|
| C04 | Project number query of master indoor unit | 1-255:Project number; 00: No master indoor unit | Timer zone displays the project number of master indoor unit/ 00. |
| C05 | Historical error query ingress of indoor unit | 5 historical errors | <p>Operation method:</p> <p>1. In "C05" status, press "MODE" button to enter the historical error query interface. Press "▲" or "▼" to switch the project number of indoor unit. Press "MODE" button to enter error code query of the current indoor unit. Press "▲" or "▼" to switch the error number. Press "SWING/ENTER" button to return to the upper-level menu.</p> <p>Display mode:</p> <p>Temperature zone displays the error number and error code. Timer zone displays the project number of indoor unit.</p> |
| C10 | Static pressure setting query of outdoor unit | 00: 0Pa 20: 20Pa 50: 50Pa 80: 80Pa | <p>Operation method:</p> <p>In "C10" status, press "MODE" button to enter the interface of outdoor unit static pressure setting query. Press "▲" or "▼" button to switch the outdoor unit address.</p> <p>Display mode:</p> <p>Temperature zone displays the address of the current outdoor unit. Timer zone displays the static pressure setting value.</p> |
| C13 | Outdoor unit network number query | 1~255 | Timer zone displays the network number of the current outdoor unit. |
| C14 | Temperature query for inlet tube temperature sensor of indoor unit | -9~99 | <p>Operation method:</p> <p>In "C14" status, press "MODE" button to enter the interface of indoor unit inlet tube temperature sensor query. Press "▲" or "▼" button to switch the number of indoor unit.</p> <p>Display mode:</p> <p>Temperature zone displays the project number of the current indoor unit. Timer zone displays the temperature value.</p> <p>If the HBS network consists of only one indoor unit, timer zone will directly display the temperature value in "C14" status. Temperature is displayed in Centigrade whether the remote signal is Fahrenheit or Centigrade.</p> <p>When the wired controller displays the inlet tube temperature after receiving signals from the remote controller, the inlet tube temperature of the indoor unit that has the smallest project number in the HBS network is displayed by default.</p> |
| C15 | Temperature query for outlet tube | -9~99 | <p>Operation method:</p> <p>In "C15" status, press "MODE" button to enter the interface of indoor unit outlet tube temperature sensor query. Press "▲" or "▼" button</p> |

GMV5 Home DC Inverter Multi VRF Units

| | | | |
|-----|---|---------------------|--|
| | temperature sensor of indoor unit | | <p>to switch the number of indoor unit.</p> <p>Display mode:</p> <p>Temperature zone displays the project number of the current indoor unit.</p> <p>Timer zone displays the temperature value.</p> <p>If the HBS network consists of only one indoor unit, timer zone will directly display the temperature value in "C15" status.</p> <p>Temperature is displayed in Centigrade whether the remote signal is Fahrenheit or Centigrade.</p> <p>When the wired controller displays the outlet tube temperature after receiving signals from the remote controller, the outlet tube temperature of the indoor unit that has the smallest project number in the HBS network is displayed by default.</p> |
| C16 | Opening degree query of electronic expansion valve of indoor unit | 0~20 | <p>Operation method:</p> <p>In "C16" status, press "MODE" button to enter the interface of indoor unit electronic expansion valve opening degree query. Press "▲" or "▼" button to switch the number of indoor unit.</p> <p>Display mode:</p> <p>Temperature zone displays the project number of the current indoor unit.</p> <p>Timer zone displays the opening degree value.</p> <p>If the HBS network consists of only indoor unit, timer zone will directly display the opening degree value of electronic expansion valve in the "C16" status.</p> <p>When the wired controller displays the opening degree of electronic expansion valve after receiving signals from remote controller, the opening degree of electronic expansion valve of the indoor unit that has the smallest project number in the HBS network is displayed.</p> |
| n2 | Capacity configuration ratio upper limit of outdoor/indoor unit | 35:135% 50:150% | <p>Temperature zone displays parameter code.</p> <p>Timer zone displays the setting value of capacity configuration ratio of the current outdoor/indoor unit.</p> |
| n6 | Historical error query ingress of outdoor unit | 5 historical errors | <p>Operation method:</p> <p>In "n6" status, press "MODE" button to enter the query of outdoor unit error code (If the wired controller controls multiple indoor units, only the errors memorized by the indoor unit that has the smallest project number can be queried). Press "▲" or "▼" button to switch the error number. Press "SWING/ENTER" button to return to the upper-level menu.</p> <p>Display mode:</p> <p>Temperature zone displays the error number and error code from left to right (1~5, errors are arranged from the earliest to the latest).</p> <p>Timer zone displays the project code of outdoor unit.</p> |
| n7 | Parameter | 01~13 | Operation method (n7 query is not supported by slave wired |

GMV5 Home DC Inverter Multi VRF Units

| | query ingress of outdoor unit | 25~29 | <p>controller):</p> <p>In "n7" status, the timer zone is not displayed. Press "MODE" button to enter parameter query of outdoor unit. The first bit in the temperature zone (display bit of the outdoor unit module ID) blinks. Press "▲" or "▼" to switch the outdoor unit module ID. Press "MODE" button to select an outdoor unit module. In this case, the first bit in the temperature zone stops blinking, and the second and third bits in the temperature zone display the parameter code. The timer zone displays a corresponding parameter value. Press "▲" or "▼" to switch the parameter code and press the "SWING/ENTER" button to return to the upper-level menu.</p> <p>Display mode:</p> <p>Temperature zone displays the outdoor unit module ID and parameter code from left to right.</p> <p>Timer zone displays a corresponding parameter value on the right.</p> <table border="1"> <thead> <tr> <th>Parameter code</th> <th>Parameter name</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>Outdoor ambient temperature</td> <td>°C/°F</td> </tr> <tr> <td>02</td> <td>Operation frequency of compressor 1</td> <td>Hz</td> </tr> <tr> <td>03</td> <td>Operation frequency of compressor 2</td> <td>Hz</td> </tr> <tr> <td>04</td> <td>Operation frequency of outdoor fan</td> <td>Hz</td> </tr> <tr> <td>05</td> <td>Module high pressure</td> <td>°C/°F</td> </tr> <tr> <td>06</td> <td>Module low pressure</td> <td>°C/°F</td> </tr> <tr> <td>07</td> <td>Discharge temperature of compressor 1</td> <td>°C/°F</td> </tr> <tr> <td>08</td> <td>Discharge temperature of compressor 2</td> <td>°C/°F</td> </tr> <tr> <td>09</td> <td>Discharge temperature of compressor 3</td> <td>°C/°F</td> </tr> <tr> <td>10</td> <td>Discharge temperature of compressor 4</td> <td>°C/°F</td> </tr> <tr> <td>11</td> <td>Discharge temperature of compressor 5</td> <td>°C/°F</td> </tr> <tr> <td>12</td> <td>Discharge temperature of compressor 6</td> <td>°C/°F</td> </tr> <tr> <td>13</td> <td>Operation frequency of compressor 3</td> <td>Hz</td> </tr> <tr> <td>25</td> <td>Outdoor unit heating EXV1 (Actual value = Displayed value*10)</td> <td>PLS</td> </tr> <tr> <td>26</td> <td>Outdoor unit heating EXV2</td> <td>PLS</td> </tr> </tbody> </table> | Parameter code | Parameter name | Unit | 01 | Outdoor ambient temperature | °C/°F | 02 | Operation frequency of compressor 1 | Hz | 03 | Operation frequency of compressor 2 | Hz | 04 | Operation frequency of outdoor fan | Hz | 05 | Module high pressure | °C/°F | 06 | Module low pressure | °C/°F | 07 | Discharge temperature of compressor 1 | °C/°F | 08 | Discharge temperature of compressor 2 | °C/°F | 09 | Discharge temperature of compressor 3 | °C/°F | 10 | Discharge temperature of compressor 4 | °C/°F | 11 | Discharge temperature of compressor 5 | °C/°F | 12 | Discharge temperature of compressor 6 | °C/°F | 13 | Operation frequency of compressor 3 | Hz | 25 | Outdoor unit heating EXV1 (Actual value = Displayed value*10) | PLS | 26 | Outdoor unit heating EXV2 | PLS |
|----------------|--|-------|--|----------------|----------------|------|----|-----------------------------|-------|----|-------------------------------------|----|----|-------------------------------------|----|----|------------------------------------|----|----|----------------------|-------|----|---------------------|-------|----|---------------------------------------|-------|----|---------------------------------------|-------|----|---------------------------------------|-------|----|---------------------------------------|-------|----|---------------------------------------|-------|----|---------------------------------------|-------|----|-------------------------------------|----|----|--|-----|----|---------------------------|-----|
| Parameter code | Parameter name | Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01 | Outdoor ambient temperature | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 02 | Operation frequency of compressor 1 | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 03 | Operation frequency of compressor 2 | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 04 | Operation frequency of outdoor fan | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 05 | Module high pressure | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 06 | Module low pressure | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 07 | Discharge temperature of compressor 1 | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 08 | Discharge temperature of compressor 2 | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 09 | Discharge temperature of compressor 3 | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Discharge temperature of compressor 4 | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Discharge temperature of compressor 5 | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Discharge temperature of compressor 6 | °C/°F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Operation frequency of compressor 3 | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | Outdoor unit heating EXV1 (Actual value = Displayed value*10) | PLS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Outdoor unit heating EXV2 | PLS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

GMV5 Home DC Inverter Multi VRF Units

| | | | | (Actual value = Displayed value*10) | | | | | | | | | | | |
|---|--------------------------------|--|--|---|-------|---------|------------------|------------|----------|---------|---|--------------------------------|---------------------------------|--|---|
| | | | 27 | Sub-cooler EXV (Actual value = Displayed value*10) | PLS | | | | | | | | | | |
| | | | 28 | Defrosting temperature | °C/°F | | | | | | | | | | |
| | | | 29 | Liquid-extracting temperature of sub-cooler | °C/°F | | | | | | | | | | |
| | | | 30 | Outlet tube temperature of gas separator | °C/°F | | | | | | | | | | |
| | | | 31 | Oil return temperature | °C/°F | | | | | | | | | | |
| | | | 32 | Inlet tube temperature of condenser | °C/°F | | | | | | | | | | |
| | | | 33 | Outlet tube temperature of condenser | °C/°F | | | | | | | | | | |
| A6 | Unit cooling/heating function | nA: Cooling/ Heating nC: Cooling only nH: Heating only nF: Fan (air supply) | Temperature zone displays the parameter code. Timer zone displays the cooling/heating function setting value of the current unit. | | | | | | | | | | | | |
| nb | Barcode query of indoor unit | 0~9, A~Z, a~z,- | <p>Operation method (nb query is not supported by slave wired controller):</p> <p>In “nb” status, the timer zone is not displayed. Press “MODE” button to enter barcode query. The temperature zone displays “nb” and the project number in the timer zone blinks. Press “▲” or “▼” to switch the project number of indoor unit.</p> <p>Press “MODE” button to select an indoor unit. The temperature zone displays “Un” and the timer zone displays “-n”. Press “▲” or “▼” to display the barcode of the entire indoor unit and the barcode of indoor unit controller. Press “SWING/ENTER” button to return to the upper-level menu. The temperature zone displays “nb” and the timer zone displays the project number of the queried indoor unit. Press “SWING/ENTER” button again to return to the upper-level menu.</p> <p>Display mode:</p> <p>Temperature zone displays nb/Un/Pc/barcode. Timer zone displays -n/project number/barcode.</p> <p>The following is an example:</p> <table border="1"> <thead> <tr> <th>Example</th> <th>Temperature zone</th> <th>Timer zone</th> <th>Remark 1</th> <th>Remark2</th> </tr> </thead> <tbody> <tr> <td>Barcode of the entire indoor unit: N1r0128150066</td> <td>Un (displayed on the right)</td> <td>-n (displayed in the middle)</td> <td>It indicates that the following is the</td> <td>Press “▼” to display downward and press</td> </tr> </tbody> </table> | | | Example | Temperature zone | Timer zone | Remark 1 | Remark2 | Barcode of the entire indoor unit: N1r0128150066 | Un (displayed on the right) | -n (displayed in the middle) | It indicates that the following is the | Press “▼” to display downward and press |
| Example | Temperature zone | Timer zone | Remark 1 | Remark2 | | | | | | | | | | | |
| Barcode of the entire indoor unit: N1r0128150066 | Un (displayed on the right) | -n (displayed in the middle) | It indicates that the following is the | Press “▼” to display downward and press | | | | | | | | | | | |

GMV5 Home DC Inverter Multi VRF Units

| | | | | | | |
|---|--|---|-----|------|--|------------------------|
| | | | | | barcode of the entire indoor unit. | "▲" to display upward. |
| | | | N1r | 0128 | It indicates the former 7 bits of the barcode | |
| | | | 150 | 066 | It indicates the latter 6 bits of the barcod. | |
| | | Barcode of indoor unit controller: N1r012815006 7 | Pc | -n | It indicates that the following is the barcode of indoor unit controller | |
| | | | N1r | 0128 | It indicates the former 7 bits of the barcode | |
| | | | 150 | 067 | It indicates the latter 6 bits of the barcode | |
| | | | | | | |
| Note: | | | | | | |
| <p>1. Un indicates the barcode of the entire indoor unit; Pc indicates the barcode of indoor unit controller.</p> <p>2. When there is only one indoor unit, press "MODE" button in "nb" status to enter barcode query. There is no need to select project number of indoor unit.</p> <p>3. System will exit the query status if no operation is performed within 60 seconds.</p> <p>4. The barcode query starts from the barcode of the entire indoor unit and ends at the barcode of indoor unit controller. That is, the query does not start again even if user presses "▼".</p> | | | | | | |

Note:

In parameter query status, "Fan" and "Timer" buttons are invalid. By pressing "ON/OFF" button, user can return to the main interface but not power on or off the unit.

In parameter query status, signals of remote controller are invalid.

3.3.2.5 Engineering Parameter Settings

Engineering parameters can be set in power-on or power-off status.

- (1) Press and hold "FUNCTION" button for 5 seconds and the temperature zone displays "C00". Continue to press "MODE" button for 3 times, and then press and hold "FUNCTION" button for 5 seconds to enter the interface of engineering parameter settings. The temperature zone will display "P00".
- (2) Press "▲" or "▼" button to select a parameter code. Press "MODE" button to switch to parameter value settings. The parameter value blinks. Adjust the parameter value by pressing "▲" or "▼" button, then press "SWING/ENTER" button to complete the setting.
- (3) Press "SWING/ENTER" button to return to the previous step until exiting parameter settings.

In the interface of engineering parameter settings, user can also set user parameters as listed in table 3.2.

The engineering parameter setting list is as below:

Table 3.4 List of Engineering Parameter Settings

| Parameter code | Parameter name | Parameter range | Default value | Remarks |
|----------------|---|--|---------------|---|
| P15 | Power-off memory mode | 00: Standby after recovery from power disconnection 01: Restore the original status after recovery from power disconnection | 00 | |
| P17 | Historical error clearing for indoor unit | 00: Not cleared 01: Cleared | 00 | It is to clear historical errors of all indoor units controlled by the current wired controller. |
| P20 | Setting of indoor unit ambient temperature sensor | 01: Temperature sensor of air return vent; 02: Temperature sensor of wired controller; 03: Temperature sensor of air return vent for cooling, drying and fan mode; Temperature sensor of wired controller for heating; 04: Temperature sensor of wired controller for cooling, drying and fan mode; Temperature sensor of air return vent for heating | 03 | When there are master and slave wired controllers and the temperature sensor of wired controller is used, only the temperature sensor of the master wired controller is used by default. Note: 1. In auto mode, ambient temperature sensor setting is invalid for a common indoor unit but the setting value is memorized. 2. The ambient temperature sensor setting is invalid for a fresh air indoor unit. The temperature sensor of air return vent is used by default. |
| P21 | Corrected value | -15~+15 | Temperature | Press "▲" or "▼" to increase or |

GMV5 Home DC Inverter Multi VRF Units

| | | | | |
|-----|---|--|---|---|
| | of ambient temperature sensor of indoor unit(for cooling, drying and fan mode) | | sensor of unit: 0°C; Temperature sensor of wired controller: 0°C | decrease by 1°C. |
| P22 | Corrected value of ambient temperature sensor of indoor unit (for heating, fast heating and warming mode) | -15~+15 | Temperature sensor of unit: -2°C; Temperature sensor of wired controller: 0°C | Press “▲” or “▼” to increase or decrease by 1°C. Temperature sensor of the unit and the temperature sensor of wired controller share the same corrected value. In heating mode, corrected value of temperature sensor of unit = corrected value of temperature sensor of wired controller -2°C. |
| P32 | Capacity adjustment function of indoor unit | -40%~+40% | 00 | Press “▲” or “▼” to increase or decrease by 10%. |
| P35 | Factory setting recovery for user functions | 00: Invalid 01: Valid | 00 | Select "01" and then press and hold "SWING/ENTER" button to restore the factory settings for user functions (Factory setting recovery will fail if remote shield is effective). |
| P36 | Factory setting recovery for engineering settings | 00: Invalid 01: Valid | 00 | Select "01" and then press and hold "SWING/ENTER" button to restore the factory settings for engineering settings (Factory setting recovery will fail if remote shield is effective). |
| P40 | Prevention for heat collection | 00: Disabled 10: 10 seconds 20: 20 seconds 30: 30 seconds 40: 40 seconds 50: 50 seconds 60: 60 seconds | 00 | It indicates the number of seconds for enabling the low-level fan every 15 minutes. |
| P42 | Setting of indoor unit project number | 1~255 | Automatically generated upon the initial system operation | In "P42" status, press "MODE" button to enter the setting menu. The project number blinks in the timer zone. Press “▲” or “▼” to adjust the project number. Press "SWING/ENTER" button to confirm the setting and return to |

GMV5 Home DC Inverter Multi VRF Units

| | | | | |
|-----|--|---|----|--|
| | | | | the upper-level menu. |
| P45 | One-key reset for indoor unit project number | 00: Invalid 01: Valid | 00 | When it is set to 01, the wired controller initiates an indoor unit project number reset command. |
| P48 | Minimum opening degree setting for heating breakdown of indoor unit expansion valves | 00: Automatically controlled Adjustable in 1~500 | 00 | After the default minimum opening degree for heating breakdown is manually modified, the opening degree remains unchanged upon heating breakdown. |
| P52 | Setting of indoor fan speed in AHRI energy efficiency test mode | 100~1800 | - | <p>Operation method:</p> <p>In "P52" status, timer zone displays the actual speed of AHRI indoor fan.</p> <p>Press "MODE" button to enter the interface of settings. Timer zone displays the targeted speed of indoor fan and blinks. Press "▲" or "▼" to adjust the setting of indoor fan speed. Press and hold for 5 seconds, fan speed will increase one digit by one digit. Press and hold for 5~10 seconds, fan speed will increase two digits by two digits. The adjustment range can't exceed the maximum and minimum value of indoor unit. Press "SWING/ENTER" button to confirm the setting and return to the upper-level menu.</p> <p>Display mode:</p> <p>Temperature zone displays P52. Timer zone displays the indoor fan speed.</p> <p>Note: If one wired controller controls many indoor units, only the actual fan speed of the indoor unit that has the smallest project number will be displayed. Fan speed cannot be set.</p> |
| P53 | Setting of water pump status in special | 00: Water pump is not allowed to be on 01: Water pump is | 01 | If it is set to 00, water pump is not allowed to be on in special operating mode (capacity test |

GMV5 Home DC Inverter Multi VRF Units

| | | | | |
|-----|--|--|----|--|
| | operating mode | allowed to be on | | mode, energy efficiency test mode, AHRI test mode); If it is set to 01, water pump works as normal. |
| P55 | Setting of static pressure for DC fresh air unit | Setting range: 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 12, 13 | 08 | There are 13 levels of static pressure of DC fresh air unit. Each level is corresponding to a speed value. After adjusting fan speed at the main interface of wired controller, motor speed remains unchanged. Motor speed can be changed by setting the static pressure level upon entering wired controller functions. |
| n0 | Setting of system energy-saving operation | 00: Pleasantness in priority 01: Energy-saving in priority | 00 | |
| n1 | Setting of defrosting period | 40: 40 minutes 50: 50 minutes 60: 60 minutes | 50 | |
| n3 | Forcible defrosting | 00: Common 01: Forcible defrosting | 00 | After setting is finished, it automatically restores to "00". |
| n4 | Setting of the highest capacity output limitation for outdoor unit | 08: 80% 09: 90% 10: 100% | 10 | Enter query in "n4" status. Temperature zone displays the function code and timer zone displays the corresponding setting value. |
| A7 | Quiet function for outdoor unit | 00: No quiet function 01~09: Intelligent nighttime quiet mode 1 to mode 9 10~12: Forcible quiet mode 1 to mode 3 | 00 | Enter query in "A7" status. Temperature zone displays the function code and timer zone displays the corresponding setting value. |

Note:

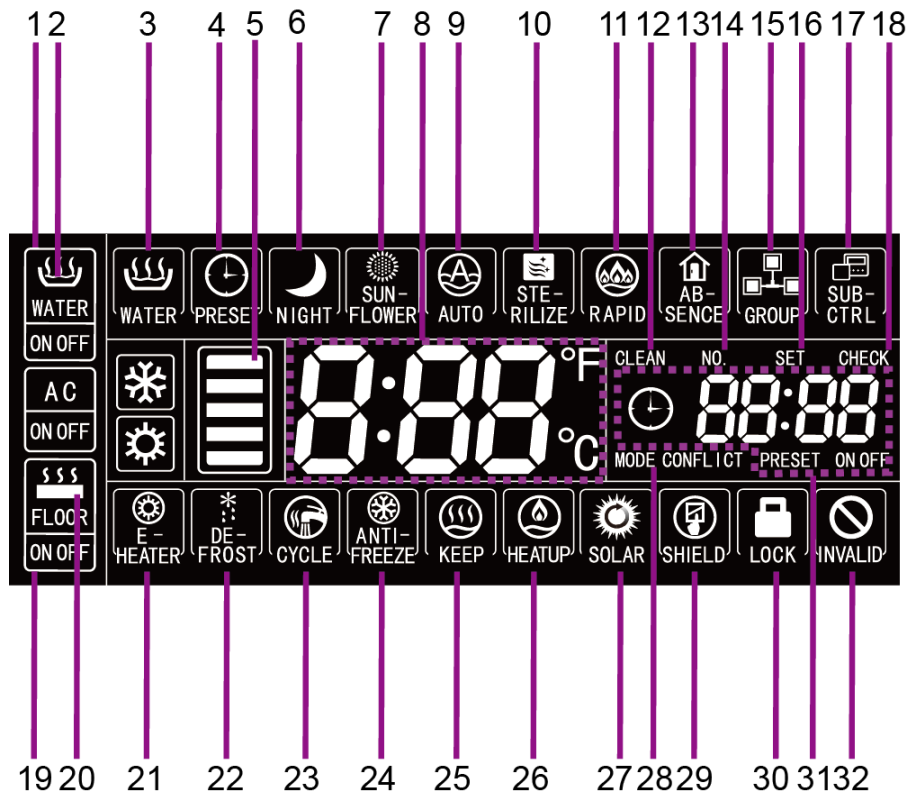
- (1) In parameter setting status, "Fan" and "Timer" buttons are invalid. By pressing "ON/OFF" button, user can return to the main interface but not power on or off the unit.
- (2) In parameter setting status, signals of remote controller are invalid.

4. Hydro Box Wired Controller

4.1 Display



4.1.1 LCD of Wired Controller



4.1.2 LCD Display Instructions

| No. | Name | Instructions |
|-----|---------------|--|
| 1 | Water heating | When wired controller displays water heating function, the corresponding frame will be lit up. |

GMV5 Home DC Inverter Multi VRF Units

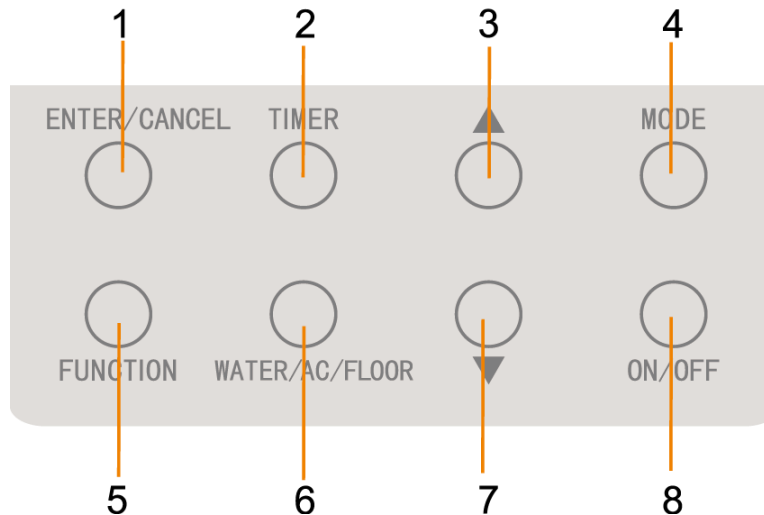
| | | |
|----|------------------------|---|
| 2 | Water heating on/off | The icon of hot water is lit up. Icon of on/off will be displayed along with the on/off of water heating. |
| 3 | Standard water heating | Standard water heating |
| 4 | Preset | Preset water heating |
| 5 | Usable hot water | It indicates the percentage of usable hot water. It is displayed only on water heating interface. |
| 6 | Night | Nighttime water heating |
| 7 | Sunflower | It is displayed when sunflower function is activated. |
| 8 | Temperature zone | It displays set water temperature/ actual water temperature |
| 9 | Auto | It is displayed when water temperature is set automatically. Auto mode can be set in water heating or floor heating. It will be on or off along with the on or off of the corresponding function. |
| 10 | Sterilize | It is lit up when high temperature sterilization is effective. It blinks when sterilization is in process. |
| 11 | Rapid | It is displayed when rapid function is effective. Rapid function can be set in water heating and floor heating. It will be on or off along with the on or off of the corresponding function. |
| 12 | Clean | It is displayed when cleaning function is effective. It blinks when cleaning is in process. |
| 13 | Absence | It is displayed when absence function is effective. |
| 14 | No. | "No." icon is displayed when checking or setting the project number of hydro box. |
| 15 | Group control | It is displayed when one wired controller controls multiple hydro boxes. |
| 16 | Set | "Set" icon is displayed when wired controller is in the interface of parameter setting. |
| 17 | Sub-controller | It indicates that the current wired controller is a slave controller (address: 02). |
| 18 | Check | "Check" icon is displayed when wired controller is in the interface of parameter query. |
| 19 | Floor heating | When wired controller displays floor heating function, the corresponding frame will be lit up. |
| 20 | Floor heating on/off | The icon of floor heating is lit up. Icon of on/off will be displayed along with the on/off of floor heating. |
| 21 | E-heater | It indicates that auxiliary electric heating is on. |
| 22 | Defrost | It indicates outdoor unit is in defrosting process. |
| 23 | Cycle | It indicates the running state of cycle pump. |
| 24 | Antifreeze | It indicates the anti-freezing state. |
| 25 | Keep water temperature | It indicates a running state of hydro box. |
| 26 | Heat up | It indicates a running state of hydro box. |
| 27 | Solar power | It blinks when hydro box is connected with solar power. |
| 28 | Mode conflict | If unit is in cooling/ drying mode, floor heating is not allowed to be on. In this case, "Mode conflict" blinks. |
| 29 | Shield | Shielding state |
| 30 | Child lock | Child lock state |

GMV5 Home DC Inverter Multi VRF Units

| | | |
|--|------------|--|
| 31 | Timer zone | It displays system clock and timer state. |
| 32 | Invalid | It is displayed when operation is invalid. |
| Remark: Functions may vary if wired controller matches with a different hydro box. | | |

4.2 Buttons

4.2.1 Graphics of Buttons

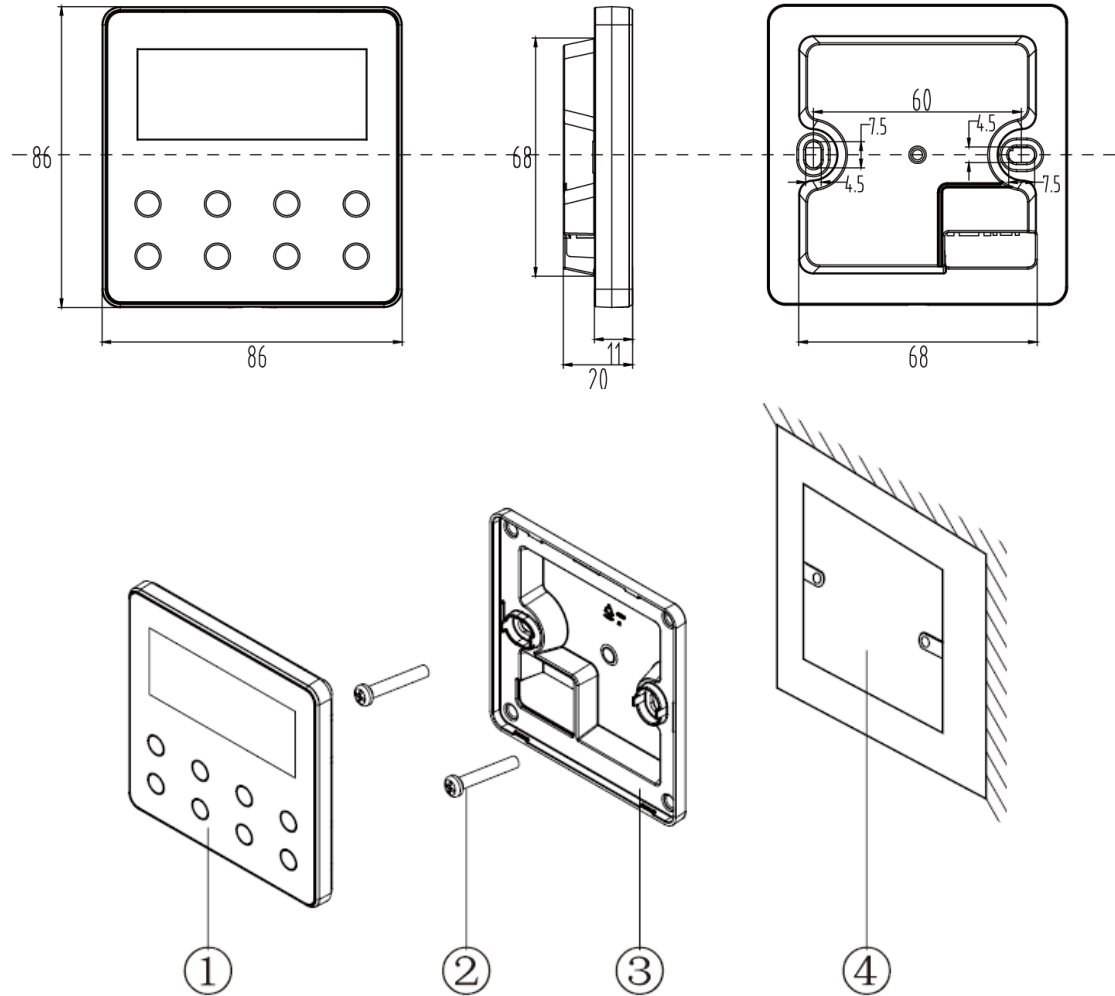


4.2.2 Function Instructions of Buttons

| No. | Name | Functions |
|---------|--|--|
| 1 | Enter/Cancel | Select or cancel a function |
| 3 | Decrease | (1) Set water temperature of water heating, water temperature of floor heating, temperature of high temperature sterilization; (2) Set timer (for water heating/ floor heating), preset water heating time, time of high temperature sterilization; (3) Set and inquire parameters |
| 7 | Increase | |
| 4 | Mode | On the interface of water heating, switch among Standard Water Heating, Preset Water Heating, and Nighttime Water Heating. (Note: On the interface of floor heating, mode can't be switched.) |
| 5 | Function | On the interface of water heating: switch among Sunflower, Water heating water temperature auto setting, Sterilizing, Rapid water heating; On the interface of floor heating: switch among Floor heating water temperature auto setting, Absence function, Rapid floor heating |
| 2 | Timer | Timer setting |
| 8 | On/Off | On/Off of water heating/ floor heating |
| 6 | Water heating/Air conditioning/Floor heating | Switch between water heating interface and floor heating interface (only when water heating and floor heating functions are valid). |
| 7 and 3 | Child lock | Press and hold these two buttons for 5 seconds to activate or cancel child lock function. |

4.3 Installation and Debugging of Wired Controller

Unit: mm



| | | | | |
|----------|---------------------------|-------------|-------------------------------|--------------------------------|
| No. | 1 | 2 | 3 | 4 |
| Name | Panel of wired controller | Screw M4X25 | Soleplate of wired controller | Wiring box mounted in the wall |
| Quantity | 1 pc | 2 pc | 1 pc | Prepared by user |

4.3.1 Installation of Wired Controller

4.3.1.1 Selection of Communication Wire

| Wire material type | Total length of communication wire between hydro box and wired controller L(m) | Wire size (mm ²) | Material standard | Remarks |
|---|--|------------------------------|-------------------|---|
| Light/Ordinary polyvinyl chloride sheathed cord (RVV) | L≤250 | 2×0.75~2×1.25 | GB/T 5023.5-2008 | Total length of communication wire can't exceed 250m. |
| Shielding light/Ordinary polyvinyl chloride sheathed | L≤250 | 2×0.75~2×1.25 | GB/T 5023.5-2008 | If unit is installed in a place with |

GMV5 Home DC Inverter Multi VRF Units

| | | | |
|--------------------------------|--|--|--|
| twisted copper cord (RVVSP) | | | strong electromagnetic interference, use shielding wire (RVVSP). |
|--------------------------------|--|--|--|

△ Note:

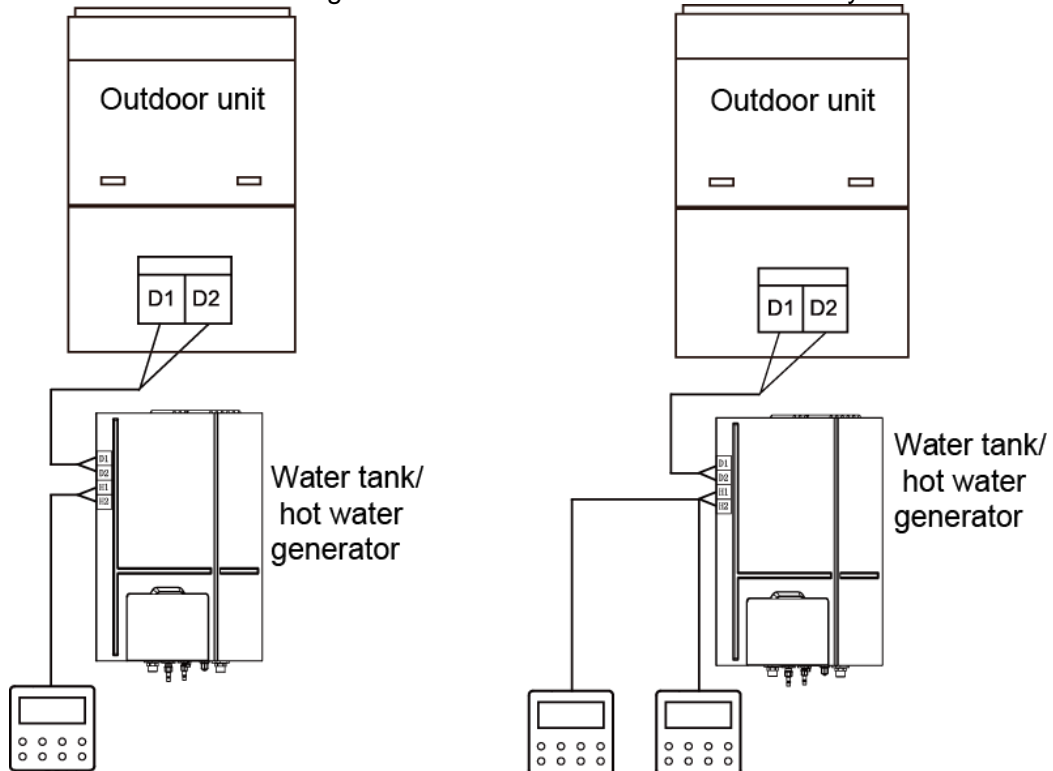
- ① If air conditioner is installed in a place with strong electromagnetic interference, communication wire of wired controller must be shielding twisted pair.
- ② Materials of communication wire for wired controller must be selected according to this manual strictly.

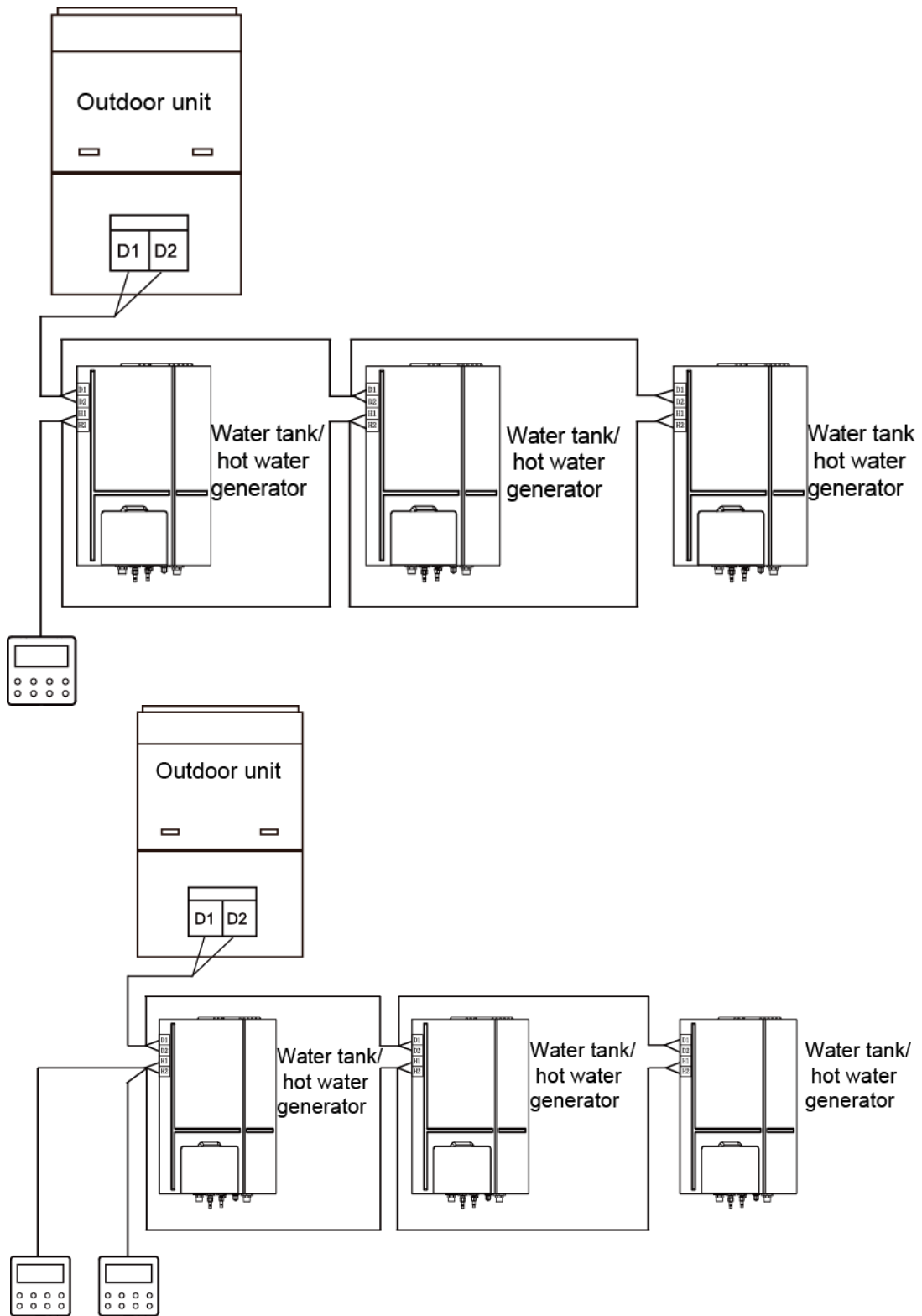
4.3.1.2 Installation Requirements

- (1) Never install the wired controller at wet places.
- (2) Never install the wired controller under direct sunlight.
- (3) Never install the wired controller at a place near high temperature objects or water-splashing places.

4.3.1.3 Wiring Requirements

There are four network wiring methods between wired controller and hydro box:





Wiring instructions:

- (1) When one wired controller controls multiple hydro boxes simultaneously, the wired controller can connect to any one hydro box, but all the connected units must be hydro boxes. The total quantity of hydro box controlled by wired controller can't exceed 3 sets, and the connected hydro box must be within the same network.
- (2) When two wired controllers control one hydro box, the addresses of those two wired controllers should be different. Please refer to section 4.3.2.2 for the setting method.
- (3) When two wired controllers control multiple hydro boxes, wired controller can connect to

any one hydro box, but all the connected units should be hydro boxes. The addresses of those two wired controllers should be different. Please refer to section 4.3.2.2 for the setting method. The total quantity of hydro box controlled by wired controller can't be more than 3 sets and all connected hydro boxes must be within the same network.

- (4) When one (or two) wired controller(s) control(s) multiple hydro boxes at the same time, the controlled hydro boxes' settings should be the same.
- (5) Network wiring between wired controller and hydro box must follow one of the four wiring methods as shown in Fig 3.4-3.7. As for the connection method shown in Fig 3.5 and 3.7, there should be only one master wired controller (address 01) and one slave wired controller (address 02). There can't be more than 2 wired controllers.

4.3.1.4 Installation

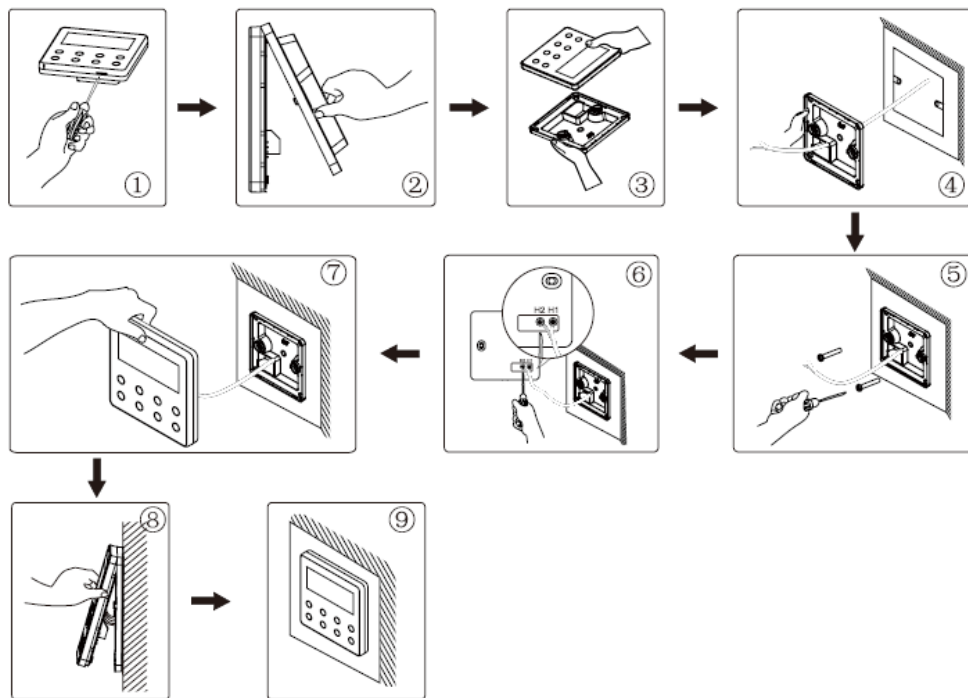
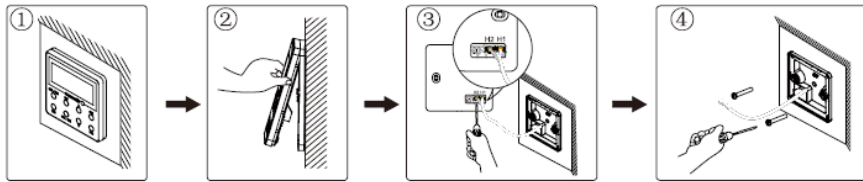


Figure above is a simple installation process of wired controller. Please pay attention to the following matters:

- (1) Before installation, please cut off the power for hydro boxes.
- (2) Pull out the 2-core twisted pair from the installation hole on wall, and then pull this wire through the wiring hole at the rear side of the soleplate of wired controller.
- (3) Stick the soleplate of wired controller on the wall and use screw M4x25 to fix the soleplate onto the installation hole on wall.
- (4) Connect the 2-core twisted pair to H1 and H2 wiring column and then tighten up the screws.
- (5) Bundle the panel and soleplate of wired controller together.

4.3.1.5 Disassembly



4.3.2 Debugging

4.3.2.1 Parameter Query

Unit's parameters can be queried under power-on or power-off status.

1. Press and hold "FUNCTION" button for 5 seconds to enter the interface of parameter query. "C00" is displayed in temperature zone and "Check" icon is on.

2. Press "▲" or "▼" button to select a parameter code.

3. Press "ENTER/CANCEL" button to return to the previous step until exiting the interface of parameter query.

4. Parameter query list is as below:

| Parameter code | Parameter name | Parameter range | Query method |
|----------------|---|--|---|
| C00 | Parameter setting ingress | - | In "C00" status, time zone displays the project number of the current hydro box. If one wired controller controls multiple hydro boxes, then only the smallest project number will be shown. |
| C01 | Project number query of hydro box and location of a faulty hydro box | 1-255: Project number of online hydro box | <p>Operation method: Enter query: Press "MODE" button in "C01" status to enter the interface of hydro box project number query. Press "▲" or "▼" button to switch the project number of hydro box.</p> <p>Display mode: Temperature zone displays the error of the current hydro box (Only the error of hydro box will be shown. If there are several errors, they are circularly displayed every 3 seconds). Timer zone displays (project number conflict C5 error)/ project number of the current hydro box.</p> <p>Note: "C01" query will not quit automatically upon time out. User has to exit "C01" manually.</p> |
| C03 | Indoor air conditioner and hydro box quantity query in the system network | 1-80 | Timer zone displays the total number of indoor units (indoor air conditioner, hydro box) in the system. |
| C06 | Preferential operation query | 00: Common operation 01: Preferential operation | <p>Operation mode: In "C06" status, press "MODE" button to enter the interface of preferential operation query. Press "▲" or "▼" button to select a hydro box.</p> <p>Display mode: Temperature zone displays the project number of current hydro box. Timer zone displays the preferential operation setting value of</p> |

GMV5 Home DC Inverter Multi VRF Units

| | | | current hydro box. |
|-----|--|---|---|
| C09 | Wired controller address query | 01, 02 | Timer zone displays the address of current wired controller. |
| C11 | Hydro box quantity query in the case that one wired controller controls many hydro boxes | 1-3 | Timer zone displays the total number of hydro boxes controlled by the wired controller. |
| C12 | Outdoor ambient temperature query | - | Timer zone displays outdoor ambient temperature. |
| C18 | One-key query for hydro box project number | 1~255: Project number of online hydro box | <p>Operation method:</p> <p>Enter query: Press "MODE" button in "C18" status to turn on one-key query for hydro box project number. Wired controller will enter the interface of hydro box project number query. Press "▲" or "▼" button to switch the number of hydro box.</p> <p>Display mode:</p> <p>Temperature zone displays the number of the current hydro box. Timer zone displays the project number of the current hydro box.</p> <p>Note:</p> <ol style="list-style-type: none"> After turning on the one-key query for hydro box project number, all wired controllers in the system network will display the project number of hydro box that it controls in its timer zone (If one wired controller controls multiple hydro boxes, project numbers are displayed circularly every 3 seconds). Slave wired controller cannot turn on or cancel one-key query for hydro box project number. <p>Cancellation:</p> <ol style="list-style-type: none"> If user quits the "C18" query interface manually, the one-key query for hydro box project number is canceled immediately. If the "C18" query interface exits after 20 seconds upon time out, press "ON/OFF" button in power-on or power-off status to cancel the one-key query for hydro box project number. After turning on the one-key query for hydro box project number, press "ON/OFF" button on any wired controller in the same network under power-on or power-off status to quit the one-key query for hydro box project number. |
| C21 | Water | 0~100℃ | Operation method: |

GMV5 Home DC Inverter Multi VRF Units

| | | | |
|--|-------------------------------------|--|---|
| | temperature query for water heating | | <p>Press "MODE" button in "C21" status to enter the interface of water tank water temperature query. Press "▲" or "▼" button to switch the number of hydro box.</p> <p style="text-align: center;">Display mode:</p> <p>Temperature zone displays the project number of the current hydro box.</p> <p>Timer zone displays the water temperature of the current hydro box.</p> |
|--|-------------------------------------|--|---|

Note:

In parameter query status, "FUNCTION", "TIMER" and "WATER/AC/FLOOR" buttons are invalid. By pressing "ON/OFF" button, user can return to the main interface but not power on or off the unit.

4.3.2.2 Parameter Settings

Parameters can be set in power-on or power-off status.

1. Press and hold "FUNCTION" button for 5 seconds, the temperature zone will display "C00". Then press and hold the "FUNCTION" button for another 5 seconds to enter the interface of wired controller parameter setting. Temperature zone will display "P00".

2. Select a parameter code by pressing "▲" or "▼". Press "MODE" button to switch to parameter value settings. The parameter value blinks. Adjust the parameter value by pressing "▲" or "▼". Then press "ENTER/CANCEL" button to complete the setting.

3. Press "ENTER/CANCEL" button to return to the previous step until exiting parameter settings.

Parameter setting list is as below:

| Parameter code | Parameter name | Parameter range | Default value | Remarks |
|----------------|--|---|---------------|---|
| P13 | Wired controller address setting | 01: Master wired controller 02: Slave wired controller | 01 | When two wired controllers simultaneously control one or more hydro boxes, the two wired controller should use different addresses. The slave wired controller (address: 02) doesn't have the function of parameter setting except the function of setting its own address. |
| P14 | Quantity setting of group-controlled hydro boxes | 00: Disabled 01-03: Number of hydro boxes | 01 | This value is set based on the number of connected hydro boxes. |
| P43 | Setting of preferential operation | 00: Common operation 01: Preferential operation | 00 | When power supply is insufficient, hydro box that is set with preferential operation can be turned on or off at will while other hydro boxes will be powered off forcibly. |
| P46 | Water temperature keeping function for water tank standby status | 00: Allowed 01: Not allowed | 00 | |
| P47 | Temperature | 35~46℃ | 42℃ | |

GMV5 Home DC Inverter Multi VRF Units

| | | | | |
|-----|---|-------------------|-----|--|
| | setting value of water temperature keeping function for water tank standby status | | | |
| P50 | Water temperature setting of sunflower water temperature keeping function | 35~50℃ | 40℃ | |
| P53 | Corrected value of water heating water temperature auto setting | -2~8℃ | 0℃ | |
| P54 | Cycling days of high-temperature sterilizing | 0~60 | 0 | If it is set to 0, high-temperature sterilizing function is valid only once. |
| P55 | Advanced startup time of high-temperature sterilization | 0~3 hours | 1 | |
| P56 | On/Off of electric heating under normal water heating | 00: ON 01: OFF | 00 | |
| P58 | On/Off of auto heat recovery | 00: ON 01: OFF | 00 | |
| P59 | Water temperature setting of auto heat recovery | 35~46℃ | 42℃ | |
| P73 | On/Off of rapid heating | 00: ON 01: OFF | 01 | |
| P80 | On/Off of electric heating for floor heating | 00: ON 01: OFF | 00 | |

Note:

In parameter setting status, "WATER/AC/FLOOR" and "TIMER" buttons are invalid. By pressing "ON/OFF" button, user can return to the main interface but not power on or off the unit.

4.4 Operation Instructions


4.4.1 Switch between Water Heating Interface and Floor Heating Interface


Under any status with no other operation (If there is other operation, please exit first), press

“WATER/AC/FLOOR” button to switch between water heating interface and floor heating interface.

On the interface of floor heating, user can switch to the interface of water heating by pressing “WATER/AC/FLOOR” button.

On the interface of water heating, user can switch to the interface of floor heating by pressing “WATER/AC/FLOOR” button.

If wired controller displays water heating interface,  icon is on.

If wired controller displays floor heating interface,  icon is on.

Note:

1. If the project has water heating function only, wired controller only displays water heating interface. It can't switch to floor heating interface.
2. If the project has floor heating function only, wired controller only displays floor heating interface. It can't switch to water heating interface.
3. Only when hydro box is connected and water heating and floor heating functions are both effective, will the wired controller switch interfaces and display as instructed above.

4.4.1 On/Off of Water Heating

On/Off of water heating: Press “ON/OFF” button, and water heating will be on or off.

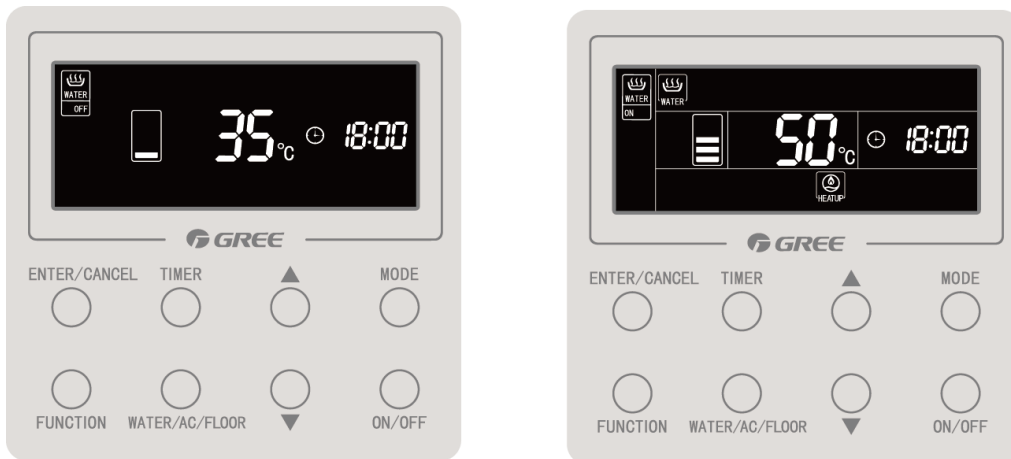
On the interface of floor heating: press “WATER/AC/FLOOR” button once to activate the interface of water heating. Then switch according to the following instructions:

If water heating is on: press “ON/OFF” button to turn it off.

If water heating is off: press “ON/OFF” button to turn it on.

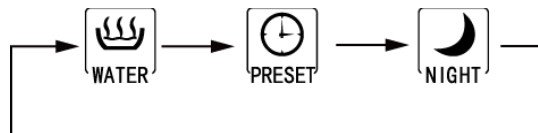
On the interface of water heating: switch on or off according to the above instructions.

Wired controller displays as below when water heating is on or off:



4.4.3 Mode Setting of Water Heating

When water heating is on, pressing “MODE” button will switch working mode circularly as below:



Water heating mode: Hydro box starts water heating according to the currently set water temperature or stops water heating.

Preset mode: Water heating can be preset. Hydro box will start up in advance according to actual water temperature and turn compressor on or off according to the difference between actual water temperature and set water temperature. Hydro box will stop working 1~4 hours after the preset time. If preset mode is activated, it will work repeatedly every day.

Night mode: Water heating time will be fixed at the period from 00:00 to 06:00. During this period, hydro box will work and turn compressor on or off according to the difference between actual water temperature and set water temperature. Out of this period, hydro box will not work. If night mode is activated, it will work repeatedly every day.

4.4.4 Water Temperature Setting of Water Heating

When water heating is on, pressing “▲” or “▼” button will increase or decrease set

temperature by 1°C. Holding “▲” or “▼” button will increase or decrease set temperature by 1°C every 0.3 seconds.

Under Standard Water Heating, Preset Water Heating and Nighttime Water Heating, temperature setting range is 35°C~maximum water temperature for water heating. Default water temperature is 50°C.

Note:

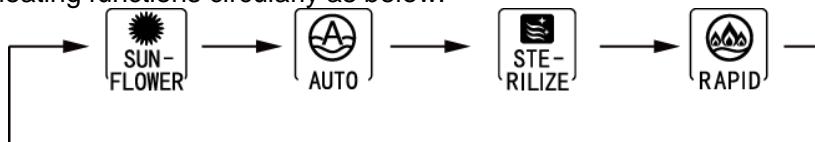
1. Default maximum water temperature is 55°C. Professional operators can adjust the maximum water temperature from 55°C to 70°C.
2. Water temperature setting ranges for Standard Water Heating, Preset Water Heating and Nighttime Water Heating are the same. Temperature setting value under each mode is independent of one other.
3. When water heating water temperature auto setting function is effective, pressing “▲” or “▼” button will not change the water temperature.

4.4.5 Switch of Water Heating Functions

The following functions can be set when water heating is on or off:

| Water heating is on/off | Functions | Remarks |
|-----------------------------------|--|---------|
| Water heating is in standard mode | Sunflower, Water Heating Water Temperature Auto Setting, High-temperature Sterilizing, Rapid Water Heating | |
| Water heating is in preset mode | Water Heating Water Temperature Auto Setting, High-temperature Sterilizing, Rapid Water Heating | |
| Water heating is in night mode | Water Heating Water Temperature Auto Setting, High-temperature Sterilizing, Rapid Water Heating | |
| Water heating is off | High-temperature Sterilizing | |

When water heating is turned on in standard mode, pressing “FUNCTION” button once will change water heating functions circularly as below:



When water heating is turned on in preset mode or night mode, pressing “FUNCTION” button will change water heating functions circularly as below:



When water heating is turned off, only the sterilizing function will be available. Press “FUNCTION” button, and the icon “Sterilize” will blink.

Note:

1. If a function is shielded or disabled because of some reason, wired controller will skip this function when “FUNCTION” button is pressed.
2. For Rapid function, Auto function and Sunflower function, if they can't be set in a certain water heating mode, their icons will not display. If they can be set in a certain water heating mode, user can set or cancel these functions in that mode.

4.4.6 Setting of Sunflower Function

Sunflower: System will locate the highest outdoor temperature of the previous day according to the records of outdoor temperature. Then it will decide the water heating time to save energy.

Setting of sunflower function: Under standard water heating mode, press “FUNCTION” button to switch to sunflower function. Icon of sunflower blinks. Press “ENTER/CANCEL” to enable sunflower function.

Cancellation of sunflower function: Under standard water heating mode, press "FUNCTION"

button to switch to sunflower function. Then press "ENTER/CANCEL" to cancel sunflower function.

4.4.7 Setting of Water Heating Water Temperature Auto Setting

Water heating water temperature auto setting: Water heating water temperature will be set automatically by main board according to outdoor ambient temperature.

Setting of water heating water temperature auto setting: Under water heating, press "FUNCTION" button to switch to auto function. Icon of auto blinks. Press "ENTER/CANCEL" to enable the auto setting function.

Cancellation of water heating water temperature auto setting: Under water heating, press "FUNCTION" button to switch to auto function. Then press "ENTER/CANCEL" to cancel the auto setting function.

4.4.8 Setting of High-temperature Sterilizing

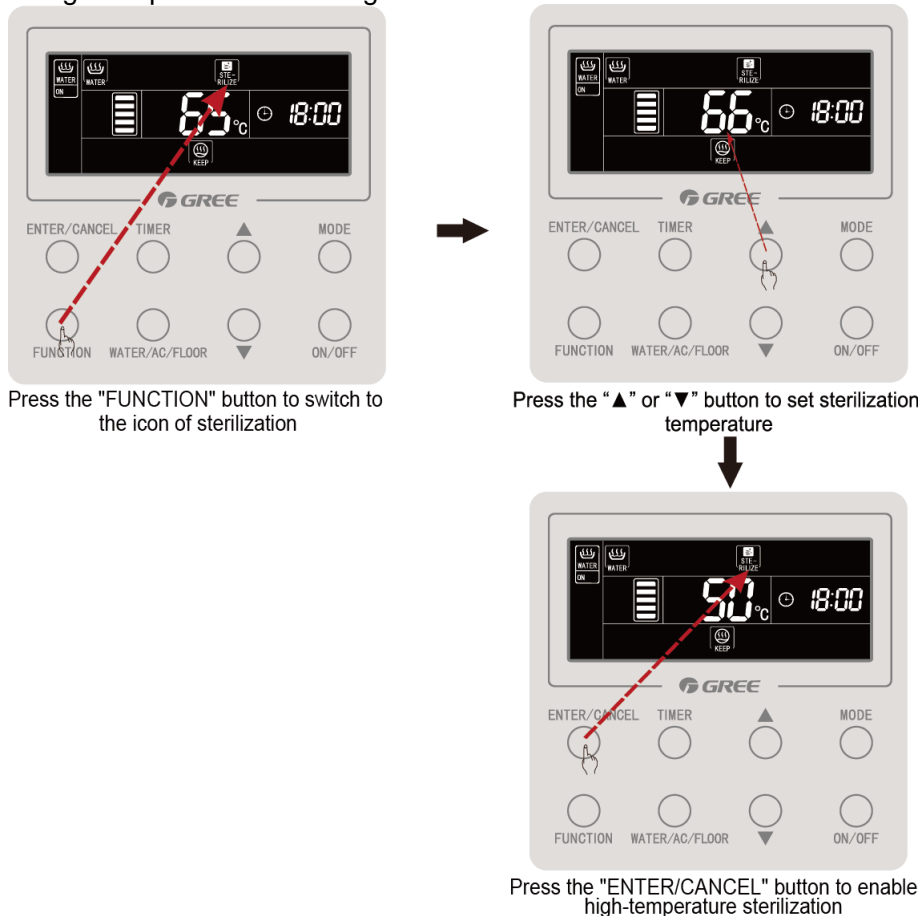
High-temperature sterilizing: Water in the water tank will be heated to 65~70°C (adjustable) in a set time to realize high-temperature sterilization.

1. If cycling days of high-temperature sterilizing is set to 0, it means sterilizing function is valid only once:

Setting of high-temperature sterilizing: On the interface of water heating, press "FUNCTION" button to switch to sterilizing. Icon of sterilizing blinks. Press "▲" or "▼" to adjust the temperature for sterilizing. Press "ENTER/CANCEL" button to enable the setting.

Cancellation of high-temperature sterilizing: On the interface of water heating, press "FUNCTION" button to switch to sterilizing. Press "ENTER/CANCEL" button to cancel the setting.

Setting of high-temperature sterilizing is as below:



2. If cycling days of high-temperature sterilizing is set to be more than 0, it means sterilizing function is valid in a cycling way:

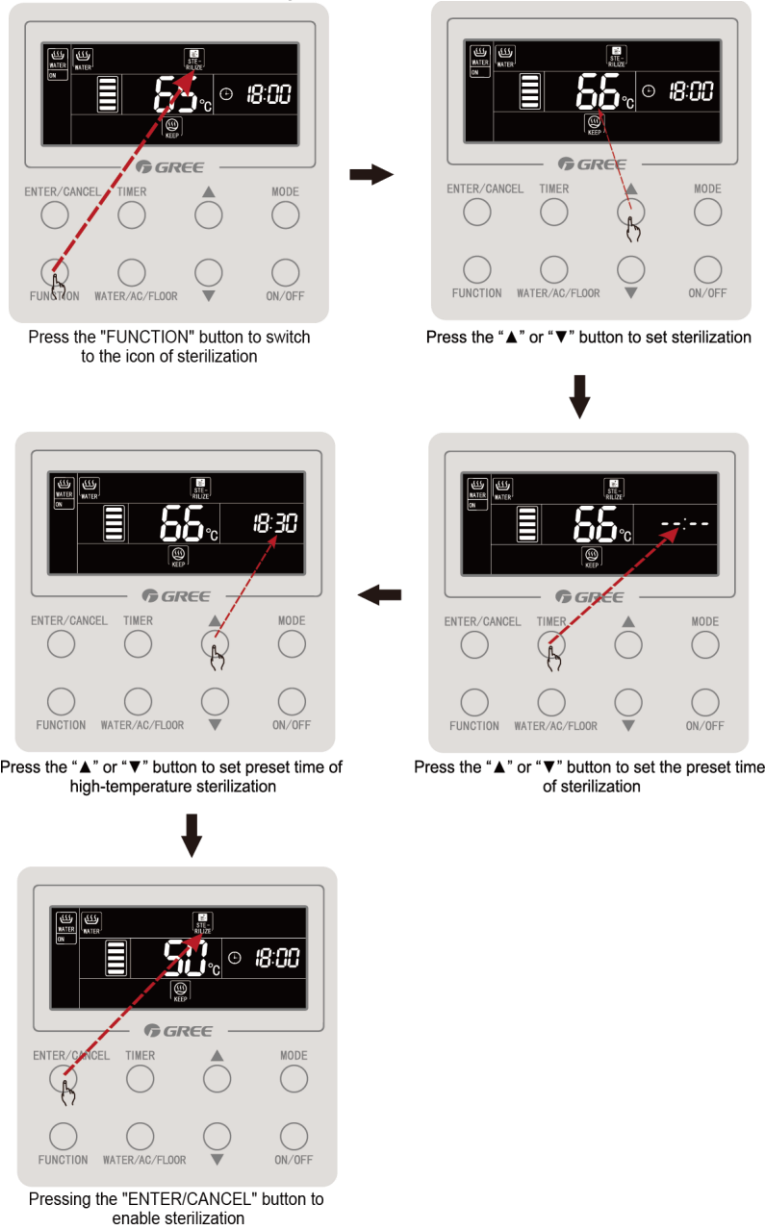
Setting of high-temperature sterilizing: On the interface of water heating, press "FUNCTION" button to switch to sterilizing. Icon of sterilizing blinks. Press "▲" or "▼" to adjust the temperature for sterilizing. Press "TIMER" button and the timer zone blinks. Press "▲" or "▼" to adjust the preset time for sterilizing. Press "ENTER/CANCEL" button to enable the setting.

Cancellation of high-temperature sterilizing: On the interface of water heating, press "FUNCTION" button to switch to sterilizing. Press "ENTER/CANCEL" button to cancel the setting.

Note:

- ① Preset time for sterilizing defaults to null and timer zone displays "--: --".
- ② Cycling days for sterilizing can be adjusted by professional operators. Default cycling days is 0.

Setting of high-temperature sterilizing is as below:



Cancellation of high-temperature sterilizing is as below:

