

# MINI CHILLER

## TECHNICAL SALES GUIDE

CAPACITY RANGE : 8 - 45kW



**R410A**

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## 1 MODELS LIST

### ➤ 1.1 Split Type

| Nominal Capacity | Model       |                | Power Supply |
|------------------|-------------|----------------|--------------|
| kW               | Refrigerant | Model Name     | Ph, V, Hz    |
| 8                | R410A       | IMCR8WZNa-M    | 3, 380, 50   |
| 10               |             | IMCR10WZNa-M   | 3, 380, 50   |
| 12.5             |             | IMCR12.5WZNa-M | 3, 380, 50   |
| 15               |             | IMCR15WZNa-M   | 3, 380, 50   |

### ➤ 1.2 Integral Type

| Nominal Capacity | Model       |             | Power Supply |
|------------------|-------------|-------------|--------------|
| kW               | Refrigerant | Model Name  | Ph, V, Hz    |
| 19               | R410A       | IMCR19Na-M  | 3, 380, 50   |
| 25               |             | IMCR25SNa-M | 3, 380, 50   |
| 35               |             | IMCR35SNa-M | 3, 380, 50   |
| 45               |             | IMCR45SNa-M | 3, 380, 50   |

## 2 NOMENCLATURE

### ➔ 2.1 Split Type

IMC R 15 W Z Na — M (O)

| Model | Model number description     | Options                                                                                       |
|-------|------------------------------|-----------------------------------------------------------------------------------------------|
| IMC   | Mini chiller                 |                                                                                               |
| R     | Product type                 | R=Heat pump                                                                                   |
| 15    | Nominal cooling capacity     | 8 = 8kW=27300Btu/h<br>10 = 10kW=34120Btu/h<br>12.5= 12.5kW=42650Btu/h<br>15= 15kW=51180 Btu/h |
| W     | Structure feature            | Default= vertical type<br>W= horizontal type                                                  |
| Z     | Product configuration        | Z= combination                                                                                |
| Na    | Refrigerant                  | Na=R410A                                                                                      |
| M     | Voltage                      | M= 3Ph, 380V~415v, 50Hz                                                                       |
| O     | Indoor and outdoor unit code | I = indoor unit<br>O=outdoor unit                                                             |

### ➔ 2.2 Integral Type

IMC R 35 S Na — M

| Model | Model number description | Options                                                                                        |
|-------|--------------------------|------------------------------------------------------------------------------------------------|
| IMC   | Mini chiller             |                                                                                                |
| R     | Product type             | R=Heat pump                                                                                    |
| 35    | Nominal cooling capacity | 19 = 19kW=64828Btu/h<br>25 = 25kW=85300Btu/h<br>35 = 35kW=119420Btu/h<br>45 = 45kW=153540Btu/h |
| S     | Product configuration    | S = twin circuits                                                                              |
| Na    | Refrigerant              | Na=R410A                                                                                       |
| M     | Voltage                  | M= 3Ph, 380V~415v, 50Hz                                                                        |



## 3 FEATURES

INVENTOR Mini Chiller which has the capacity from 27300 Btu/h to 153540 Btu/h is a kind of small central air conditioning unit.

INVENTOR Mini Chiller can offer the perfect combination of high quality, energy saving and low cost. These units are CE certified and manufactured under strict quality control.

INVENTOR Mini Chiller can be widely used in high-grade flats, combination buildings, high-grade townhouse, and unitary office, restaurants, department stores, entertaining places and other places that have special air conditioning requirements. The units can work normally in heating mode when the outdoor temperature drops to even -15°C.

### **Use of new refrigerant friendly to earth**

INVENTOR Mini Chiller uses the new refrigerant R410A which contains hydro-fluorocarbon (HFC) and of which ODP is zero. This means the new refrigerant is more friendly to the global environment in comparison with the conventional one (HCFC22) of which ODP is 0.055.

### **Careful safety measures**

If the INVENTOR Mini Chillers are out of order, their operation is automatically stopped by various safety and protective devices listed below before trouble occurs.

- ◆ Electric system  
Over-current relay, compressor thermal protector.
- ◆ Refrigerant system  
High pressure switch, low pressure switch, safety valve.
- ◆ Water system  
Water flow switch, auto water fill valve, auto exhaust valve.

### **Energy-saving and High efficiency**

The compressor with High efficiency and reliable quality and the most optimum refrigerant system make the INVENTOR Mini Chiller energy-saving and high efficiency.

### **High reliability**

Heat transfer media of this unit is water and with no distance limitation, only considering enough water pump lift can realize long-distance heating and cooling.

### **Low noise**

High-quality low-noise fan, water pump and varieties of silencing technologies are used for large reduction of running noise, keeping your rooms away from noise pollution.

### **Excellent Control System**

It is available to conduct on or off control to chiller in rooms, that is, when order of turning on from only a single room, chiller on; when all rooms send unit off order, chiller off; general control spot can be set at living room to conduct prior control to unit.

### **Economic Installation And Convenient Usage**

Water pump, expansion vessel, automatic water replenishing valve and safety valve are integrated. It's unnecessary to install expansion vessel and just directly connect the water pipe, which saves more installation costs.

### **Superior Anti-freeze (Split Type)**

Indoor unit could install in the house to protect the tube-in-tube-exchanger from being frozen.

### **Sloping air-out (Integral Type)**

Prevent seasonal wind and installation position from affecting cooling/heating result. It is especially suitable for installation limited by height or distance between buildings.

### **Versatile Functions**

The controller has versatile functions that is not only supplying the basic functions such as Power on/off, mode setting, temperature & malfunction displaying, but also supporting water temperature setting and physical parameter checking (including inlet/outlet water temperature, outdoor ambient temperature, antifreeze temperature, defrost temperature and exhaust temperature)

## 4 PRODUCT DATA

### ➔ 4.1 Split Type

| Models                   |                            |           |       | IMCR_WZNa-M                                                                                                                                                |           |           |           |
|--------------------------|----------------------------|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|
|                          |                            |           |       | 8                                                                                                                                                          | 10        | 12.5      | 15        |
| Nominal Capacity         |                            | Cooling   | kW    | 8                                                                                                                                                          | 10        | 12.5      | 15        |
|                          |                            |           | Btu/h | 27300                                                                                                                                                      | 34120     | 42650     | 51180     |
|                          |                            |           | RT    | 2.3                                                                                                                                                        | 2.9       | 3.6       | 4.3       |
|                          |                            | Heating   | kW    | 9                                                                                                                                                          | 11        | 13.5      | 16        |
|                          |                            |           | Btu/h | 30700                                                                                                                                                      | 37550     | 46100     | 54600     |
|                          |                            |           | RT    | 2.6                                                                                                                                                        | 3.1       | 3.9       | 4.6       |
| Power Consumption        |                            | Cooling   | kW    | 3.3                                                                                                                                                        | 4.4       | 5.2       | 5.6       |
|                          |                            | Heating   | kW    | 3.2                                                                                                                                                        | 4.2       | 5.0       | 5.5       |
| Power Supply             |                            | V, ph, Hz |       | 380~415, 3, 50                                                                                                                                             |           |           |           |
| Safeties                 |                            |           |       | High/low pressure switch、compressor thermal protection、over current protection、lose of phase/anti-phase protection、antifreeze protection、water flow switch |           |           |           |
| Refrigerant              |                            | Type      |       | R410a                                                                                                                                                      |           |           |           |
|                          |                            | Charge    | kg    | 3.1                                                                                                                                                        | 3.55      | 3.6       | 5.5       |
| Compressor               |                            | Type      |       | scroll                                                                                                                                                     | scroll    | scroll    | scroll    |
|                          |                            | NO.       |       | 1                                                                                                                                                          | 1         | 1         | 1         |
| Evaporator               | Heat Exchanger             |           |       | Tube-in-Tube                                                                                                                                               |           |           |           |
|                          | Water In/Out Pipe Diameter |           | Inch  | 1                                                                                                                                                          | 1         | 1         | 1         |
| Condenser                | Heat Exchanger             |           |       | Aluminum fin-copper tube                                                                                                                                   |           |           |           |
|                          | Fan Motor Power Input      |           | kW    | 0.2                                                                                                                                                        | 0.14      | 0.14      | 0.2       |
|                          | Water Flow                 |           | L/s   | 0.36                                                                                                                                                       | 0.50      | 0.56      | 0.72      |
| Pump                     | Delivery Lift              |           | GPM   | 5.78                                                                                                                                                       | 7.94      | 8.83      | 11.48     |
|                          | Power Input                |           | m     | 18                                                                                                                                                         | 18        | 18        | 18        |
|                          |                            |           | W     | 550                                                                                                                                                        | 550       | 550       | 550       |
| Expansion vessel Tankage |                            |           | L     | 5                                                                                                                                                          | 5         | 5         | 5         |
| Indoor Unit              | Unit / Packing Dimension   | Height    | mm    | 288/385                                                                                                                                                    | 288/385   | 288/385   | 288/385   |
|                          |                            | Width     | mm    | 1100/1285                                                                                                                                                  | 1100/1285 | 1100/1285 | 1100/1285 |
|                          |                            | Depth     | mm    | 450/682                                                                                                                                                    | 450/682   | 450/682   | 450/682   |
|                          | Net/Gross Weight           |           | kg    | 84/96                                                                                                                                                      | 84/96     | 84/96     | 84/96     |
| Outdoor Unit             | Unit / Packing Dimension   | Height    | mm    | 840/850                                                                                                                                                    | 1250/1280 | 1250/1280 | 1250/1385 |
|                          |                            | Width     | mm    | 1018/1100                                                                                                                                                  | 1032/1100 | 1032/1110 | 1032/1100 |
|                          |                            | Depth     | mm    | 412/450                                                                                                                                                    | 412/450   | 412/450   | 412/450   |
|                          | Net/Gross Weight           |           | kg    | 90/100                                                                                                                                                     | 112/123   | 115/125   | 123/134   |

## 4.2 Integral Type

| Models                   |                            |        | IMCR_SNa-M                                                                                                                                                 |           |               |           |           |
|--------------------------|----------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|-----------|-----------|
|                          |                            |        | 19                                                                                                                                                         | 25        | 35            | 45        |           |
| Nomi nal Capacity        | Cooling                    | kW     | 19                                                                                                                                                         | 25        | 35            | 45        |           |
|                          |                            | Btu/h  | 64828                                                                                                                                                      | 85300     | 119420        | 153540    |           |
|                          |                            | RT     | 5.4                                                                                                                                                        | 7.1       | 10            | 13        |           |
|                          | Heating                    | kW     | 21                                                                                                                                                         | 27        | 37            | 47        |           |
|                          |                            | Btu/h  | 71650                                                                                                                                                      | 92124     | 126250        | 160360    |           |
|                          |                            | RT     | 6                                                                                                                                                          | 7.7       | 10.6          | 13.5      |           |
| Power Consumption        | Cooling                    | kW     | 7.0                                                                                                                                                        | 9.0       | 11.8          | 17.3      |           |
|                          | Heating                    | kW     | 6.8                                                                                                                                                        | 8.9       | 12.3          | 16.9      |           |
| Power Supply             | V, ph, Hz                  |        | 380~4 15, 3, 50                                                                                                                                            |           |               |           |           |
| Safeties                 |                            |        | High/low pressure switch、compressor thermal protection、over current protection、lose of phase/anti-phase protection、antifreeze protection、water flow switch |           |               |           |           |
| Refrigerant              |                            | Type   |                                                                                                                                                            | R410a     |               |           |           |
|                          |                            | Charge | kg                                                                                                                                                         | 3.9×2     | 4.8×2         | 6.5×2     | 8.5×2     |
| Compressor               |                            | Type   |                                                                                                                                                            | scroll    | scroll        | scroll    | scroll    |
|                          |                            | NO.    |                                                                                                                                                            | 2         | 2             | 2         | 2         |
| Evaporator               | Heat Exchanger             |        | Tube-in-Tube                                                                                                                                               |           | Shell in tube |           |           |
|                          | Water In/Out Pipe Diameter |        | Inch                                                                                                                                                       | 1         | 1             | 1-1/2     | 1-1/2     |
| Condenser                | Heat Exchanger             |        | Aluminum fin-copper tube                                                                                                                                   |           |               |           |           |
|                          | Fan Motor Power Input      |        | kW                                                                                                                                                         | 0.4       | 0.4           | 0.6       | 0.6       |
| Pump                     | Water Flow                 |        | L/s                                                                                                                                                        | 0.92      | 1.20          | 1.45      | 2.22      |
|                          |                            |        | GPM                                                                                                                                                        | 14.6      | 19.0          | 22.9      | 35.3      |
|                          | Delivery Lift              |        | m                                                                                                                                                          | 22        | 24            | 25        | 27        |
|                          | Power Input                |        | W                                                                                                                                                          | 750       | 750           | 1500      | 1500      |
| Expansion vessel Tankage |                            | L      | 8                                                                                                                                                          | 8         | 8             | 8         |           |
| Unit / Packing Dimension | Height                     |        | mm                                                                                                                                                         | 1850/1960 | 1850/1960     | 1760/1870 | 1760/1870 |
|                          | Width                      |        | mm                                                                                                                                                         | 1460/1540 | 1460/1540     | 1750/1830 | 1750/1830 |
|                          | Depth                      |        | mm                                                                                                                                                         | 530/610   | 530/610       | 800/880   | 800/880   |
| Net/Gross Weight         |                            | kg     | 370/375                                                                                                                                                    | 390/395   | 450/455       | 470/475   |           |

## Notes:

1. Cooling capacity is based on the following conditions: leaving chilling water temp. 7°C(44.5°F), entering chilling water temp. 12°C(53.6°F), and outdoor air temp. 35°C DB(95°F DB)
2. Heating capacity is based on the following conditions: leaving heating water temp. 45°C(113°F), entering heating water temp. 40°C(104°F), and outdoor air temp. 7°C DB(44.6°F DB)
3. Water flow range for operation must be from 70% to 120% of the rated water flow.
4. The maximum allowable pressure for water pipe is 0.9MPa.
5. The delivery lift value showing in the table above equals to the difference between the delivery lift of the pump and the lose water pressure of the unit.

## 5 PERFORMANCE CORRECTION

### 5.1. Correction of Temperature

#### 1) Cooling Capacity Correction

| Performance correction        |                            |        |        |         |         |
|-------------------------------|----------------------------|--------|--------|---------|---------|
| Leaving Chilling Water °C(°F) | Ambient Temperature °C(°F) |        |        |         |         |
|                               | 25(77)                     | 30(86) | 35(95) | 40(104) | 45(113) |
| 5(41.0)                       | 0.995                      | 0.955  | 0.905  | 0.855   | 0.805   |
| 6(42.8)                       | 1.045                      | 1.005  | 0.955  | 0.905   | 0.855   |
| 7(44.6)                       | 1.090                      | 1.050  | 1.000  | 0.950   | 0.900   |
| 8(46.4)                       | 1.145                      | 1.102  | 1.052  | 1.000   | 0.950   |
| 9(48.2)                       | 1.190                      | 1.150  | 1.100  | 1.050   | 1.002   |
| 10(50.0)                      | 1.245                      | 1.200  | 1.150  | 1.100   | 1.050   |
| 11(51.8)                      | 1.290                      | 1.250  | 1.202  | 1.152   | 1.102   |
| 12(53.6)                      | 1.340                      | 1.300  | 1.252  | 1.200   | 1.152   |
| 13(55.4)                      | 1.390                      | 1.350  | 1.302  | 1.252   | 1.202   |
| 14(57.2)                      | 1.442                      | 1.402  | 1.350  | 1.302   | 1.252   |
| 15(59.0)                      | 1.490                      | 1.450  | 1.400  | 1.350   | 1.302   |

Calculation of actual cooling capacity:

Actual cooling capacity = nominal cooling capacity × cooling capacity correction coefficient

#### 2) Heating Capacity Correction

| Ambient Temperature °C(°F)   |                        |         |        |       |         |          |          |
|------------------------------|------------------------|---------|--------|-------|---------|----------|----------|
| Leaving Heating Water °C(°F) | Performance correction |         |        |       |         |          |          |
|                              | -15(5)                 | -10(14) | -5(23) | 0(32) | 5(41.0) | 10(50.0) | 15(59.0) |
| 30(86)                       | 0.81                   | 0.91    | 1.00   | 1.10  | 1.18    | 1.26     | 1.35     |
| 35(95)                       | 0.74                   | 0.84    | 0.93   | 1.03  | 1.11    | 1.19     | 1.28     |
| 40(104)                      | 0.67                   | 0.77    | 0.87   | 0.96  | 1.04    | 1.12     | 1.20     |
| 45(113)                      | 0.60                   | 0.70    | 0.80   | 0.89  | 0.97    | 1.05     | 1.13     |
| 50(122)                      | 0.53                   | 0.63    | 0.73   | 0.82  | 0.90    | 0.98     | 1.06     |
| 55(131)                      | 0.46                   | 0.56    | 0.66   | 0.74  | 0.83    | 0.90     | 0.98     |

Calculation of actual heating capacity:

Actual heating capacity = nominal heating capacity × heating capacity correction coefficient

## ➔ 5.2 Correction of Connection Piping (For split type )

### 1) Connection Piping

| Model          | Diameter of Piping |      |     |      | The Max. Length | The Max. Fall | Replenishment Charge of Refrigerant (g/m) |
|----------------|--------------------|------|-----|------|-----------------|---------------|-------------------------------------------|
|                | Liquid             |      | Gas |      |                 |               |                                           |
|                | mm                 | inch | mm  | inch |                 |               |                                           |
| IMCR8WZNa-M    | Φ12                | 1/2  | Φ19 | 3/4  | 20              | 15            | 118                                       |
| IMCR10WZNa-M   | Φ12                | 1/2  | Φ19 | 3/4  | 20              | 15            | 118                                       |
| IMCR12.5WZNa-M | Φ12                | 1/2  | Φ19 | 3/4  | 20              | 15            | 118                                       |
| IMCR15WZNa-M   | Φ12                | 1/2  | Φ19 | 3/4  | 20              | 15            | 118                                       |

### 2) Correction Value

| Total Piping Length<br>(Actual Length)           |                                           |     | Correction Factor |      |      |      |      |      |      |
|--------------------------------------------------|-------------------------------------------|-----|-------------------|------|------|------|------|------|------|
|                                                  |                                           |     | 5m                | 10m  | 15m  | 20m  | 25m  | 30m  | 35m  |
| Height difference between The Indoor and Outdoor | The Indoor Unit Below<br>The Outdoor Unit | 0m  | 1.0               | 0.98 | 0.96 | 0.94 | 0.92 | 0.9  | 0.88 |
|                                                  |                                           | 5m  | 1.0               | 0.97 | 0.95 | 0.93 | 0.91 | 0.89 | 0.87 |
|                                                  |                                           | 10m | -                 | 0.96 | 0.94 | 0.92 | 0.90 | 0.88 | 0.86 |
|                                                  |                                           | 15m | -                 | -    | 0.93 | 0.91 | 0.89 | 0.87 | 0.85 |
|                                                  |                                           | 20m | -                 | -    | -    | 0.90 | 0.88 | 0.86 | 0.84 |
|                                                  |                                           | 25m | -                 | -    | -    | -    | 0.87 | 0.85 | 0.83 |
|                                                  | The Outdoor Unit Below<br>The Indoor Unit | 0m  | 1.0               | 0.98 | 0.96 | 0.94 | 0.92 | 0.9  | 0.88 |
|                                                  |                                           | 5m  | 1.0               | 0.98 | 0.96 | 0.94 | 0.92 | 0.9  | 0.88 |
|                                                  |                                           | 10m | -                 | 0.98 | 0.96 | 0.94 | 0.92 | 0.9  | 0.88 |
|                                                  |                                           | 15m | -                 | -    | 0.96 | 0.94 | 0.92 | 0.9  | 0.88 |
|                                                  |                                           | 20m | -                 | -    | -    | 0.94 | 0.92 | 0.9  | 0.88 |
|                                                  |                                           | 25m | -                 | -    | -    | -    | 0.92 | 0.9  | 0.88 |

## 6 ANTIFREEZE

For heat pump unit, antifreeze fluid must be added to the water system. For cooling unit that will not be used in winter, the water inside the unit and pipe must be thoroughly drained to avoid freezing the tube-in-tube heat exchanger, pipe and water pump. If the water cannot be thoroughly drained out of the pipe, antifreeze fluid must be added. Do not cut off the power supply after the unit is stopped, otherwise the auto antifreeze protection will be disabled.

Ethylene glycol solution causes a variation in unit performance. To obtain the effective performance. It is necessary to multiply the water performance data by correction factors corresponding to the ambient temperature or Ethylene glycol percentage indicated in the following table.

| % by Weight                        | 0       | 12      | 22       | 30       | 36        | 41       | 46        | 50         |
|------------------------------------|---------|---------|----------|----------|-----------|----------|-----------|------------|
| Freezing Point°C (°F)              | 0(32)   | -5(23)  | -10(14)  | -15(5)   | -20(-4)   | -25(-13) | -30(-22)  | -35(-31)   |
| Ambient Temperature°C (°F)         | 8.3(47) | 3.3(38) | -1.7(29) | -6.7(20) | -11.7(11) | -16.7(2) | -21.7(-7) | -26.7(-16) |
| Cooling Capacity Correction Factor | 1.0     | 0.985   | 0.980    | 0.974    | 0.970     | 0.965    | 0.964     | 0.960      |
| Water Flow Correction Factor       | 1.0     | 1.02    | 1.04     | 1.075    | 1.11      | 1.14     | 1.17      | 1.20       |
| Pressure Drop Correction Factor    | 1.0     | 1.07    | 1.11     | 1.18     | 1.22      | 1.24     | 1.27      | 1.30       |

## 7 ELECTRICAL DATA

### ➤ 7.1 split Type

| Model          | Rated Power Supply | Compressor |              |              | Fan Motor |         | Pump | Total   |         |
|----------------|--------------------|------------|--------------|--------------|-----------|---------|------|---------|---------|
|                | (Ph, V, Hz)        | NO.        | LRA each (A) | MRC each (A) | NO.       | MRC (A) |      | MRC (A) | NRC (A) |
| IMCR8WZNa-M    |                    | 1          | 67           | 9.1          | 1         | 1.5     | 0.7  | 9.4     | 7       |
| IMCR10WZNa-M   | 3, 380~415, 50     | 1          | 66           | 11.6         | 2         | 2       | 0.7  | 13.0    | 8.5     |
| IMCR12.5WZNa-M |                    | 1          | 67           | 13.7         | 3         | 2       | 0.7  | 14.5    | 10.5    |
| IMCR15WZNa-M   |                    | 1          | 67           | 13.7         | 3         | 2       | 0.7  | 14.5    | 10.5    |

## ➔ 7.2 Integral Type

| Model       | Rated Power Supply | Compressor |              |              | Fan Motor |         | Pump    | Total   |         |
|-------------|--------------------|------------|--------------|--------------|-----------|---------|---------|---------|---------|
|             | (Ph, V, Hz)        | NO.        | LRA each (A) | MRC each (A) | Outdoor   |         | MRC (A) | MRC (A) | NRC (A) |
|             |                    |            |              |              | NO.       | MRC (A) |         |         |         |
| IMCR19SNa-M | 3, 380~415, 50     | 2          | 66           | 11.6         | 2         | 5       | 1.5     | 19.5    | 14.5    |
| IMCR25SNa-M |                    | 2          | 80           | 13.5         | 2         | 5       | 1.5     | 23.5    | 18.5    |
| IMCR35SNa-M |                    | 2          | 101          | 16.4         | 2         | 7.5     | 3       | 28.5    | 24.5    |
| IMCR45SNa-M |                    | 2          | 125          | 22.5         | 2         | 7.5     | 3       | 45      | 31      |

### Notes:

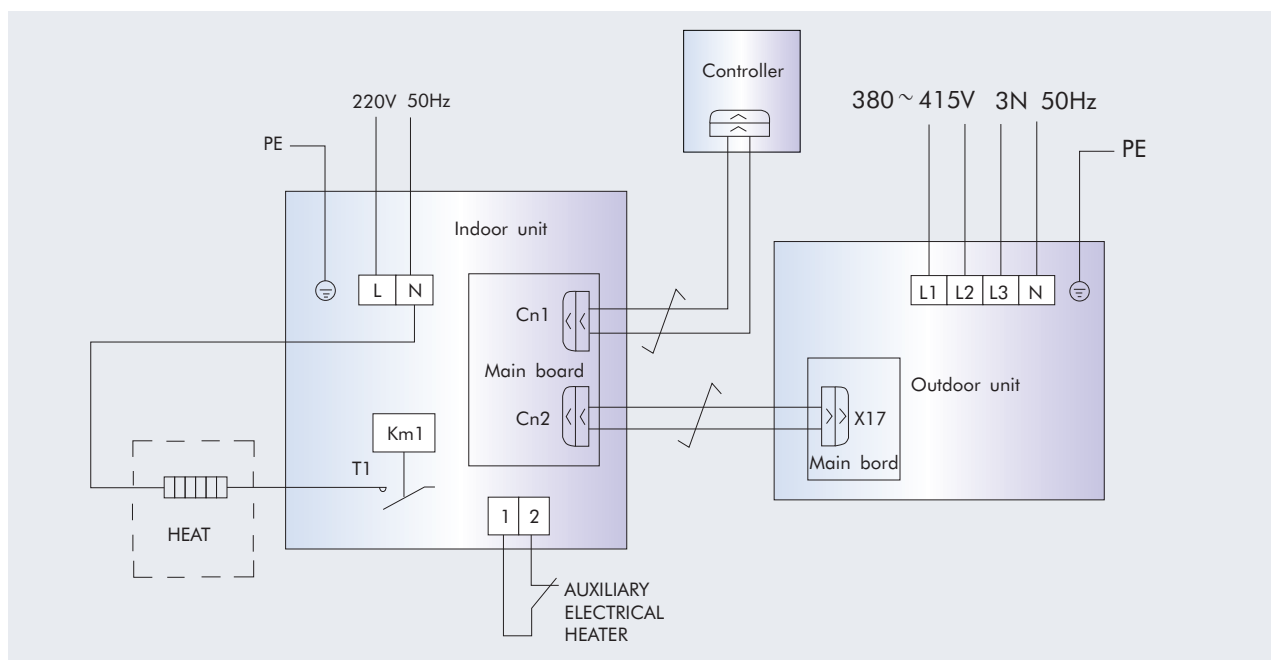
LRA: Locked rotor amps (A)

MRC: Maximum running current (A)

NRC: Nominal running current (A)

## 8 FIELD WIRING DIAGRAM

### ➔ Split Type

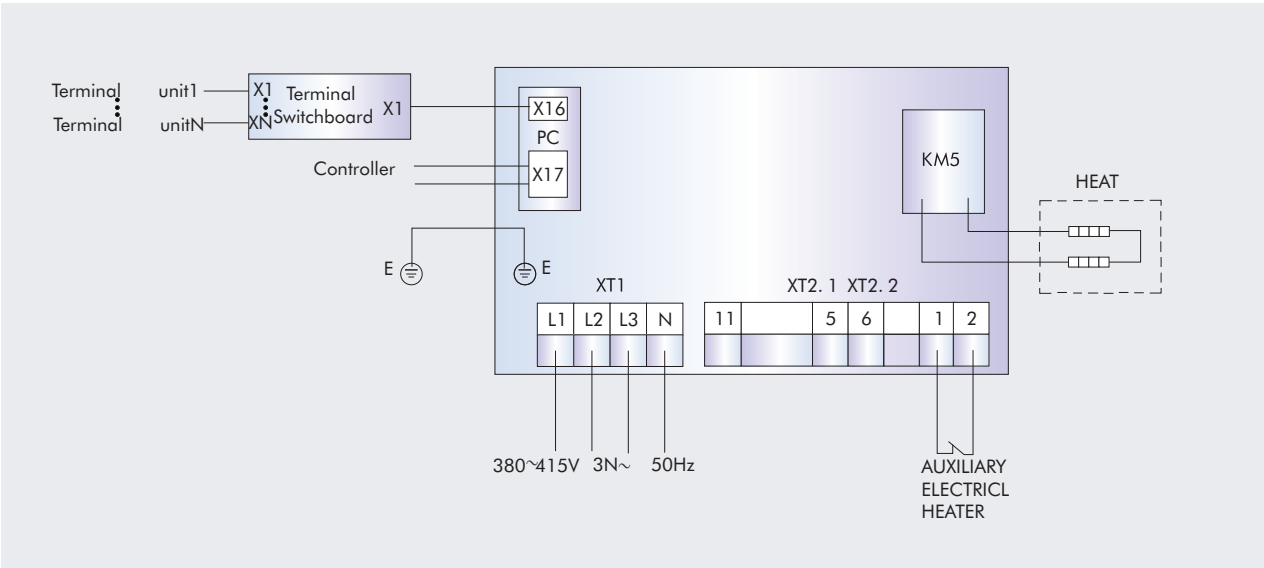




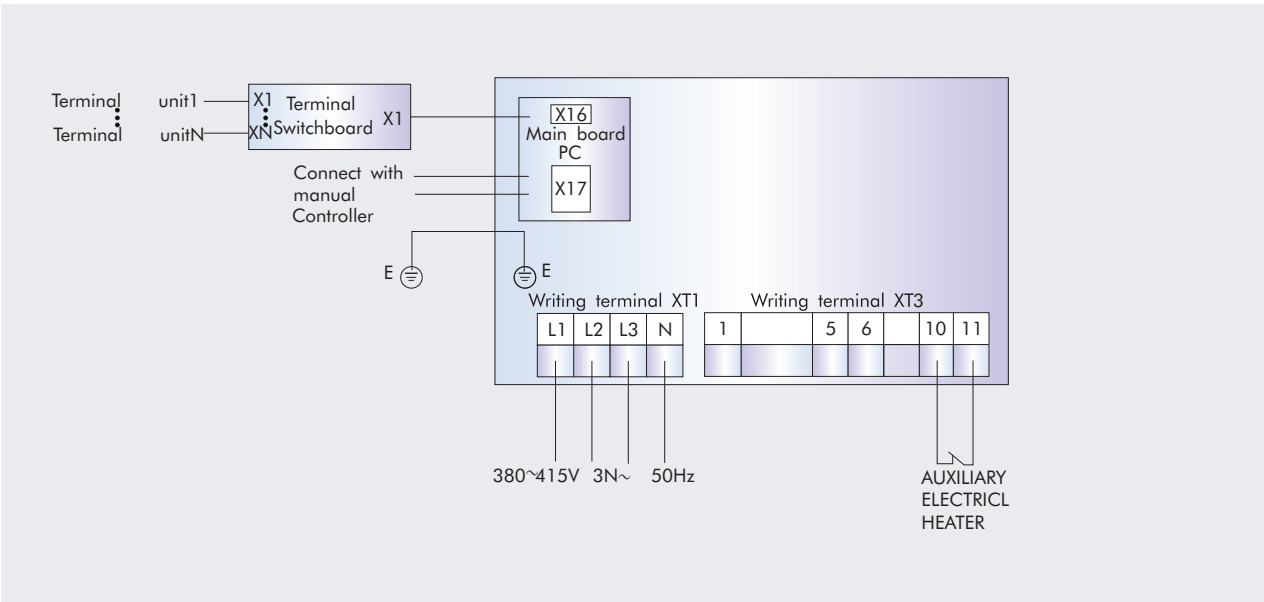


**Integral Type**

◆ IMCR19SNa-M    IMCR25SNa-M

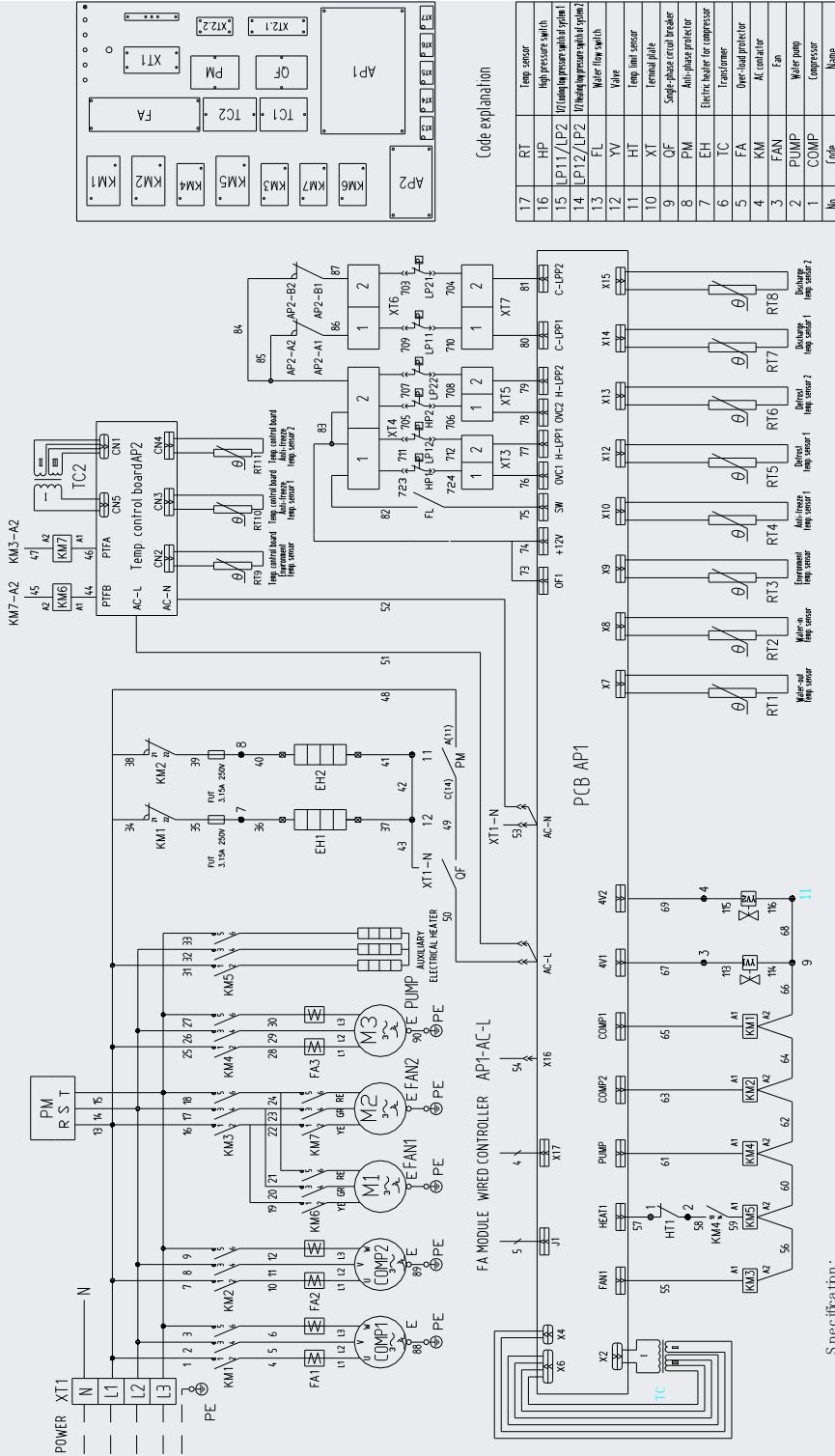


◆ IMCR35SNa-M    IMCR45SNa-M



# 9 WIRING DIAGRAM

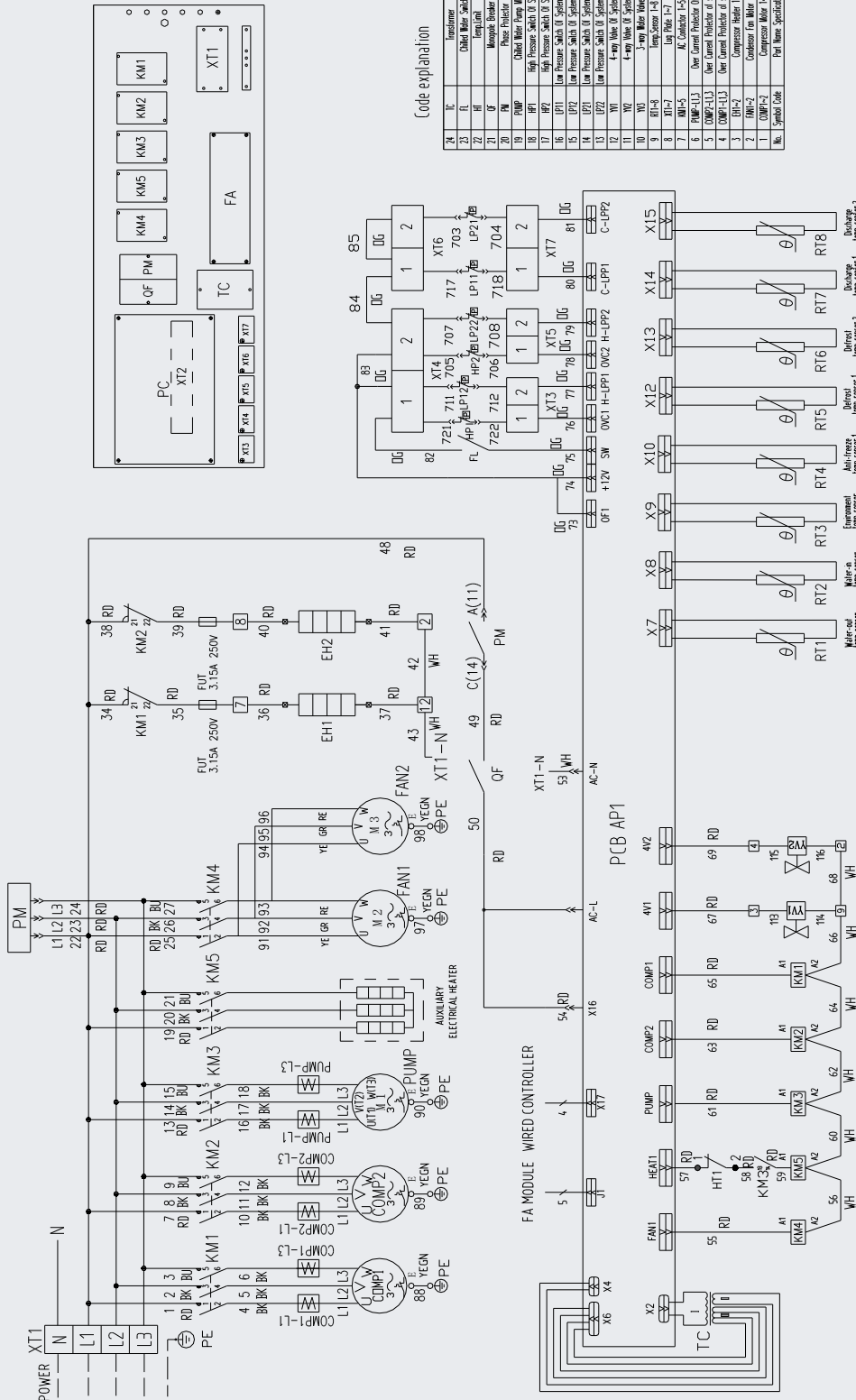
◆ IMCR19SNa-M IMCR25SNa-M



63622240

- Specification:**
1. Auxiliary electric heater is optional part for heat pump unit, once it is used, please connect the temp. resistor HT1 with XT2.1-1 and XT2.1-2.
  2. Cooling only type unit do not have below parts: KM5, Auxiliary electric heater, LP12, LP22, Defrost temp. sensor 1.
  3. If the chiller is connected with fan coil units, please remove the wire between AC-L and X16 on PCB, then connect X16 to X1 on fan coil unit patching board.
  4. Remarks: "•X" means terminals on XT2.1 or XT2.2 patching board.

## ◆IMCR35SNa-M IMCR45SNa-M



- Specification:**
1. Auxiliary electric heater is optional part for heat pump unit, once it is used, please connect the temp. resistor HT1 with XT2-10 and XT2-11.
  2. Cooling only type unit do not have the parts: KM5, Auxiliary electric heater, LP12, LP22, RT5, RT6, YV1, YV2.
  3. If the chiller is connected with fan coil units, please remove the wire between AC-L and X16 on PCB, then connect X16 to X1 on fan coil unit patching board.
  4. Remarks: "X" means terminals on XT2 patching board.

63622115

# 10 INSTALLATION

## ➔ 10.1 Location of Installation

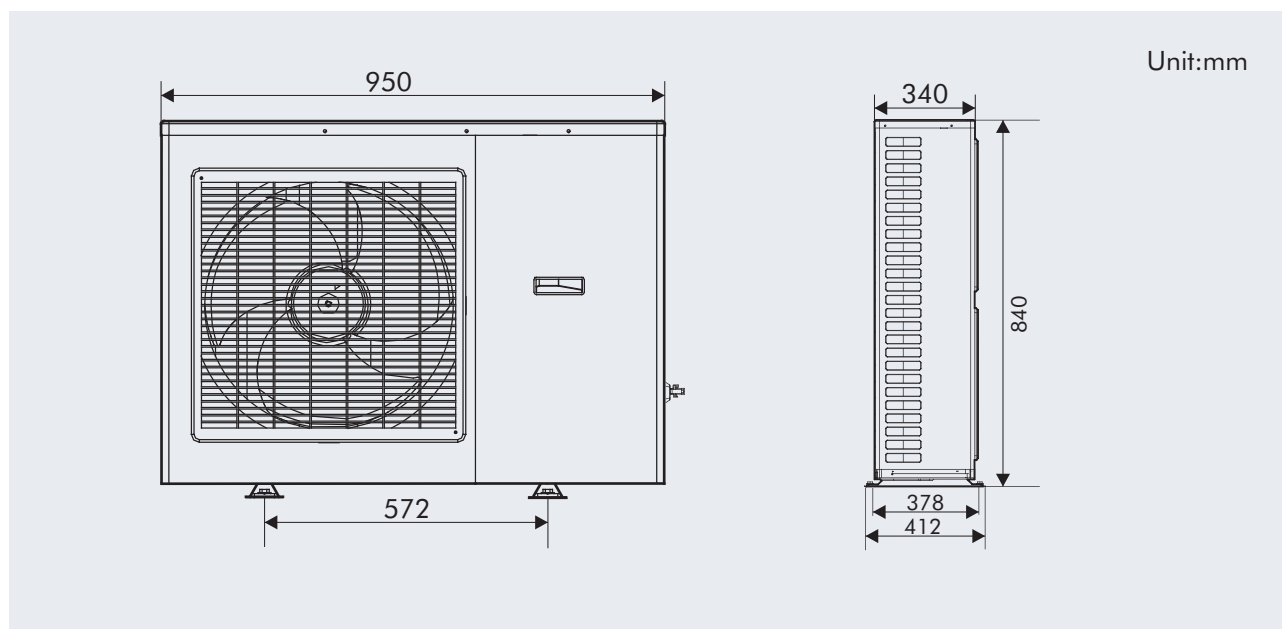
1. The Mini Chiller unit can be installed on roof, ceiling, special flat or other place that is easy for installation and be able to stand its weight.
2. Select a place with well ventilation and smooth exhausting, and the place will not produce short-circuit circulation, and where exhausted air from the unit will not bother neighbors.
3. When placing the unit at roof, pay attention to wind direction to prevent direct up wind; when placing it on ground, avoid placing it at where there is strong wind.
4. There should be no heat source, exhaust vent of other facilities, strong steam and flammable gas around the unit.
5. When installing several units, ensure there is enough suction space to prevent short-circuit circulation.
6. Place where there is no large snow in winter.
7. There should be no obstruction near air intake vent or air outlet vent.
8. Place where with drainage pipe around the unit to drain cooling or heating water.
9. Place where near power for easy wiring.
10. Place where near supply water source for convenient pipe construction.
11. There should be open space around the unit.

## ➔ 10.2 Unit Dimension

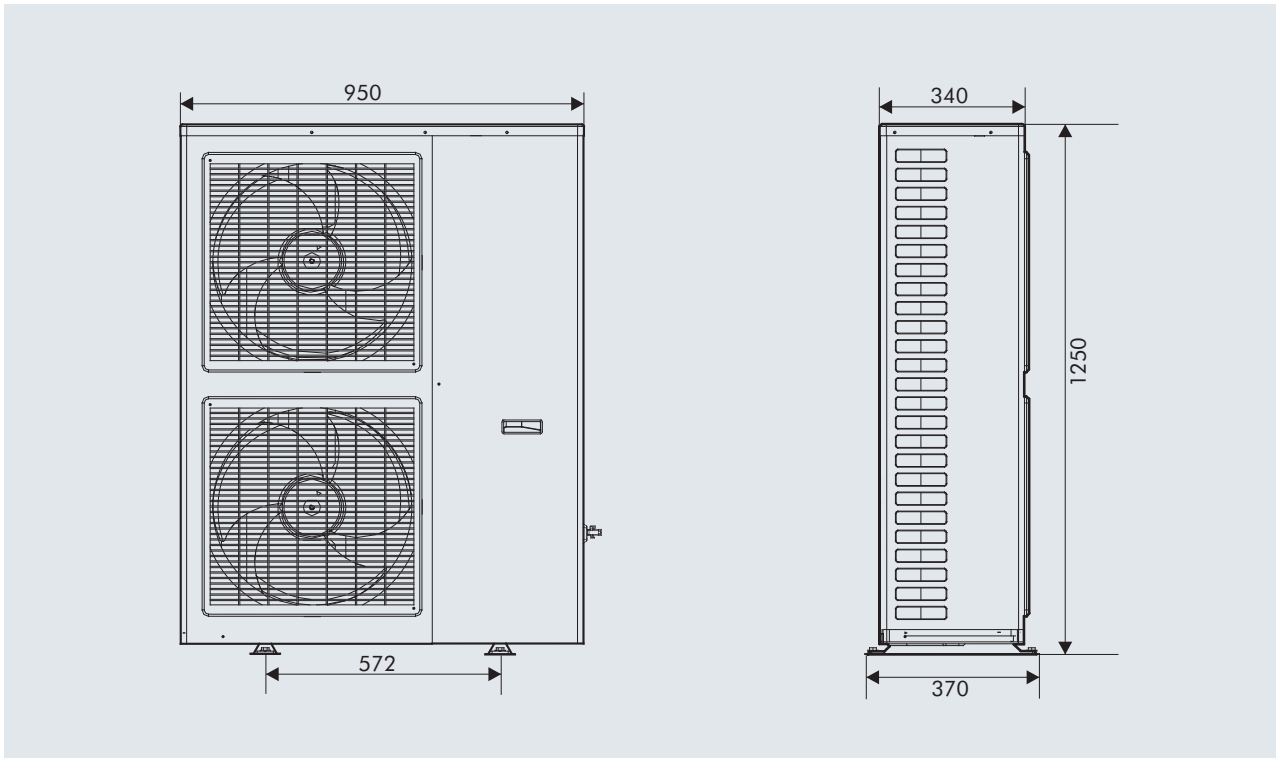
### 10.2.1 Split Type

#### 1) Outdoor Unit

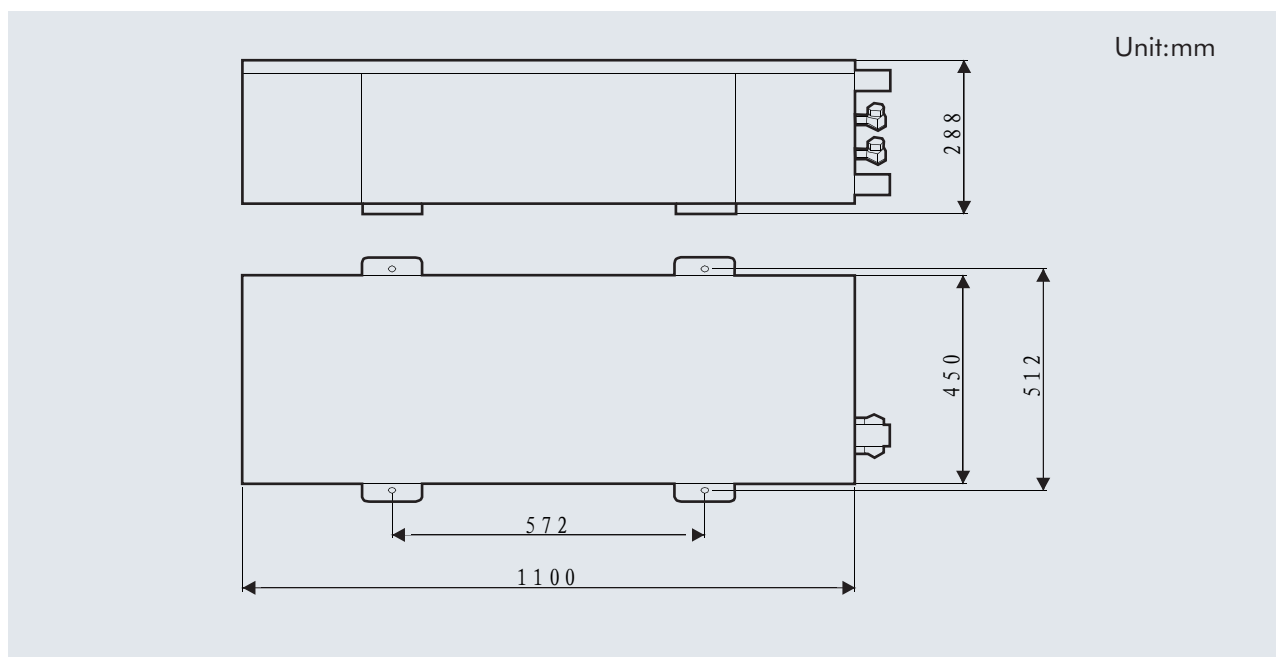
##### ◆ IMCR8WZNa-M(0)



◆ IMCR10WZNa-M(O), IMCR12.5WZNa-M(0), IMCR15WZNa-M(0)

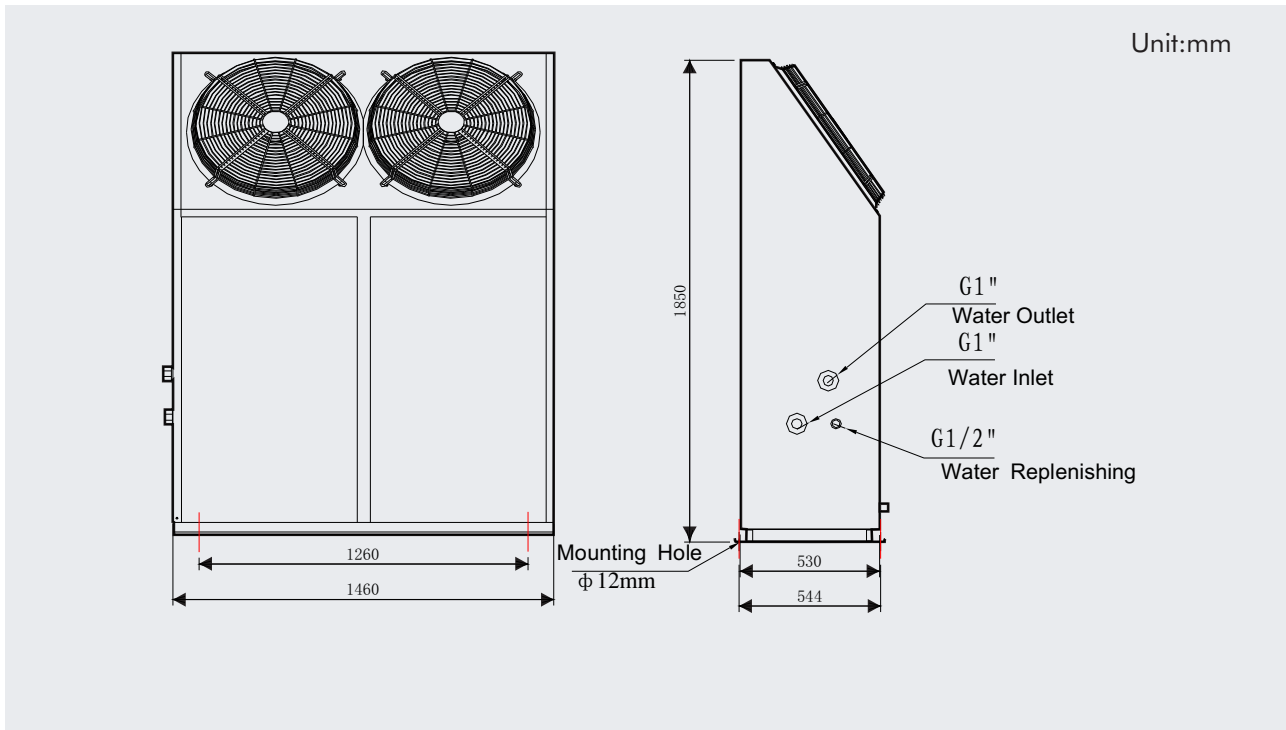


## 2) Indoor Unit

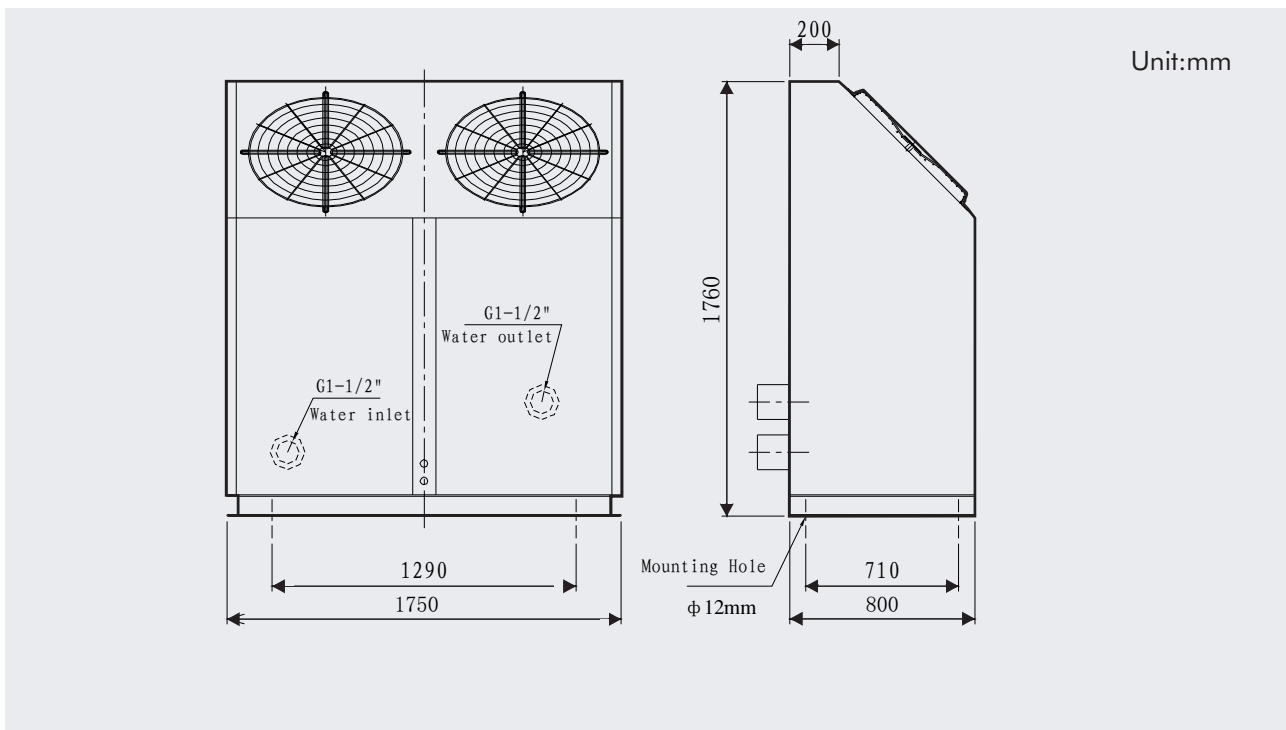


## 10.2.2 Integral Type

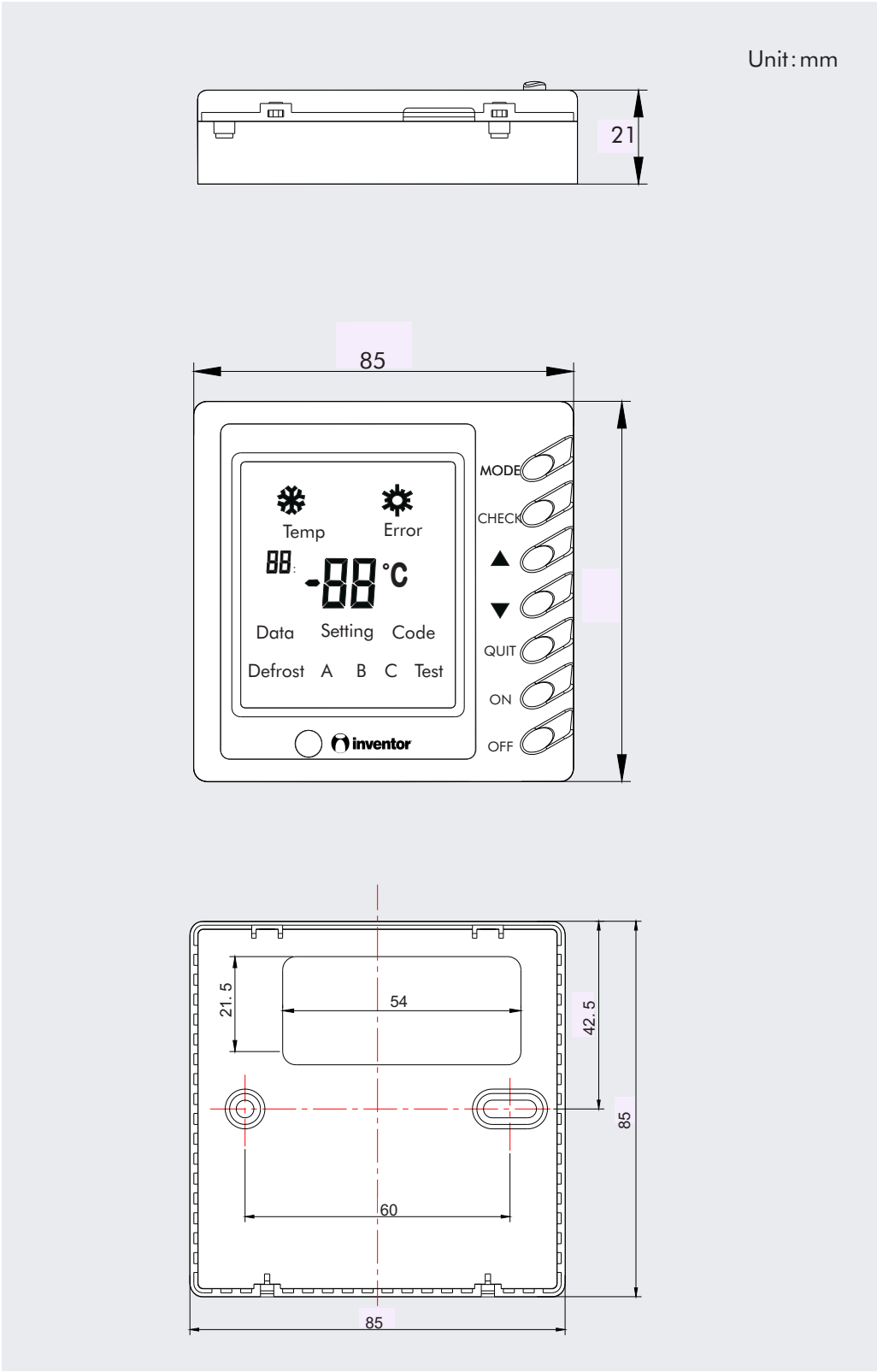
### ◆ IMCR19SNa-M、IMCR25SNa-M

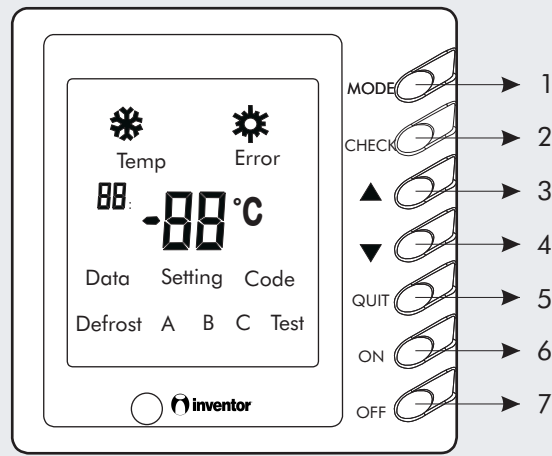


### ◆ IMCR35SNa-M、IMCR45SNa-M



10.2.3 Wired Controller





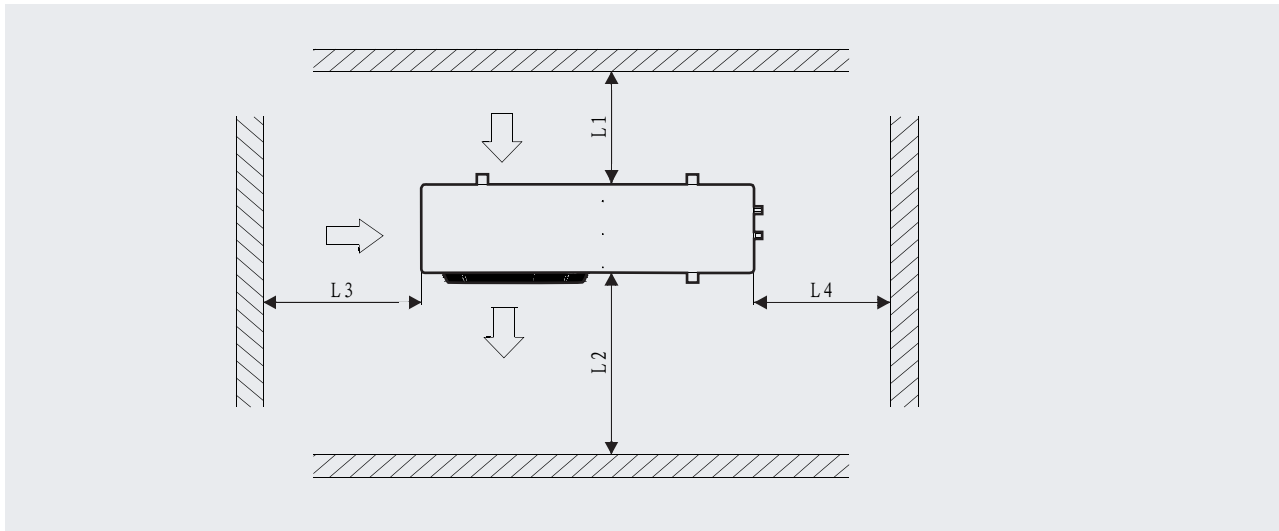
| NO. | Key Name | Function description                                                                                                                                                                                                                                                                                                                    |
|-----|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | MODE     | It can switch between cooling and heating, this button is available only on cooling and heating unit.                                                                                                                                                                                                                                   |
| 2   | CHECK    | Press it once under normal state to enter check mode, under check mode, press this button when "17" is displayed can change the value of "17". Under parameter set mode, press this once can switch the adjusting objection between parameter and value, press this button for long (about 5s) to save and quit this parameter setting. |
| 3   | ▲        | To increase present set value or change set/check object.                                                                                                                                                                                                                                                                               |
| 4   | ▼        | To decrease present set value or change set/check object.                                                                                                                                                                                                                                                                               |
| 5   | QUIT     | Under Set and Check mode, press it once to quit this mode. Under parameter set mode, this set value would not be saved. Press this button for long (about 5s) to set sound, and make sound switches between always on and always off.                                                                                                   |
| 6   | ON       | It is used to turn on the unit. Press the button for 1 second when unit is off to turn on the unit. This button cannot be pressed continuously.                                                                                                                                                                                         |
| 7   | OFF      | It is used to turn off the unit. Press the button for 1 second when unit is on to turn off the unit. This button cannot be pressed continuously.                                                                                                                                                                                        |



## ➤ 10.3 Installation Clearance

### 10.3.1 Split Type

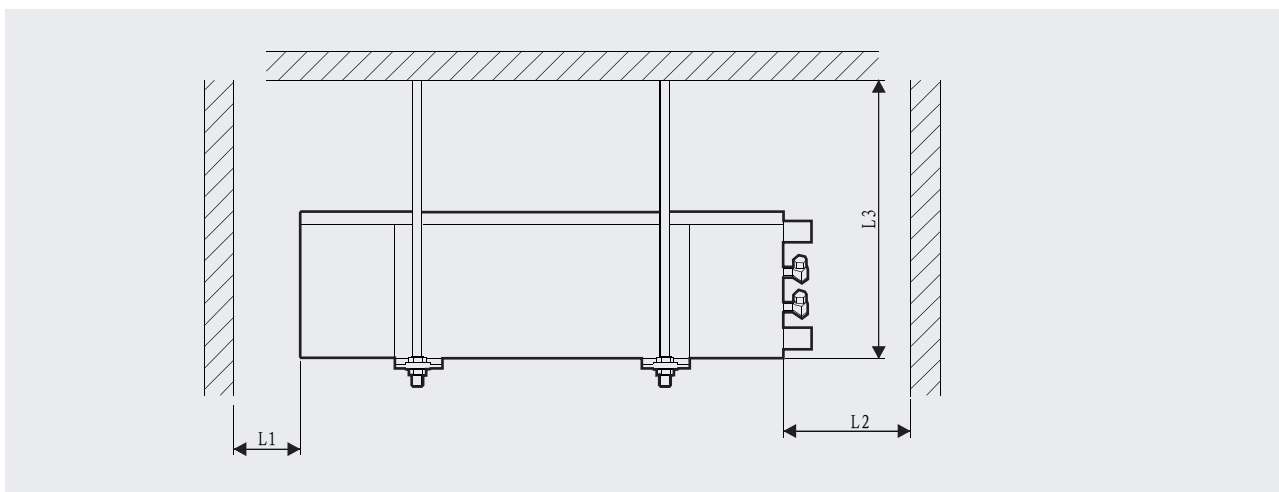
#### 1) Outdoor unit



Unit:mm

| Code    | L1   | L2    | L3   | L4   |
|---------|------|-------|------|------|
| Spacing | >500 | >1000 | >500 | >500 |

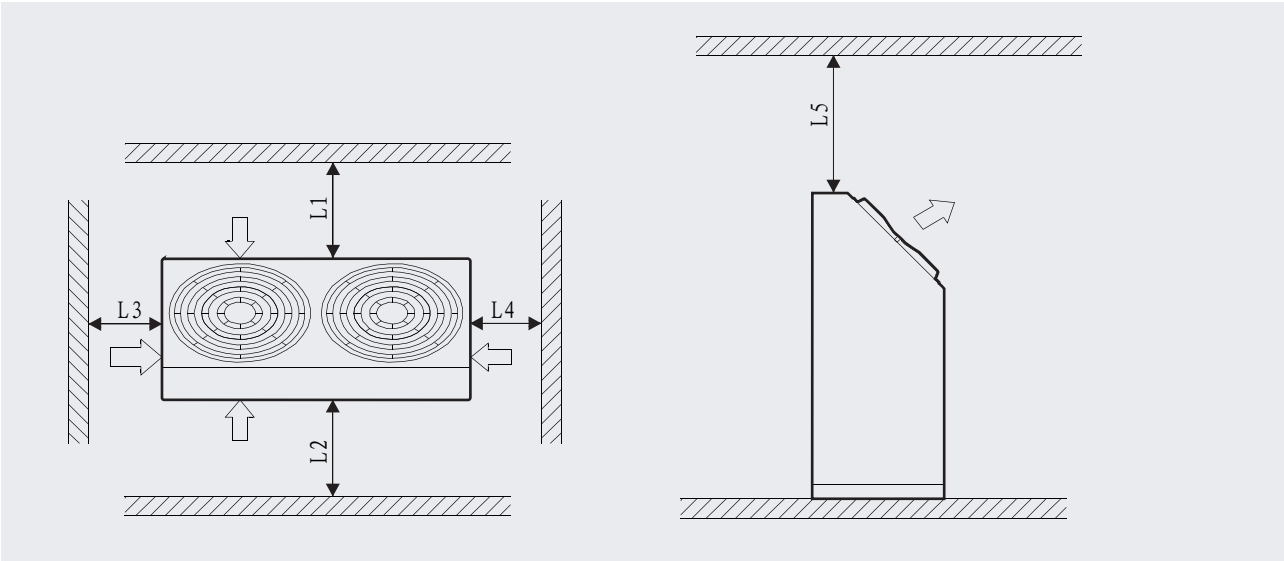
#### 2) Indoor unit



Unit:mm

| Code    | L1   | L2   | L3    |
|---------|------|------|-------|
| Spacing | >250 | >800 | <1200 |

### 10.3.2 Integral Type

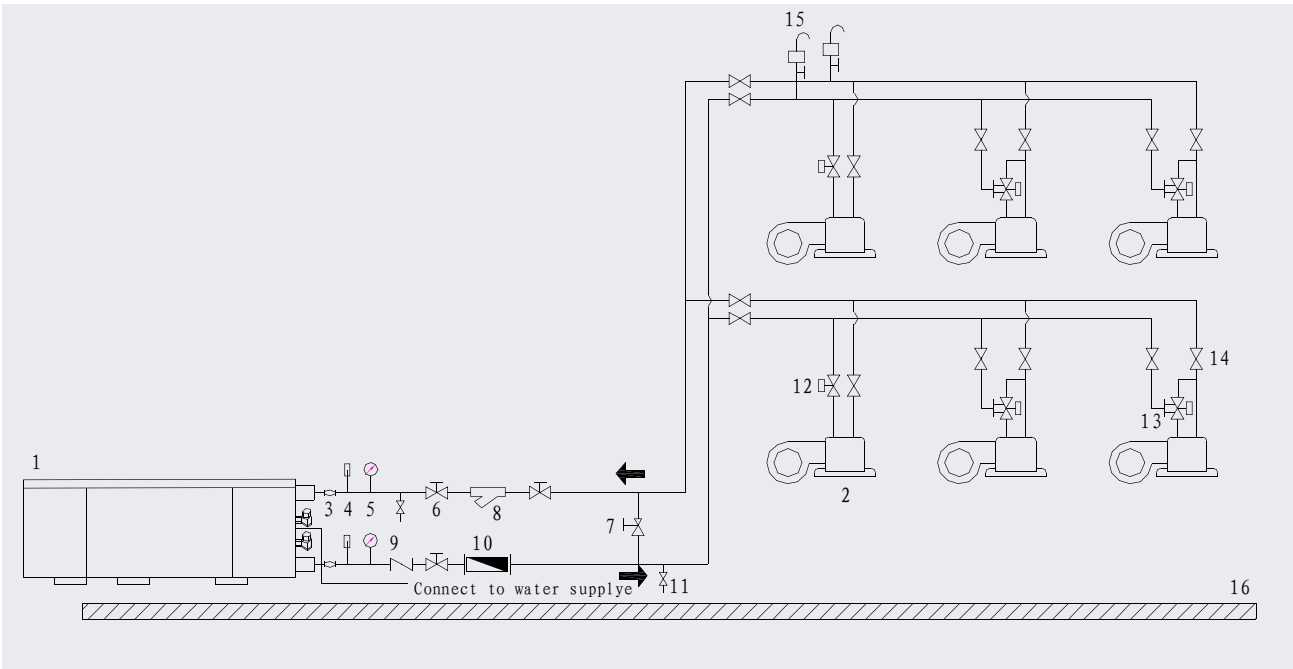


Unit:mm

| Code    | L1    | L2    | L3    | L4    | L5    |
|---------|-------|-------|-------|-------|-------|
| Spacing | >1000 | >1200 | >1000 | >1000 | >2000 |

## 10.4 Sketch Map of Installation of Water System

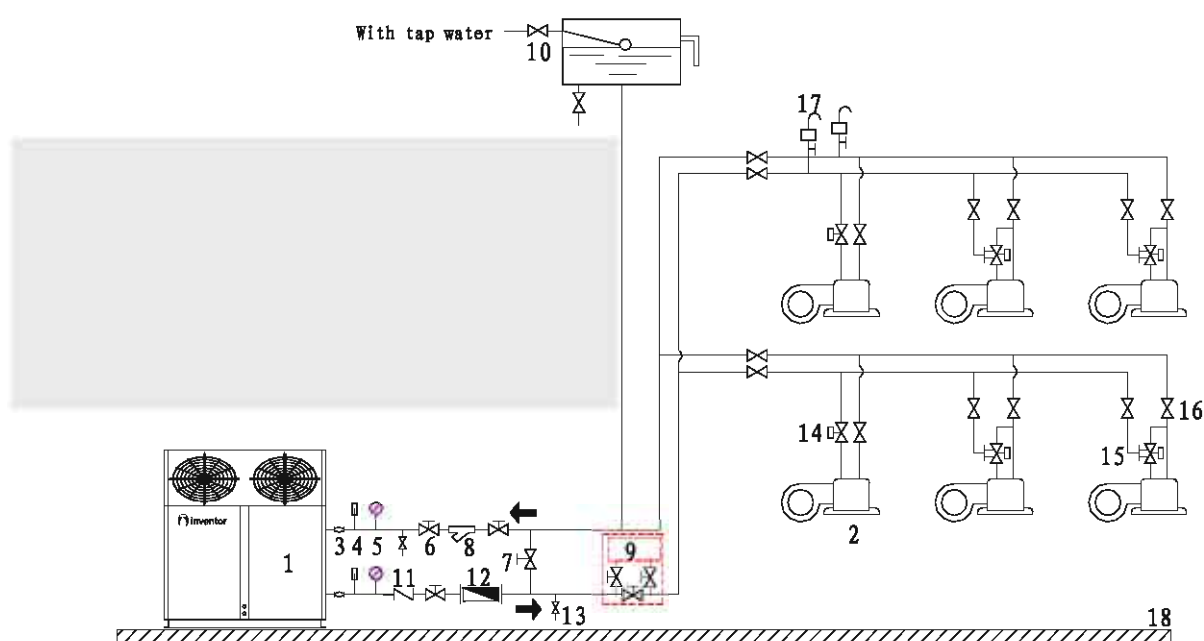
### 10.4.1 Split Type



|   |                       |    |                      |
|---|-----------------------|----|----------------------|
| 1 | Host air conditioner  | 9  | Check valve          |
| 2 | Fan coil              | 10 | Flowmeter            |
| 3 | Rubber soft contact   | 11 | Water drainage valve |
| 4 | Thermometer           | 12 | Electric 2-way valve |
| 5 | Manometer             | 13 | Electric 3-way valve |
| 6 | Cut-off valve         | 14 | Ball valve           |
| 7 | By-pass control valve | 15 | Auto exhaust valve   |
| 8 | Y-type filter         | 16 | Base                 |

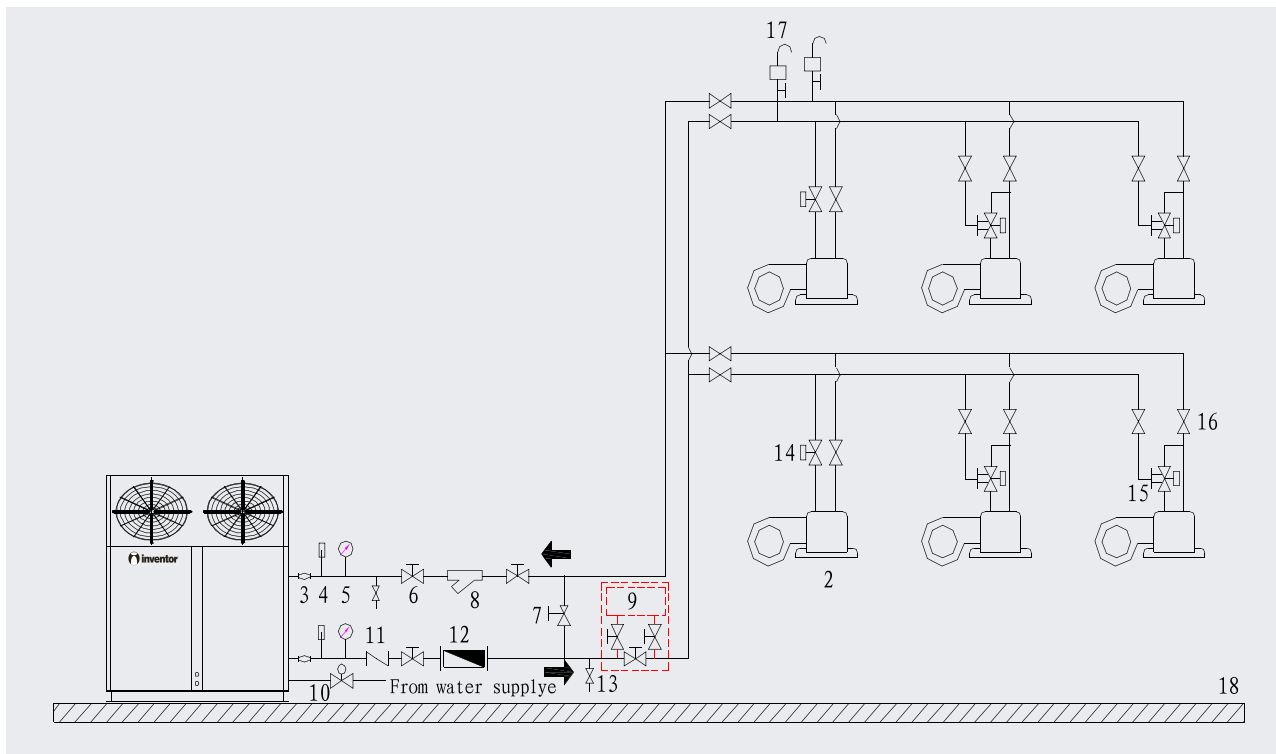
## 9.4.2 Integral Type

### 1) Open expansion water tank system



|   |                                            |    |                        |
|---|--------------------------------------------|----|------------------------|
| 1 | Host air conditioner                       | 10 | Float-ball water valve |
| 2 | Fan coil                                   | 11 | Check valve            |
| 3 | Rubber soft contact                        | 12 | Flowmeter              |
| 4 | Thermometer                                | 13 | Water drainage valve   |
| 5 | Manometer                                  | 14 | Electric 2-way valve   |
| 6 | Cut-off valve                              | 15 | Electric 3-way valve   |
| 7 | By-pass control valve                      | 16 | Ball valve             |
| 8 | Y-type filter                              | 17 | Auto exhaust valve     |
| 9 | Auxiliary electric heater/hot-water boiler | 18 | Base                   |

## 2) Closed expansion water tank system



|   |                                            |    |                       |
|---|--------------------------------------------|----|-----------------------|
| 1 | Host air conditioner                       | 10 | Auto water fill valve |
| 2 | Fan coil                                   | 11 | Check valve           |
| 3 | Rubber soft contact                        | 12 | Flowmeter             |
| 4 | Thermometer                                | 13 | Water drainage valve  |
| 5 | Manometer                                  | 14 | Electric 2-way valve  |
| 6 | Cut-off valve                              | 15 | Electric 3-way valve  |
| 7 | By-pass control valve                      | 16 | Ball valve            |
| 8 | Y-type filter                              | 17 | Auto exhaust valve    |
| 9 | Auxiliary electric heater/hot-water boiler | 18 | Base                  |

## 11 ACCESSORIES

| Name                  | Standard | Optional | Provided by user |
|-----------------------|----------|----------|------------------|
| Auto water fill valve | ✓        | ×        | ×                |
| Safety valve          | ✓        | ×        | ×                |
| Auto exhaust valve    | ✓        | ×        | ×                |
| Wire controller       | ✓        | ×        | ×                |
| water pump            | ✓        | ×        | ×                |

