

|                                        |            |
|----------------------------------------|------------|
| <b>Part 1 General Information.....</b> | <b>1</b>   |
| <b>Part 2 Indoor Units.....</b>        | <b>11</b>  |
| <b>Part 3 Outdoor Units.....</b>       | <b>86</b>  |
| <b>Part 4 Installation.....</b>        | <b>126</b> |
| <b>Part 5 Control System .....</b>     | <b>139</b> |



# Part 1

## General Information

|                                             |    |
|---------------------------------------------|----|
| 1. Model Names of Indoor/Outdoor Units..... | 2  |
| 2. External Appearance.....                 | 5  |
| 3. Combination of Indoor Units.....         | 7  |
| 4. Nomenclature .....                       | 8  |
| 5. Features.....                            | 10 |

# 1. Model Names of Indoor/Outdoor Units

## 1.1 Indoor Units

| Model name    | Dimension (mm)                          | Net/Gross weight (kg) | Power supply      |
|---------------|-----------------------------------------|-----------------------|-------------------|
| MSCI-07HRIN1  | Width: 745<br>Height: 200<br>Depth: 220 | 8/9.5                 | 220~240V-1ph-50Hz |
| MSCI-09HRIN1  | Width: 745<br>Height: 200<br>Depth: 220 | 8/9.5                 | 220~240V-1ph-50Hz |
| MSCI-12HRIN1  | Width: 820<br>Height: 215<br>Depth: 255 | 9/11                  | 220~240V-1ph-50Hz |
| MSHI-07HRIN1  | Width: 775<br>Height: 215<br>Depth: 216 | 8/10                  | 220~240V-1ph-50Hz |
| MSHI-09HRIN1  | Width: 775<br>Height: 215<br>Depth: 216 | 8.5/10                | 220~240V-1ph-50Hz |
| MSHI-12HRIN1  | Width: 860<br>Height: 220<br>Depth: 240 | 10/12                 | 220~240V-1ph-50Hz |
| MSV1I-09HRDN1 | Width: 795<br>Height: 270<br>Depth: 165 | 10/11.5               | 220~240V-1ph-50Hz |
| MSV1I-12HRDN1 | Width: 845<br>Height: 286<br>Depth: 165 | 10.5/12               | 220~240V-1ph-50Hz |
| MST6I-07HRIN1 | Width: 785<br>Height: 205<br>Depth: 220 | 8/10                  | 220~240V-1ph-50Hz |
| MST6I-09HRIN1 | Width: 785<br>Height: 205<br>Depth: 220 | 8/10                  | 220~240V-1ph-50Hz |
| MST6I-12HRIN1 | Width: 820<br>Height: 220<br>Depth: 225 | 9.5/11.5              | 220~240V-1ph-50Hz |
| MSQ4I-07HRDN1 | Width: 580<br>Height: 254<br>Depth: 580 | 18.5/25               | 220~240V-1ph-50Hz |
| MSQ4I-09HRDN1 | Width: 580<br>Height: 254<br>Depth: 580 | 18.5/25               | 220~240V-1ph-50Hz |
| MSQ4I-12HRDN1 | Width: 580                              | 18.5/25               | 220~240V-1ph-50Hz |

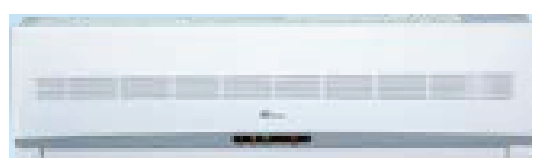
| Model name    | Dimension (mm)                           | Net/Gross weight (kg) | Power supply      |
|---------------|------------------------------------------|-----------------------|-------------------|
|               | Height: 254<br>Depth: 580                |                       |                   |
| MSQ4I-18HRIN1 | Width: 580<br>Height: 254<br>Depth: 580  | 21/28                 | 220~240V-1ph-50Hz |
| MST2I-07HRIN1 | Width: 874<br>Height: 203<br>Depth: 375  | 15/19                 | 220~240V-1ph-50Hz |
| MST2I-09HRIN1 | Width: 874<br>Height: 203<br>Depth: 375  | 15/19                 | 220~240V-1ph-50Hz |
| MST2I-12HRIN1 | Width: 874<br>Height: 203<br>Depth: 375  | 15/19                 | 220~240V-1ph-50Hz |
| MST2I-18HRIN1 | Width: 1224<br>Height: 206<br>Depth: 365 | 18/23                 | 220~240V-1ph-50Hz |
| MSDLI-12HRIN1 | Width: 990<br>Height: 660<br>Depth: 206  | 27/33                 | 220~240V-1ph-50Hz |
| MSDLI-18HRIN1 | Width: 990<br>Height: 660<br>Depth: 206  | 27/33                 | 220~240V-1ph-50Hz |
| MSEI-07HRIN1  | Width:710<br>Height:250<br>Depth:191     | 8/9.5                 | 220~240V-1ph-50Hz |
| MSEI-09HRIN1  | Width:710<br>Height:250<br>Depth:191     | 8/9.5                 | 220~240V-1ph-50Hz |
| MSEI-12HRIN1  | Width:790<br>Height:265<br>Depth:204     | 9.5/11.5              | 220~240V-1ph-50Hz |

## 1.2 Outdoor Units

| Model name   | Dimension (mm)                          | Net/Gross weight (kg) | Power supply      |
|--------------|-----------------------------------------|-----------------------|-------------------|
| M2OA-18HRDN1 | Width: 940<br>Height: 375<br>Depth: 755 | 68/72                 | 220~240V-1ph-50Hz |
| M2OB-18HRDN1 | Width: 940<br>Height: 375<br>Depth: 755 | 61/65                 | 220~240V-1ph-50Hz |
| M3OA-27HRDN1 | Width: 940<br>Height: 375<br>Depth: 755 | 68/72                 | 220~240V-1ph-50Hz |
| M4OA-27HRDN1 | Width: 968<br>Height: 858<br>Depth: 355 | 80/84                 | 220~240V-1ph-50Hz |

## 2. External Appearance

### Indoor units:

|                                                                                                                      |                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <p>Four-way cassette (compact)</p>  | <p>Duct</p>                  |
| <p>Ceiling and floor</p>            | <p>Wall-mounted Corona</p>   |
| <p>Wall-mounted Alfa</p>           | <p>Wall-mounted Vertu</p>   |
| <p>Wall-mounted T6</p>            | <p>Wall-mounted Elite</p>  |

**Outdoor units:**

M2OA-18HRDN1/ M2OB-18HRDN1



M3OA-27HRDN1



M4OA-27HRDN1



### 3. Combination of Indoor Units

You can choose different style indoor units: cassette type, duct type, wall-mounted type, ceiling and floor type.

#### 3.1 M2OA-18HRDN1/M2OB-18HRDN1

| Nominal Capacity<br>K Btu/h | One indoor unit | two indoor units |          |           |
|-----------------------------|-----------------|------------------|----------|-----------|
|                             | 7               | 7<br>+7          | 9<br>+9  | 1<br>2+12 |
|                             | 9               | 7<br>+9          | 9<br>+12 |           |
|                             | 12              | 7<br>+12         |          |           |

#### 3.2 M3OA-27HRDN1

| Nominal Capacity<br>K Btu/h | one indoor unit | two indoor units |      |       | three indoor units |         |
|-----------------------------|-----------------|------------------|------|-------|--------------------|---------|
|                             | 7               | 7+7              | 9+9  | 12+12 | 7+7+7              | 7+9+12  |
|                             | 9               | 7+9              | 9+12 |       | 7+7+9              | 7+12+12 |
|                             | 12              | 7+12             |      |       | 7+7+12             | 9+9+9   |
|                             |                 |                  |      |       | 7+9+9              | 9+9+12  |

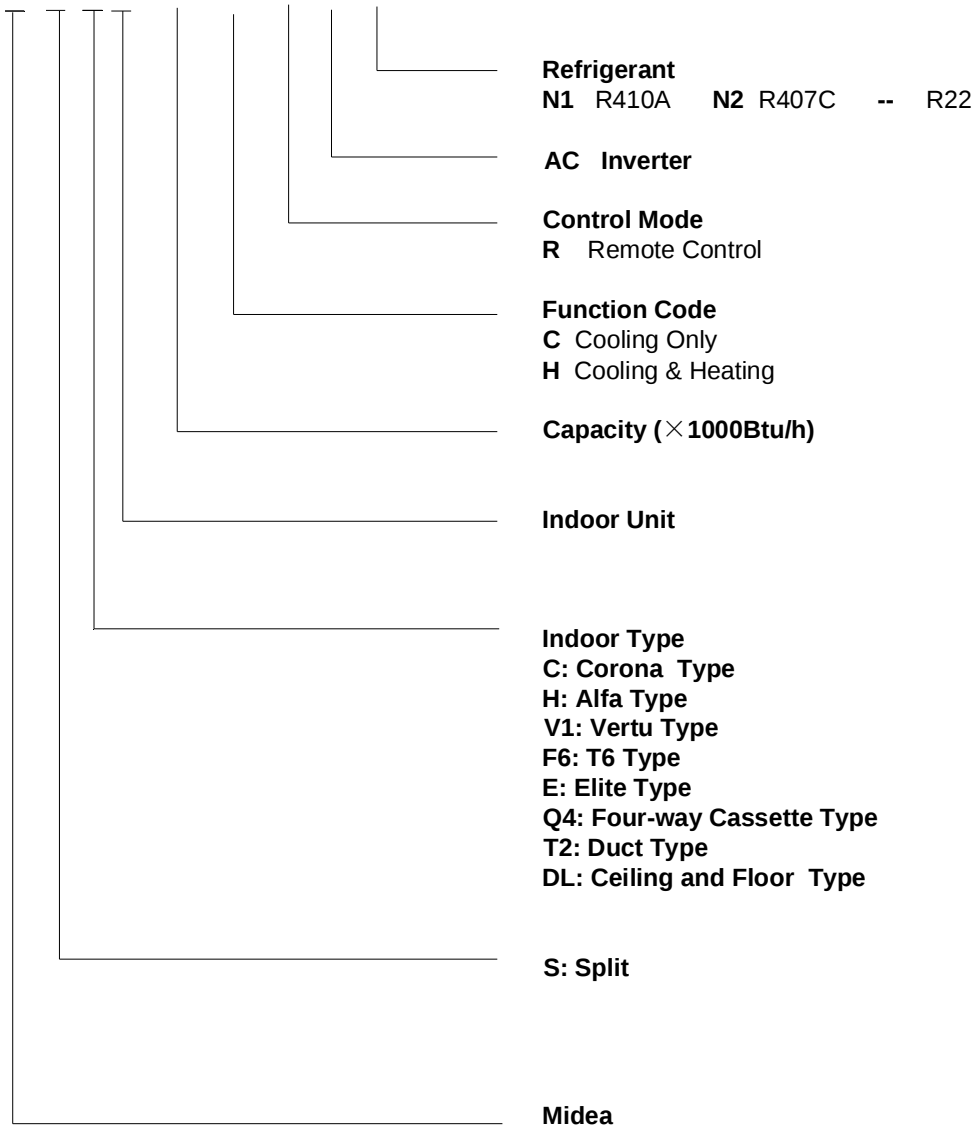
#### 3.3 M4OA-27HRDN1

| Nominal Capacity<br>K Btu/h | one indoor unit | two indoor units |       |       | three indoor units |         |         |          | four indoor units |          |           |
|-----------------------------|-----------------|------------------|-------|-------|--------------------|---------|---------|----------|-------------------|----------|-----------|
|                             | 7               | 7+7              | 9+9   | 12+18 | 7+7+7              | 7+9+9   | 7+12+18 | 9+12+12  | 7+7+7+7           | 7+7+9+9  | 9+9+9+9   |
|                             | 9               | 7+9              | 9+12  | 18+18 | 7+7+9              | 7+9+12  | 9+9+9   | 9+12+18  | 7+7+7+9           | 7+7+9+12 | 9+9+9+12  |
|                             | 12              | 7+12             | 9+18  |       | 7+7+12             | 7+9+18  | 9+9+12  | 12+12+12 | 7+7+7+12          | 7+9+9+9  | 7+7+12+12 |
|                             | 18              | 7+18             | 12+12 |       | 7+7+18             | 7+12+12 | 9+9+18  |          | 7+7+7+18          | 7+9+9+12 | 7+9+12+12 |

## 4. Nomenclature

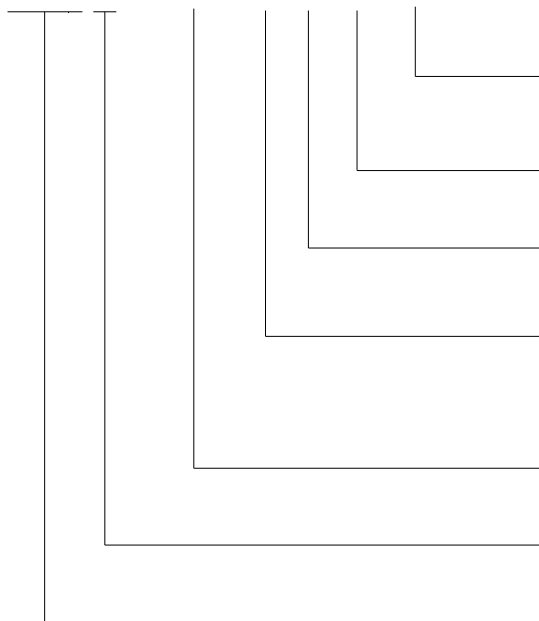
### 4.1 Indoor unit

**M S C I - 07 H R I N1**



## 4.2 Outdoor unit

### M2OA - 18 H R D N1


**Refrigerant**

**N1** R410A    **N2** R407C    --    R22

**DC Inverter**
**Control Mode**

**R** Remote Control

**Function Code**

**C** Cooling Only

**H** Cooling & Heating

**Capacity (×1000Btu/h)**

A:1st Design

B: 2nd Design

**M2O: Universal Outdoor Unit with 1 drive 2**

**M3O: Universal Outdoor Unit with 1 drive 3**

**M4O: Universal Outdoor Unit with 1 drive 4**

## 5. Features

Midea's DC multi air conditioner is new product series in Midea CAC.

- I Adopt DC inverter compressor

All the outdoor units use DC inverter compressor, the efficiency is high, the EER is up to A class.

- I Various styles indoor units

More than 20 different models indoor units can be chosen, including wall-mounted type, cassette type, duct type, ceiling and floor type.

- I Cooling in low temperature

The outdoor unit can operate even in -15°C. The model M4OA-27HRDN1 is standard with low ambient kit, other outdoor units can be customized with the low ambient kit.

# Part 2

## Indoor Units

|                              |    |
|------------------------------|----|
| Wall-mounted Type.....       | 12 |
| Four-way Cassette Type ..... | 43 |
| Duct Type .....              | 58 |
| Ceiling and Floor Type.....  | 73 |

# Wall-mounted Type

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>1. Features.....</b>                                    | <b>13</b> |
| <b>2. Specifications .....</b>                             | <b>14</b> |
| <b>3. Dimensions .....</b>                                 | <b>19</b> |
| <b>4. Service Space .....</b>                              | <b>25</b> |
| <b>5. Wiring Diagrams .....</b>                            | <b>26</b> |
| <b>6. Air Velocity and Temperature Distributions .....</b> | <b>28</b> |
| <b>7. Electric Characteristics.....</b>                    | <b>29</b> |
| <b>8. Sound Levels .....</b>                               | <b>30</b> |
| <b>9. Exploded View .....</b>                              | <b>31</b> |
| <b>10. Accessories.....</b>                                | <b>42</b> |

## **1. Features**

The wall-mounted indoor unit has several different types for your choice, such as Corona type, Alfa type, Elite type, T6 type and Vertu type. The different style panels can satisfy your different requirements. All the units have various functions, such as the function of auto-restart, sleep mode are standard, the function of golden fin, bio filter, silver filter are optional.

## 2. Specifications

### 2.1 Corona series

| Sale Model                     |                                |                   | MSCI-07HRIN1              | MSCI-09HRIN1          | MSCI-12HRIN1          |
|--------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|-----------------------|
| Power supply                   |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          | 220~240-1-50          |
| Supply electricity type        |                                |                   | Outdoor unit supply power |                       |                       |
| Cooling                        | Capacity                       | Btu/h             | 7000                      | 9000                  | 12000                 |
|                                | Input                          | W                 | 37                        | 37                    | 44                    |
|                                | Rated current                  | A                 | 0.17                      | 0.17                  | 0.2                   |
| Heating                        | Capacity                       | Btu/h             | 8500                      | 11000                 | 13000                 |
|                                | Input                          | W                 | 37                        | 37                    | 44                    |
|                                | Rated current                  | A                 | 0.17                      | 0.17                  | 0.2                   |
| Indoor fan motor               | Model                          |                   | RPG18H                    | RPG18H                | RPG20D                |
|                                | Type                           |                   | AC Motor                  | AC Motor              | AC Motor              |
|                                | Brand                          |                   | Welling                   | Welling               | Welling               |
|                                | Input                          | W                 | 36                        | 36                    | 38                    |
|                                | Capacitor                      | uF                | 1.2                       | 1.2                   | 1.5                   |
|                                | Speed(hi/mi/lo)                | r/min             | 1200/1000/850             | 1200/1000/850         | 1180/1000/850         |
| Indoor coil                    | a.Number of rows               |                   | 2                         | 2                     | 2                     |
|                                | b.Tube pitch(a)x row pitch(b)  | mm                | 21x13.37                  | 21x13.37              | 21x13.37              |
|                                | c.Fin spacing                  | mm                | 1.5                       | 1.3                   | 1.3                   |
|                                | d.Fin type                     |                   | hydrophilic aluminium     | hydrophilic aluminium | hydrophilic aluminium |
|                                | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    | Φ7                    |
|                                |                                |                   | Inner-groove tube         | Inner-groove tube     | Inner-groove tube     |
|                                | f.Coil length x height x width | mm                | 538 x 200 x 26.74         | 538 x 200 x 26.74     | 637 x 200 x 26.74     |
|                                | g.Number of circuits           |                   | 2                         | 2                     | 2                     |
| Indoor air flow (Hi/Mi/Lo)     |                                | m <sup>3</sup> /h | 400/330/300               | 450/340/300           | 510/450/340           |
| Indoor noise level (Hi//Mi/Lo) |                                | dB(A)             | 35/32/30                  | 37/34/31              | 39/37/34              |
| Indoor unit                    | Dimension (W x H x D)          | mm                | 745 x 200 x 220           | 745 x 200 x 220       | 820 x 215 x 255       |
|                                | Packing (W x H x D)            | mm                | 800 x 270 x 340           | 800 x 270 x 340       | 875 x 375 x 285       |
|                                | Net/Gross weight               | kg                | 8/9.5                     | 8/9.5                 | 9/11                  |
| Refrigerant Type               |                                |                   | R410A                     | R410A                 | R410A                 |
| Refrigerant pipe               | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ9.53           | Φ6.35/Φ12.7           |
| Drainage water pipe diameter   |                                | mm                | Φ17.5                     | Φ17.5                 | Φ17.5                 |
| Controller(standard)           |                                |                   | R71 A/E                   | R71 A/E               | R71 A/E               |
| Application area               |                                | m <sup>2</sup>    | 13-15                     | 16-20                 | 21-26                 |

## 2.2 Alfa series

| Sale Model                     |                                |                   | MSHI-07HRIN1              | MSHI-09HRIN1          | MSHI-12HRIN1          |
|--------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|-----------------------|
| Power supply                   |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          | 220~240-1-50          |
| Supply electricity type        |                                |                   | Outdoor unit supply power |                       |                       |
| Cooling                        | Capacity                       | Btu/h             | 7000                      | 9000                  | 12000                 |
|                                | Input                          | W                 | 36.5                      | 36.5                  | 51.5                  |
|                                | Rated current                  | A                 | 0.17                      | 0.17                  | 0.24                  |
| Heating                        | Capacity                       | Btu/h             | 8500                      | 11000                 | 15000                 |
|                                | Input                          | W                 | 36.5                      | 36.5                  | 51.5                  |
|                                | Rated current                  | A                 | 0.17                      | 0.17                  | 0.24                  |
| Indoor fan motor               | Model                          |                   | RPG13H                    | RPG13H                | RPG20D                |
|                                | Type                           |                   | AC Motor                  | AC Motor              | AC Motor              |
|                                | Brand                          |                   | Welling                   | Welling               | Welling               |
|                                | Input                          | W                 | 33                        | 33                    | 38                    |
|                                | Capacitor                      | uF                | 1.2                       | 1.2                   | 1.5                   |
|                                | Speed(hi/mi/lo)                | r/min             | 1050/920/820              | 1200/950/850          | 1250/1000/800         |
| Indoor coil                    | a.Number of rows               |                   | 2                         | 2                     | 2                     |
|                                | b.Tube pitch(a)x row pitch(b)  | mm                | 21×13.37                  | 21×13.37              | 21×13.37              |
|                                | c.Fin spacing                  | mm                | 1.5                       | 1.3                   | 1.3                   |
|                                | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium | Hydrophilic aluminium |
|                                | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    | Φ7                    |
|                                |                                |                   | Inner-groove tube         | Inner-groove tube     | Inner-groove tube     |
|                                | f.Coil length x height x width | mm                | 578 x 200 x 26.74         | 578 x 200 x 26.74     | 653 x 200 x 26.74     |
|                                | g.Number of circuits           |                   | 2                         | 2                     | 2                     |
| Indoor air flow (Hi/Mi/Lo)     |                                | m <sup>3</sup> /h | 400/330/300               | 450/340/300           | 510/450/340           |
| Indoor noise level (Hi//Mi/Lo) |                                | dB(A)             | 37/35/34                  | 37/35/34              | 38/36/34              |
| Indoor unit                    | Dimension (W x H x D)          | mm                | 775 x 215 x 216           | 775 x 215 x 216       | 860 x 220 x 240       |
|                                | Packing (W x H x D)            | mm                | 830 x 285 x 336           | 830 x 285 x 336       | 915 x 290 x 360       |
|                                | Net/Gross weight               | kg                | 8/10                      | 8.5/10                | 10/12                 |
| Refrigerant Type               |                                |                   | R410A                     | R410A                 | R410A                 |
| Refrigerant pipe               | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ9.53           | Φ6.35/Φ12.7           |
| Drainage water pipe diameter   |                                | mm                | Φ17.5                     | Φ17.5                 | Φ17.5                 |
| Controller(standard)           |                                |                   | R71 A/E                   | R71 A/E               | R71 A/E               |
| Application area               |                                | m <sup>2</sup>    | 13-15                     | 16-20                 | 21-26                 |

## 2.3 T6 series

| Sale Model                    |                                |                   | MSF6I-07HRIN1             | MSF6I-09HRIN1         | MSF6I-12HRIN1         |
|-------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|-----------------------|
| Power supply                  |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          | 220~240-1-50          |
| Supply electricity type       |                                |                   | Outdoor unit supply power |                       |                       |
| Cooling                       | Capacity                       | Btu/h             | 7000                      | 9000                  | 12000                 |
|                               | Input                          | W                 | 39.5                      | 39.5                  | 44                    |
|                               | Rated current                  | A                 | 0.18                      | 0.18                  | 0.2                   |
| Heating                       | Capacity                       | Btu/h             | 8000                      | 10000                 | 14000                 |
|                               | Input                          | W                 | 39.5                      | 39.5                  | 44                    |
|                               | Rated current                  | A                 | 0.18                      | 0.18                  | 0.2                   |
| Indoor fan motor              | Model                          |                   | RPG13H                    | RPG13H                | RPG20D                |
|                               | Type                           |                   | AC Motor                  | AC Motor              | AC Motor              |
|                               | Brand                          |                   | Welling                   | Welling               | welling               |
|                               | Input                          | W                 | 33                        | 33                    | 38                    |
|                               | Capacitor                      | uF                | 1.2                       | 1.2                   | 1.5                   |
|                               | Speed(hi/mi/lo)                | r/min             | 1100/1000/900             | 1100/1000/900         | 1200/1080/950         |
| Indoor coil                   | a.Number of rows               |                   | 2                         | 2                     | 2                     |
|                               | b.Tube pitch(a) x row pitch(b) | mm                | 21X13.37                  | 21X13.37              | 21X13.37              |
|                               | c.Fin spacing                  | mm                | 1.3                       | 1.3                   | 1.3                   |
|                               | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium | Hydrophilic aluminium |
|                               | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    | Φ7                    |
|                               |                                |                   | Inner-groove tube         | Inner-groove tube     | Inner-groove tube     |
|                               | f.Coil length x height x width | mm                | 578 x 200 x 26.74         | 578 x 200 x 26.74     | 637 x 200 x 26.74     |
|                               | g.Number of circuits           |                   | 2                         | 2                     | 2                     |
| Indoor air flow (Hi/Mi/Lo)    |                                | m <sup>3</sup> /h | 400/330/300               | 450/340/300           | 510/430/350           |
| Indoor noise level (Hi/Mi/Lo) |                                | dB(A)             | 39/36/32                  | 39/36/32              | 40/37/34              |
| Indoor unit                   | Dimension (W x H x D)          | mm                | 785 x 205 x 220           | 785 x 205 x 220       | 820 x 220 x 225       |
|                               | Packing (W x H x D)            | mm                | 840 x 270 x 340           | 840 x 270 x 340       | 875 x 285 x 375       |
|                               | Net/Gross weight               | kg                | 8/10                      | 8/10                  | 9.5/11.5              |
| Refrigerant Type              |                                |                   | R410A                     | R410A                 | R410A                 |
| Refrigerant pipe              | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ9.53           | Φ6.35/Φ12.7           |
| Drainage water pipe diameter. |                                | mm                | Φ17.5                     | Φ17.5                 | Φ17.5                 |
| Controller(standard)          |                                |                   | R71 A/E                   | R71 A/E               | R71 A/E               |
| Application area              |                                | m <sup>2</sup>    | 12~15                     | 12~15                 | 12~15                 |

## 2.5 Vertu series

| Sale Model                    |                                |                   | MSV1I-09HRDN1             | MSV1I-12HRDN1         |
|-------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|
| Power supply                  |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          |
| Supply electricity type       |                                |                   | Outdoor unit supply power |                       |
| Cooling                       | Capacity                       | Btu/h             | 9000                      | 12000                 |
|                               | Input                          | W                 | 38                        | 44                    |
|                               | Rated current                  | A                 | 0.17                      | 0.2                   |
| Heating                       | Capacity                       | Btu/h             | 10000                     | 14000                 |
|                               | Input                          | W                 | 38                        | 44                    |
|                               | Rated current                  | A                 | 0.17                      | 0.2                   |
| Indoor fan motor              | Model                          |                   | RPG20D                    | RPG20D                |
|                               | Type                           |                   | AC motor                  | AC motor              |
|                               | Brand                          |                   | Welling                   | Welling               |
|                               | Input                          | W                 | 38                        | 38                    |
|                               | Capacitor                      | uF                | 1.2                       | 1.2                   |
|                               | Speed(hi/mi/lo)                | r/min             | 1150/1000/850             | 1150/1000/850         |
| Indoor coil                   | a.Number of rows               |                   | 2                         | 2                     |
|                               | b.Tube pitch(a)x row pitch(b)  | mm                | 21×13.37                  | 21×13.37              |
|                               | c.Fin spacing                  | mm                | 1.3                       | 1.3                   |
|                               | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium |
|                               | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    |
|                               |                                |                   | Inner-groove tube         | Inner-groove tube     |
|                               | f.Coil length x height x width | mm                | 620 x 200 x 26.74         | 620 x 200 x 26.74     |
|                               | g.Number of circuits           |                   | 2                         | 2                     |
| Indoor air flow (Hi/Mi/Lo)    |                                | m <sup>3</sup> /h | 570/480/350               | 700/520/420           |
| Indoor noise level (Hi/Mi/Lo) |                                | dB(A)             | 39/34/29                  | 39/34/29              |
| Indoor unit                   | Dimension (W x H x D)          | mm                | 795 x 270 x 165           | 845 x 286 x 165       |
|                               | Packing (W x H x D)            | mm                | 850 x 285 x 340           | 905 x 285 x 355       |
|                               | Net/Gross weight               | kg                | 10/11.5                   | 10.5/12               |
| Refrigerant Type              |                                |                   | R410A                     | R410A                 |
| Refrigerant pipe              | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ12.7           |
| Drainage water pipe diameter. |                                | mm                | Φ20                       | Φ17.5                 |
| Controller(standard)          |                                |                   | R51I4/BGE                 | R51I4/BGE             |
| Application area              |                                | m <sup>2</sup>    | 12~15                     | 12~15                 |

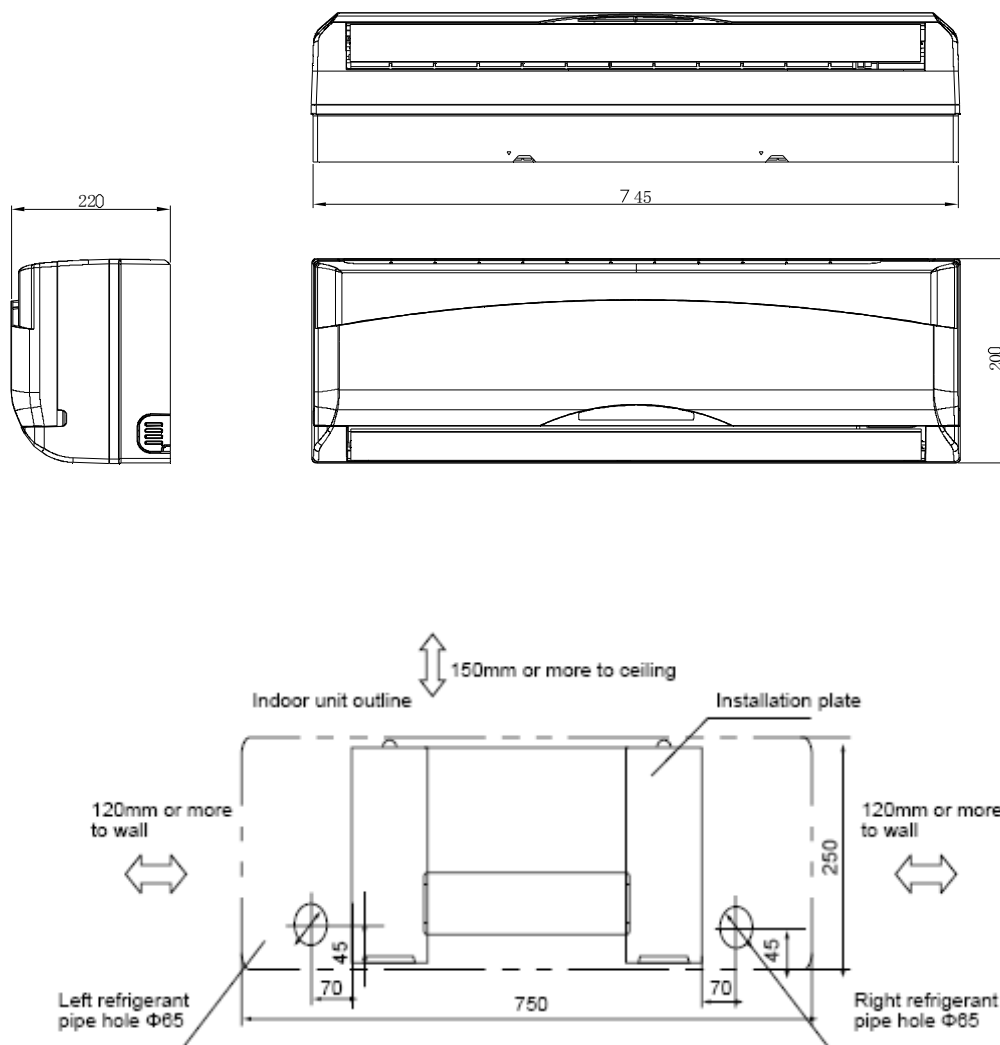
## 2.6 Elite series

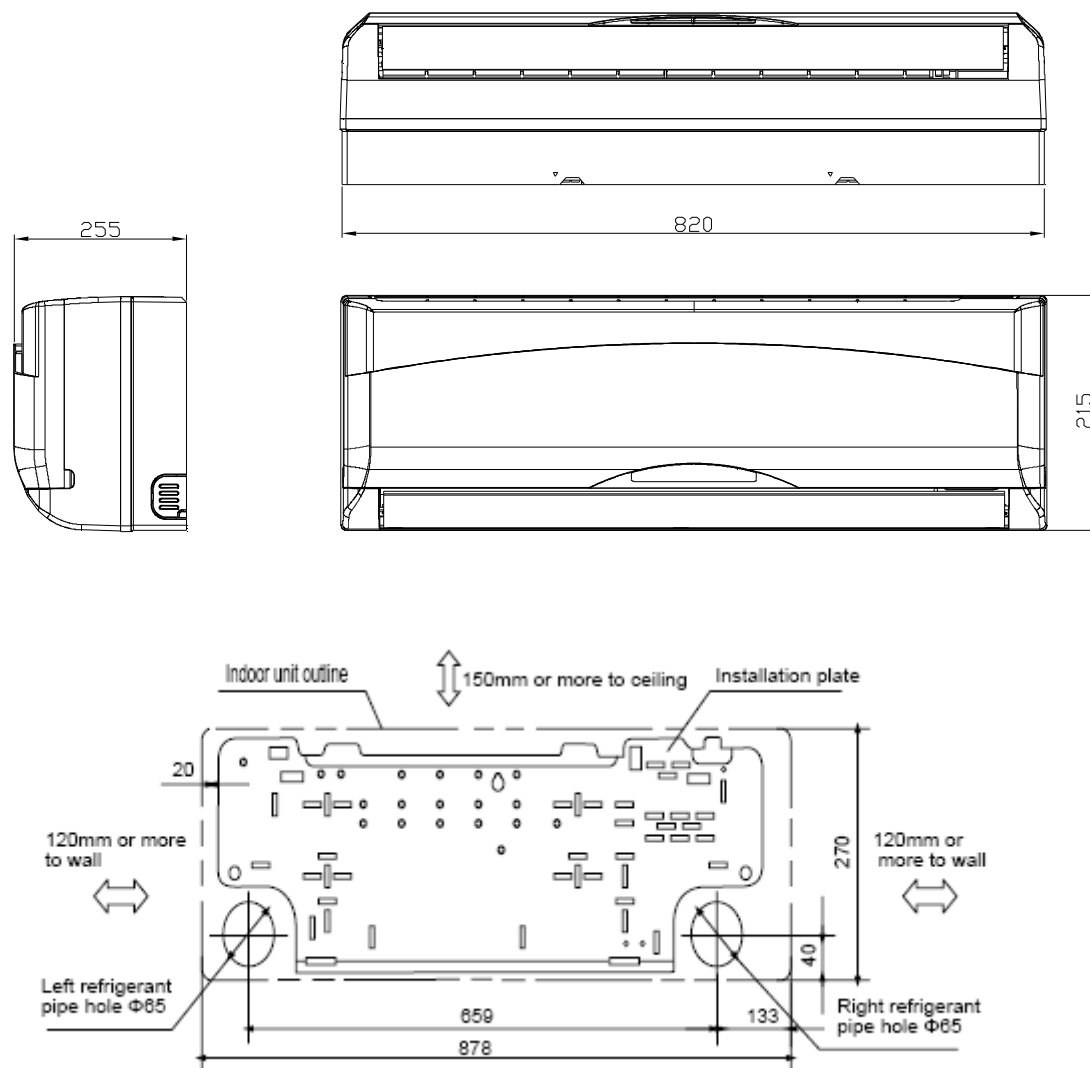
| Model                          |                                |                   | MSEI-07HRIN1              | MSEI-09HRIN1           | MSEI-12HRIN1           |
|--------------------------------|--------------------------------|-------------------|---------------------------|------------------------|------------------------|
| Power supply                   |                                | V-ph-Hz           | 1Ph, 220-240V~,50Hz       | 1Ph, 220-240V~,50Hz    | 1PH, 220-240V~,50Hz    |
| Supply electricity type        |                                |                   | Outdoor unit supply power |                        |                        |
| Cooling                        | Capacity                       | Btu/h             | 7000                      | 9000                   | 12000                  |
|                                | Input                          | W                 | 39.5                      | 39.5                   | 42                     |
|                                | Rated current                  | A                 | 0.18                      | 0.18                   | 0.2                    |
| Heating                        | Capacity                       | Btu/h             | 8500                      | 10000                  | 14000                  |
|                                | Input                          | W                 | 39.5                      | 39.5                   | 44                     |
|                                | Rated current                  | A                 | 0.16                      | 0.16                   | 0.2                    |
| Indoor fan motor               | Model                          |                   | RPG13H                    | RPG13H                 | RPG20D                 |
|                                | Type                           |                   | AC Motor                  | AC Motor               | AC Motor               |
|                                | Brand                          |                   | Welling                   | Welling                | welling                |
|                                | Input                          | W                 | 33                        | 33                     | 38                     |
|                                | Capacitor                      | uF                | 1.2                       | 1.2                    | 1.5                    |
|                                | Speed(hi/mi/lo)                | r/min             | 1100/1000/900             | 1100/1000/900          | 1200/1080/950          |
| Indoor coil                    | a.Number of rows               |                   | 2                         | 2                      | 2                      |
|                                | b.Tube pitch(a)x row pitch(b)  | mm                | 21X13.37                  | 21X13.37               | 21X13.37               |
|                                | c.Fin spacing                  | mm                | 1.3                       | 1.3                    | 1.3                    |
|                                | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium  | Hydrophilic aluminium  |
|                                | e.Tube outside dia.and type    | mm                | Φ 7, Inner-groove tube    | Φ 7, Inner-groove tube | Φ 7, Inner-groove tube |
|                                |                                |                   | 538X252X26.74             | 538X252X26.74          | 637×294×26.74          |
|                                | f.Coil length x height x width | mm                | 2                         | 2                      | 2                      |
|                                | g.Number of circuits           |                   | 2                         | 2                      | 2                      |
| Indoor air flow (Hi/Mi/Lo)     |                                | m <sup>3</sup> /h | 480/400/340               | 480/400/340            | 580/500/420            |
| Indoor noise level (Hi//Mi/Lo) |                                | dB(A)             | 36/33/30                  | 36/33/30               | 37/34/31               |
| Indoor unit                    | Dimension (W x H x D)          | 710×250×191       | 710×250×191               | 790x265x204            | 820 x 220 x 225        |
|                                | Packing (W x H x D)            | 800×340×270       | 800×340×270               | 875×375×285            | 875 x 285 x 375        |
|                                | Net/Gross weight               | kg                | 8/9.5                     | 8/9.5                  | 9.5/11.5               |
| Refrigerant Type               |                                |                   | R410A                     | R410A                  | R410A                  |
| Refrigerant pipe               | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ9.53            | Φ6.35/Φ12.7            |
| Drainage water pipe diameter.  |                                | mm                | Φ17.5                     | Φ17.5                  | Φ17.5                  |
| Controller(standard)           |                                |                   | R71 A/E                   | R71 A/E                | R71 A/E                |
| Application area               |                                | m <sup>2</sup>    | 12~15                     | 12~15                  | 12~15                  |

### 3. Dimensions

#### 3.1 Corona Series

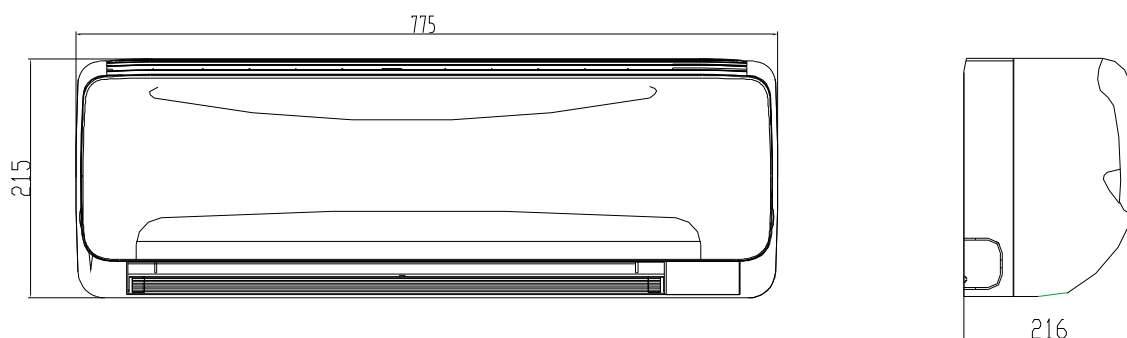
a) Indoor unit: MSCI-07HRIN1 MSCI-09HRIN1



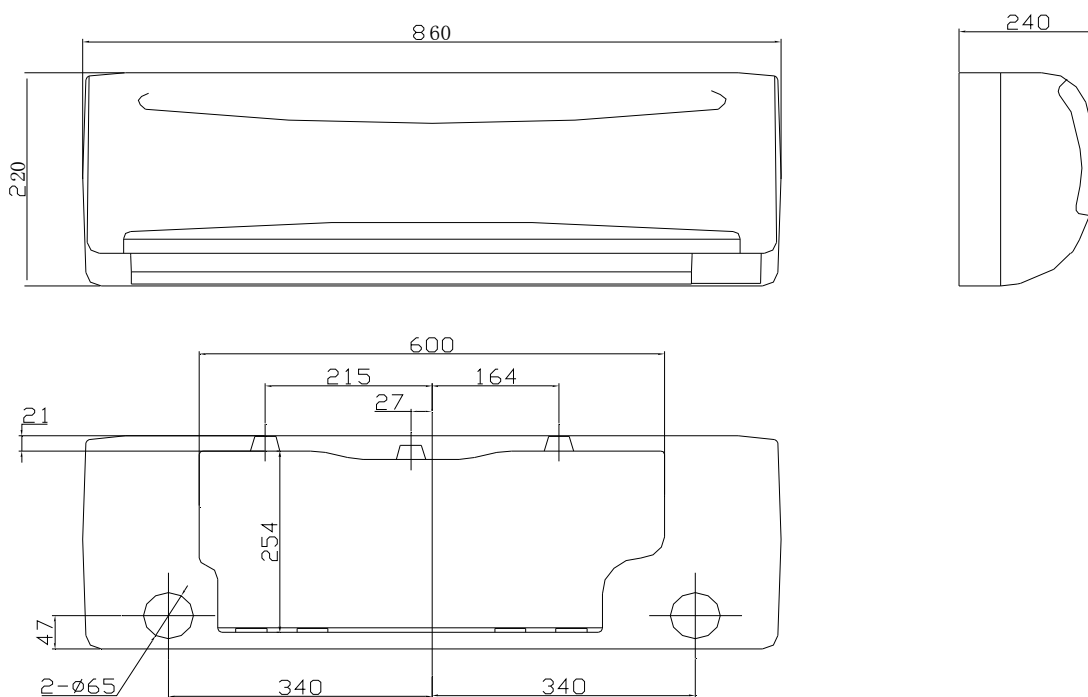
**I Indoor Unit : MSCI-12HRIN1**

### 3.2 Alfa Series

Indoor Unit: MSHI-07HRIN1 MSHI-09HRIN1

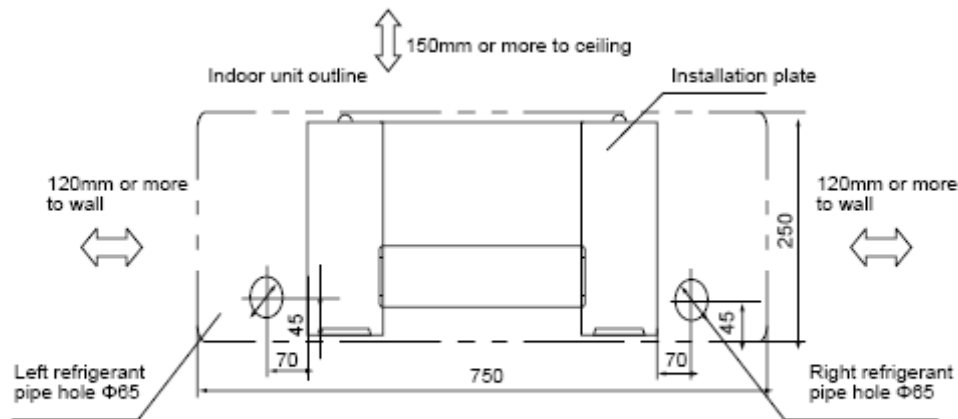
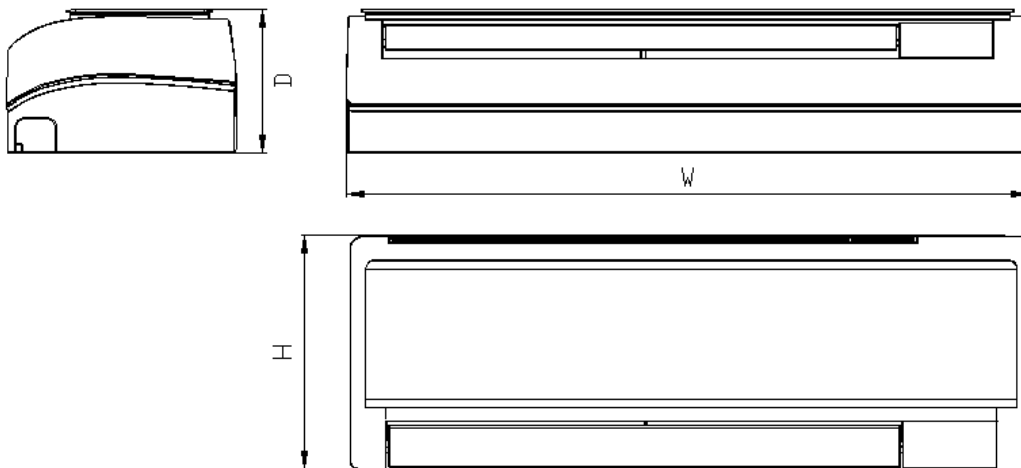


Indoor Unit: MSHI-12HRIN1

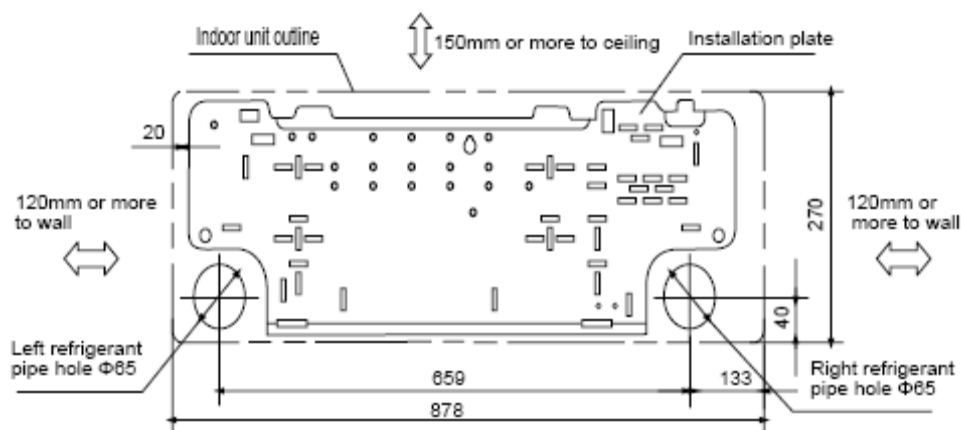


### 3.3 Vertu Series

Indoor unit: MSV1I-09HRDN1 MSV1I-12HRDN1



(<12000Btu/h type)

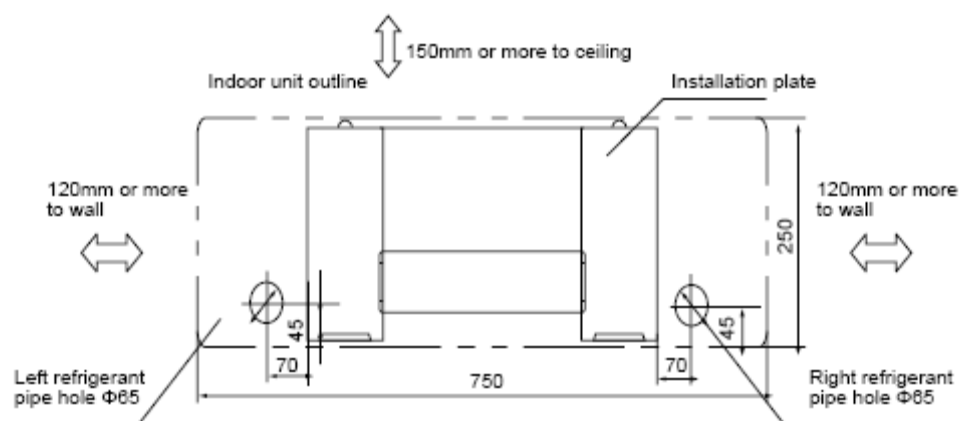
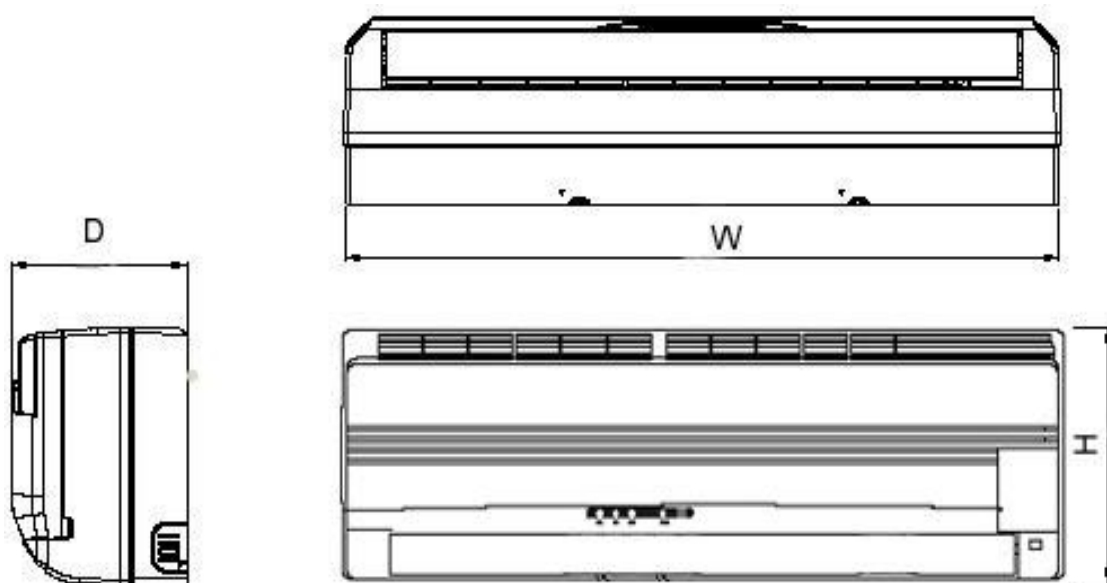


( $\geq 12000$ Btu/h type)

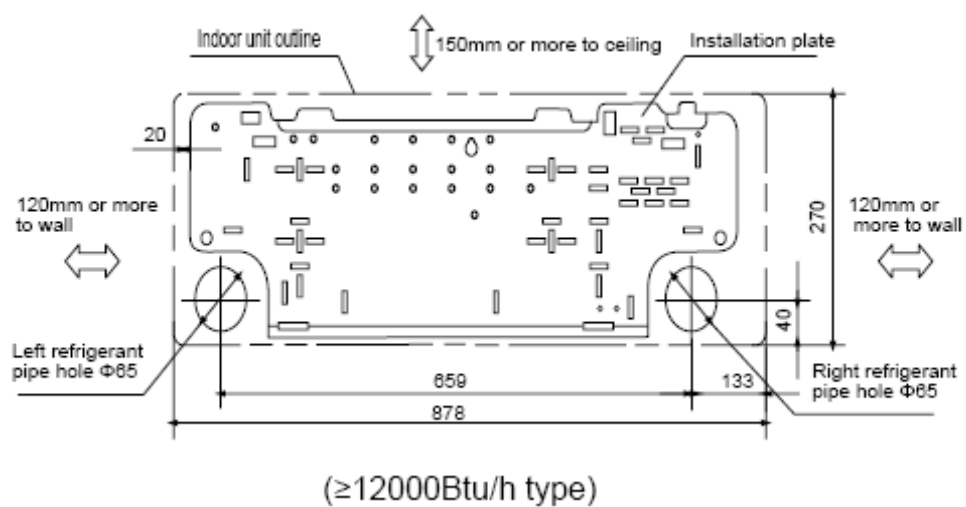
Unit: mm

| Model \ Dimension | W   | H   | D   |
|-------------------|-----|-----|-----|
| MSV1I-09HRDN1     | 795 | 270 | 165 |
| MSV1I-12HRDN1     | 845 | 286 | 165 |

### 3.4 T6 Series



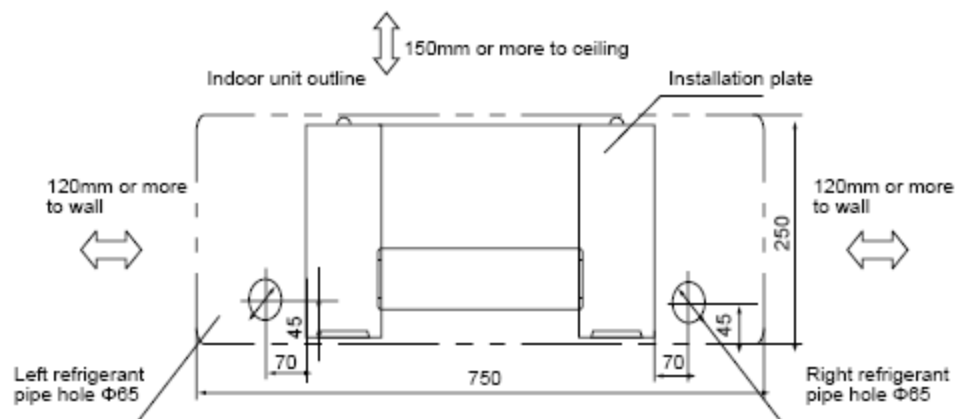
(&lt;12000Btu/h type)



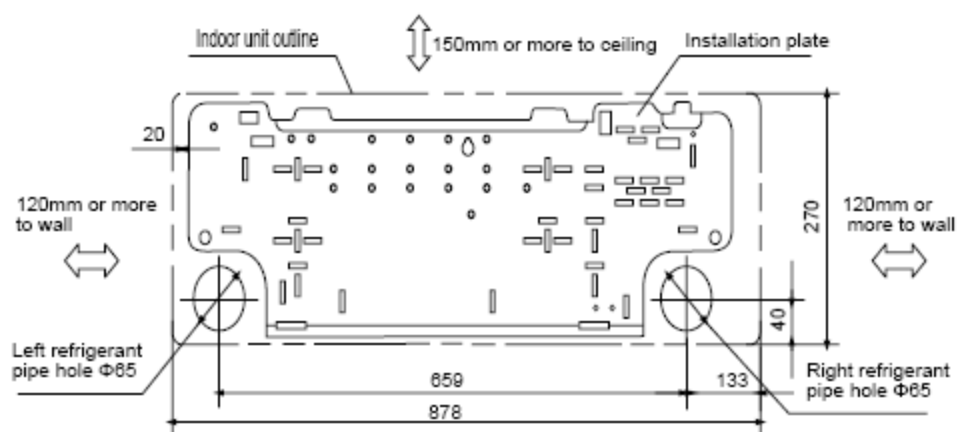
Unit: mm

| Mode \ Dimension | W   | H   | D   |
|------------------|-----|-----|-----|
| MST6I-07HRIN1    | 785 | 205 | 220 |
| MST6I-09HRIN1    | 785 | 205 | 220 |
| MST6I-12HRIN1    | 820 | 220 | 225 |

## 4. Service Space



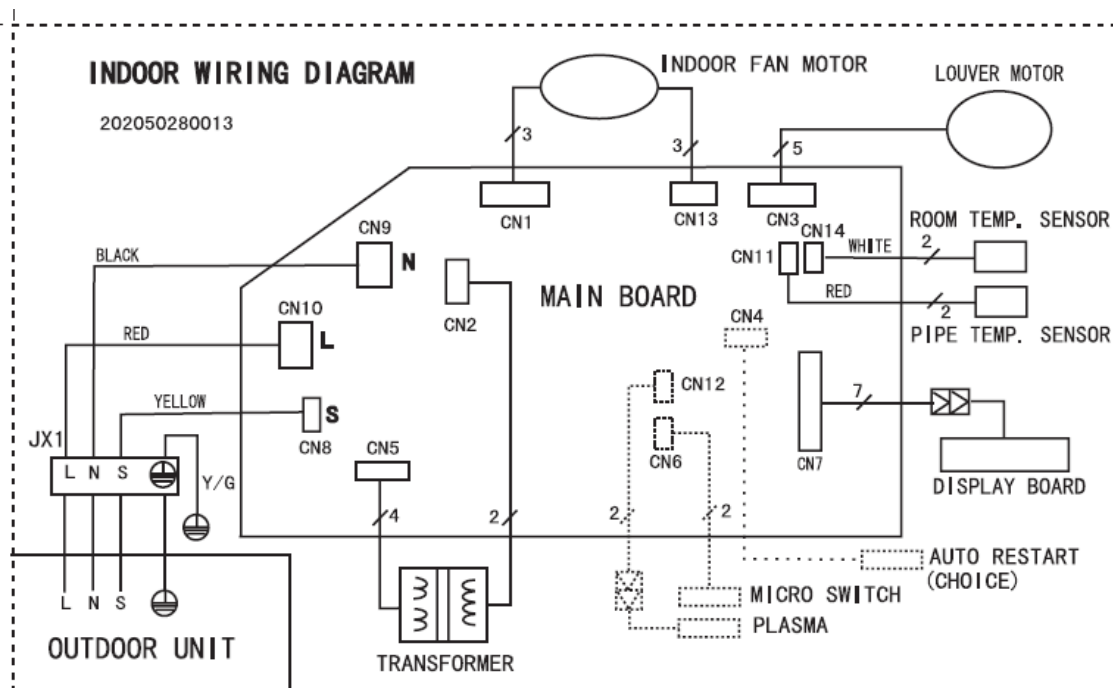
(<12000Btu/h type)



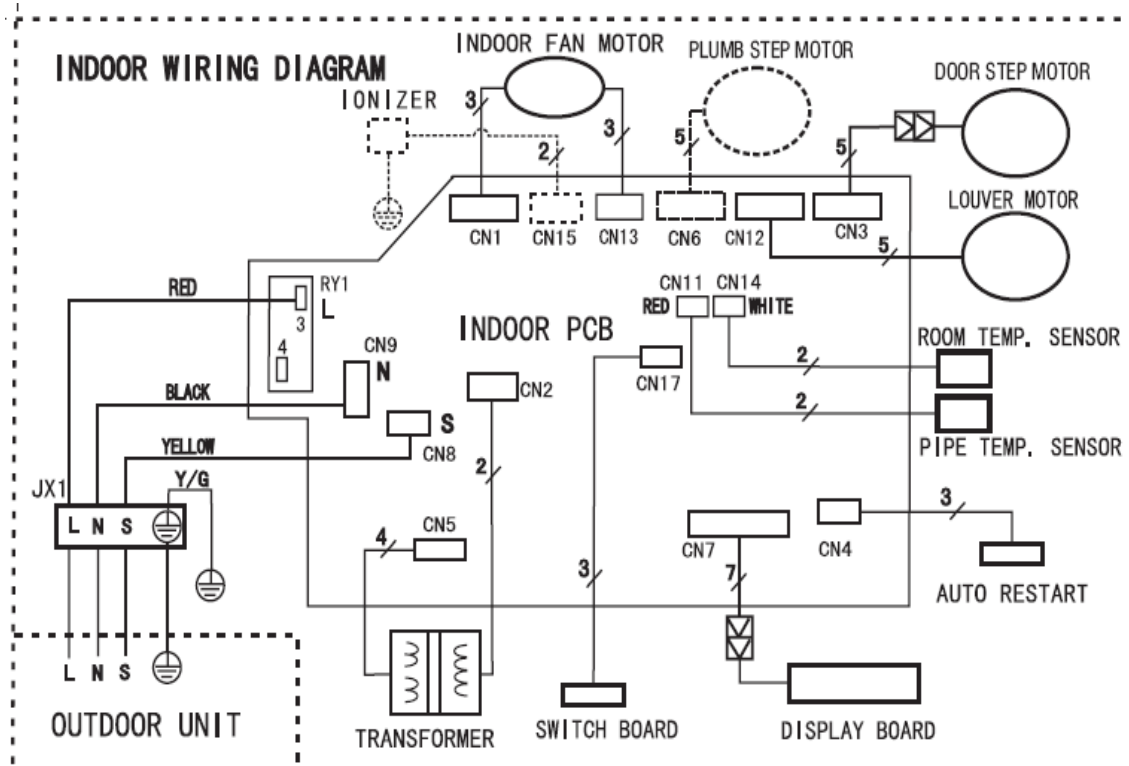
( $\geq 12000$ Btu/h type)

## 5. Wiring Diagrams

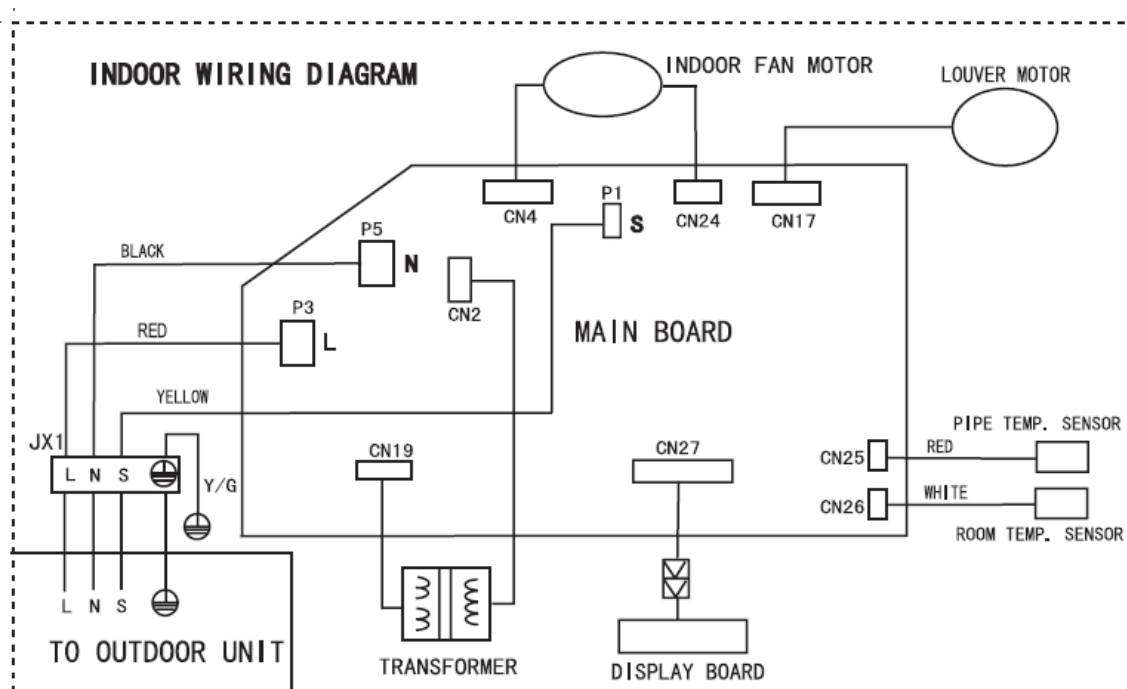
### 5.1 MSCI-07HRIN1,MSCI-09HRIN1,MSCI-12HRIN1 MSHI-07HRIN1,MSHI-09HRIN1,MSHI-12HRIN1



### 5.2 MSV1I-09HRDN1,MSV1I-12HRDN1

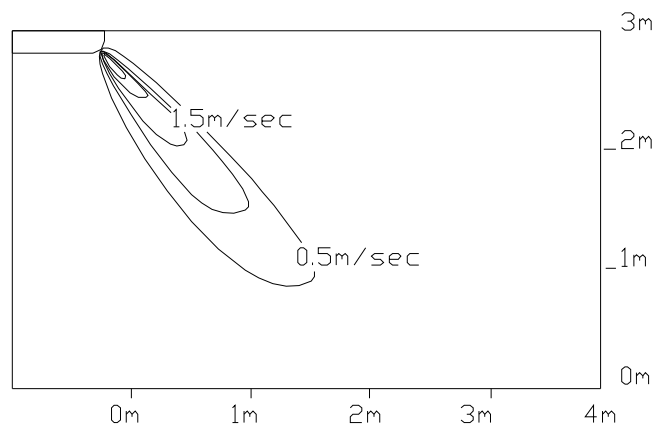


### 5.3 MST6I-07HRIN1,MST6I-09HRIN1,MST6I-12HRIN1

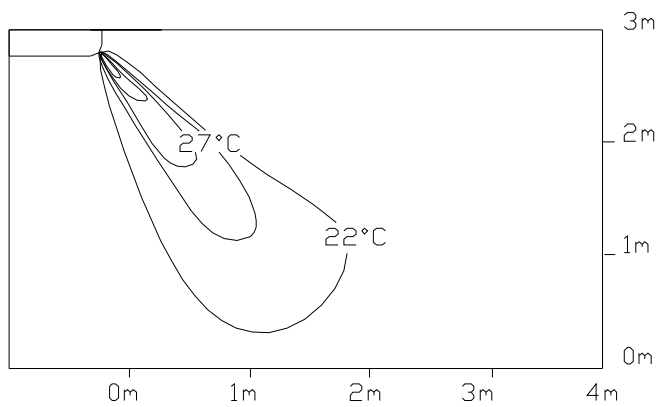


## 6. Air Velocity and Temperature Distributions

Airflow velocity



Temperature



## 7. Electric Characteristics

| Model         | Indoor Unit |         |     |     | Power Supply |     | IFM   |       |
|---------------|-------------|---------|-----|-----|--------------|-----|-------|-------|
|               | Hz          | Voltage | Min | Max | MCA          | MFA | kW    | FLA   |
| MSCI-07HRIN1  | 50          | 220-240 | 198 | 254 | 0.2075       | 16  | 0.018 | 0.166 |
| MSCI-09HRIN1  | 50          | 220-240 | 198 | 254 | 0.2075       | 16  | 0.018 | 0.166 |
| MSCI-12HRIN1  | 50          | 220-240 | 198 | 254 | 0.2125       | 16  | 0.02  | 0.17  |
| MSHI-07HRIN1  | 50          | 220-240 | 198 | 254 | 0.1875       | 16  | 0.013 | 0.15  |
| MSHI-09HRIN1  | 50          | 220-240 | 198 | 254 | 0.1875       | 16  | 0.013 | 0.15  |
| MSHI-12HRIN1  | 50          | 220-240 | 198 | 254 | 0.2125       | 16  | 0.02  | 0.17  |
| MSV1I-09HRDN1 | 50          | 220-240 | 198 | 254 | 0.21         | 16  | 0.02  | 0.17  |
| MSV1I-12HRDN1 | 50          | 220-240 | 198 | 254 | 0.25         | 16  | 0.02  | 0.17  |
| MSF6I-07HRIN1 | 50          | 220-240 | 198 | 254 | 0.1875       | 16  | 0.013 | 0.15  |
| MSF6I-09HRIN1 | 50          | 220-240 | 198 | 254 | 0.1875       | 16  | 0.013 | 0.15  |
| MSF6I-12HRIN1 | 50          | 220-240 | 198 | 254 | 0.2125       | 16  | 0.2   | 0.17  |
| MSEI-07HRIN1  | 50          | 220-240 | 198 | 254 | 0.2075       | 16  | 0.018 | 0.166 |
| MSEI-09HRIN1  | 50          | 220-240 | 198 | 254 | 0.2075       | 16  | 0.018 | 0.166 |
| MSEI-12HRIN1  | 50          | 220-240 | 198 | 254 | 0.2125       | 16  | 0.02  | 0.17  |

### Remark:

MCA: Min. Current Amps. (A)

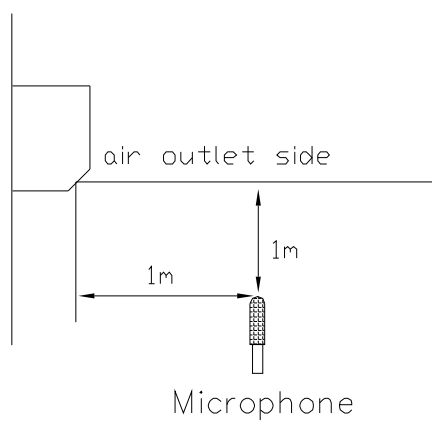
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM: Indoor Fan Motor

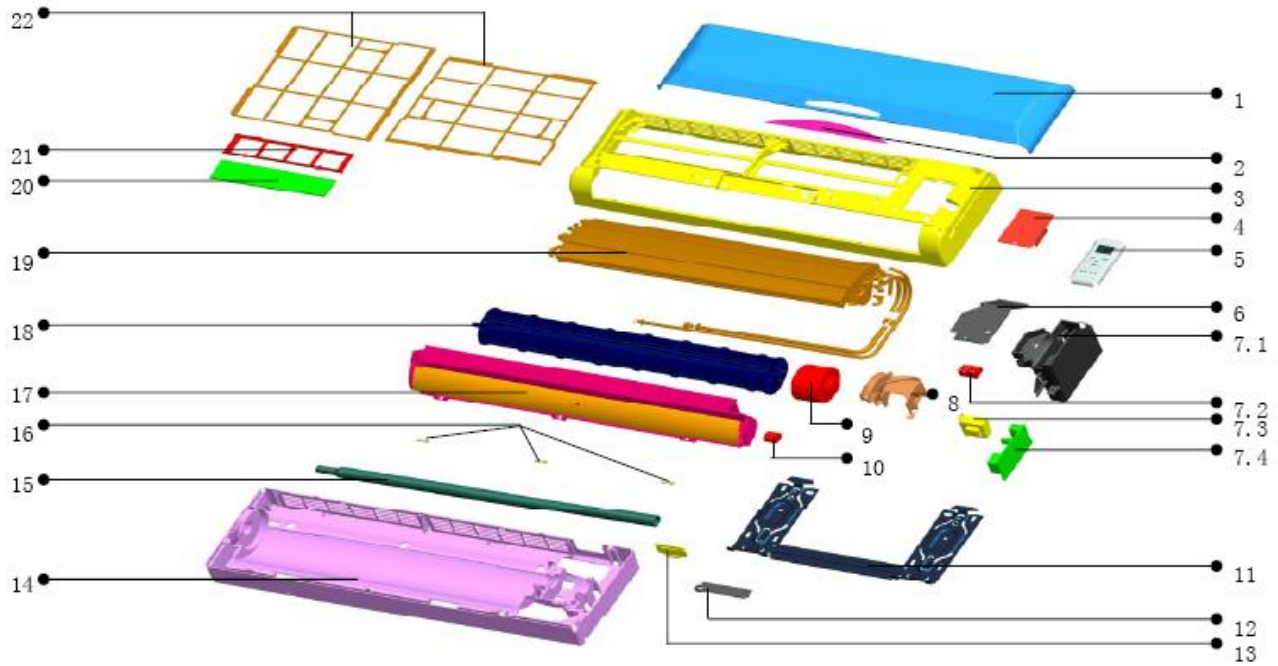
## 8. Sound Levels



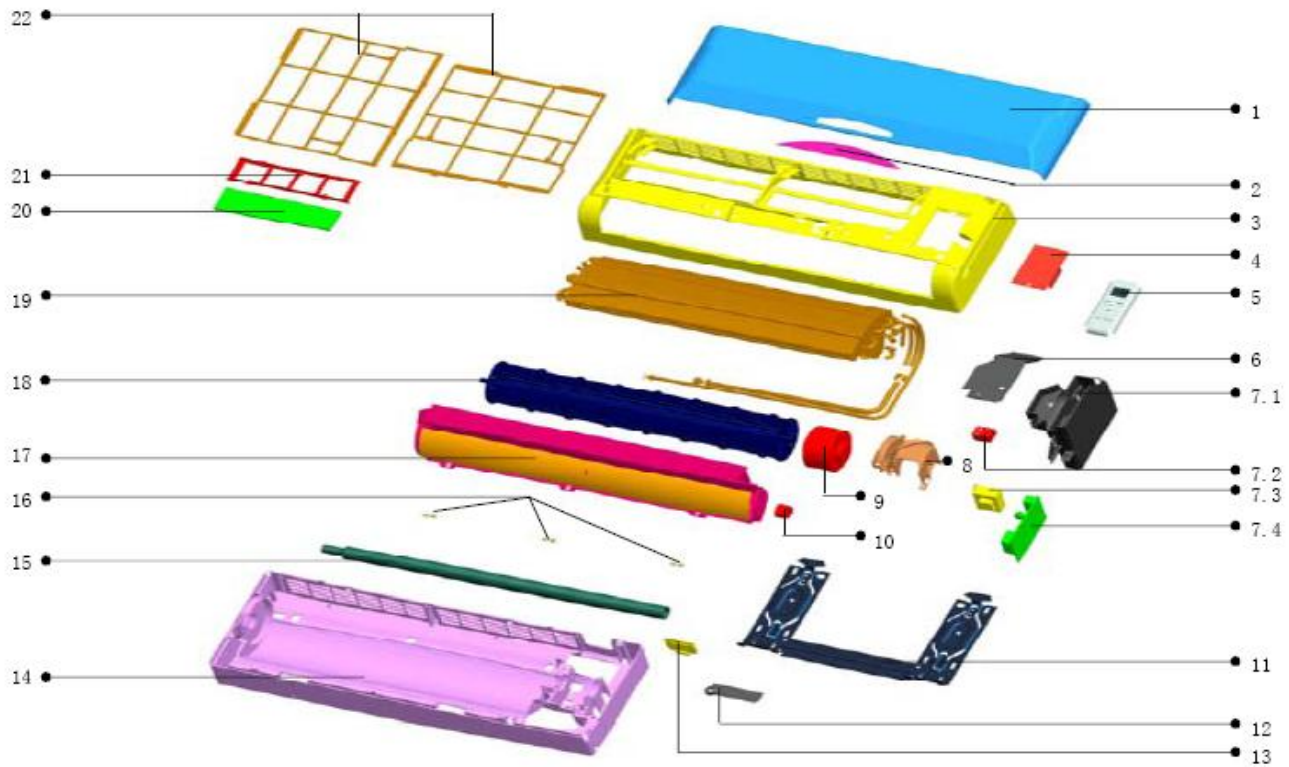
| Model         | Noise level dB(A) |
|---------------|-------------------|
|               | High speed        |
| MSCI-07HRIN1  | 35                |
| MSCI-09HRIN1  | 37                |
| MSCI-12HRIN1  | 39                |
| MSHI-07HRIN1  | 37                |
| MSHI-09HRIN1  | 37                |
| MSHI-12HRIN1  | 38                |
| MSV1I-09HRDN1 | 39                |
| MSV1I-12HRDN1 | 39                |
| MST6I-07HRIN1 | 39                |
| MST6I-09HRIN1 | 39                |
| MST6I-12HRIN1 | 40                |
| MSEI-07HRIN1  | 36                |
| MSEI-09HRIN1  | 36                |
| MSEI-12HRIN1  | 37                |

## 9. Exploded View

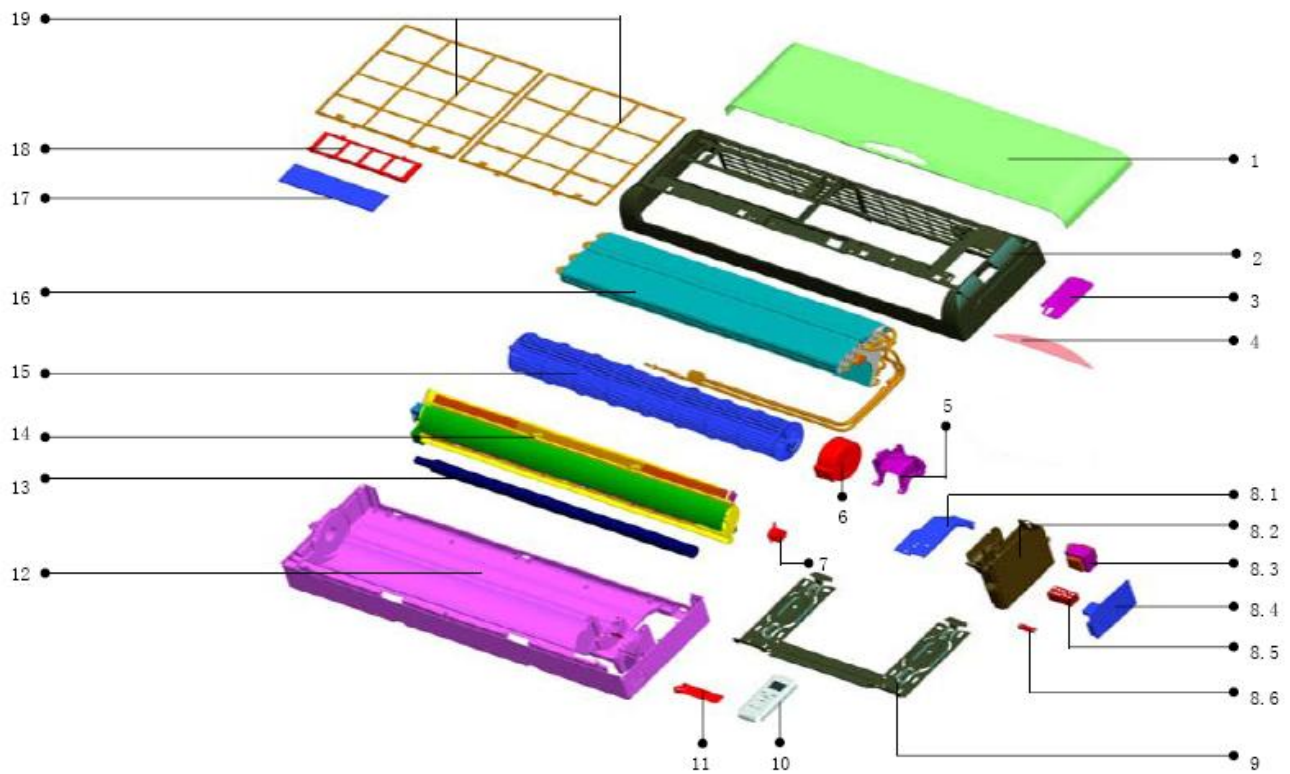
### MSCI-07HRIN1



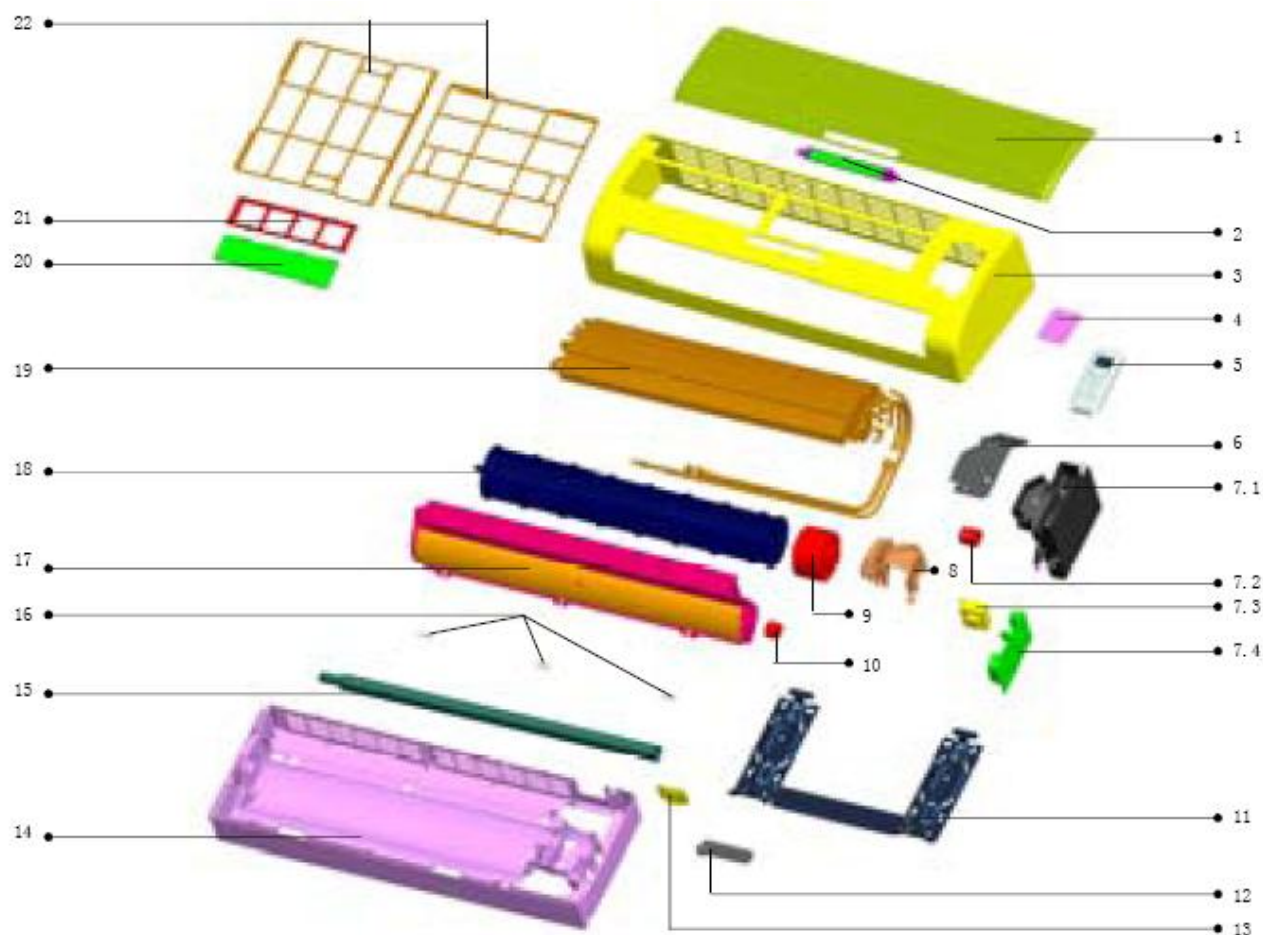
| No. | Part Name                          | Quantity | No.   | Part Name                                  | Quantity |
|-----|------------------------------------|----------|-------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 14    | Chassis assembly                           | 1        |
| 2   | Display board,assembly             | 1        | 15    | Drain hose                                 | 1        |
| 3   | Panel frame                        | 1        | 16    | Screw cover                                | 3        |
| 4   | Cover, electric control box        | 1        | 17    | Air out frame                              | 1        |
| 5   | Remote controller                  | 1        | 18    | Cross flow fan assembly                    | 1        |
| 6   | E-part box cover                   | 1        | 19    | Evaporator assembly                        | 1        |
| 7   | Electrical control box subassembly | 1        | 19.1  | Evaporator back                            | 1        |
| 7.1 | Electrical control box             | 1        | 19.2  | Evaporator front                           | 1        |
| 7.2 | Terminal                           | 1        | 19.3  | Liquid input pipe, evaporator, subassembly | 1        |
| 7.3 | Transformer                        | 1        | 19.4  | Gas output pipe, evaporator, subassembly   | 1        |
| 7.4 | Main control board                 | 1        | 19.5  | Pipe nut                                   | 1        |
| 7.5 | Sensor,assembly                    | 1        | 19.6  | Pipe nut                                   | 1        |
| 7.6 | Evaporator temp sensor             | 1        | 19.7  | Copper nut                                 | 1        |
| 8   | Motor cover                        | 1        | 19.8  | Copper nut                                 | 1        |
| 9   | Fan motor                          | 1        | 19.9  | Sphere pad                                 | 1        |
| 10  | Louver motor                       | 1        | 19.10 | Sphere pad                                 | 1        |
| 11  | Installation Plate                 | 1        | 20    | Air cleaner                                | 1        |
| 12  | Connecting pipe clamp              | 1        | 21    | Air cleaner holder                         | 1        |
| 13  | Cover board chassis back           | 1        | 22    | Air Filter                                 | 2        |

**MSCI-09HRIN1**

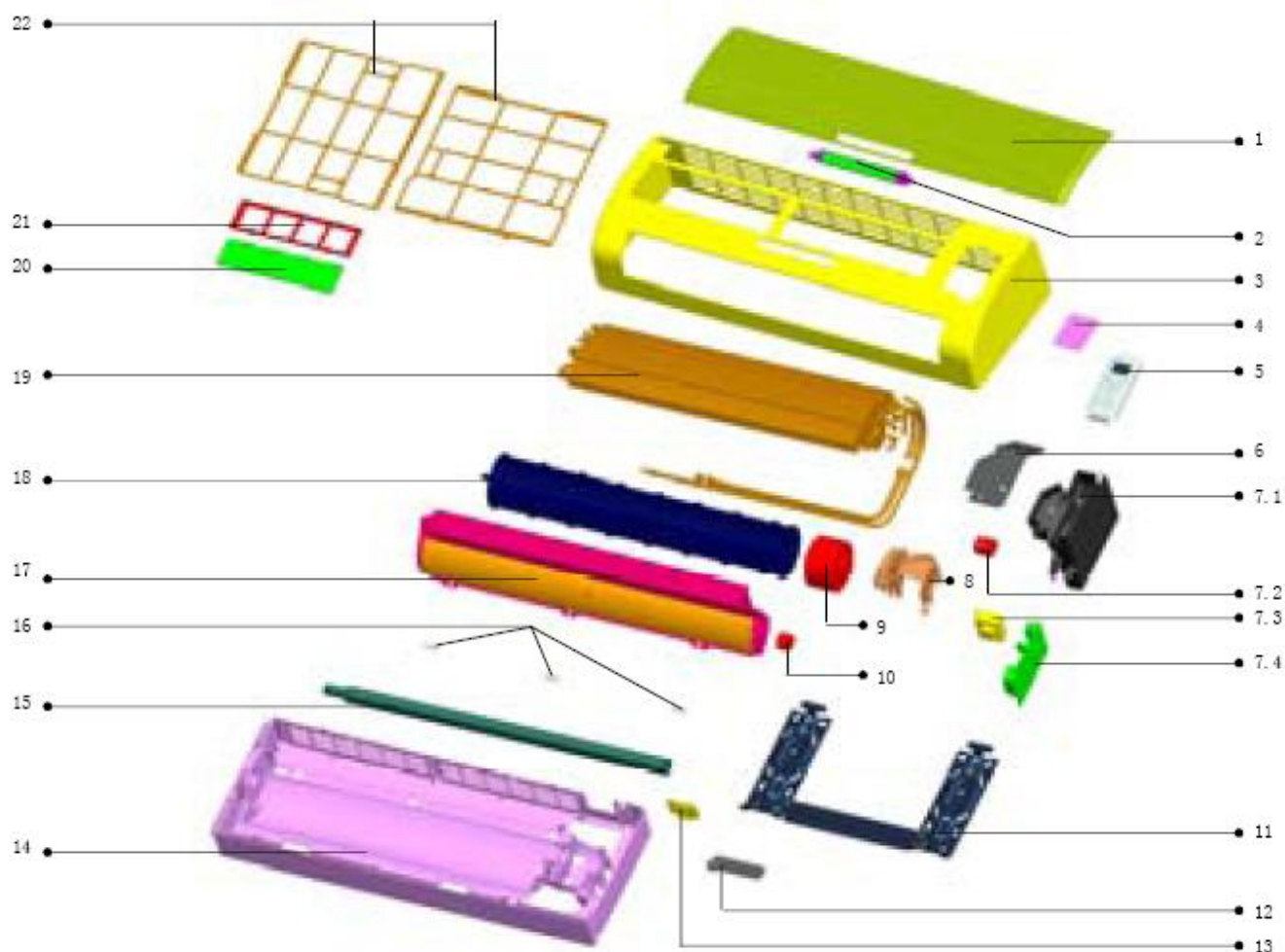
| No. | Part Name                          | Quantity | No.   | Part Name                                  | Quantity |
|-----|------------------------------------|----------|-------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 14    | Chassis assembly                           | 1        |
| 2   | Display board,Ass'y                | 1        | 15    | Drain hose                                 | 1        |
| 3   | Panel frame                        | 1        | 16    | Screw cover                                | 3        |
| 4   | Cover, electric control box        | 1        | 17    | Air out frame                              | 1        |
| 5   | Remote controller                  | 1        | 18    | Cross flow fan assembly                    | 1        |
| 6   | E-part box cover                   | 1        | 19    | Evaporator assembly                        | 1        |
| 7   | Electrical control box subassembly | 1        | 19.1  | Evaporator back                            | 1        |
| 7.1 | Electrical control box             | 1        | 19.2  | Evaporator front                           | 1        |
| 7.2 | Terminal                           | 1        | 19.3  | Liquid input pipe, evaporator, subassembly | 1        |
| 7.3 | Transformer                        | 1        | 19.4  | Gas output pipe, evaporator, subassembly   | 1        |
| 7.4 | Main control board                 | 1        | 19.5  | Pipe nut                                   | 1        |
| 7.5 | Sensor,Ass'y                       | 1        | 19.6  | Pipe nut                                   | 1        |
| 7.6 | Evaporator temp sensor             | 1        | 19.7  | Copper nut                                 | 1        |
| 8   | Motor cover                        | 1        | 19.8  | Copper nut                                 | 1        |
| 9   | Fan motor                          | 1        | 19.9  | Sphere pad                                 | 1        |
| 10  | Louver motor                       | 1        | 19.10 | Sphere pad                                 | 1        |
| 11  | Installation Plate                 | 1        | 20    | Air cleaner                                | 1        |
| 12  | Connecting pipe clamp              | 1        | 21    | Air cleaner holder                         | 1        |
| 13  | Cover board chassis back           | 1        | 22    | Air Filter                                 | 2        |

**MSCI-12HRIN1**

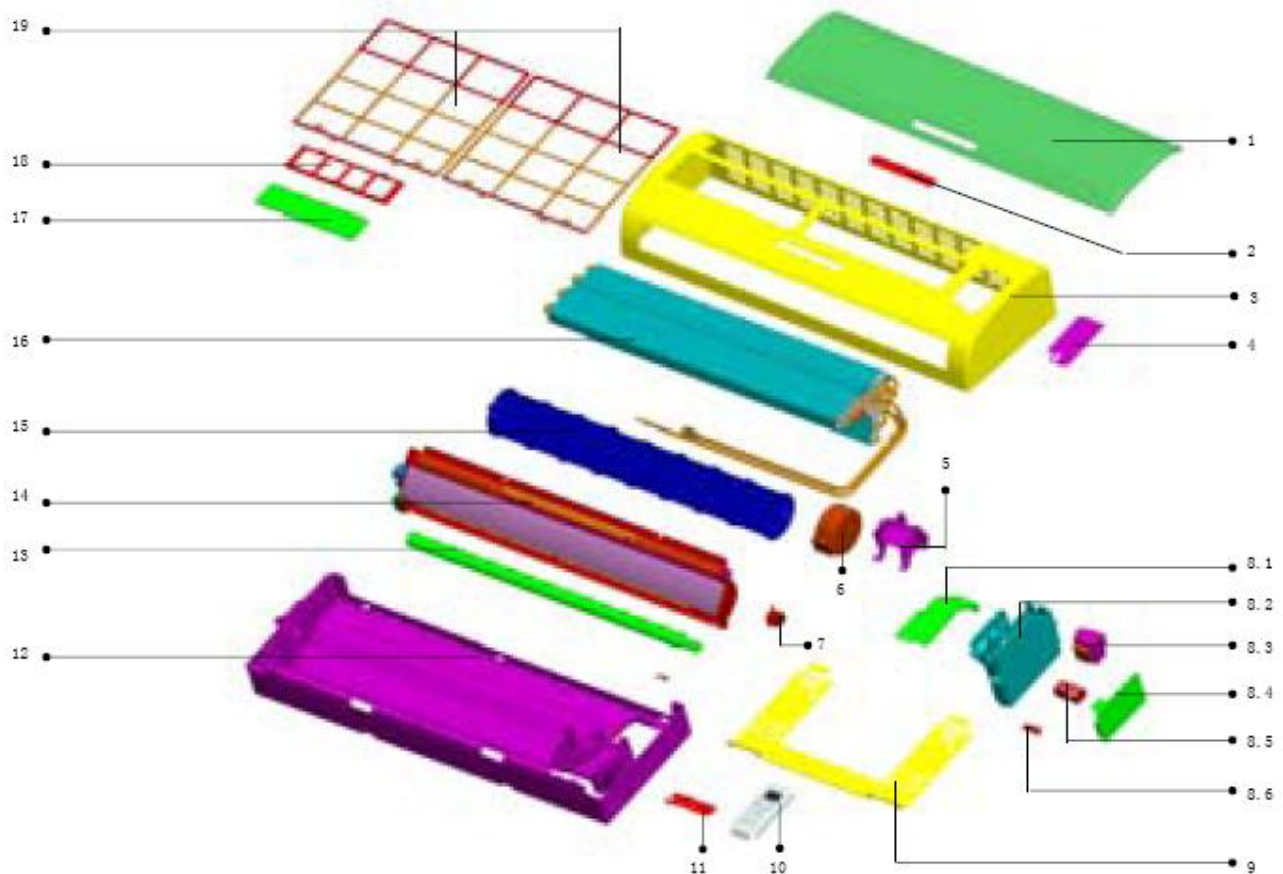
| No. | Part Name                          | Quantity | No.    | Part Name                                  | Quantity |
|-----|------------------------------------|----------|--------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 13     | Drain hose                                 | 1        |
| 2   | Panel frame                        | 1        | 14     | Air out frame                              | 1        |
| 3   | Cover, electric control box        | 1        | 15     | Cross flow fan assembly                    | 1        |
| 4   | Display board, Ass'y               | 1        | 16     | Evaporator assembly                        | 1        |
| 5   | Motor cover                        | 1        | 16.1   | Evaporator front                           | 1        |
| 6   | Fan motor                          | 1        | 16.2   | Evaporator back                            | 1        |
| 7   | Louver motor                       | 1        | 16.3   | Liquid input pipe, evaporator, subassembly | 1        |
| 8   | Electrical control box subassembly | 1        | 16.3.1 | Pipe connector                             | 1        |
| 8.1 | E-part box cover                   | 1        | 16.4   | Gas output pipe, evaporator, subassembly   | 1        |
| 8.2 | E-Parts box                        | 1        | 16.4.1 | Pipe connector                             | 1        |
| 8.3 | Transformer                        | 1        | 16.5   | Pipe nut                                   | 1        |
| 8.4 | Main control board                 | 1        | 16.6   | Pipe nut                                   | 1        |
| 8.5 | Terminal                           | 1        | 16.7   | Sphere pad                                 | 1        |
| 8.6 | Wire clamp                         | 2        | 16.8   | Sphere pad                                 | 1        |
| 8.7 | Sensor, Ass'y                      | 1        | 16.9   | Copper nut                                 | 1        |
| 8.8 | Evaporator temp sensor             | 1        | 16.10  | Copper nut                                 | 1        |
| 9   | Installation Plate                 | 1        | 17     | Air cleaner                                | 1        |
| 10  | Remote controller                  | 1        | 18     | Air cleaner holder                         | 1        |
| 11  | Connecting pipe clamp              | 1        | 19     | Air Filter                                 | 2        |
| 12  | Chassis assembly                   | 1        |        |                                            |          |

**MSHI-07HRIN1**

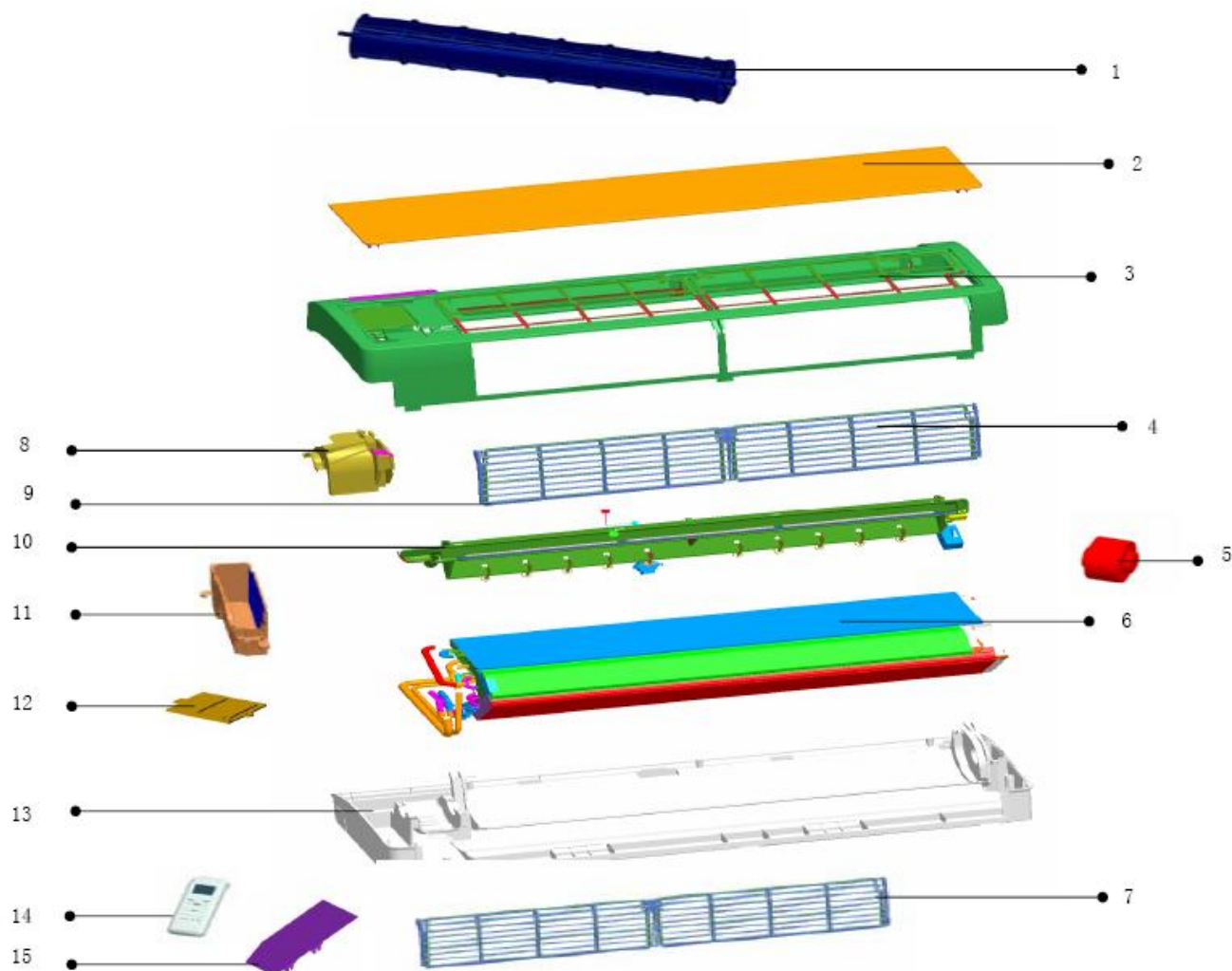
| No. | Part Name                          | Quantity | No.   | Part Name                                  | Quantity |
|-----|------------------------------------|----------|-------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 14    | Chassis assembly                           | 1        |
| 2   | Display board,Ass'y                | 1        | 15    | Drain hose                                 | 1        |
| 3   | Panel frame                        | 1        | 16    | Screw cover                                | 3        |
| 4   | Cover, electric control box        | 1        | 17    | Air out frame                              | 1        |
| 5   | Remote controller                  | 1        | 18    | Cross flow fan assembly                    | 1        |
| 6   | E-part box cover                   | 1        | 19    | Evaporator assembly                        | 1        |
| 7   | Electrical control box subassembly | 1        | 19.1  | Evaporator back                            | 1        |
| 7.1 | Electrical control box             | 1        | 19.2  | Evaporator front                           | 1        |
| 7.2 | Terminal                           | 1        | 19.3  | Liquid input pipe, evaporator, subassembly | 1        |
| 7.3 | Transformer                        | 1        | 19.4  | Gas output pipe, evaporator, subassembly   | 1        |
| 7.4 | Main control board                 | 1        | 19.5  | Pipe nut                                   | 1        |
| 7.5 | Sensor,Ass'y                       | 1        | 19.6  | Pipe nut                                   | 1        |
| 7.6 | Evaporator temp sensor             | 1        | 19.7  | Copper nut                                 | 1        |
| 8   | Motor cover                        | 1        | 19.8  | Copper nut                                 | 1        |
| 9   | Fan motor                          | 1        | 19.9  | Sphere pad                                 | 1        |
| 10  | Louver motor                       | 1        | 19.10 | Sphere pad                                 | 1        |
| 11  | Installation Plate                 | 1        | 20    | Air cleaner                                | 1        |
| 12  | Connecting pipe clamp              | 1        | 21    | Air cleaner holder                         | 1        |
| 13  | Cover board chassis back           | 1        | 22    | Air Filter                                 | 2        |

**MSHI-09HRIN1**

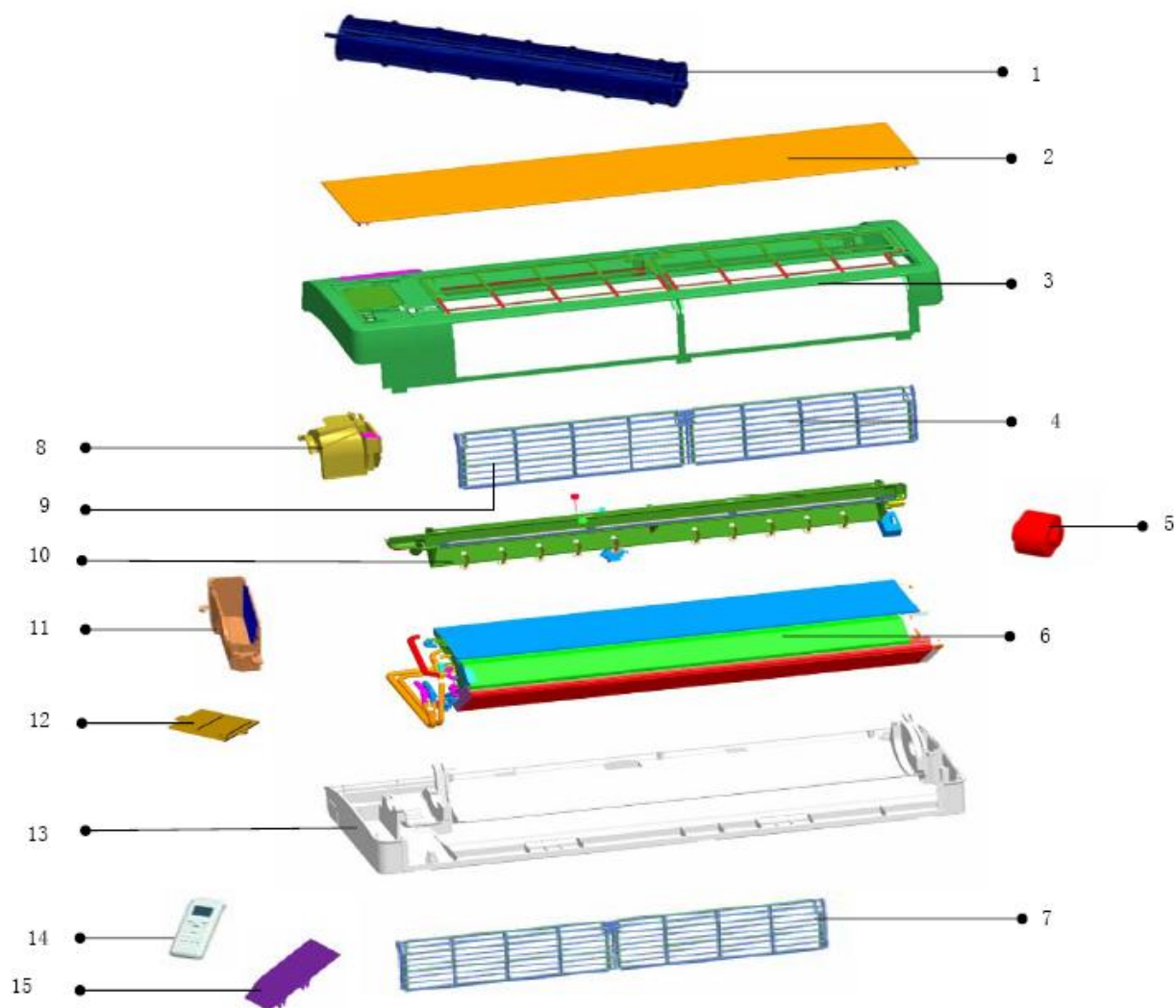
| No. | Part Name                          | Quantity | No.   | Part Name                                  | Quantity |
|-----|------------------------------------|----------|-------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 14    | Chassis assembly                           | 1        |
| 2   | Display board,Ass'y                | 1        | 15    | Drain hose                                 | 1        |
| 3   | Panel frame                        | 1        | 16    | Screw cover                                | 3        |
| 4   | Cover, electric control box        | 1        | 17    | Air out frame                              | 1        |
| 5   | Remote controller                  | 1        | 18    | Cross flow fan assembly                    | 1        |
| 6   | E-part box cover                   | 1        | 19    | Evaporator assembly                        | 1        |
| 7   | Electrical control box subassembly | 1        | 19.1  | Evaporator back                            | 1        |
| 7.1 | Electrical control box             | 1        | 19.2  | Evaporator front                           | 1        |
| 7.2 | Terminal                           | 1        | 19.3  | Liquid input pipe, evaporator, subassembly | 1        |
| 7.3 | Transformer                        | 1        | 19.4  | Gas output pipe, evaporator, subassembly   | 1        |
| 7.4 | Main control board                 | 1        | 19.5  | Pipe nut                                   | 1        |
| 7.5 | Sensor,Ass'y                       | 1        | 19.6  | Pipe nut                                   | 1        |
| 7.6 | Evaporator temp sensor             | 1        | 19.7  | Copper nut                                 | 1        |
| 8   | Motor cover                        | 1        | 19.8  | Copper nut                                 | 1        |
| 9   | Fan motor                          | 1        | 19.9  | Sphere pad                                 | 1        |
| 10  | Louver motor                       | 1        | 19.10 | Sphere pad                                 | 1        |
| 11  | Installation Plate                 | 1        | 20    | Air cleaner                                | 1        |
| 12  | Connecting pipe clamp              | 1        | 21    | Air cleaner holder                         | 1        |
| 13  | Cover board chassis back           | 1        | 22    | Air Filter                                 | 2        |

**MSHI-12HRIN1**

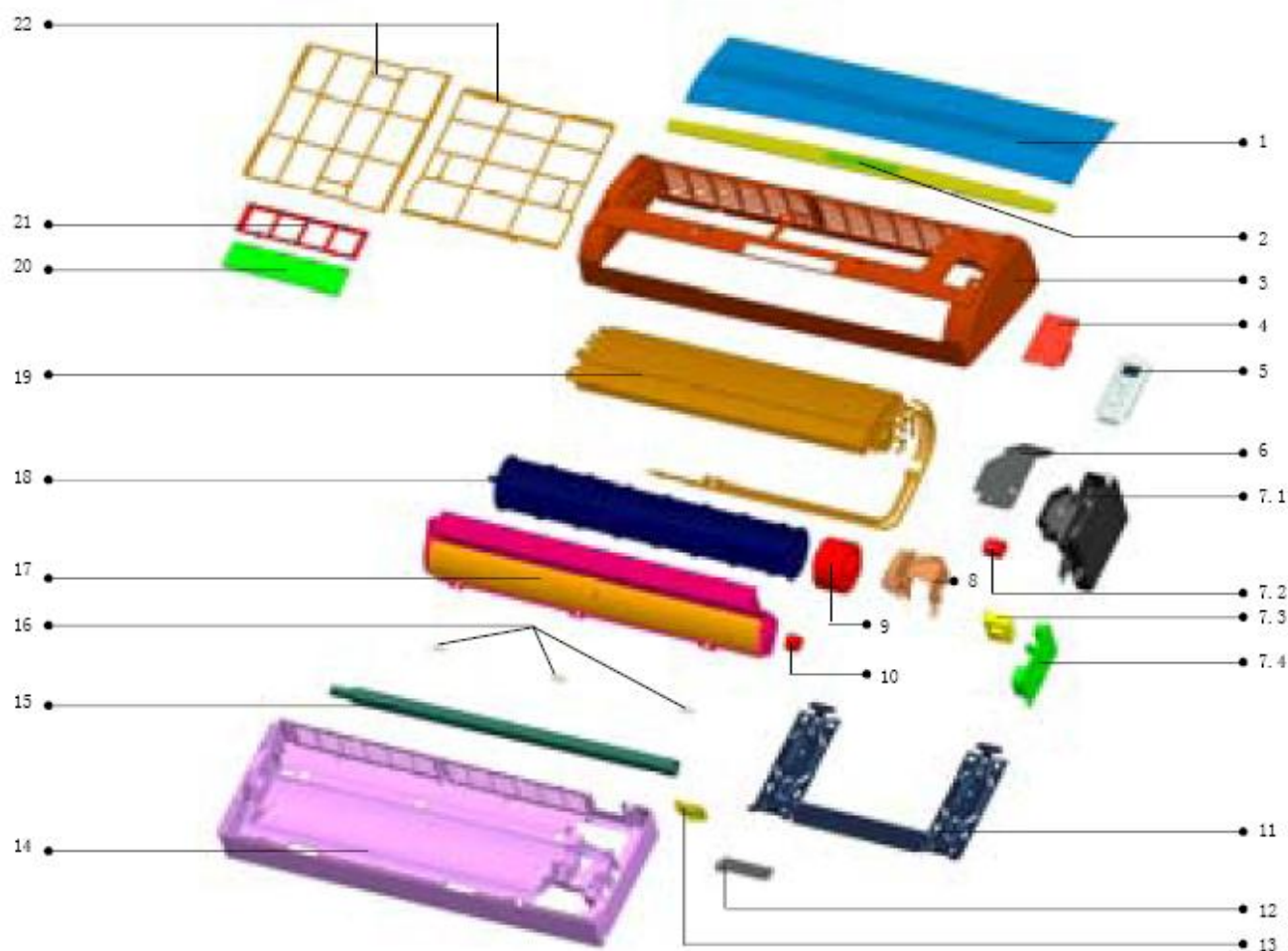
| No. | Part Name                          | Quantity | No.    | Part Name                                  | Quantity |
|-----|------------------------------------|----------|--------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 13     | Drain hose                                 | 1        |
| 2   | Display board, Ass'y               | 1        | 14     | Air out frame                              | 1        |
| 3   | Panel frame                        | 1        | 15     | Cross flow fan assembly                    | 1        |
| 4   | Cover, electric control box        | 1        | 16     | Evaporator assembly                        | 1        |
| 5   | Motor cover                        | 1        | 16.1   | Evaporator front                           | 1        |
| 6   | Fan motor                          | 1        | 16.2   | Evaporator back                            | 1        |
| 7   | Louver motor                       | 1        | 16.3   | Liquid input pipe, evaporator, subassembly | 1        |
| 8   | Electrical control box subassembly | 1        | 16.3.1 | Pipe connector                             | 1        |
| 8.1 | E-part box cover                   | 1        | 16.4   | Gas output pipe, evaporator, subassembly   | 1        |
| 8.2 | E-Parts box                        | 1        | 16.4.1 | Pipe connector                             | 1        |
| 8.3 | Transformer                        | 1        | 16.5   | Pipe nut                                   | 1        |
| 8.4 | Main control board                 | 1        | 16.6   | Pipe nut                                   | 1        |
| 8.5 | Terminal                           | 1        | 16.7   | Sphere pad                                 | 1        |
| 8.6 | Wire clamp                         | 2        | 16.8   | Sphere pad                                 | 1        |
| 8.7 | The temperature sensor             | 1        | 16.9   | Copper nut                                 | 1        |
| 8.8 | Room temperature sensory package   | 1        | 16.10  | Copper nut                                 | 1        |
| 9   | Installation Plate                 | 1        | 17     | Air cleaner                                | 1        |
| 10  | Remote controller                  | 1        | 18     | Air cleaner holder                         | 1        |
| 11  | Connecting pipe clamp              | 1        | 19     | Air Filter                                 | 2        |
| 12  | Chassis assembly                   | 1        |        |                                            |          |

**MSV1I-09HRDN1**

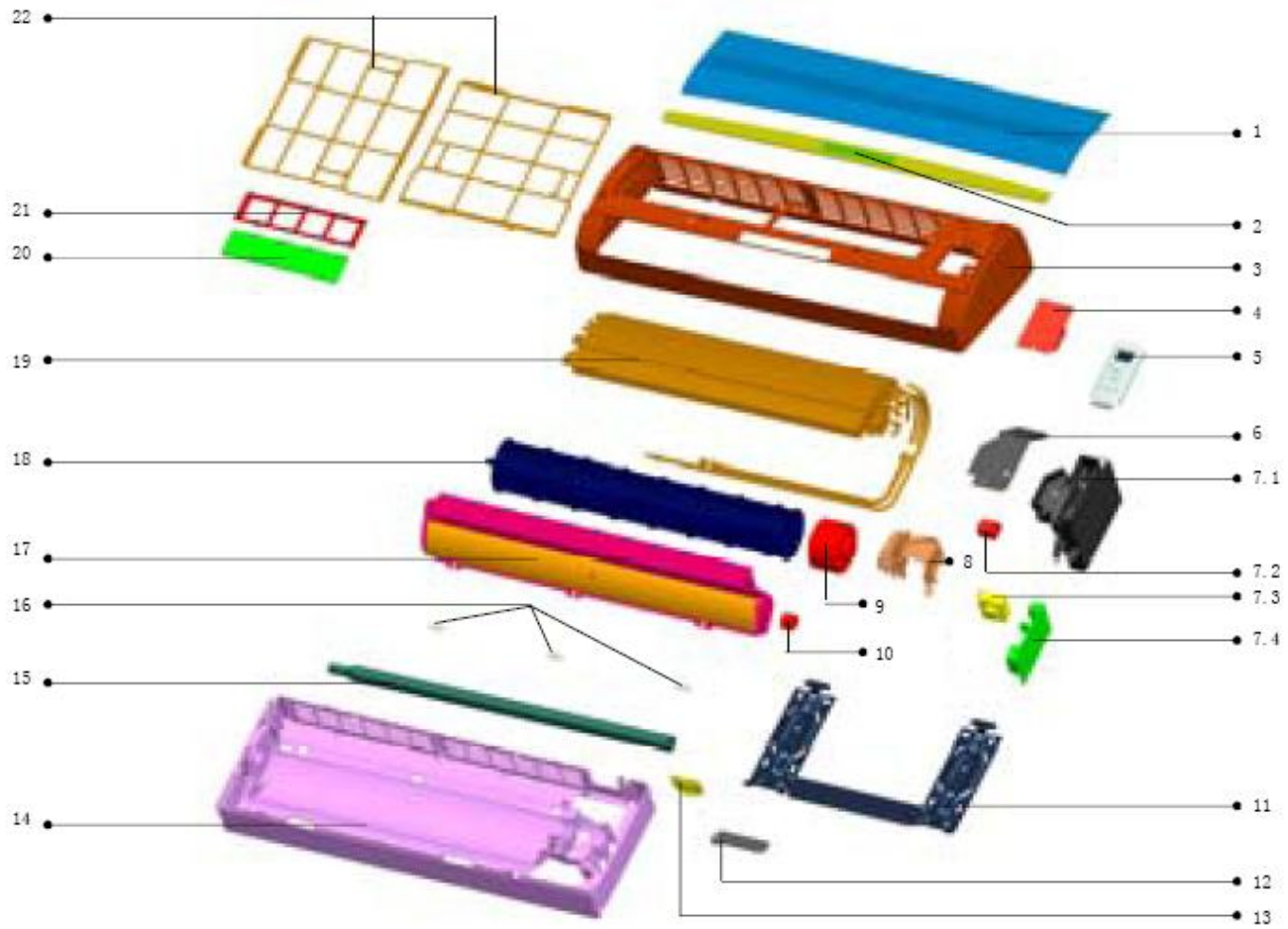
| No. | Part Name                              | Quantity | No.  | Part Name                                 | Quantity |
|-----|----------------------------------------|----------|------|-------------------------------------------|----------|
| 1   | Cross flow fan                         | 1        | 11   | Electric control assy subassembly         | 1        |
| 2   | Panel assembly                         | 1        | 11.1 | E-Parts box                               | 1        |
| 3   | Panel frame                            | 1        | 11.2 | Main controller subassembly               | 1        |
| 4   | Filter the net( right)                 | 1        | 11.3 | Transformer                               | 1        |
| 5   | A synchronism motor                    | 1        | 11.4 | Room Temperature Sensor Ass'y subassembly | 1        |
| 6   | Evaporator assembly                    | 1        | 11.5 | Evaporator temp sensor subassembly        | 1        |
| 6.1 | Copper nut, GLM-C03                    | 1        | 11.6 | Auto restart control board subassembly    | 1        |
| 6.2 | Copper nut, GLM-C03                    | 1        | 12   | Window cover for repairing                | 1        |
| 7   | Enter the style grid parts             | 1        | 13   | Base pan assembly                         | 1        |
| 8   | The electrical engineering cover parts | 1        | 14   | Remote controller                         | 1        |
| 9   | Filter the net( left)                  | 1        | 15   | Waterproof board                          | 1        |
| 10  | Air outlet assembly                    | 1        | 16   | Display board subassembly                 | 1        |

**MSV1I-12HRDN1**

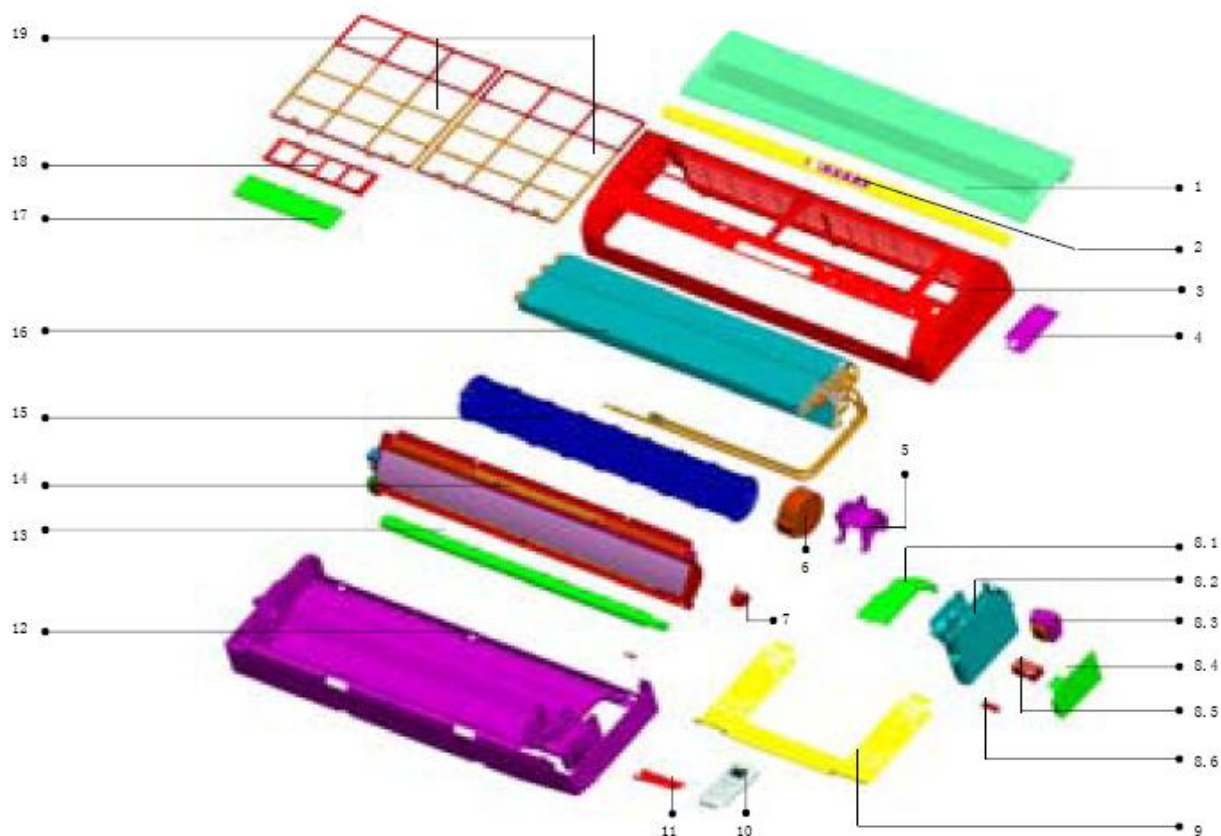
| No. | Part Name                              | Quantity | No.  | Part Name                                 | Quantity |
|-----|----------------------------------------|----------|------|-------------------------------------------|----------|
| 1   | Cross flow fan                         | 1        | 11   | Electric control assy subassembly         | 1        |
| 2   | Panel assembly                         | 1        | 11.1 | E-Parts box                               | 1        |
| 3   | Panel frame                            | 1        | 11.2 | Main controller subassembly               | 1        |
| 4   | Filter the net( right)                 | 1        | 11.3 | Auto restart control board subassembly    | 1        |
| 5   | A synchronism motor                    | 1        | 11.4 | Room Temperature Sensor Ass'y subassembly | 1        |
| 6   | Evaporator assembly                    | 1        | 11.5 | Evaporator temp sensor subassembly        | 1        |
| 6.1 | Copper nut, GLM-C03                    | 1        | 11.6 | Transformer                               | 1        |
| 6.2 | Copper nut, GLM-C03                    | 1        | 12   | Window cover for repairing                | 1        |
| 7   | Enter the style grid parts             | 1        | 13   | Base pan assembly                         | 1        |
| 8   | The electrical engineering cover parts | 1        | 14   | Remote controller                         | 1        |
| 9   | Filter the net( left)                  | 1        | 15   | Waterproof board                          | 1        |
| 10  | Air outlet assembly                    | 1        | 16   | Display board subassembly                 | 1        |

**MST6I-07HRIN1**

| No. | Part Name                          | Quantity | No.   | Part Name                                  | Quantity |
|-----|------------------------------------|----------|-------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 14    | Chassis assembly                           | 1        |
| 2   | Display board,Ass'y                | 1        | 15    | Drain hose                                 | 1        |
| 3   | Panel frame                        | 1        | 16    | Screw cover                                | 3        |
| 4   | Cover, electric control box        | 1        | 17    | Air out frame                              | 1        |
| 5   | Remote controller                  | 1        | 18    | Cross flow fan assembly                    | 1        |
| 6   | E-part box cover                   | 1        | 19    | Evaporator assembly                        | 1        |
| 7   | Electrical control box subassembly | 1        | 19.1  | Evaporator back                            | 1        |
| 7.1 | Electrical control box             | 1        | 19.2  | Evaporator front                           | 1        |
| 7.2 | Terminal                           | 1        | 19.3  | Liquid input pipe, evaporator, subassembly | 1        |
| 7.3 | Transformer                        | 1        | 19.4  | Gas output pipe, evaporator, subassembly   | 1        |
| 7.4 | Main control board                 | 1        | 19.5  | Pipe nut                                   | 1        |
| 7.5 | Sensor,Ass'y                       | 1        | 19.6  | Pipe nut                                   | 1        |
| 7.6 | Evaporator temp sensor             | 1        | 19.7  | Copper nut                                 | 1        |
| 8   | Motor cover                        | 1        | 19.8  | Copper nut                                 | 1        |
| 9   | Fan motor                          | 1        | 19.9  | Sphere pad                                 | 1        |
| 10  | Louver motor                       | 1        | 19.10 | Sphere pad                                 | 1        |
| 11  | Installation Plate                 | 1        | 20    | Air cleaner                                | 1        |
| 12  | Connecting pipe clamp              | 1        | 21    | Air cleaner holder                         | 1        |
| 13  | Cover board chassis back           | 1        | 22    | Air Filter                                 | 2        |

**MST6I-09HRIN1**

| No. | Part Name                          | Quantity | No.   | Part Name                                  | Quantity |
|-----|------------------------------------|----------|-------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 14    | Chassis assembly                           | 1        |
| 2   | Display board, Ass'y               | 1        | 15    | Drain hose                                 | 1        |
| 3   | Panel frame                        | 1        | 16    | Screw cover                                | 3        |
| 4   | Cover, electric control box        | 1        | 17    | Air out frame                              | 1        |
| 5   | Remote controller                  | 1        | 18    | Cross flow fan assembly                    | 1        |
| 6   | E-part box cover                   | 1        | 19    | Evaporator assembly                        | 1        |
| 7   | Electrical control box subassembly | 1        | 19.1  | Evaporator back                            | 1        |
| 7.1 | Electrical control box             | 1        | 19.2  | Evaporator front                           | 1        |
| 7.2 | Terminal                           | 1        | 19.3  | Liquid input pipe, evaporator, subassembly | 1        |
| 7.3 | Transformer                        | 1        | 19.4  | Gas output pipe, evaporator, subassembly   | 1        |
| 7.4 | Main control board                 | 1        | 19.5  | Pipe nut                                   | 1        |
| 7.5 | Sensor, Ass'y                      | 1        | 19.6  | Pipe nut                                   | 1        |
| 7.6 | Evaporator temp sensor             | 1        | 19.7  | Copper nut                                 | 1        |
| 8   | Motor cover                        | 1        | 19.8  | Copper nut                                 | 1        |
| 9   | Fan motor                          | 1        | 19.9  | Sphere pad                                 | 1        |
| 10  | Louver motor                       | 1        | 19.10 | Sphere pad                                 | 1        |
| 11  | Installation Plate                 | 1        | 20    | Air cleaner                                | 1        |
| 12  | Connecting pipe clamp              | 1        | 21    | Air cleaner holder                         | 1        |
| 13  | Cover board chassis back           | 1        | 22    | Air Filter                                 | 2        |

**MST6I-12HRIN1**

| No. | Part Name                          | Quantity | No.    | Part Name                                  | Quantity |
|-----|------------------------------------|----------|--------|--------------------------------------------|----------|
| 1   | Front panel                        | 1        | 13     | Drain hose                                 | 1        |
| 2   | Display board, Ass'y               | 1        | 14     | Air out frame                              | 1        |
| 3   | Panel frame                        | 1        | 15     | Cross flow fan assembly                    | 1        |
| 4   | Cover, electric control box        | 1        | 16     | Evaporator assembly                        | 1        |
| 5   | Motor cover                        | 1        | 16.1   | Evaporator front                           | 1        |
| 6   | Fan motor                          | 1        | 16.2   | Evaporator back                            | 1        |
| 7   | Louver motor                       | 1        | 16.3   | Liquid input pipe, evaporator, subassembly | 1        |
| 8   | Electrical control box subassembly | 1        | 16.3.1 | Pipe connector                             | 1        |
| 8.1 | E-part box cover                   | 1        | 16.4   | Gas output pipe, evaporator, subassembly   | 1        |
| 8.2 | E-Parts box                        | 1        | 16.4.1 | Pipe connector                             | 1        |
| 8.3 | Transformer                        | 1        | 16.5   | Pipe nut                                   | 1        |
| 8.4 | Main control board                 | 1        | 16.5   | Pipe nut                                   | 1        |
| 8.5 | Terminal                           | 1        | 16.7   | Sphere pad                                 | 1        |
| 8.6 | Wire clamp                         | 1        | 16.8   | Sphere pad                                 | 1        |
| 8.7 | The temperature sensor             | 1        | 16.9   | Copper nut                                 | 1        |
| 8.8 | Room temperature sensory package   | 1        | 16.10  | Copper nut                                 | 1        |
| 9   | Installation Plate                 | 1        | 17     | Air cleaner                                | 1        |
| 10  | Remote controller                  | 1        | 18     | Air cleaner holder                         | 1        |
| 11  | Connecting pipe clamp              | 1        | 19     | Air Filter                                 | 2        |
| 12  | Chassis assembly                   | 1        |        |                                            |          |

**10. Accessories**

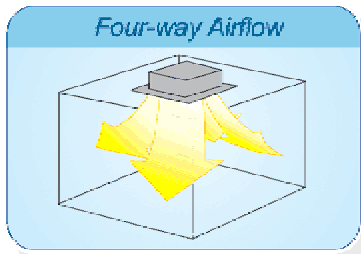
| Number | Name                        |             |               |
|--------|-----------------------------|-------------|---------------|
| 1      | Installation plate          |             |               |
| 2      | Self-tapping screw ST3.9×25 |             |               |
| 3      | Plastic Expansion Pipe      |             |               |
| 4      | Connection<br>Pipe Ass.     | Liquid side | φ 6.35        |
|        |                             | Gas side    | φ 9.53/φ 12.7 |
| 5      | Remote controller           |             |               |
| 6      | Remote controller holder    |             |               |

# Four-way Cassette Type

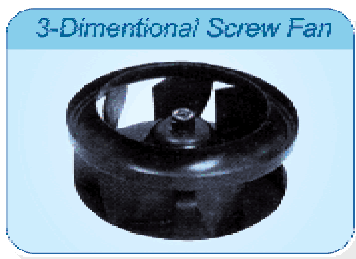
|                                                     |    |
|-----------------------------------------------------|----|
| 1. Features.....                                    | 44 |
| 2. Specifications .....                             | 45 |
| 3. Dimensions .....                                 | 47 |
| 4. Service Space (unit: mm).....                    | 48 |
| 5. Wiring Diagrams .....                            | 49 |
| 6. Air Velocity and Temperature Distributions ..... | 50 |
| 7. Electric Characteristics.....                    | 51 |
| 8. Sound Levels .....                               | 52 |
| 9. Exploded View .....                              | 53 |
| 10. Accessories.....                                | 57 |

## 1. Features

- (1) Low operation noise
  - Streamline plate ensures quietness
  - Creates natural and comfortable environment
- (2) Efficient cooling
  - Equal, fast and wide—range cooling



- (3) The adoption of the most advanced 3- Dimensional Screw fan
  - Reduces the air resistance passing through
  - Smooths the air flow
  - Makes air speed distribution to the heat exchange uniform



## 2. Specifications

| Sale Model                   |                                |                   | MSQ4I-07HRDN1             | MSQ4I-09HRDN1         |
|------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|
| Power supply                 |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          |
| Supply electricity type      |                                |                   | Outdoor unit supply power |                       |
| Cooling                      | Capacity                       | Btu/h             | 7000                      | 9000                  |
|                              | Input                          | W                 | 33                        | 35                    |
|                              | Rated current                  | A                 | 0.15                      | 0.15                  |
| Heating                      | Capacity                       | Btu/h             | 9000                      | 11000                 |
|                              | Input                          | W                 | 33                        | 35                    |
|                              | Rated current                  | A                 | 0.15                      | 0.15                  |
| Indoor motor fan             | Model                          |                   | YDK45-4F                  | YDK45-4F              |
|                              | Type                           |                   | motor                     | Motor                 |
|                              | Brand                          |                   | Welling                   | Welling               |
|                              | Input                          | W                 | 63/57/47                  | 63/57/47              |
|                              | Capacitor                      | uF                | 1.2                       | 1.2                   |
|                              | Speed(hi/lo)                   | r/min             | 830/660                   | 830/660               |
| Indoor coil                  | a.Number of rows               |                   | 1                         | 1                     |
|                              | b.Tube pitch(a)x row pitch(b)  | mm                | 21 x 13.37                | 21 x 13.37            |
|                              | c.Fin spacing                  | mm                | 1.4                       | 1.4                   |
|                              | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium |
|                              | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    |
|                              |                                |                   | Inner-groove tube         | Inner-groove tube     |
|                              | f.Coil length x height x width | mm                | 1188x210x13.37            | 1188x210x13.37        |
|                              | g.Number of circuits           |                   | 3                         | 3                     |
| Indoor air flow (Hi/Mi/Lo)   |                                | m <sup>3</sup> /h | 510/400                   | 510/400               |
| Indoor noise level (Hi/Lo)   |                                | dB(A)             | 36/33                     | 36/33                 |
| Indoor unit                  | Dimension (W x H x D)          | mm                | 580 x 254 x 580           | 580 x 254 x 580       |
|                              | Packing (W x H x D)            | mm                | 750 x 340 x 750           | 750 x 340 x 750       |
|                              | Net/Gross weight               | kg                | 18.5/25                   | 18.5/25               |
| Refrigerant Type             |                                |                   | R410A                     | R410A                 |
| Refrigerant pipe             | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ9.53           |
| Drainage water pipe diameter |                                | mm                | Φ25                       | Φ25                   |
| Controller(standard)         |                                |                   | R11HG/E                   | R11HG/E               |
| Application area             |                                | m <sup>2</sup>    | 13-17                     | 17-21                 |

| Sale Model                   |                                |                   | MSQ4I-12HRDN1             | MSQ4I-18HRIN1         |
|------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|
| Power supply                 |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          |
| Supply electricity type      |                                |                   | Outdoor unit supply power |                       |
| Cooling                      | Capacity                       | Btu/h             | 12000                     | 18000                 |
|                              | Input                          | W                 | 40                        | 80                    |
|                              | Rated current                  | A                 | 0.2                       | 0.4                   |
| Heating                      | Capacity                       | Btu/h             | 13000                     | 20500                 |
|                              | Input                          | W                 | 40                        | 80                    |
|                              | Rated current                  | A                 | 0.2                       | 0.4                   |
| Indoor motor fan             | Model                          |                   | YDK45-4F                  | YDK45-4F              |
|                              | Type                           |                   | motor                     | motor                 |
|                              | Brand                          |                   | Welling                   | Welling               |
|                              | Input                          | W                 | 63/57/47                  | 63/57/47              |
|                              | Capacitor                      | uF                | 1.5                       | 2.5                   |
|                              | Speed(hi/lo)                   | r/min             | 830/660                   | 830/660               |
| Indoor coil                  | a.Number of rows               |                   | 1                         | 2                     |
|                              | b.Tube pitch(a)x row pitch(b)  | mm                | 21 x 13.37                | 21 x 26.74            |
|                              | c.Fin spacing                  | mm                | 1.4                       | 1.4                   |
|                              | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium |
|                              | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    |
|                              |                                |                   | Inner-groove tube         | Inner-groove tube     |
|                              | f.Coil length x height x width | mm                | 1188x210x13.37            | 1188x210x26.74        |
|                              | g.Number of circuits           |                   | 3                         | 5                     |
| Indoor air flow (Hi/Mi/Lo)   |                                | m <sup>3</sup> /h | 550/420                   | 700/560               |
| Indoor noise level (Hi/Lo)   |                                | dB(A)             | 36/33                     | 43/40                 |
| Indoor unit                  | Dimension (W x H x D)          | mm                | 580 x 254 x 580           | 580 x 254 x 580       |
|                              | Packing (W x H x D)            | mm                | 750 x 340 x 750           | 750 x 340 x 750       |
|                              | Net/Gross weight               | kg                | 18.5/25                   | 21\28                 |
| Refrigerant Type             |                                |                   | R410A                     | R410A                 |
| Refrigerant pipe             | Liquid side/ Gas side          | mm                | Φ6.35/Φ12.7               | Φ6.35/Φ12.7           |
| Drainage water pipe diameter |                                | mm                | Φ25                       | Φ25                   |
| Controller(standard)         |                                |                   | R11HG/E                   | R11HG/E               |
| Application area             |                                | m <sup>2</sup>    | 20-25                     | 25-35                 |

### 3. Dimensions

Indoor unit (7000Btu/h/9000Btu/h /12000Btu/h /18000Btu/h) :

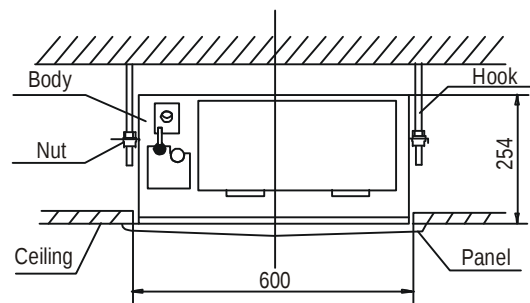
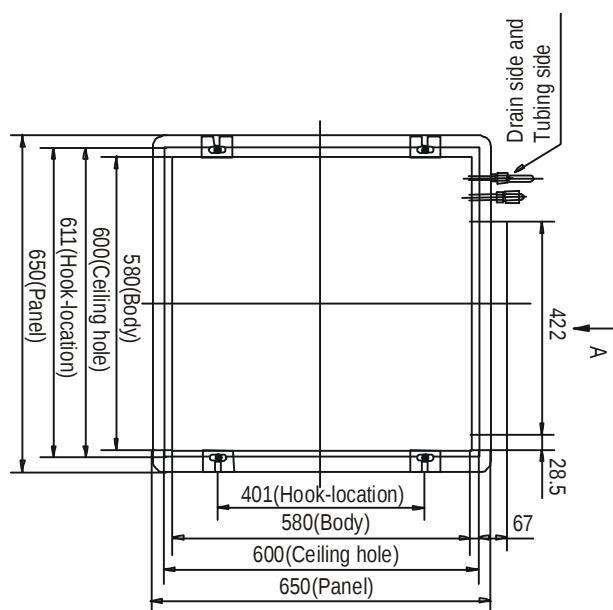
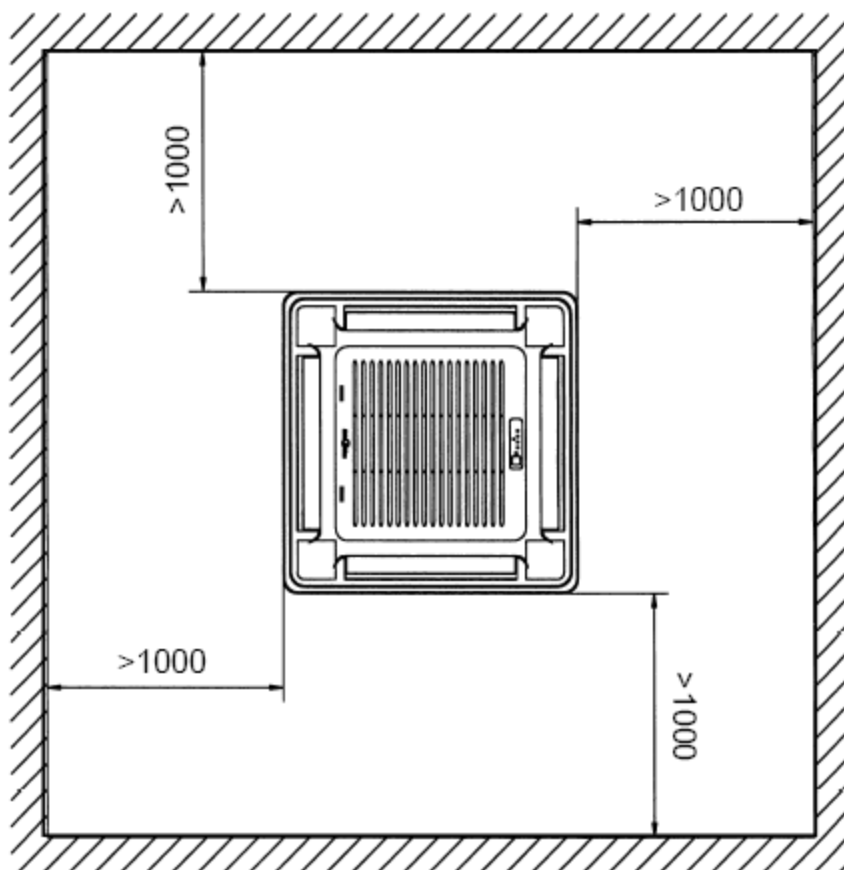
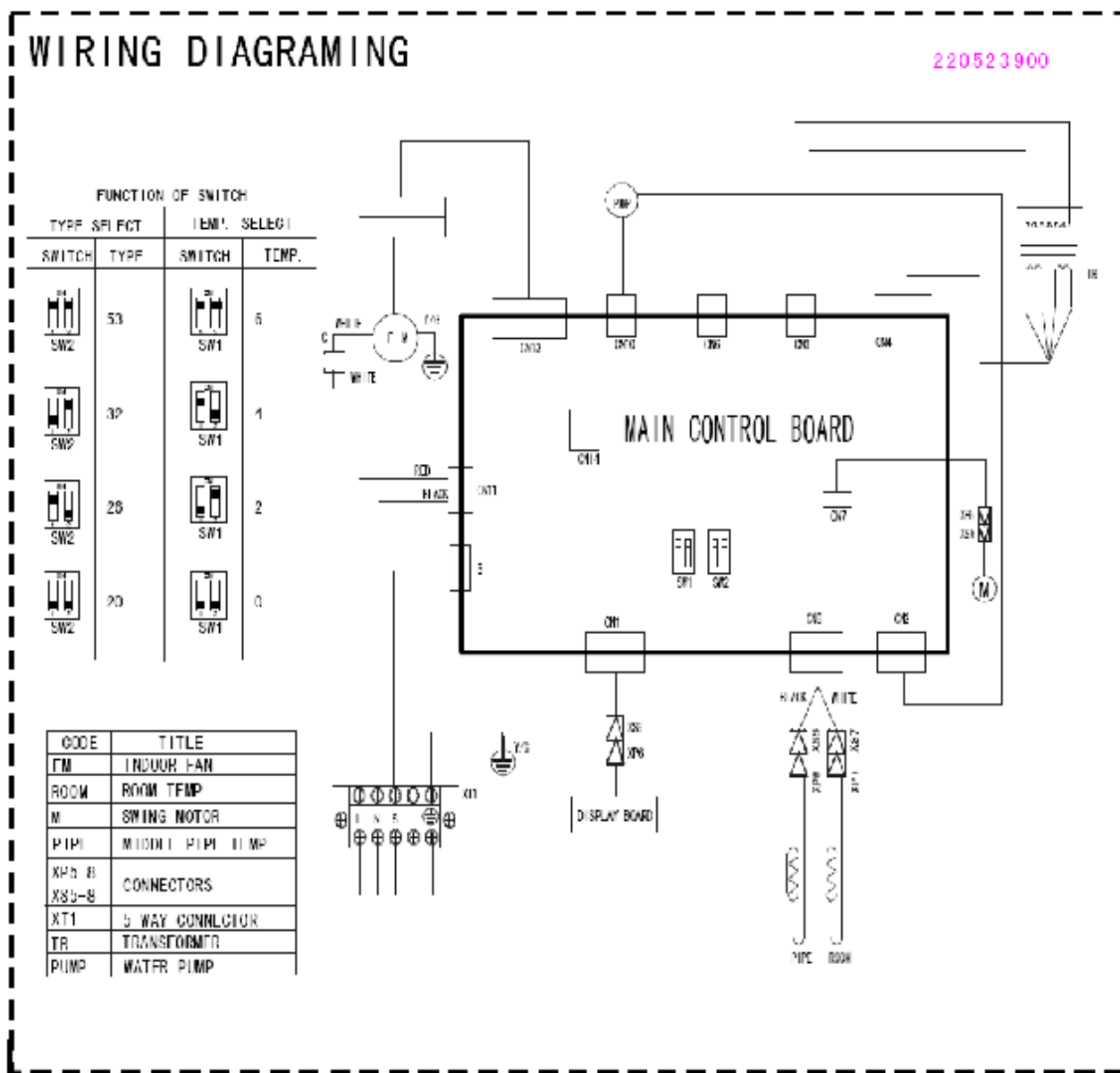


Chart 4

**4. Service Space (unit: mm)**

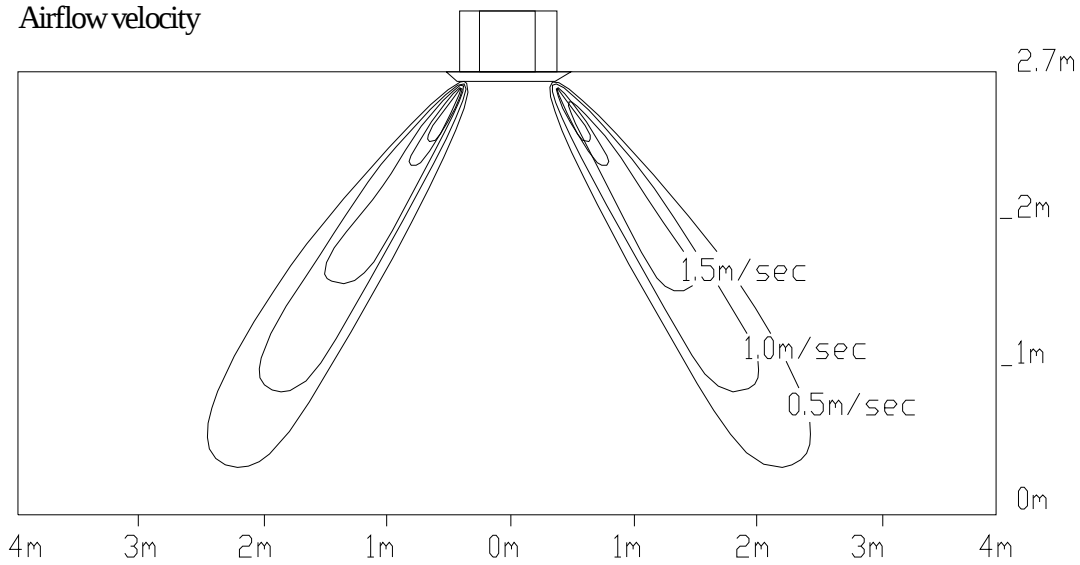
## 5. Wiring Diagrams

MSQ4I-07HRDN1, MSQ4I-09HRDN1, MSQ4I-12HRDN1, MSQ4I-18HRIN1

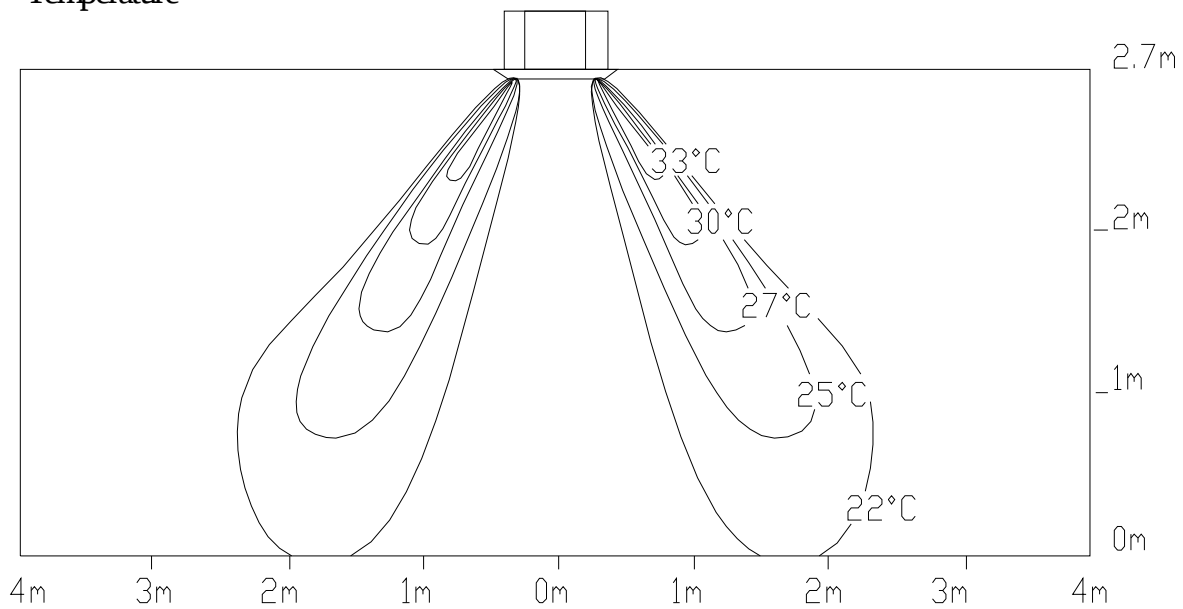


## 6. Air Velocity and Temperature Distributions (Reference Data) Discharge angle 60°

Airflow velocity



Temperature



## 7. Electric Characteristics

| Model         | Indoor Unit |         |      |      | Power Supply |     | IFM   |      |
|---------------|-------------|---------|------|------|--------------|-----|-------|------|
|               | Hz          | Voltage | Min. | Max. | MCA          | MFA | kW    | FLA  |
| MSQ4I-07HRDN1 | 50          | 220~240 | 198  | 254  | 0.36         | 16  | 0.063 | 0.29 |
| MSQ4I-09HRDN1 | 50          | 220~240 | 198  | 254  | 0.36         | 16  | 0.063 | 0.29 |
| MSQ4I-12HRDN1 | 50          | 220~240 | 198  | 254  | 0.36         | 16  | 0.063 | 0.29 |
| MSQ4I-18HRIN1 | 50          | 220~240 | 198  | 254  | 0.3625       | 16  | 0.045 | 0.29 |

### Remark:

MCA: Min. Current Amps. (A)

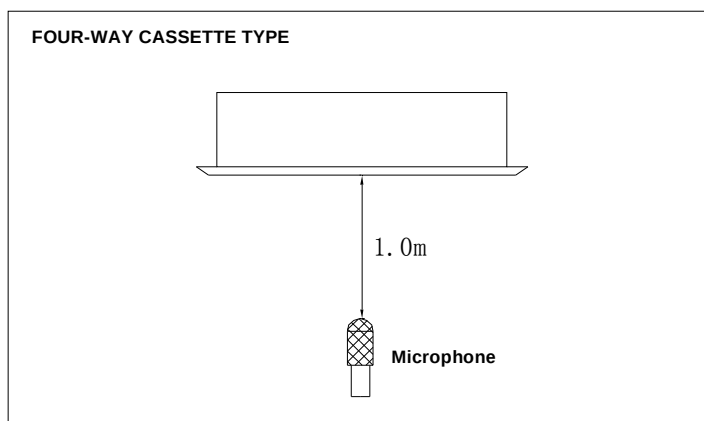
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM: Indoor Fan Motor

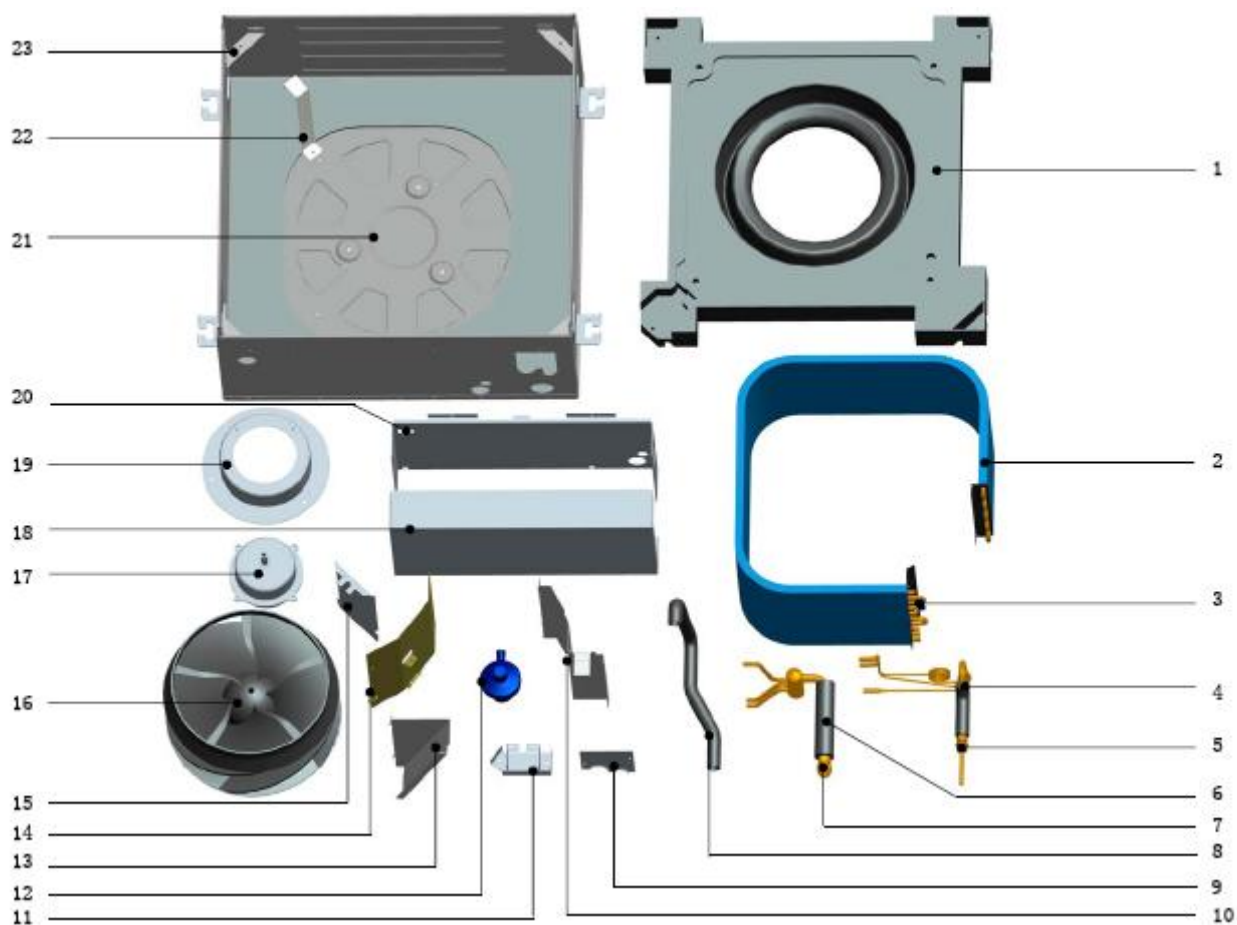
## 8. Sound Levels



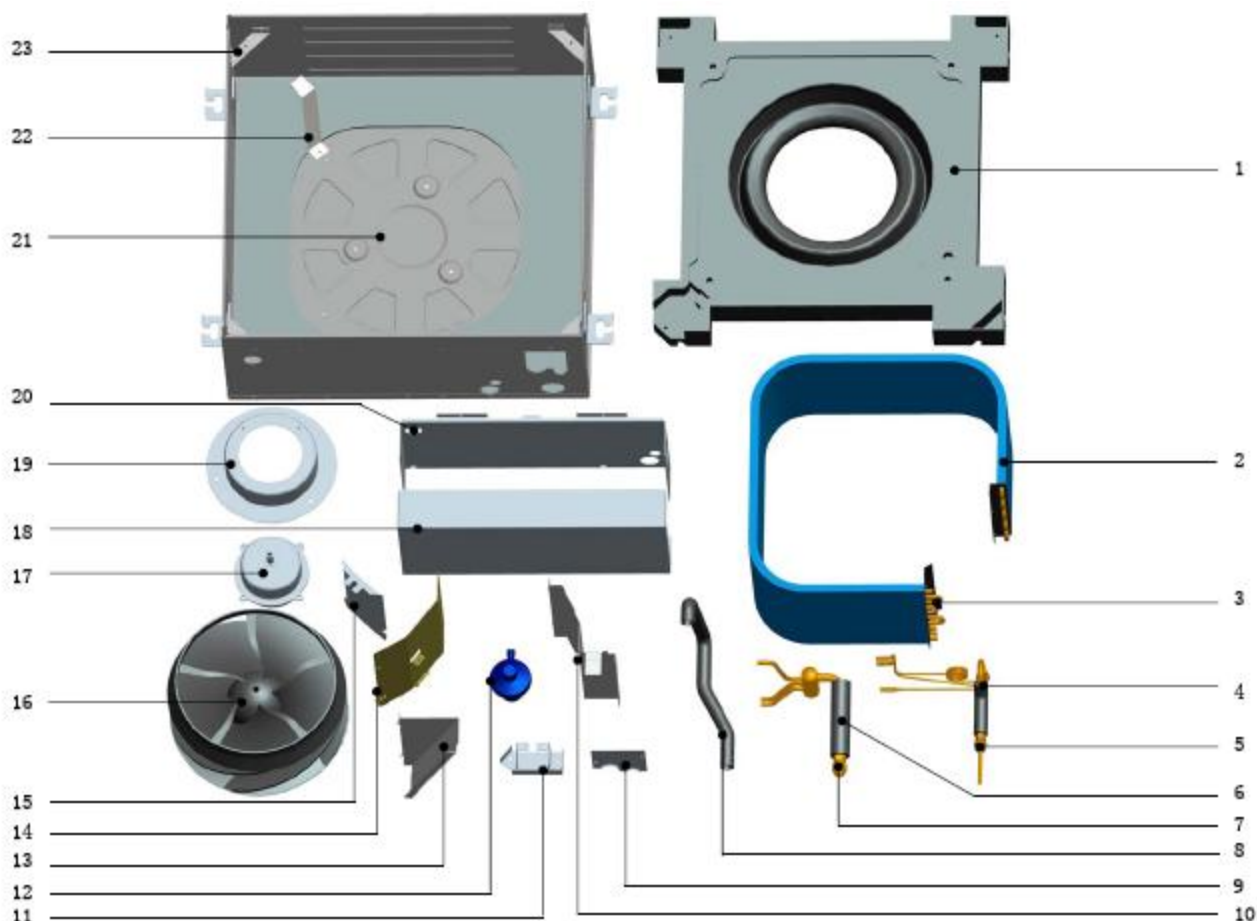
| Model         | Noise level dB(A) |
|---------------|-------------------|
|               | High speed        |
| MSQ4I-07HRDN1 | 36                |
| MSQ4I-09HRDN1 | 36                |
| MSQ4I-12HRDN1 | 36                |
| MSQ4I-18HRIN1 | 43                |

## 9. Exploded View

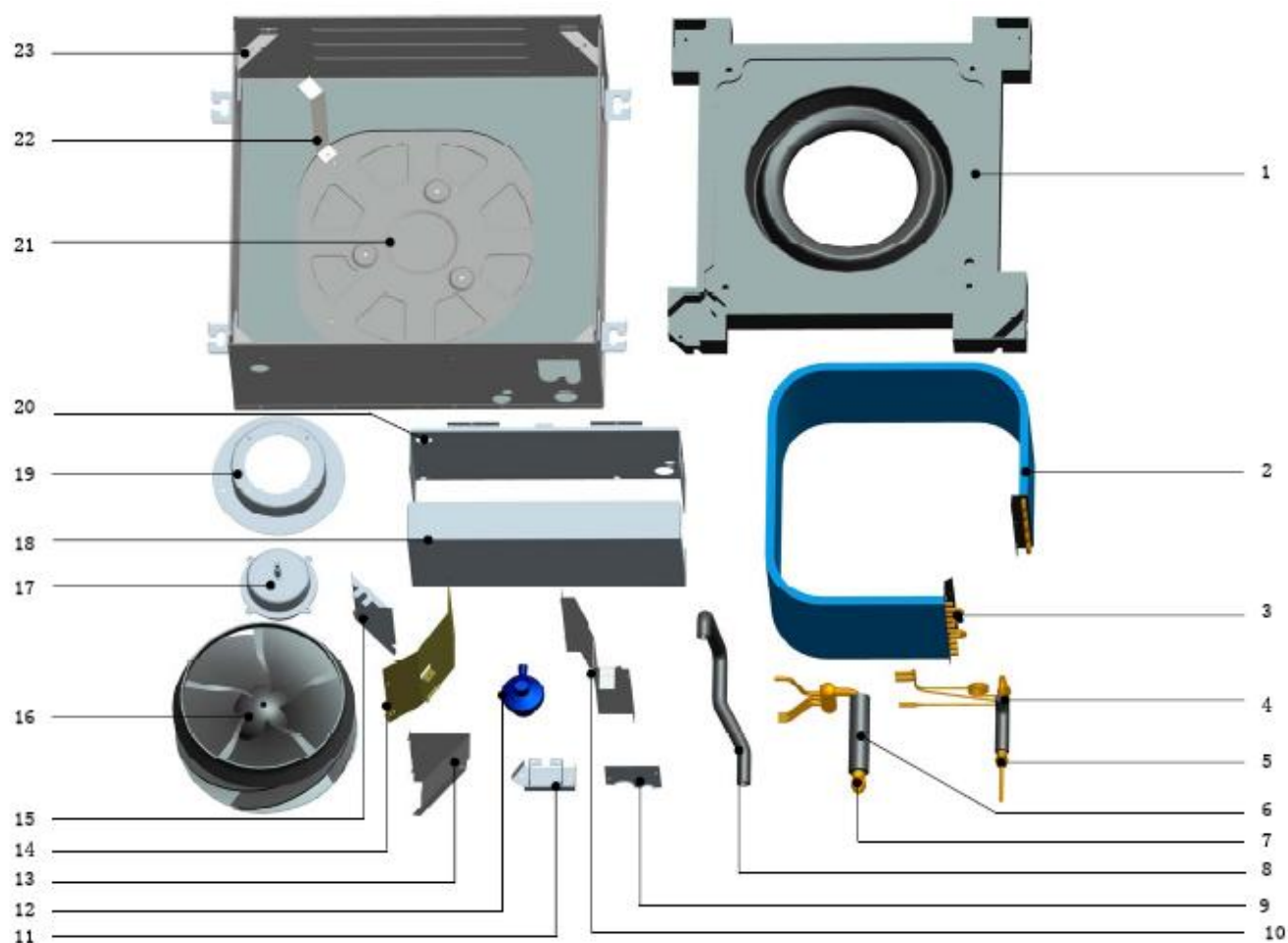
### MSQ4I-07HRDN1



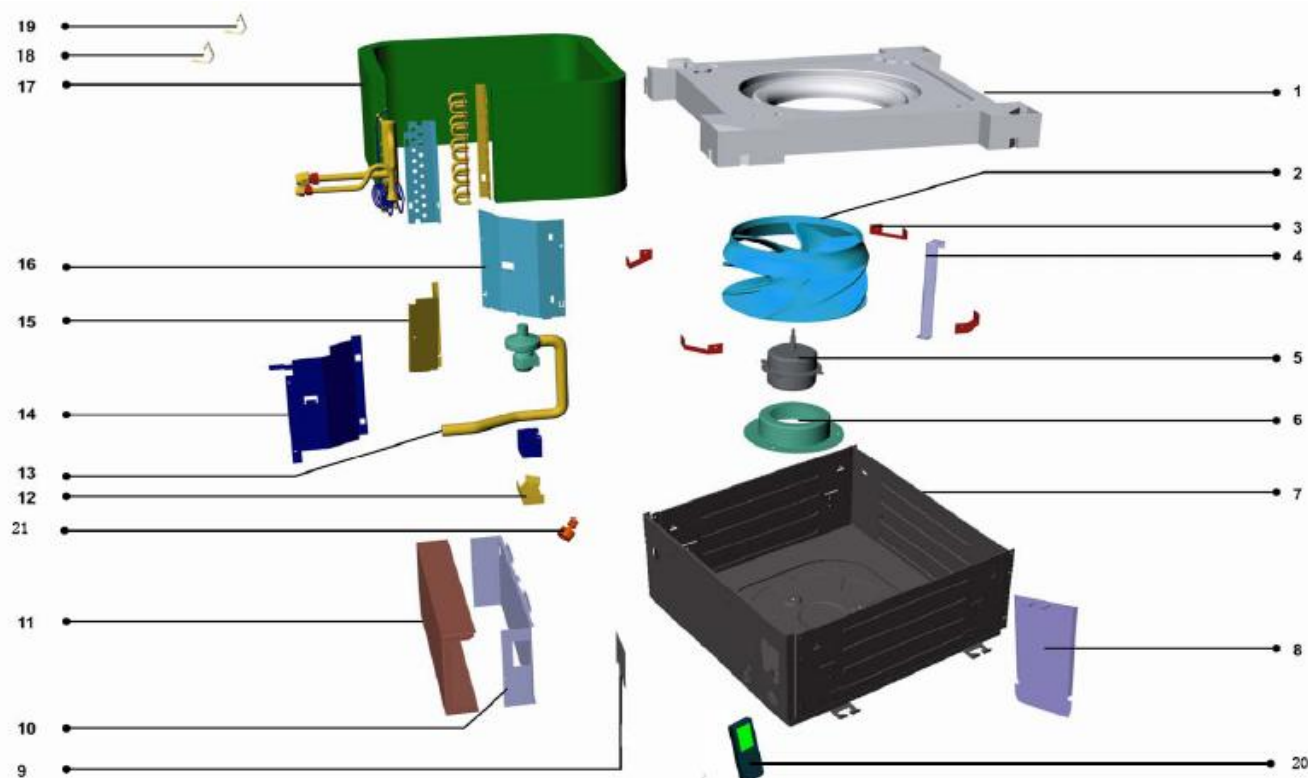
| No. | Part Name                                  | Quantity | No.  | Part Name                     | Quantity |
|-----|--------------------------------------------|----------|------|-------------------------------|----------|
| 1   | water collector                            | 1        | 15   | wire crossing board           | 1        |
| 2   | evaporator                                 | 1        | 16   | centrifugal fan               | 1        |
| 3   | Temp. sensor                               | 1        | 17   | a synchronism motor           | 1        |
| 4   | liquid input pipe, evaporator, subassembly | 1        | 18   | cover, electronic control box | 1        |
| 5   | copper nut                                 | 1        | 19   | fan motor underlay            | 1        |
| 6   | gas output pipe, evaporator, subassembly   | 1        | 20   | electronic control box        | 1        |
| 7   | copper nut                                 | 1        | 20.1 | fan motor capacitor           | 1        |
| 8   | drain pipe                                 | 1        | 20.2 | power transformer             | 1        |
| 9   | output pipe, sealing board                 | 1        | 20.3 | main controller subassembly   | 1        |
| 10  | right clapboard                            | 1        | 21   | base pan assembly             | 1        |
| 11  | drain pump bracket                         | 1        | 22   | evaporator fixing hook        | 1        |
| 12  | drain pump                                 | 1        | 23   | bracket, water collector      | 4        |
| 13  | left clapboard                             | 1        | 24   | room temp. sensor             | 1        |
| 14  | evaporator fixing board                    | 1        | 25   | remote controller             | 1        |

**MSQ4I-09HRDN1**

| No. | Part Name                                  | Quantity | No.  | Part Name                     | Quantity |
|-----|--------------------------------------------|----------|------|-------------------------------|----------|
| 1   | water collector                            | 1        | 15   | wire crossing board           | 1        |
| 2   | evaporator                                 | 1        | 16   | centrifugal fan               | 1        |
| 3   | Temp. sensor                               | 1        | 17   | a synchronism motor           | 1        |
| 4   | liquid input pipe, evaporator, subassembly | 1        | 18   | cover, electronic control box | 1        |
| 5   | copper nut                                 | 1        | 19   | fan motor underlay            | 1        |
| 6   | gas output pipe, evaporator, subassembly   | 1        | 20   | electronic control box        | 1        |
| 7   | copper nut                                 | 1        | 20.1 | fan motor capacitor           | 1        |
| 8   | drain pipe                                 | 1        | 20.2 | power transformer             | 1        |
| 9   | output pipe, sealing board                 | 1        | 20.3 | main controller subassembly   | 1        |
| 10  | right clapboard                            | 1        | 21   | base pan assembly             | 1        |
| 11  | drain pump bracket                         | 1        | 22   | evaporator fixing hook        | 1        |
| 12  | drain pump                                 | 1        | 23   | bracket, water collector      | 4        |
| 13  | left clapboard                             | 1        | 24   | room temp. sensor             | 1        |
| 14  | evaporator fixing board                    | 1        | 25   | remote controller             | 1        |

**MSQ4I-12HRDN1**

| No. | Part Name                                  | Quantity | No.  | Part Name                     | Quantity |
|-----|--------------------------------------------|----------|------|-------------------------------|----------|
| 1   | water collector                            | 1        | 15   | wire crossing board           | 1        |
| 2   | evaporator                                 | 1        | 16   | centrifugal fan               | 1        |
| 3   | Temp. sensor                               | 1        | 17   | a synchronism motor           | 1        |
| 4   | liquid input pipe, evaporator, subassembly | 1        | 18   | cover, electronic control box | 1        |
| 5   | copper nut                                 | 1        | 19   | fan motor underlay            | 1        |
| 6   | gas output pipe, evaporator, subassembly   | 1        | 20   | electronic control box        | 1        |
| 7   | copper nut                                 | 1        | 20.1 | capacitor                     | 1        |
| 8   | drain pipe                                 | 1        | 20.2 | power transformer             | 1        |
| 9   | output pipe, sealing board                 | 1        | 20.3 | main controller subassembly   | 1        |
| 10  | right clapboard                            | 1        | 21   | base pan assembly             | 1        |
| 11  | drain pump bracket                         | 1        | 22   | evaporator fixing hook        | 1        |
| 12  | drain pump                                 | 1        | 23   | bracket, water collector      | 4        |
| 13  | left clapboard                             | 1        | 24   | room temp. sensor             | 1        |
| 14  | evaporator fixing board                    | 1        | 25   | remote controller             | 1        |

**MSQ4I-18HRIN1**

| No.  | Part Name                                | Quantity | No.  | Part Name                      | Quantity |
|------|------------------------------------------|----------|------|--------------------------------|----------|
| 1    | water collector                          | 1        | 11   | E-part box cover               | 1        |
| 2    | Centrifugal fan                          | 1        | 12   | Drain Pump Holder              | 1        |
| 3    | Fixing board, water pan                  | 4        | 13   | Drain Pump                     | 1        |
| 4    | Evaporator Fixture Board Ass'y           | 1        | 14   | clapboard right assembly       | 1        |
| 5    | Fan motor                                | 1        | 15   | clapboard left                 | 1        |
| 6    | Fan Motor Underlay                       | 1        | 16   | Evaporator Fixture Board Ass'y | 1        |
| 7    | Chassis                                  | 1        | 17   | Evaporator assembly            | 1        |
| 8    | Wire crossing board                      | 1        | 17.1 | input pipe of evaporator       | 1        |
| 9    | Sealing board, pipe out                  | 1        | 17.2 | output pipe of evaporator      | 1        |
| 10   | Electric control assy                    | 1        | 18   | Outdoor Term sender assembly   | 1        |
| 10.1 | transformer                              | 1        | 19   | Temp. sensor                   | 1        |
| 10.2 | fan capacitor                            | 1        | 20   | remote control                 | 1        |
| 10.3 | main control plane subassembly of indoor | 1        | 21   | water level sensor             | 1        |

**10. Accessories**

|                             |    |                                                                                   |
|-----------------------------|----|-----------------------------------------------------------------------------------|
| 1. Out-let pipe sheath..... | 1  |  |
| 2. Out-let pipe clasp.....  | 1  |  |
| 3. Tightening band.....     | 20 |  |
| 4. Drain elbow.....         | 1  |  |
| 5. Seal ring.....           | 1  |  |
| 6. Reducer.....             | 3  |                                                                                   |

# Duct Type

|                                                                     |    |
|---------------------------------------------------------------------|----|
| 1. Features.....                                                    | 59 |
| 2. Specifications .....                                             | 60 |
| 3. Dimension .....                                                  | 62 |
| 4. Service Space .....                                              | 63 |
| 5. Wiring Diagrams .....                                            | 64 |
| 6. Air Velocity and Temperature Distributions (Reference Data)..... | 65 |
| 7. Electric Characteristics.....                                    | 66 |
| 8. Sound Levels .....                                               | 67 |
| 9. Exploded View .....                                              | 68 |
| 10. Accessories.....                                                | 72 |

## 1. Features

- n** All plastic body, small weight and anti-corrosion;
- n** Low operation noise;
- n** Adopt cross fan;
- n** Compact structure, space saving
- n** Adopt 4-bend evaporator with high efficiency

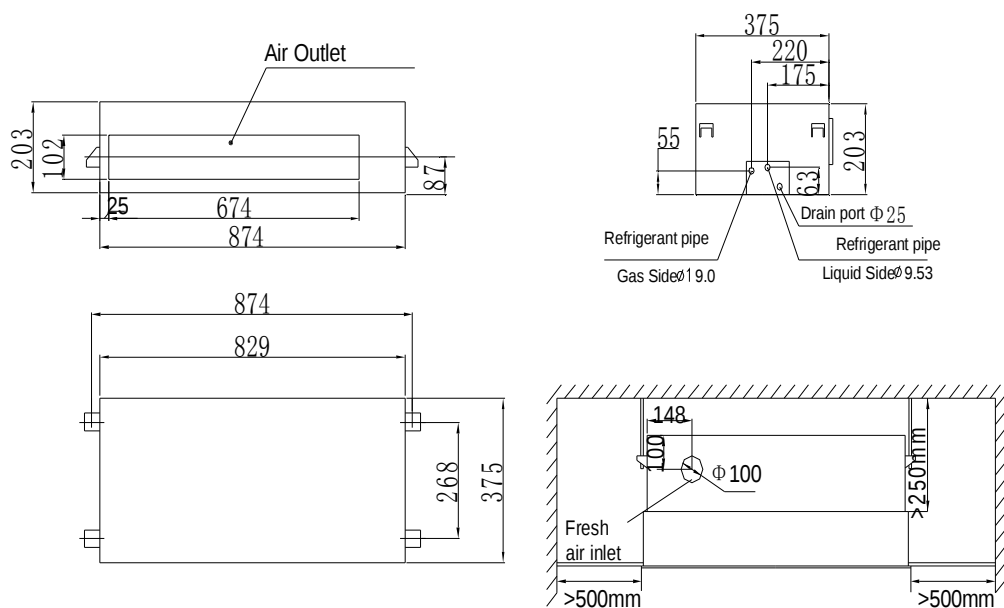
## 2. Specifications

| Sale Model                           |                                |                   | MST2I-07HRIN1             | MST2I-09HRIN1         |
|--------------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|
| Power supply                         |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          |
| Supply electricity type              |                                |                   | Outdoor unit supply power |                       |
| Cooling                              | Capacity                       | Btu/h             | 7000                      | 9000                  |
|                                      | Input                          | W                 | 40                        | 40                    |
|                                      | Rated current                  | A                 | 0.2                       | 0.2                   |
| Heating                              | Capacity                       | Btu/h             | 8500                      | 11000                 |
|                                      | Input                          | W                 | 40                        | 40                    |
|                                      | Rated current                  | A                 | 0.2                       | 0.2                   |
| Indoor motor fan                     | Model                          |                   | RPS20D                    | RPS20D                |
|                                      | Brand                          |                   | Welling                   | Welling               |
|                                      | Input                          | W                 | 34.5/30.5/27.3            | 34.5/30.5/27.3        |
|                                      | Capacitor                      | uF                | 1.2                       | 1.2                   |
|                                      | Speed(hi/mi/lo)                | r/min             | 940/840/760               | 940/840/760           |
| Indoor coil                          | a.Number of rows               |                   | 2                         | 2                     |
|                                      | b.Tube pitch(a)x row pitch(b)  | mm                | 21 x 13.37                | 21 x 13.37            |
|                                      | c.Fin spacing                  | mm                | 1.5                       | 1.5                   |
|                                      | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium |
|                                      | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    |
|                                      |                                |                   | Inner-groove tube         | Inner-groove tube     |
|                                      | f.Coil length x height x width | mm                | 718X350X26.74             | 718X350X26.74         |
|                                      | g.Number of circuits           |                   | 2                         | 2                     |
| Indoor air flow (Hi/Mi/Lo)           |                                | m <sup>3</sup> /h | 680/620/540               | 680/620/540           |
| Indoor external static pressure (Hi) |                                | Pa                | 10                        | 10                    |
| Indoor noise level (Hi/Mi/Lo)        |                                | dB(A)             | 35/32/30                  | 36/33/30              |
| Indoor unit                          | Dimension (W x H x D)          | mm                | 874 x 203 x 375           | 874 x 203 x 375       |
|                                      | Packing (W x H x D)            | mm                | 1044 x 439 x 277          | 1044 x 439 x 277      |
|                                      | Net/Gross weight               | kg                | 15/19                     | 15/19                 |
| Refrigerant Type                     |                                |                   | R410A                     | R410A                 |
| Design pressure                      |                                | MPa               | 4.2/2.5                   | 4.2/2.5               |
| Refrigerant pipe                     | Liquid side/ Gas side          | mm                | Φ6.35/Φ9.53               | Φ6.35/Φ9.53           |
| Drainage water pipe diameter         |                                | mm                | Φ19                       | Φ19                   |
| Controller(standard)                 |                                |                   | R11HG/E                   | R11HG/E               |
| Application area                     |                                | m <sup>2</sup>    | 13-17                     | 17-21                 |

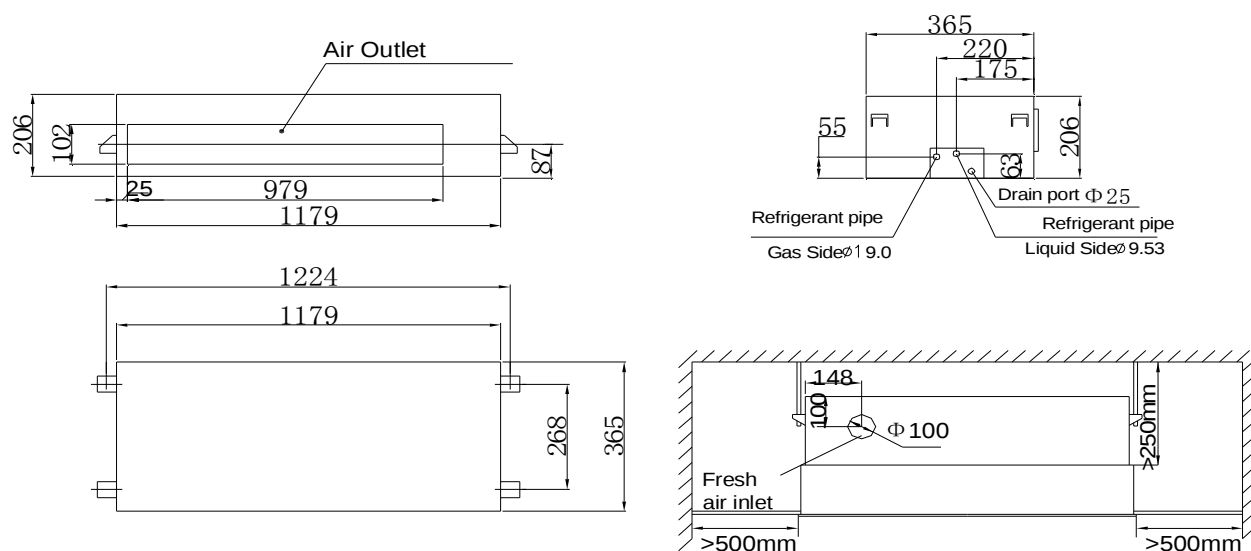
| Sale Model                           |                                |                   | MST2I-12HRIN1             | MST2I-18HRIN1         |
|--------------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|
| Power supply                         |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          |
| Supply electricity type              |                                |                   | Outdoor unit supply power |                       |
| Cooling                              | Capacity                       | Btu/h             | 12000                     | 18000                 |
|                                      | Input                          | W                 | 45                        | 60                    |
|                                      | Rated current                  | A                 | 0.2                       | 0.3                   |
| Heating                              | Capacity                       | Btu/h             | 13000                     | 20500                 |
|                                      | Input                          | W                 | 45                        | 60                    |
|                                      | Rated current                  | A                 | 0.2                       | 0.3                   |
| Indoor motor fan                     | Model                          |                   | RPS20D                    | YDK30-4A              |
|                                      | Brand                          |                   | Welling                   | Welling               |
|                                      | Input                          | W                 | 34.5/30.5/27.3            | 52/47/43              |
|                                      | Capacitor                      | uF                | 1.2                       | 3                     |
|                                      | Speed(hi/mi/lo)                | r/min             | 940/840/760               | 940/850/750           |
| Indoor coil                          | a.Number of rows               |                   | 2                         | 2                     |
|                                      | b.Tube pitch(a)x row pitch(b)  | mm                | 21 x 13.37                | 21 x 13.37            |
|                                      | c.Fin spacing                  | mm                | 1.5                       | 1.5                   |
|                                      | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium |
|                                      | e.Tube outside dia.and type    | mm                | Φ7                        | Φ7                    |
|                                      |                                |                   | Inner-groove tube         | Inner-groove tube     |
|                                      | f.Coil length x height x width | mm                | 718X350X26.74             | 1014X350X26.74        |
|                                      | g.Number of circuits           |                   | 2                         | 4                     |
| Indoor air flow (Hi/Mi/Lo)           |                                | m <sup>3</sup> /h | 680/620/540               | 870/800/720           |
| Indoor external static pressure (Hi) |                                | Pa                | 10                        | 10                    |
| Indoor noise level (Hi/Mi/Lo)        |                                | dB(A)             | 38/35/33                  | 40/38/35              |
| Indoor unit                          | Dimension (W x H x D)          | mm                | 874 x 203 x 375           | 1224 x 206 x 365      |
|                                      | Packing (W x H x D)            | mm                | 1044 x 439 x 277          | 1388 x 439 x 277      |
|                                      | Net/Gross weight               | kg                | 15/19                     | 18/23                 |
| Refrigerant Type                     |                                |                   | R410A                     | R410A                 |
| Design pressure                      |                                | MPa               | 4.2/2.5                   | 4.2/2.5               |
| Refrigerant pipe                     | Liquid side/ Gas side          | mm                | Φ6.35/Φ12.7               | Φ6.35/Φ12.7           |
| Drainage water pipe diameter         |                                | mm                | Φ19                       | Φ19                   |
| Controller(standard)                 |                                |                   | R11HG/E                   | R11HG/E               |
| Application area                     |                                | m <sup>2</sup>    | 20-25                     | 30-35                 |

### 3. Dimension

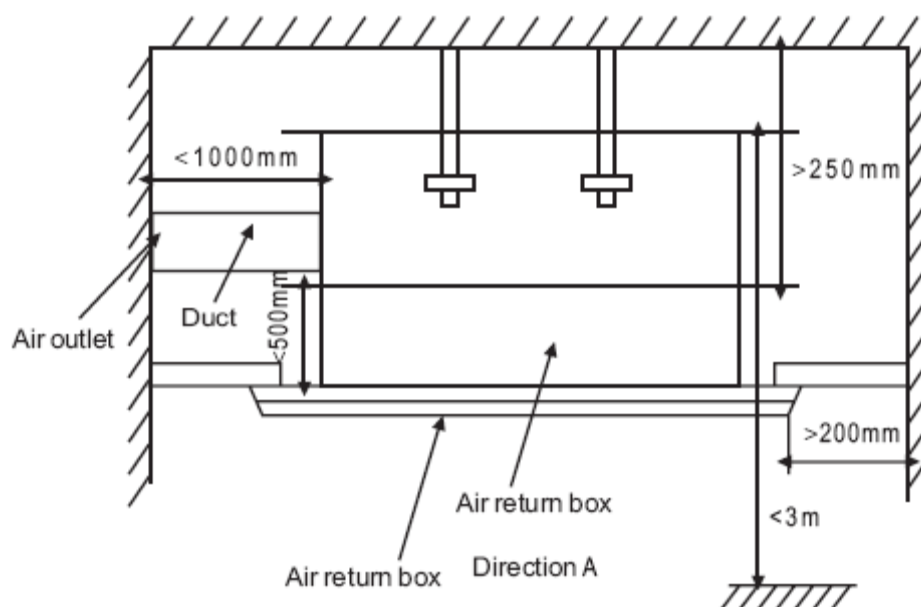
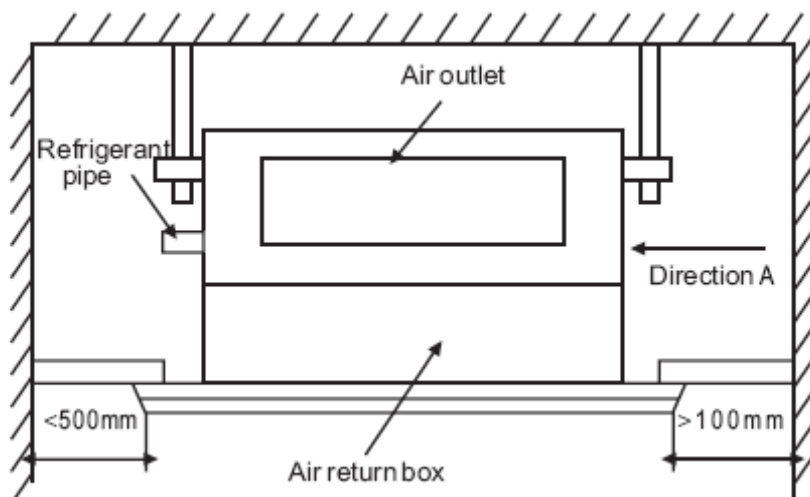
#### Indoor unit (7000Btu/h /9000Btu/h /12000Btu/h):



#### Indoor unit (18000Btu/h)

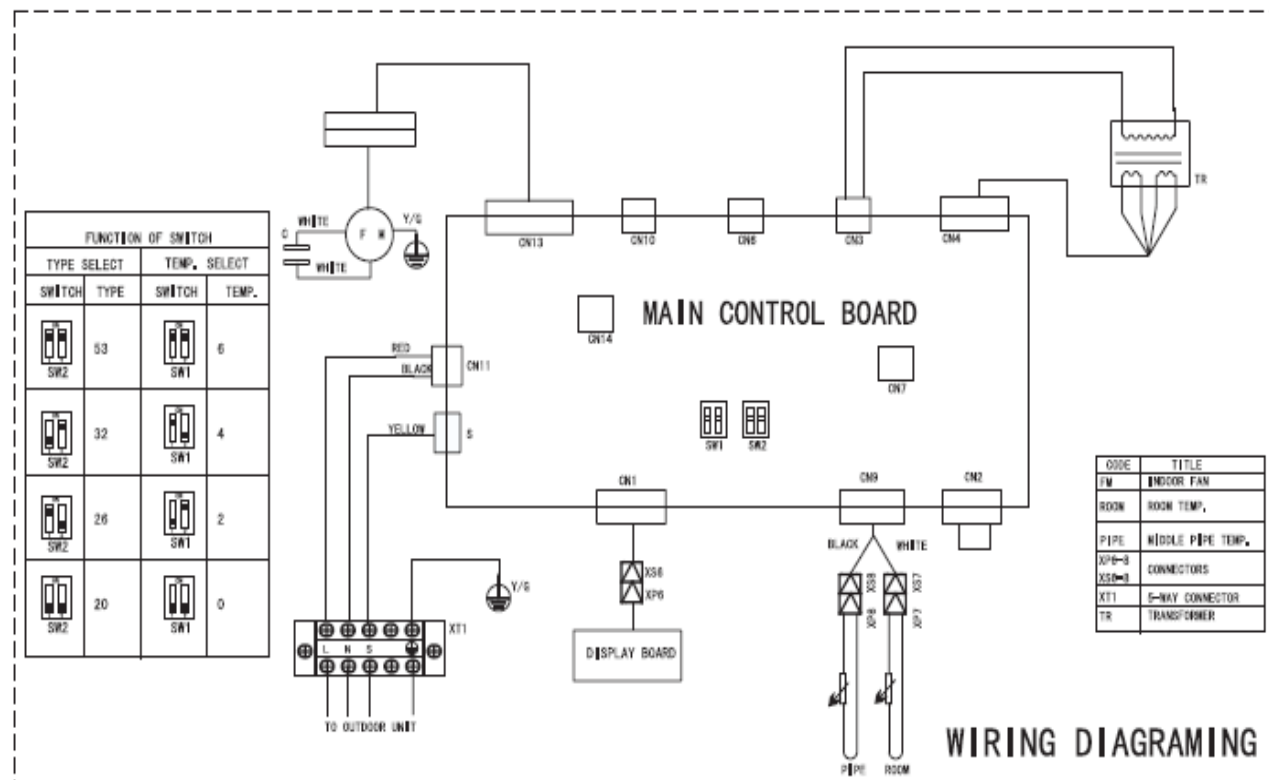


#### 4. Service Space



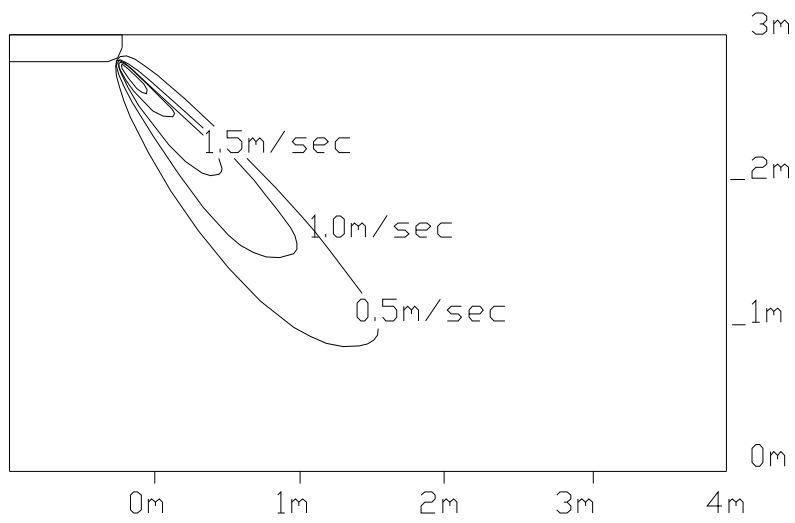
## 5. Wiring Diagrams

### MST2I-07HRIN1/MST2I-09HRIN1/MST2I-12HRIN1/MST2I-18HRIN1

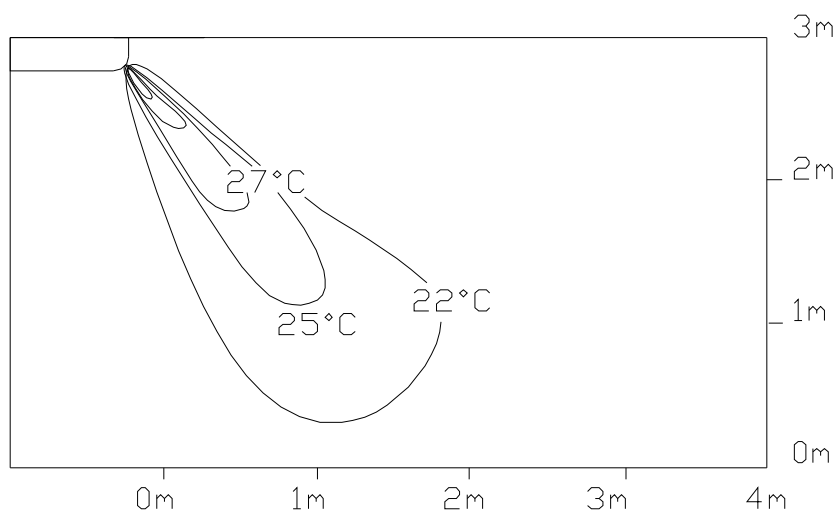


**6. Air Velocity and Temperature Distributions (Reference Data)****Discharge angle 60°**

Airflow velocity



Temperature



## 7. Electric Characteristics

| Model         | Indoor Unit |         |      |      | Power Supply |     | Indoor fan motor |      |
|---------------|-------------|---------|------|------|--------------|-----|------------------|------|
|               | Hz          | Voltage | Min. | Max. | MCA          | MFA | kW               | FLA  |
| MST2I-07HRIN1 | 50          | 220~240 | 198  | 254  | 0.2125       | 16  | 0.02             | 0.17 |
| MST2I-09HRIN1 | 50          | 220~240 | 198  | 254  | 0.2125       | 16  | 0.02             | 0.17 |
| MST2I-12HRIN1 | 50          | 220~240 | 198  | 254  | 0.2125       | 16  | 0.02             | 0.17 |
| MST2I-18HRIN1 | 50          | 220~240 | 198  | 254  | 0.325        | 16  | 0.02             | 0.26 |

### Remark:

MCA: Min. Current Amps. (A)

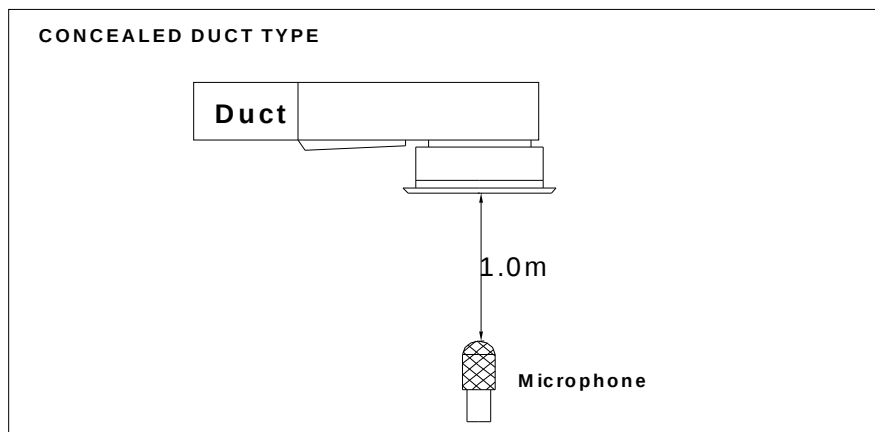
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM:Indoor Fan Motor

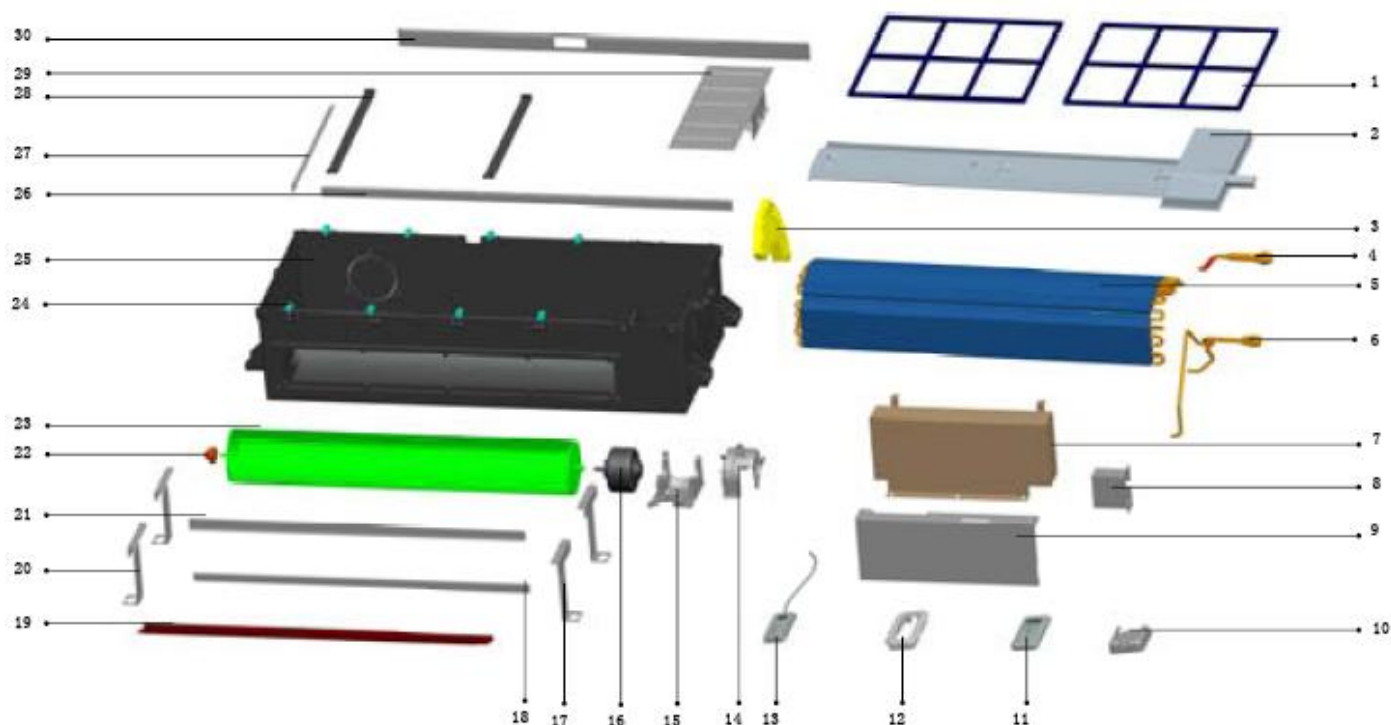
## 8. Sound Levels



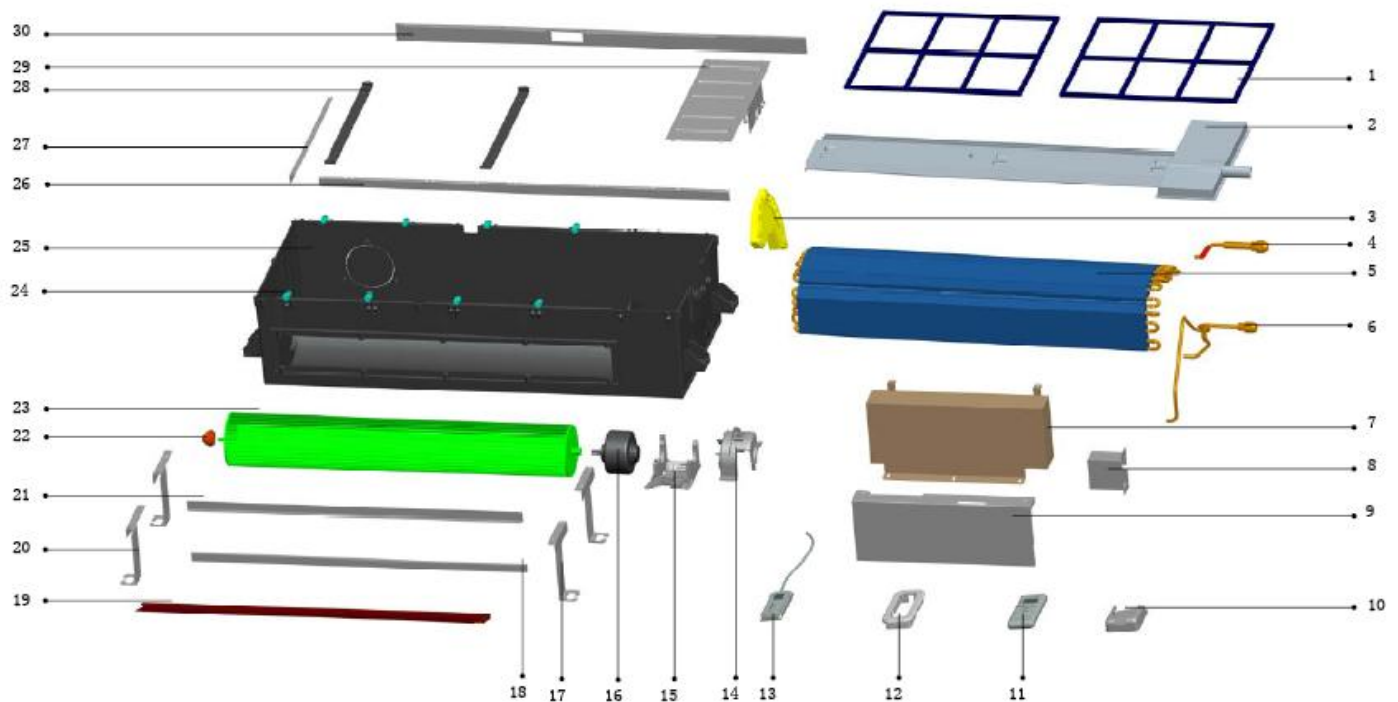
| Model         | Noise level dB(A) |
|---------------|-------------------|
|               | High speed        |
| MST2I-07HRIN1 | 39                |
| MST2I-09HRIN1 | 39                |
| MST2I-12HRIN1 | 39                |
| MST2I-18HRIN1 | 41                |

## 9. Exploded View

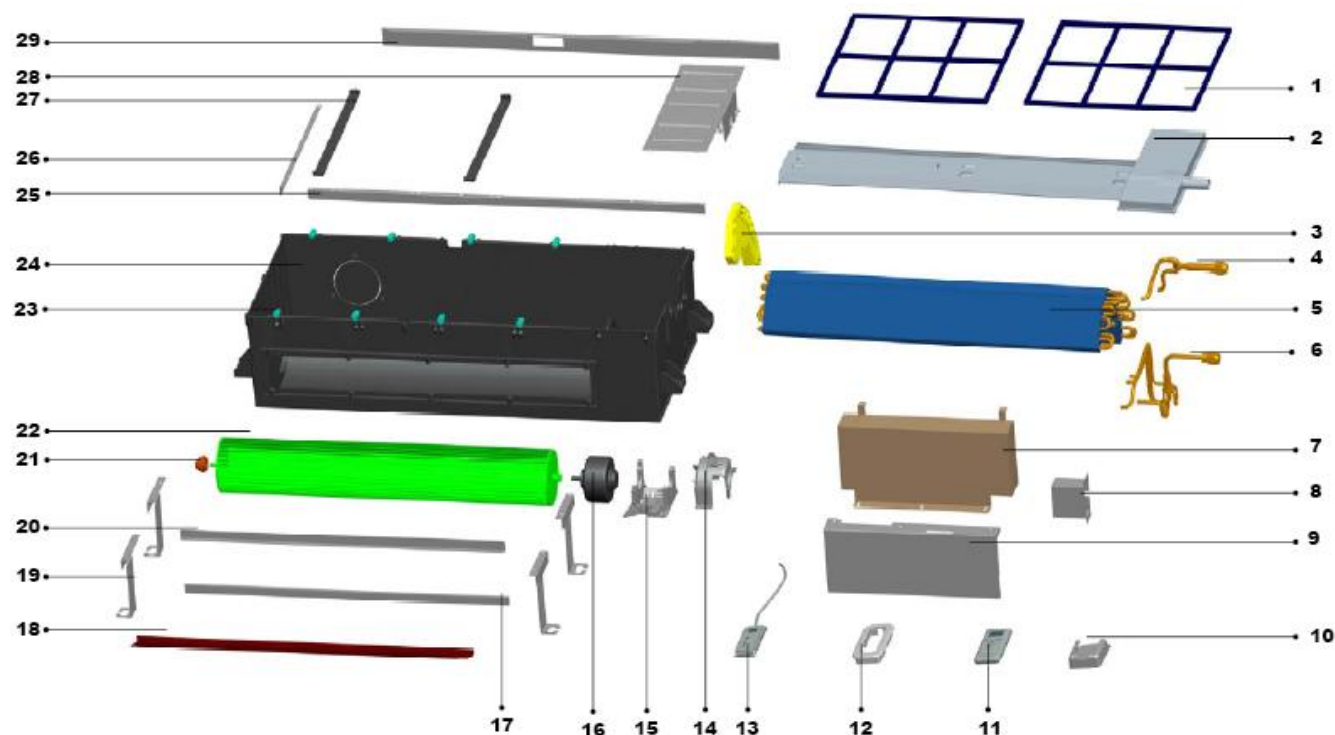
### MST2I-07HRIN1



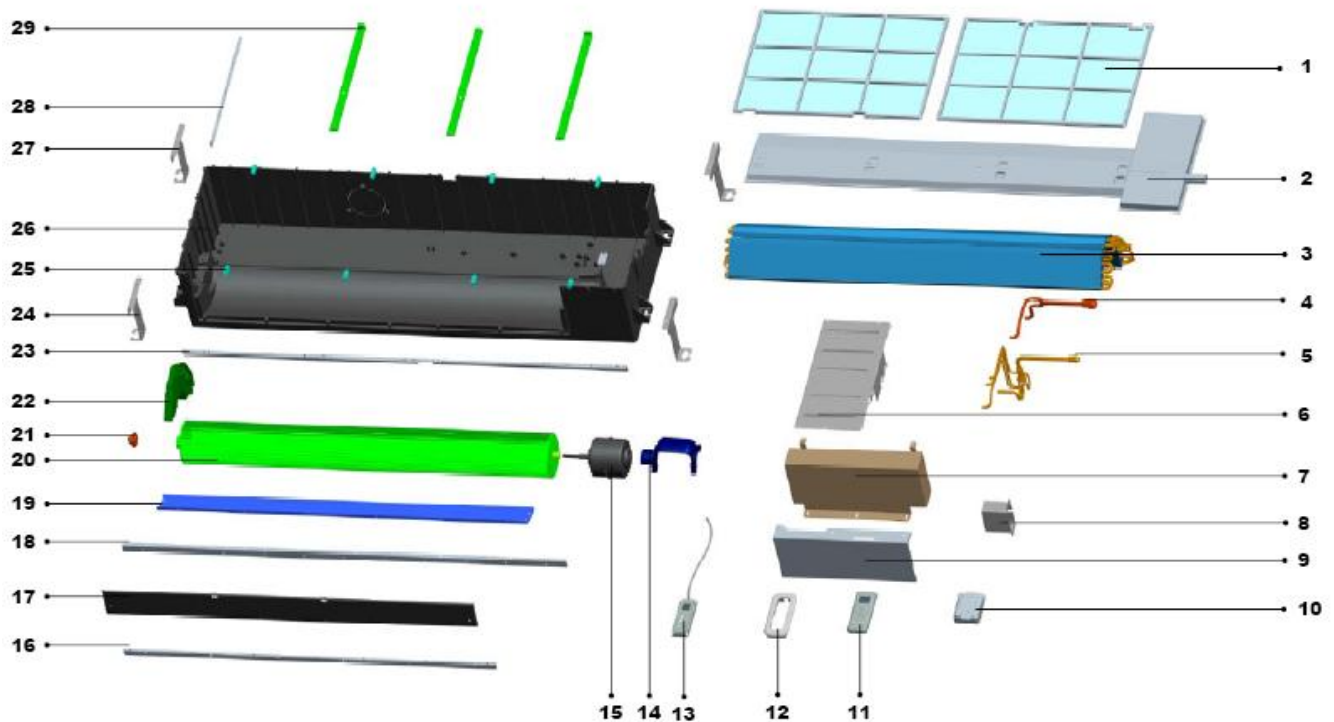
| No. | Part Name                                  | nos | No. | Part Name                    | nos |
|-----|--------------------------------------------|-----|-----|------------------------------|-----|
| 1   | filter                                     | 2   | 13  | display board subassembly    | 1   |
| 2   | drip tray                                  | 1   | 14  | motor cover                  | 1   |
| 3   | left bracket, evaporator                   | 1   | 15  | motor base                   | 1   |
| 4   | gas output pipe, evaporator, subassembly   | 1   | 16  | motor                        | 1   |
| 4.1 | copper nut                                 | 1   | 17  | bracket I, wind inlet case   | 2   |
| 4.2 | Temp. sensor                               | 1   | 18  | bracket, wind outlet case    | 1   |
| 5.1 | evaporator subassembly I                   | 1   | 19  | scroll subassembly           | 1   |
| 5.2 | evaporator subassembly II                  | 1   | 20  | bracket II, wind inlet case  | 2   |
| 6   | liquid input pipe, evaporator, subassembly | 1   | 21  | bracket 2, wind outlet case  | 1   |
| 6.1 | copper nut                                 | 1   | 22  | bearing base                 | 1   |
| 7   | electronic control box assembly            | 1   | 23  | cross flow fan               | 1   |
| 7.1 | electric control box subassembly           | 1   | 24  | press block, filter          | 8   |
| 7.2 | transformer                                | 1   | 25  | chassis                      | 1   |
| 7.3 | main controller subassembly                | 1   | 26  | bracket I, wind inlet case   | 1   |
| 8   | capacitor box                              | 1   | 27  | bracket III, wind inlet case | 1   |
| 8.1 | fan motor capacitor                        | 1   | 28  | press bar, drip tray         | 2   |
| 9   | cover, electric control box                | 1   | 29  | protection cover, drip tray  | 1   |
| 10  | bracket, remote controller                 | 1   | 30  | bracket III, wind inlet case | 1   |
| 11  | remote controller                          | 1   | 31  | Room Temp. sensor            | 1   |
| 12  | installation box, receiver module          | 1   |     |                              | 1   |

**MST2I-09HRIN1**

| No. | Part Name                                  | Quantity | No. | Part Name                    | Quantity |
|-----|--------------------------------------------|----------|-----|------------------------------|----------|
| 1   | filter                                     | 2        | 13  | display board subassembly    | 1        |
| 2   | drip tray                                  | 1        | 14  | motor cover                  | 1        |
| 3   | left bracket, evaporator                   | 1        | 15  | motor base                   | 1        |
| 4   | gas output pipe, evaporator, subassembly   | 1        | 16  | motor                        | 1        |
| 4.1 | copper nut                                 | 1        | 17  | bracket I, wind inlet case   | 2        |
| 4.2 | Temp. sensor                               | 1        | 18  | bracket, wind outlet case    | 1        |
| 5.1 | evaporator subassembly I                   | 1        | 19  | scroll subassembly           | 1        |
| 5.2 | evaporator subassembly II                  | 1        | 20  | bracket II, wind inlet case  | 2        |
| 6   | liquid input pipe, evaporator, subassembly | 1        | 21  | bracket 2, wind outlet case  | 1        |
| 6.1 | copper nut                                 | 1        | 22  | bearing base                 | 1        |
| 7   | electronic control box assembly            | 1        | 23  | cross flow fan               | 1        |
| 7.1 | electric control box subassembly           | 1        | 24  | press block, filter          | 8        |
| 7.2 | transformer                                | 1        | 25  | chassis                      | 1        |
| 7.3 | main controller subassembly                | 1        | 26  | bracket I, wind inlet case   | 1        |
| 8   | capacitor box                              | 1        | 27  | bracket III, wind inlet case | 1        |
| 8.1 | fan motor capacitor                        | 1        | 28  | press bar, drip tray         | 2        |
| 9   | cover, electric control box                | 1        | 29  | protection cover, drip tray  | 1        |
| 10  | bracket, remote controller                 | 1        | 30  | bracket III, wind inlet case | 1        |
| 11  | remote controller                          | 1        | 31  | Room Temp. sensor            | 1        |
| 12  | installation box, receiver module          | 1        |     |                              | 1        |

**MST2I-12HRIN1**

| No. | Part Name                                  | Quantity | No. | Part Name                    | Quantity |
|-----|--------------------------------------------|----------|-----|------------------------------|----------|
| 1   | filter                                     | 2        | 13  | display board subassembly    | 1        |
| 2   | drip tray                                  | 1        | 14  | motor cover                  | 1        |
| 3   | left bracket, evaporator                   | 1        | 15  | motor base                   | 1        |
| 4   | gas output pipe, evaporator, subassembly   | 1        | 16  | motor                        | 1        |
| 4.1 | copper nut                                 | 1        | 17  | bracket I, wind inlet case   | 2        |
| 4.2 | Temp. sensor                               | 1        | 18  | bracket, wind outlet case    | 1        |
| 5.1 | evaporator subassembly I                   | 1        | 19  | scroll subassembly           | 1        |
| 5.2 | evaporator subassembly II                  | 1        | 20  | bracket II, wind inlet case  | 2        |
| 6   | liquid input pipe, evaporator, subassembly | 1        | 21  | bracket 2, wind outlet case  | 1        |
| 6.1 | copper nut                                 | 1        | 22  | bearing base                 | 1        |
| 7   | electronic control box assembly            | 1        | 23  | cross flow fan               | 1        |
| 7.1 | electric control box subassembly           | 1        | 24  | press block, filter          | 8        |
| 7.2 | transformer                                | 1        | 25  | chassis                      | 1        |
| 7.3 | main controller subassembly                | 1        | 26  | bracket I, wind inlet case   | 1        |
| 8   | capacitor box                              | 1        | 27  | bracket III, wind inlet case | 1        |
| 8.1 | fan motor capacitor                        | 1        | 28  | press bar, drip tray         | 2        |
| 9   | cover, electric control box                | 1        | 29  | protection cover, drip tray  | 1        |
| 10  | bracket, remote controller                 | 1        | 30  | bracket III, wind inlet case | 1        |
| 11  | remote controller                          | 1        | 31  | Room Temp. sensor            | 1        |
| 12  | installation box, receiver module          | 1        |     |                              | 1        |

**MST2I-18HRIN1**

| No. | Part Name                                  | Quantity | No. | Part Name                    | Quantity |
|-----|--------------------------------------------|----------|-----|------------------------------|----------|
| 1   | filter                                     | 2        | 13  | display board subassembly    | 1        |
| 2   | drip tray                                  | 1        | 14  | motor cover                  | 1        |
| 3.1 | evaporator subassembly I                   | 1        | 15  | motor                        | 1        |
| 3.2 | evaporator subassembly II                  | 1        | 16  | bracket, wind outlet case    | 1        |
| 4   | gas output pipe, evaporator, subassembly   | 1        | 17  | bracket, wind outlet case    | 1        |
| 4.1 | copper nut                                 | 1        | 18  | bracket I, wind inlet case   | 1        |
| 5   | liquid input pipe, evaporator, subassembly | 1        | 19  | scroll subassembly           | 1        |
| 5.1 | copper nut                                 | 1        | 20  | cross flow fan               | 1        |
| 6   | protection cover, drip tray                | 1        | 21  | bearing base                 | 1        |
| 7   | electronic control box assembly            | 1        | 22  | left bracket, evaporator     | 1        |
| 7.1 | electric control box subassembly           | 1        | 23  | bracket III, wind inlet case | 1        |
| 7.2 | transformer                                | 1        | 24  | bracket I, wind inlet case   | 2        |
| 7.3 | main controller subassembly                | 1        | 25  | press block, filter          | 8        |
| 8   | capacitor box                              | 1        | 26  | chassis                      | 1        |
| 8.1 | fan motor capacitor                        | 1        | 27  | bracket II, wind inlet case  | 2        |
| 9   | cover, electric control box                | 1        | 28  | bracket III, wind inlet case | 1        |
| 10  | bracket, remote controller                 | 1        | 29  | press bar, drip tray         | 3        |
| 11  | remote controller                          | 1        | 30  | Temp. sensor                 | 1        |
| 12  | installation box, receiver module          | 1        | 31  | Room Temp. sensor            | 1        |

**10. Accessories**

| NO | Name                                         | Qty | Function                       |
|----|----------------------------------------------|-----|--------------------------------|
| 1  | Insulation pipe                              | 2   | Pipe joint heat insulation     |
| 2  | Remote controller                            | 1   | Remote control air conditioner |
| 3  | Big washer                                   | 8   | Overhang indoor unit           |
| 4  | Constriction bandage                         | 10  | Binding insulation pipe        |
| 5  | Water outlet joint (for cool/heat type only) | 1   | Outdoor unit drainage          |
| 6  | Gasket (for cool/heat type only)             | 1   | Outdoor unit drainage          |
| 7  | Copper nut                                   | 2   | Connecting pipe                |
| 8  | Drain hose                                   | 1   | Indoor unit drainage           |
| 9  | 7# Alkaline battery                          | 1   | _____                          |
| 10 | Remote signal receiver subassembly           | 1   | _____                          |
| 11 | Outdoor/indoor unit signal wire              | 1   | _____                          |

# Ceiling and Floor Type

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>1. Features.....</b>                                    | <b>74</b> |
| <b>2. Specification .....</b>                              | <b>75</b> |
| <b>3. Dimensions .....</b>                                 | <b>76</b> |
| <b>4. Service Space .....</b>                              | <b>77</b> |
| <b>5. Wiring Diagrams .....</b>                            | <b>78</b> |
| <b>6. Air Velocity and Temperature Distributions .....</b> | <b>79</b> |
| <b>7. Electric Characteristics.....</b>                    | <b>81</b> |
| <b>8. Sound Levels .....</b>                               | <b>82</b> |
| <b>9. Exploded View .....</b>                              | <b>83</b> |
| <b>10. Accessories.....</b>                                | <b>85</b> |

## 1. Features

### 1.1. New design, more modern and elegant appearance.

### 1.2. Convenient installation

- The ceiling type can be easily installed into a corner of the ceiling even if the ceiling is very narrow
- It is especially useful when installation of an air conditioner in the center of the ceiling is impossible due to a structure such as one lighting

### 1.3. Two direction auto swing (vertical & horizontal) and wide angle air flow

- Air flow directional control minimizes the air resistance and produces wider air flow to vertical direction.
- The range of horizontal air discharge is widened which secures wider air flow distribution to provide more comfortable air circulation no matter where the unit is set up



### 1.4. Three level fan speed, more humanism design, meets different air-supply requirement.

### 1.5. Water proof by utilizing the absorbing plastic film on water collector

### 1.6. Easy operation. Auto-restart function, remote control and optional wire control method.

### 1.7. Low noise level plus compact size

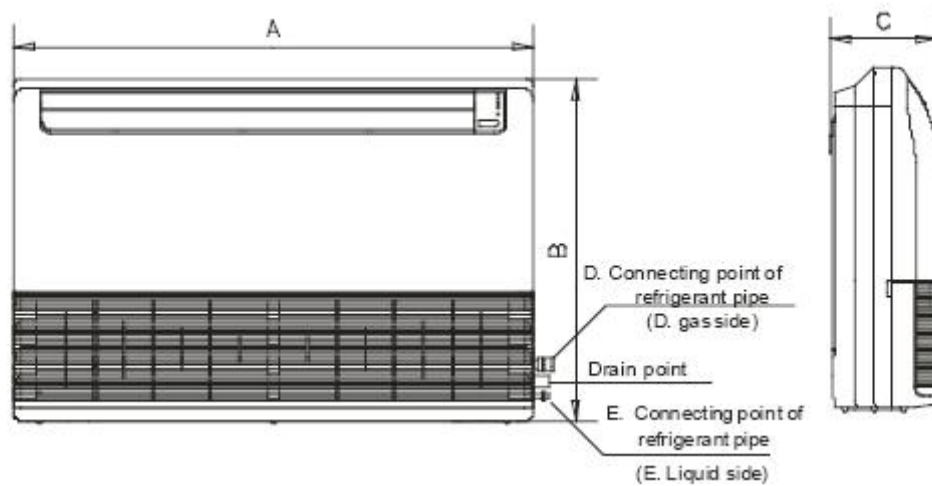
- Shape of the blades has been improved to prevent noise caused by turbulence.

## 2. Specification

| Sale Model                    |                                |                   | MSDLI-12HRIN1             | MSDLI-18HRIN1         |
|-------------------------------|--------------------------------|-------------------|---------------------------|-----------------------|
| Power supply                  |                                | V-ph-Hz           | 220~240-1-50              | 220~240-1-50          |
| Supply electricity type       |                                |                   | Outdoor unit supply power |                       |
| Cooling                       | Capacity                       | Btu/h             | 12000                     | 18000                 |
|                               | Input                          | W                 | 35                        | 35                    |
|                               | Rated current                  | A                 | 0.145                     | 0.145                 |
| Heating                       | Capacity                       | Btu/h             | 13500                     | 20000                 |
|                               | Input                          | W                 | 35                        | 35                    |
|                               | Rated current                  | A                 | 0.145                     | 0.145                 |
| Indoor motor fan              | Model                          |                   | YSK25-6L                  | YSK25-6L              |
|                               | Type                           |                   | AC motor                  | AC motor              |
|                               | Brand                          |                   | Welling                   | Welling               |
|                               | Input                          | W                 | 33.4/31.1/29.5            | 33.4/31.1/29.5        |
|                               | Capacitor                      | uF                | 1.2                       | 1.2                   |
|                               | Speed(hi/mi/lo)                | r/min             | 756/666/592               | 756/666/592           |
| Indoor coil                   | a.Number of rows               |                   | 2                         | 2                     |
|                               | b.Tube pitch(a)x row pitch(b)  | mm                | 25.4 x 22                 | 25.4 x 22             |
|                               | c.Fin spacing                  | mm                | 1.8                       | 1.8                   |
|                               | d.Fin type                     |                   | Hydrophilic aluminium     | Hydrophilic aluminium |
|                               | e.Tube outside dia.and type    | mm                | Φ9.53                     | Φ9.53                 |
|                               |                                |                   | Inner-groove tube         | Inner-groove tube     |
|                               | f.Coil length x height x width | mm                | 804x254x44                | 804x254x44            |
|                               | g.Number of circuits           |                   | 3                         | 3                     |
| Indoor air flow (Hi/Mi/Lo)    |                                | m <sup>3</sup> /h | 650/570/500               | 650/570/500           |
| Indoor noise level (Hi/Mi/Lo) |                                | dB(A)             | 39/38/36                  | 41/39/36              |
| Indoor unit                   | Dimension (W x H x D)          | mm                | 990 x 660 x 206           | 990 x 660 x 206       |
|                               | Packing (W x H x D)            | mm                | 1089 x 744 x 296          | 1089 x 744 x 296      |
|                               | Net/Gross weight               | kg                | 27/33                     | 27/33                 |
| Refrigerant Type              |                                |                   | R410A                     | R410A                 |
| Design pressure               |                                | MPa               | 4.2/2.5                   | 4.2/2.5               |
| Refrigerant pipe              | Liquid side/ Gas side          | mm                | Φ6.35/Φ12.7               | Φ6.35/Φ12.7           |
| Drainage water pipe dia.      |                                | mm                | Φ25                       | Φ25                   |
| Controller(standard)          |                                |                   | R11HG/E                   | R11HG/E               |
| Application area              |                                | m <sup>2</sup>    | 12~18                     | 20~30                 |

### 3. Dimensions

#### MSDLI-12HRIN1 MSDLI-18HRIN1

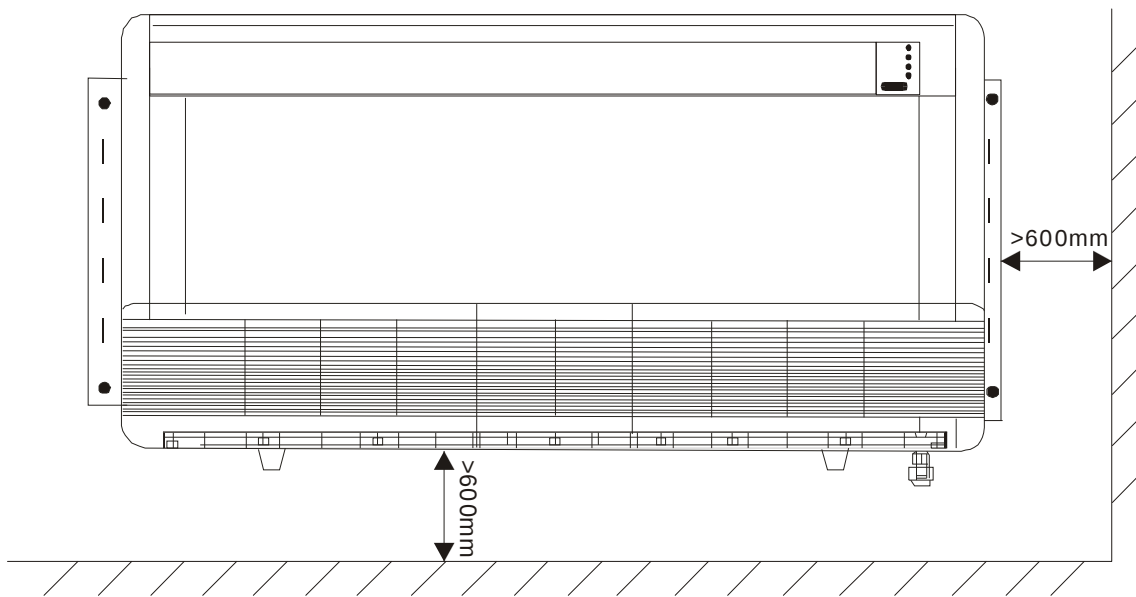


Unit: mm

| Mode \ Dimension | A   | B   | C   |
|------------------|-----|-----|-----|
| MSDLI-12HRIN1    | 990 | 660 | 206 |
| MSDLI-18HRIN1    | 990 | 660 | 206 |

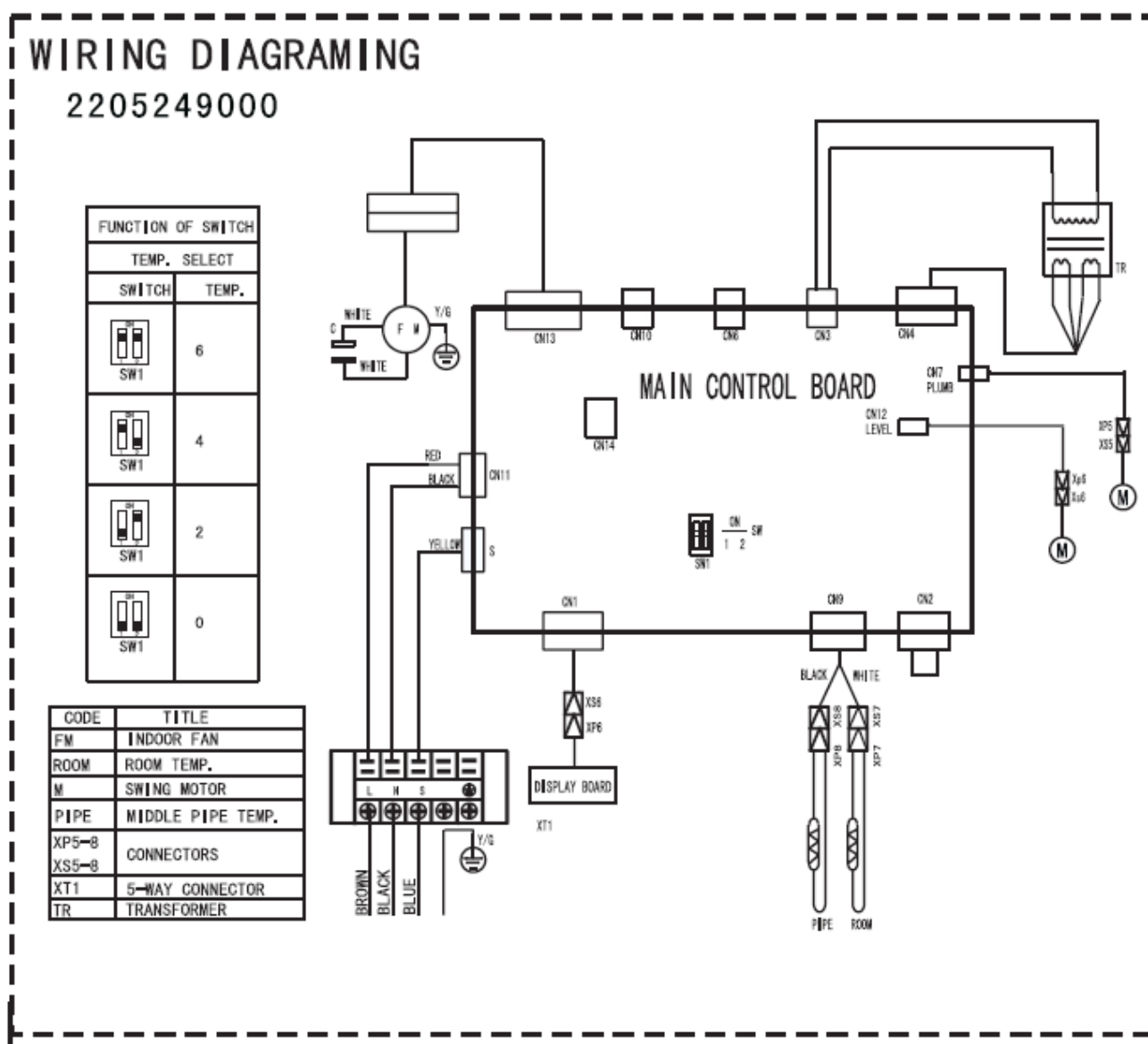
#### 4. Service Space

##### Ceiling type installation



## 5. Wiring Diagrams

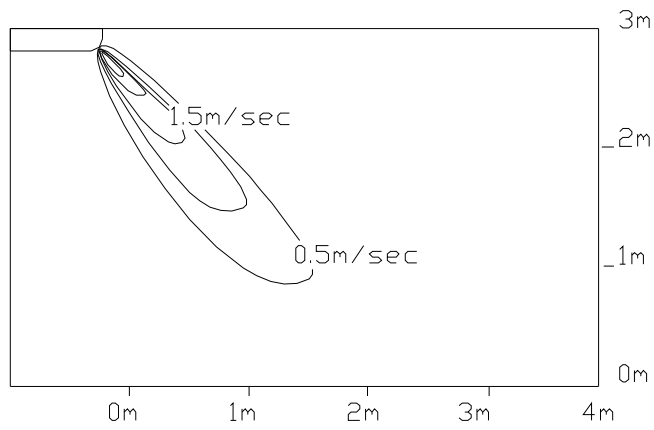
MSDLI-12HRIN1/MSDLI-18HRIN1



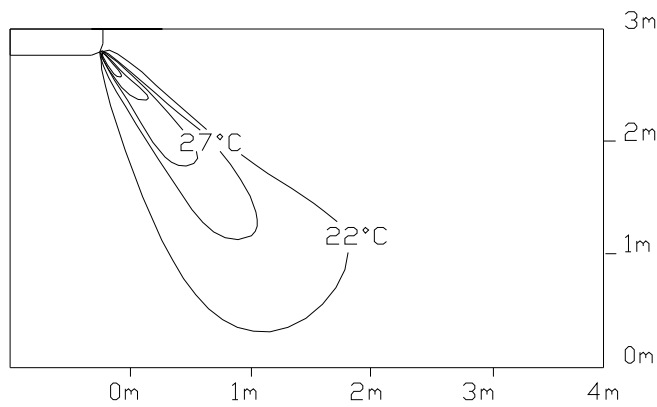
## 6. Air Velocity and Temperature Distributions

### Discharge angle 60° (CEILING)

Airflow velocity

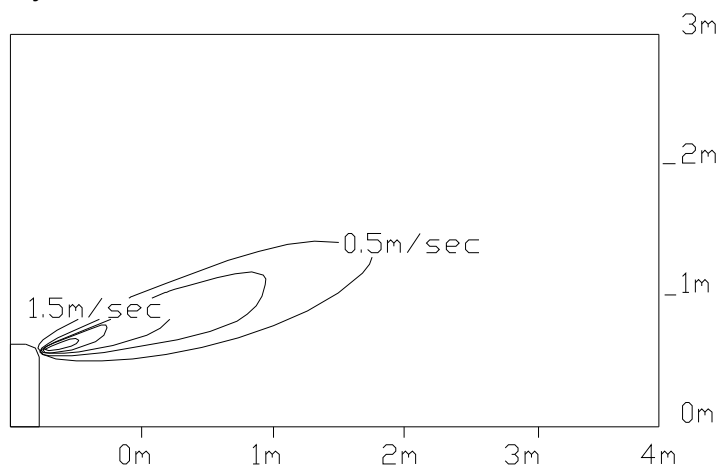


Temperature

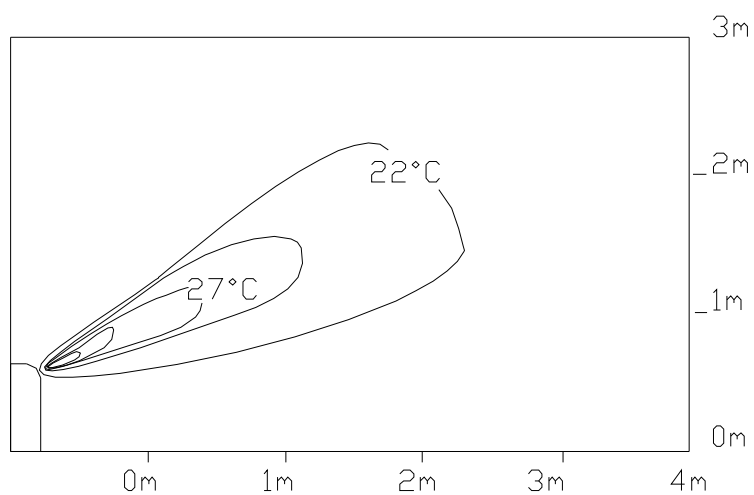


**Discharge angle 60° (FLOOR)**

Airflow velocity



Temperature



## 7. Electric Characteristics

| Model        | Units |         |      |      | Power Supply |     | IFM   |       |
|--------------|-------|---------|------|------|--------------|-----|-------|-------|
|              | Hz    | Voltage | Min. | Max. | MCA          | MFA | kW    | FLA   |
| MSDL-12HRDN1 | 50    | 220-240 | 198  | 254  | 0.18         | 16  | 0.034 | 0.145 |
| MSDL-18HRDN1 | 50    | 220-240 | 198  | 254  | 0.18         | 16  | 0.034 | 0.145 |

### Remark:

MCA: Min. Current Amps. (A)

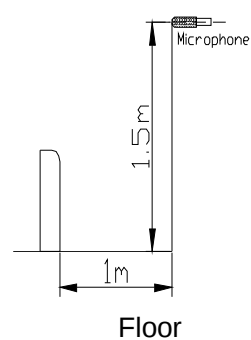
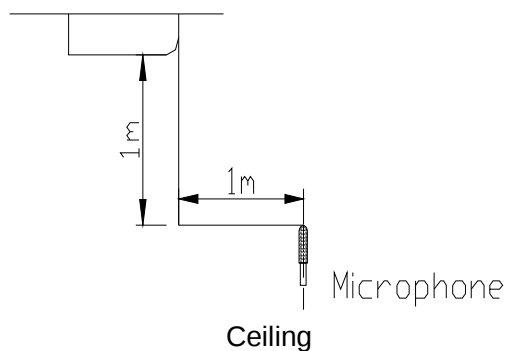
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM: Indoor Fan Motor

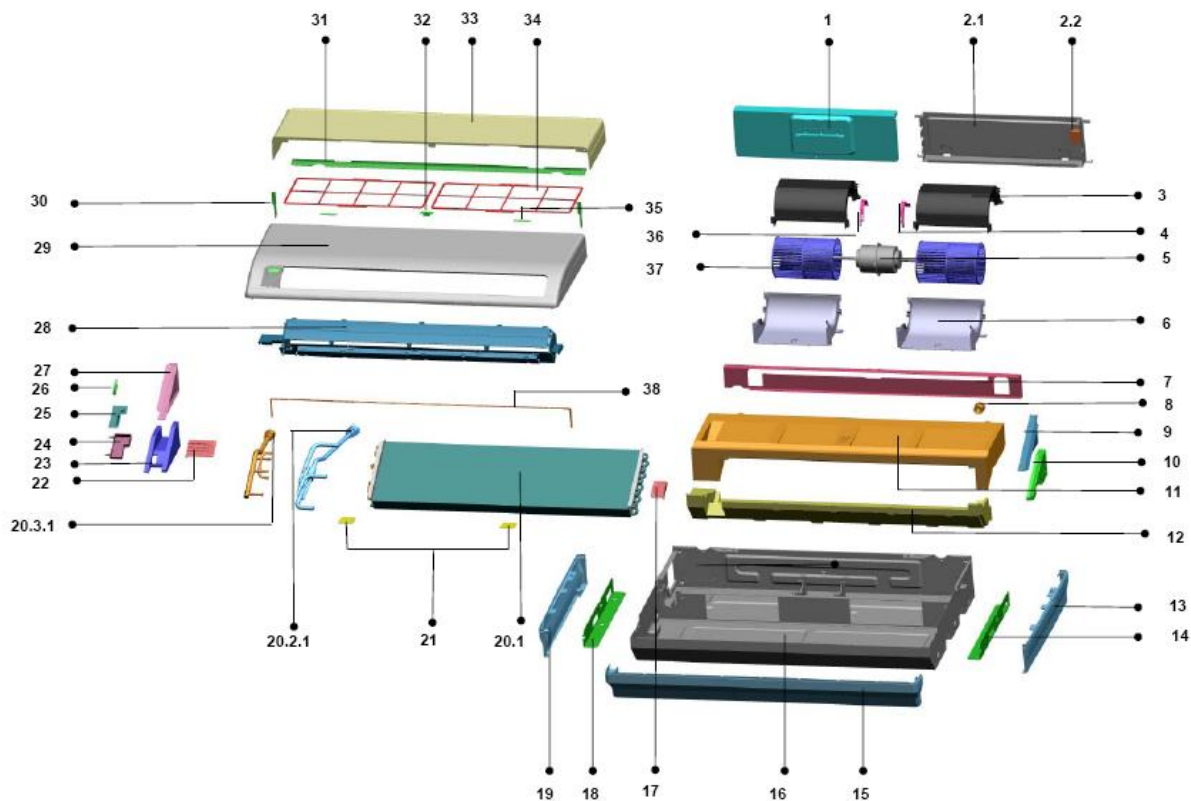
## 8. Sound Levels



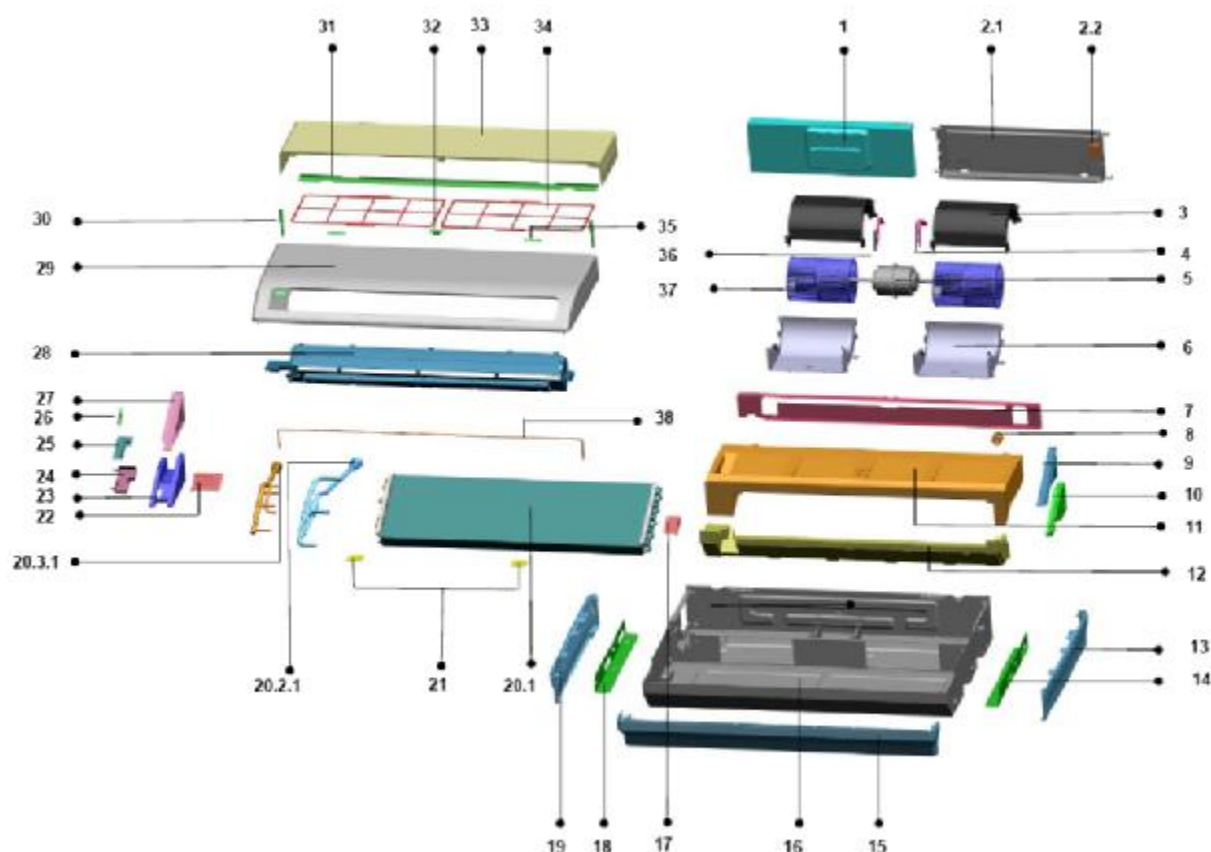
| Model         | Noise level dB(A) |
|---------------|-------------------|
|               | High speed        |
| MSDLI-12HRIN1 | 39                |
| MSDLI-18HRIN1 | 41                |

## 9. Exploded View

### MSDLI-12HRIN1



| No.  | Part Name                                   | nos | No.    | Part Name                                  | nos |
|------|---------------------------------------------|-----|--------|--------------------------------------------|-----|
| 1    | Cover for E-box                             | 1   | 20.2.1 | Copper nut                                 | 1   |
| 2    | Electric control assy subassembly           | 1   | 20.3   | Evaporator discharge pipe                  | 1   |
| 2.1  | E-Parts box                                 | 1   | 20.3.1 | Copper nut                                 | 1   |
| 2.2  | Motor capacitor                             | 1   | 21     | Installation clamp                         | 2   |
| 2.3  | Main controller subassembly                 | 1   | 22     | Left fixed board, evaporator               | 1   |
| 3    | Scroll-shell, up                            | 2   | 23     | Right frame holder, evaporator subassembly | 1   |
| 4    | Left fixing clamp for motor                 | 1   | 24     | Display panel box                          | 1   |
| 5    | A synchronism motor                         | 1   | 25     | Display board subassembly                  | 1   |
| 6    | Scroll-shell, down                          | 2   | 26     | Manual button                              | 1   |
| 7    | middle beam ,up                             | 1   | 27     | Left fixing board Evaporator               | 1   |
| 8    | Plastic cover                               | 1   | 28     | air outlet subassembly                     | 1   |
| 9    | Right fixing board of Evaporator            | 1   | 29     | Panel assembly                             | 1   |
| 10   | Left fixing board of Evaporator subassembly | 1   | 30     | Grille strip                               | 2   |
| 11   | Drip tray subassembly                       | 1   | 31     | Grille strengthening rib                   | 1   |
| 12   | Base pan frame assy subassembly             | 1   | 32     | Grille lock                                | 1   |
| 13   | Right cover board                           | 1   | 33     | Air inlet grille                           | 1   |
| 14   | Right installation board                    | 1   | 34     | Filter                                     | 2   |
| 15   | Base pan assembly                           | 1   | 35     | Clap for grille                            | 2   |
| 16   | Rear cover                                  | 1   | 36     | Right fixing clamp for motor               | 1   |
| 17   | Right fixed board, evaporator subassembly   | 1   | 37     | Fan                                        | 2   |
| 18   | Left installation board                     | 1   | 38     | Wiry holder for water collector            | 1   |
| 19   | Left cover                                  | 1   | 39     | Remote controller                          | 1   |
| 20   | Evaporator assembly                         | 1   | 40     | Holder                                     | 1   |
| 20.1 | Evaporator                                  | 1   | 41     | Room Temperature Sensor Ass'y subassembly  | 1   |
| 20.2 | Evaporator suction pipe                     | 1   | 42     | Evaporator temp sensor assembly            | 1   |

**MSDLI-18HRIN1**

| No.  | Part Name                                   | nos | No.    | Part Name                                  | nos |
|------|---------------------------------------------|-----|--------|--------------------------------------------|-----|
| 1    | Cover for E-box                             | 1   | 20.2.1 | Copper nut                                 | 1   |
| 2    | Electric control assy subassembly           | 1   | 20.3   | Evaporator discharge pipe                  | 1   |
| 2.1  | E-Parts box                                 | 1   | 20.3.1 | Copper nut                                 | 1   |
| 2.2  | Motor capacitor                             | 1   | 21     | Installation clamp                         | 1   |
| 2.3  | Main controller subassembly                 | 1   | 22     | Left fixed board, evaporator               | 1   |
| 3    | Scroll-shell, up                            | 2   | 23     | Right frame holder, evaporator subassembly | 1   |
| 4    | Left fixing clamp for motor                 | 1   | 24     | Display panel box                          | 1   |
| 5    | A synchronism motor                         | 1   | 25     | Display board subassembly                  | 1   |
| 6    | Scroll-shell, down                          | 2   | 26     | Manual button                              | 1   |
| 7    | middle beam ,up                             | 1   | 27     | Left fixing board of Evaporator            | 1   |
| 8    | Plastic cover                               | 1   | 28     | air outlet subassembly                     | 1   |
| 9    | Right fixing board Evaporator               | 1   | 29     | Panel assembly                             | 1   |
| 10   | Left fixing board of Evaporator subassembly | 1   | 30     | Grille strip                               | 2   |
| 11   | Drip tray subassembly                       | 1   | 31     | Grille strengthening rib                   | 1   |
| 12   | Base pan frame assy subassembly             | 1   | 32     | Grille lock                                | 1   |
| 13   | Right cover board                           | 1   | 33     | Air inlet grille                           | 1   |
| 14   | Right installation board                    | 1   | 34     | Filter                                     | 2   |
| 15   | Base pan assembly                           | 1   | 35     | Clap for grille                            | 2   |
| 16   | Rear cover                                  | 1   | 36     | Right fixing clamp for motor               | 1   |
| 17   | Right fixed board, evaporator subassembly   | 1   | 37     | Fan                                        | 2   |
| 18   | Left installation board                     |     | 38     | Wiry holder for water collector            | 1   |
| 19   | Left cover                                  |     | 39     | Remote controller                          | 1   |
| 20   | Evaporator assembly                         |     | 40     | Holder                                     | 1   |
| 20.1 | Evaporator                                  |     | 41     | Room Temperature Sensor Ass'y              | 1   |
| 20.2 | Evaporator suction pipe                     |     | 42     | Evaporator temp sensor assembly            | 1   |

**10. Accessories**

| NO | Name                | Qty. | Outline                                                                           | Usage                          |
|----|---------------------|------|-----------------------------------------------------------------------------------|--------------------------------|
| 1  | Owner's manual      | 1    | _____                                                                             | _____                          |
| 2  | Installation manual | 1    | (This manual)                                                                     | _____                          |
| 3  | Hook                | 2    |  | For wall mounting installation |
| 4  | Hanging arm         | 2    |  | For ceiling installation       |

**Remote controller & Its Frame**

I Remote controller.....1



I Frame.....1



I Mounting screw  
(ST2.9x10-C-H).....2



I Alkaline dry batteries(AM4)  
.....2



# Part 3

## Outdoor Units

|                                    |     |
|------------------------------------|-----|
| 1. Features .....                  | 87  |
| 2. Specifications .....            | 88  |
| 3. Dimensions .....                | 91  |
| 4. Service Space .....             | 92  |
| 5. Piping Diagrams .....           | 93  |
| 6. Wiring Diagrams .....           | 94  |
| 7. Combination capacity table..... | 96  |
| 8. Field Wiring .....              | 99  |
| 9. Electric Characteristics .....  | 100 |
| 10. Operation Limits .....         | 101 |
| 11. Sound Levels.....              | 103 |
| 12. Exploded View .....            | 104 |
| 13. Troubleshooting.....           | 108 |

## 1. Features

- 1.1 Outdoor machine tightly packed, the bigger building type also needs one set outdoors machine only; Can guarantee to construct the external appearance more simple and direct, and the gearing space need is small, don't affect the room to adopt the light
- 1.2 Compressor start steady the start electric current is small, using the interference of the electric appliances to the impact and others of the charged barbed wire net small

## 2. Specifications

### Outdoor Unit:

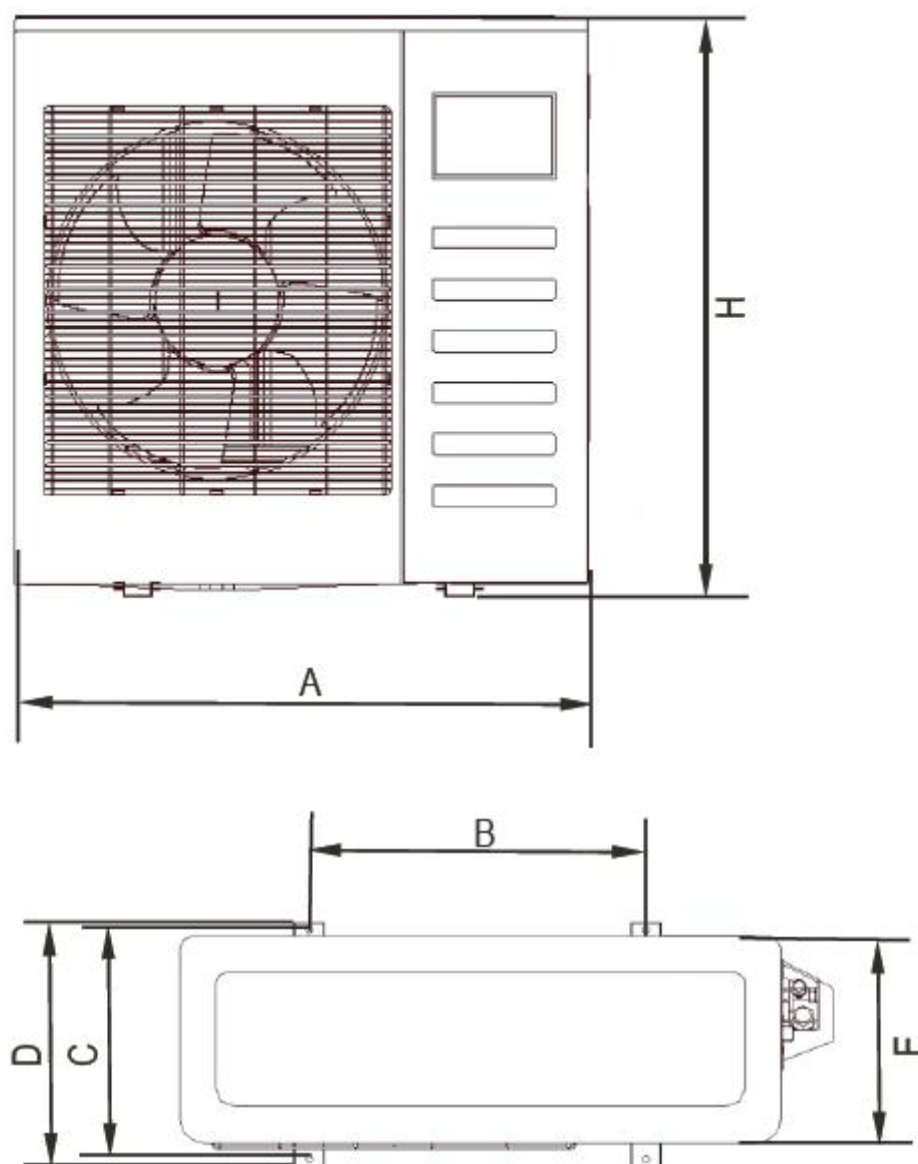
|                                                                   |                              |         |                                               |        |                           |             |       |
|-------------------------------------------------------------------|------------------------------|---------|-----------------------------------------------|--------|---------------------------|-------------|-------|
| Outdoor Model                                                     |                              |         | M2OA-18HRDN1                                  |        | 5.1.1.1.1.1.1M3OA-27HRDN1 |             |       |
| Power supply                                                      |                              | V-ph-Hz | 220~240-1-50                                  |        | 220~240-1-50              |             |       |
| Supply electricity type                                           |                              |         | Outdoor unit supply power                     |        |                           |             |       |
| Indoor Units Combination                                          |                              |         | Single                                        | Double | Single                    | Double      | Three |
| Cooling                                                           | Capacity                     | Btu/h   | 7000~12000                                    | 18000  | 7000~12000                | 16000~24000 | 27000 |
|                                                                   | Input                        | W       | 1000~1300                                     | 1644   | 1000~1300                 | 1800~2200   | 2465  |
|                                                                   | Rated current                | A       | 4.6~6.0                                       | 8.5    | 4.6~6.0                   | 10.5~13     | 13    |
| Heating                                                           | Capacity                     | Btu/h   | 10000~14000                                   | 21000  | 10000~14000               | 24000~27000 | 30000 |
|                                                                   | Input                        | W       | 1150~1450                                     | 1866   | 1150~1450                 | 1950~2300   | 2442  |
|                                                                   | Rated current                | A       | 5.3~6.7                                       | 9.0    | 5.8~7.6                   | 10~12.5     | 12.5  |
| Max. input consumption                                            |                              | W       | 2450                                          |        | 3200                      |             |       |
| Max. current                                                      |                              | A       | 14.5                                          |        | 19                        |             |       |
| Compressor                                                        | Model                        |         | JU1015D1                                      |        | JU1015D1                  |             |       |
|                                                                   | Type                         |         | ROTARY                                        |        | ROTARY                    |             |       |
|                                                                   | Brand                        |         | HITACHI                                       |        | HITACHI                   |             |       |
|                                                                   | Capacity                     | Btu/h   | 15250                                         |        | 15250                     |             |       |
|                                                                   | Input                        | W       | 1650                                          |        | 1650                      |             |       |
|                                                                   | Capacitor                    | uF      | 50                                            |        | 55                        |             |       |
|                                                                   | Refrigerant oil              | ml      | 460                                           |        | 460                       |             |       |
| Outdoor fan motor                                                 | Model                        |         | YDK53-6M                                      |        | YDK53-6M                  |             |       |
|                                                                   | Brand                        |         | Welling                                       |        | Welling                   |             |       |
|                                                                   | Input                        | W       | 143                                           |        | 143                       |             |       |
|                                                                   | Capacitor                    | uF      | 3                                             |        | 3                         |             |       |
|                                                                   | Speed                        | r/min   | 780                                           |        | 780                       |             |       |
| Outdoor coil                                                      | Number of rows               |         | 1                                             |        | 1                         |             |       |
|                                                                   | Tube pitch(a)x row pitch(b)  | mm      | 25.4×22                                       |        | 25.4×22                   |             |       |
|                                                                   | Fin spacing                  | mm      | 1.7                                           |        | 1.7                       |             |       |
|                                                                   | Fin type                     |         | Hydrophilic aluminium                         |        | Hydrophilic aluminium     |             |       |
|                                                                   | Tube outside dia. and type   | mm      | φ9.53 inner-groove tube                       |        | φ9.53 inner-groove tube   |             |       |
|                                                                   | Coil length x height x width | mm      | 766×660×44                                    |        | 766×660×44                |             |       |
|                                                                   | Number of circuits           |         | 4                                             |        | 4                         |             |       |
| Outdoor air flow                                                  |                              | m3/h    | 3000                                          |        | 3000                      |             |       |
| Outdoor noise level                                               |                              | dB(A)   | 58.5                                          |        | 59.5                      |             |       |
| Outdoor unit                                                      | Dimension(W x H x D)         | mm      | 845X695X335                                   |        | 845X695X335               |             |       |
|                                                                   | Packing (W x H x D)          | mm      | 965 x 772 x 399                               |        | 965 x 772 x 399           |             |       |
|                                                                   | Net/Gross weight             | kg      | 68/72                                         |        | 68/72                     |             |       |
| Refrigerant                                                       | type                         |         | R410A                                         |        | R410A                     |             |       |
|                                                                   | Charged volume               | g       | 2200                                          |        | 2280                      |             |       |
| Throttle type                                                     |                              |         | The electronics inflation valve and capillary |        |                           |             |       |
| Design pressure(Hi/Lo)                                            |                              | MPa     | 4.2/2.5                                       |        | 4.2/2.5                   |             |       |
| Refrigerant piping<br>(between each indoor unit and outdoor unit) | Liquid side/ Gas side        | mm      | Φ6.35/Φ9.53                                   |        | Φ6.35/Φ9.53               |             |       |
|                                                                   | Max. refrigerant pipe length | m       | 15                                            |        | 15                        |             |       |
|                                                                   | Max. difference in level     | m       | 10                                            |        | 10                        |             |       |
| Connection wiring                                                 | Power wiring                 | mm2     | 2.5 x 3 core                                  |        | 3.3                       |             |       |
|                                                                   | Signal wiring                | mm2     | 1                                             |        | 1                         |             |       |
| Ambient temp                                                      |                              | °C      | Cooling(17~43) Heating(-7~21)                 |        |                           |             |       |
| Application area                                                  |                              | m2      | 35-43                                         |        | 52-65                     |             |       |

| Outdoor Model                                                     |                              |                   | M2OB-18HRDN1                           |        |
|-------------------------------------------------------------------|------------------------------|-------------------|----------------------------------------|--------|
| Power supply                                                      |                              | V-ph-Hz           | 220~240-1-50                           |        |
| Supply electricity type                                           |                              |                   | Outdoor unit supply power              |        |
| Indoor Units Combination                                          |                              |                   | Single                                 | Double |
| Cooling                                                           | Capacity                     | Btu/h             | 7000~12000                             | 18000  |
|                                                                   | Input                        | W                 | 1000~1200                              | 1600   |
|                                                                   | Rated current                | A                 | 4.5~5.5                                | 7      |
| Heating                                                           | Capacity                     | Btu/h             | 10000~14000                            | 21000  |
|                                                                   | Input                        | W                 | 1050~1250                              | 1900   |
|                                                                   | Rated current                | A                 | 5.0~6.0                                | 8.5    |
| Max. input consumption                                            |                              | W                 | 1500                                   | 2150   |
| Max. current                                                      |                              | A                 | 7.5                                    | 10.5   |
| Compressor                                                        | Model                        |                   | C-6RVN93H0V                            |        |
|                                                                   | Type                         |                   | ROTARY                                 |        |
|                                                                   | Brand                        |                   | Sanyo                                  |        |
|                                                                   | Capacity                     | Btu/h             | 15430                                  |        |
|                                                                   | Input                        | W                 | 1470                                   |        |
|                                                                   | Rated current                | A                 | 9                                      |        |
|                                                                   | Refrigerant oil              | ml                | 350                                    |        |
| Outdoor fan motor                                                 | Model                        |                   | YDK53-6M                               |        |
|                                                                   | Brand                        |                   | Welling                                |        |
|                                                                   | Input                        | W                 | 143                                    |        |
|                                                                   | Capacitor                    | uF                | 3                                      |        |
|                                                                   | Speed                        | r/min             | 780                                    |        |
| Outdoor coil                                                      | Number of rows               |                   | 2                                      |        |
|                                                                   | Tube pitch(a)x row pitch(b)  | mm                | 25.4×22                                |        |
|                                                                   | Fin spacing                  | mm                | 1.7                                    |        |
|                                                                   | Fin type                     |                   | Hydrophilic aluminium                  |        |
|                                                                   | Tube outside dia. and type   | mm                | φ9.53 inner-groove tube                |        |
|                                                                   | Coil length x height x width | mm                | 766×660×44                             |        |
|                                                                   | Number of circuits           |                   | 4                                      |        |
| Outdoor air flow                                                  |                              | m <sup>3</sup> /h | 3000                                   |        |
| Outdoor noise level                                               |                              | dB(A)             | 53                                     |        |
| Outdoor unit                                                      | Dimension(W x H x D)         | mm                | 845X695X335                            |        |
|                                                                   | Packing (W x H x D)          | mm                | 965 x 772 x 399                        |        |
|                                                                   | Net/Gross weight             | kg                | 61/65                                  |        |
| Refrigerant                                                       | type                         |                   | R410A                                  |        |
|                                                                   | Charged volume               | g                 | 1800                                   |        |
| Throttle type                                                     |                              |                   | electric expansion valve and capillary |        |
| Design pressure(Hi/Lo)                                            |                              | MPa               | 4.2/2.5                                |        |
| Refrigerant piping<br>(between each indoor unit and outdoor unit) | Liquid side/ Gas side        | mm                | φ6.35/φ9.53                            |        |
|                                                                   | Max. refrigerant pipe length | m                 | 15                                     |        |
|                                                                   | Max. difference in level     | m                 | 10                                     |        |
| Connection wiring                                                 | Power wiring                 | mm <sup>2</sup>   | 2.5 x 3 cores                          |        |
|                                                                   | Signal wiring                | mm <sup>2</sup>   | 1                                      |        |
| Ambient temp                                                      |                              | °C                | Cooling(17~43) Heating(-7~21)          |        |
| Application area                                                  |                              | m <sup>2</sup>    | 35-43                                  |        |

| Sale Model                                                      |                              |                   | M40A-27HRDN1                               |             |             |       |
|-----------------------------------------------------------------|------------------------------|-------------------|--------------------------------------------|-------------|-------------|-------|
| Supply electricity type                                         |                              |                   | Outdoor unit supply power                  |             |             |       |
| Indoor Units Combination                                        |                              |                   | Single                                     | Twin        | Three       | Four  |
| Power supply                                                    |                              | V-ph-Hz           | 220-240-1-50                               |             |             |       |
| Cooling                                                         | Capacity                     | Btu/h             | 7000~18000                                 | 14000~24000 | 21000~26000 | 27000 |
|                                                                 | Input                        | W                 | 1334-1784                                  | 1730-2200   | 2234-2531   | 2529  |
|                                                                 | Rated current                | A                 | 5.8~7.8                                    | 7.5~10.7    | 9.7~12.1    | 11.0  |
| Heating                                                         | Capacity                     | Btu/h             | 9000~18000                                 | 16000~25000 | 21000~27000 | 28000 |
|                                                                 | Input                        | W                 | 1356-2103                                  | 1730-2653   | 2459-2869   | 2743  |
|                                                                 | Rated current                | A                 | 7.2~11                                     | 9.3~14.9    | 12.9~15.3   | 14.5  |
| Max. input consumption                                          |                              | W                 | 4800                                       |             |             |       |
| Max. current                                                    |                              | A                 | 21                                         |             |             |       |
| Compressor                                                      | Model                        |                   | TNB220FLBM1                                |             |             |       |
|                                                                 | Type                         |                   | rolling piston type rotary                 |             |             |       |
|                                                                 | Brand                        |                   | MITSUBISHI ELECTRIC                        |             |             |       |
|                                                                 | Capacity                     | Btu/h             | 24328                                      |             |             |       |
|                                                                 | Input                        | W                 | 2200                                       |             |             |       |
|                                                                 | Rated current                | A                 | 9.7                                        |             |             |       |
|                                                                 | Capacitor                    | uF                | 60                                         |             |             |       |
|                                                                 | Refrigerant oil              | ml                | MEL 56/670                                 |             |             |       |
| Outdoor fan motor                                               | Model                        |                   | YDK53-6Z                                   |             |             |       |
|                                                                 | Brand                        |                   | Welling                                    |             |             |       |
|                                                                 | Input                        | W                 | 141.5/92                                   |             |             |       |
|                                                                 | Capacitor                    | uF                | 3                                          |             |             |       |
|                                                                 | Speed(Hi/Lo)                 | r/min             | 815/550                                    |             |             |       |
| Outdoor coil                                                    | Number of rows               |                   | 1                                          |             |             |       |
|                                                                 | Tube pitch(a)x row pitch(b)  | mm                | 25.4X22                                    |             |             |       |
|                                                                 | Fin spacing                  | mm                | 1.5                                        |             |             |       |
|                                                                 | Fin type (code)              |                   | Hydrophilic aluminum                       |             |             |       |
|                                                                 | Tube outside dia. and type   | mm                | Φ9.53                                      |             |             |       |
|                                                                 |                              |                   | internal thread pipe                       |             |             |       |
|                                                                 | Coil length x height x width | mm                | 620 x 813 x 248                            |             |             |       |
|                                                                 | Number of circuits           |                   | 2                                          |             |             |       |
| Outdoor air flow                                                |                              | m <sup>3</sup> /h | 3500/                                      |             |             |       |
| Outdoor noise level                                             |                              | dB(A)             | 60.5                                       |             |             |       |
| Outdoor unit                                                    | Dimension(W x H x D)         | mm                | 968*858*355                                |             |             |       |
|                                                                 | Packing (W x H x D)          | mm                | 1043 x 915 x 395                           |             |             |       |
|                                                                 | Net/Gross weight             | kg                | 80/84                                      |             |             |       |
| Refrigerant                                                     | Type                         |                   | R410A                                      |             |             |       |
|                                                                 | Charged volume               | g                 | 2550                                       |             |             |       |
| Throttle type                                                   |                              |                   | The electric expansion valve and capillary |             |             |       |
| Design pressure                                                 |                              | MPa               | 4.2/2.5                                    |             |             |       |
| Refrigerant pipe<br>(between each indoor unit and outdoor unit) | Liquid side/ Gas side        | mm                | Φ6.35/Φ9.53                                |             |             |       |
|                                                                 | Max. refrigerant pipe length | m                 | 15                                         |             |             |       |
|                                                                 | Max. difference in level     | m                 | 10                                         |             |             |       |
| Connection wiring                                               | Power wiring                 | mm <sup>2</sup>   | 2.5 x 3 cores                              |             |             |       |
|                                                                 | Signal wiring                | mm <sup>2</sup>   | 1                                          |             |             |       |
| Ambient temp                                                    |                              | °C                | Cooling(-15~43) Heating(-7~21)             |             |             |       |
| Application area                                                |                              | m <sup>2</sup>    | 70~90                                      |             |             |       |

### 3. Dimensions

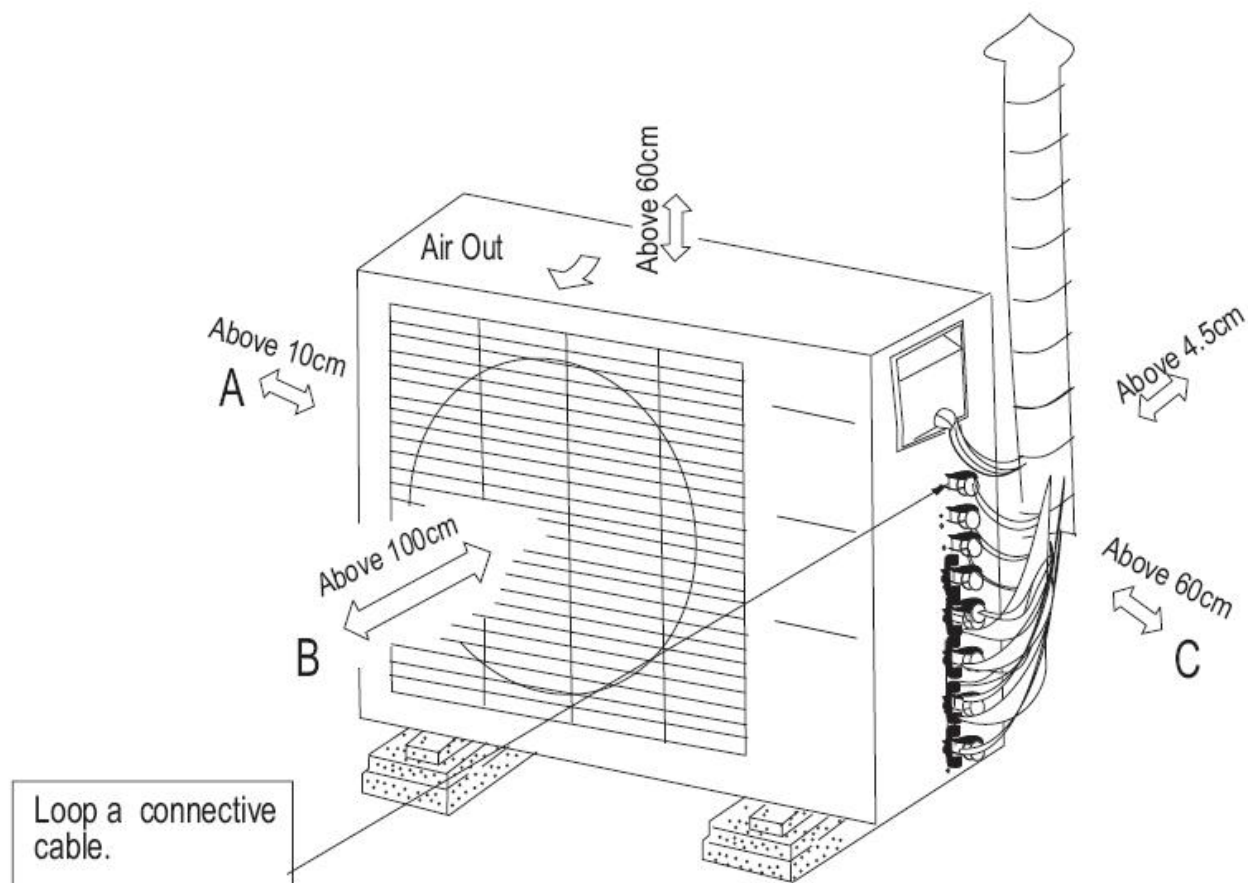
M2OA-18HRDN1, M2OB-18HRDN1, M3OA-27HRDN1, M4OA-27HRDN1



Unit: mm

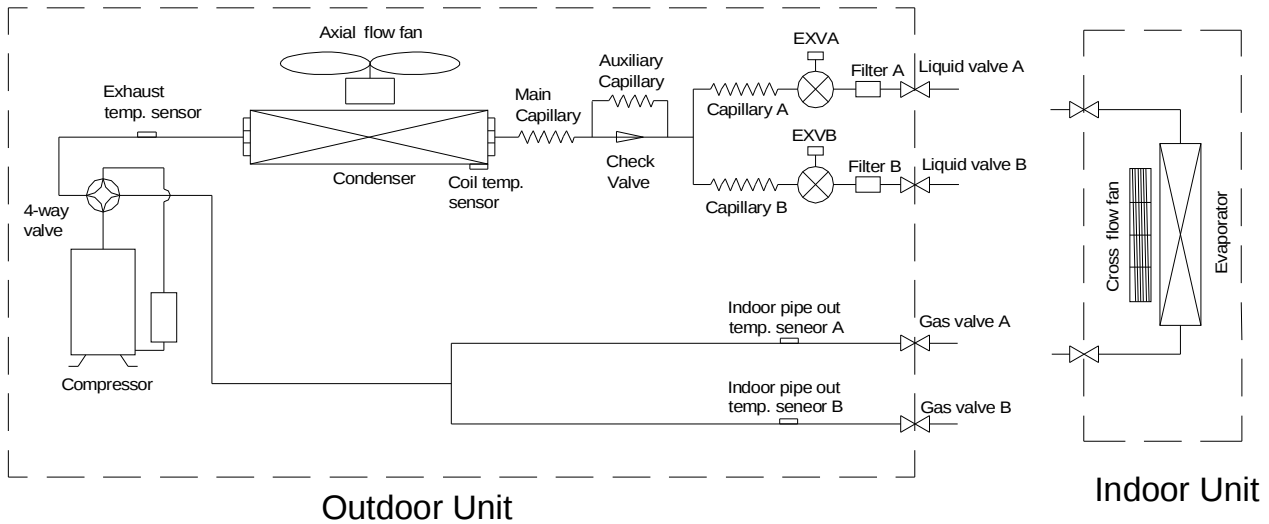
| MODEL        | A   | B   | C   | D   | E   | H   |
|--------------|-----|-----|-----|-----|-----|-----|
| M2OA-18HRDN1 | 845 | 560 | 335 | 355 | 315 | 695 |
| M2OB-18HRDN1 | 845 | 560 | 335 | 355 | 315 | 695 |
| M3OA-27HRDN1 | 845 | 560 | 335 | 355 | 315 | 695 |
| M4OA-27HRDN1 | 968 | 590 | 335 | 355 | 315 | 858 |

## 4. Service Space

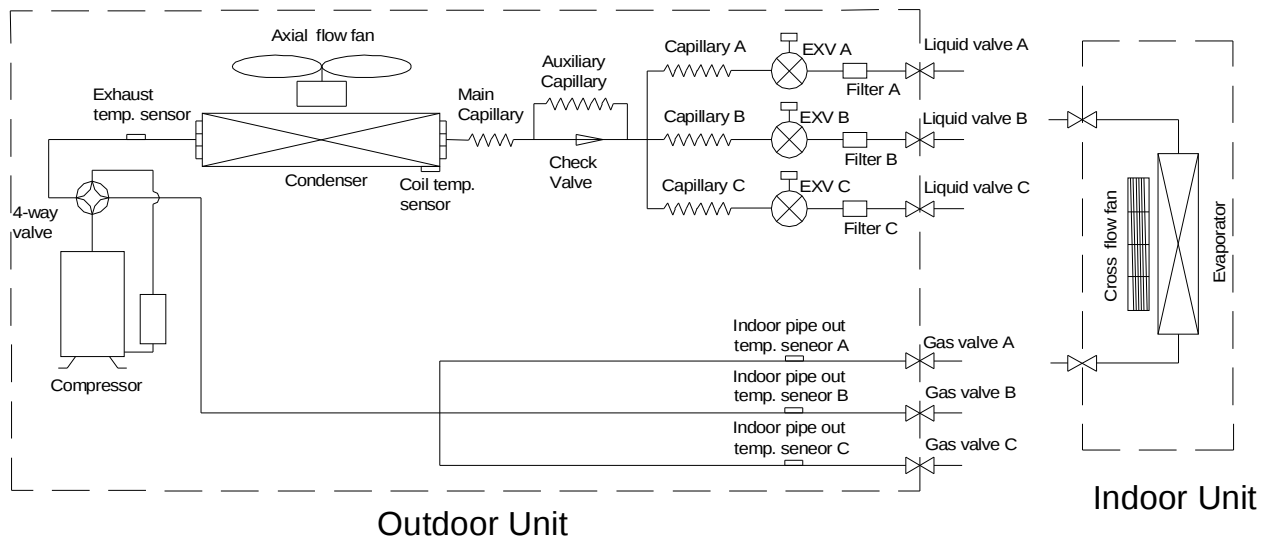


## 5. Piping Diagrams

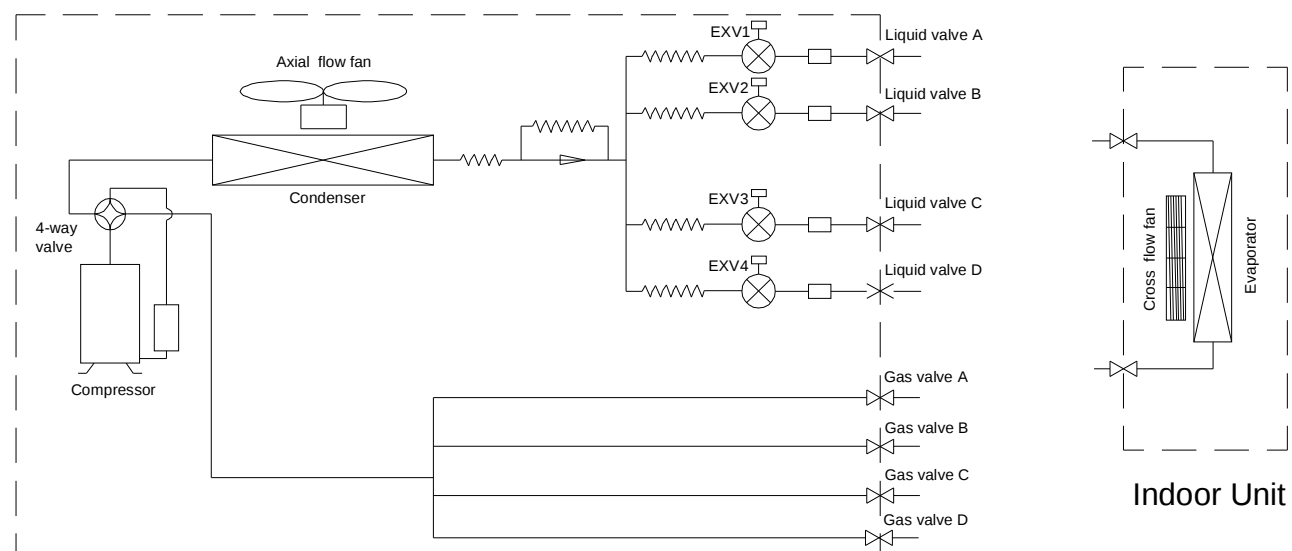
### M2OA-18HRDN1/M2OB-18HRDN1



### M3OA-27HRDN1

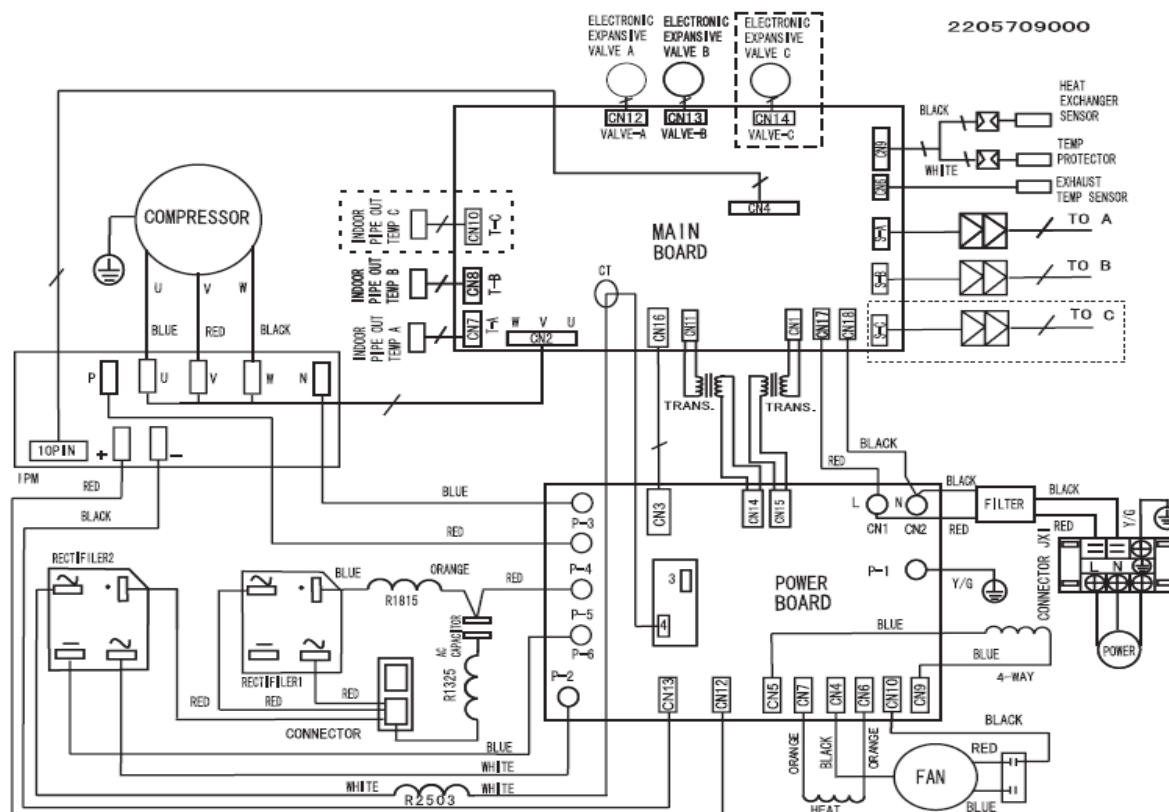


### M4OA-27HRDN1

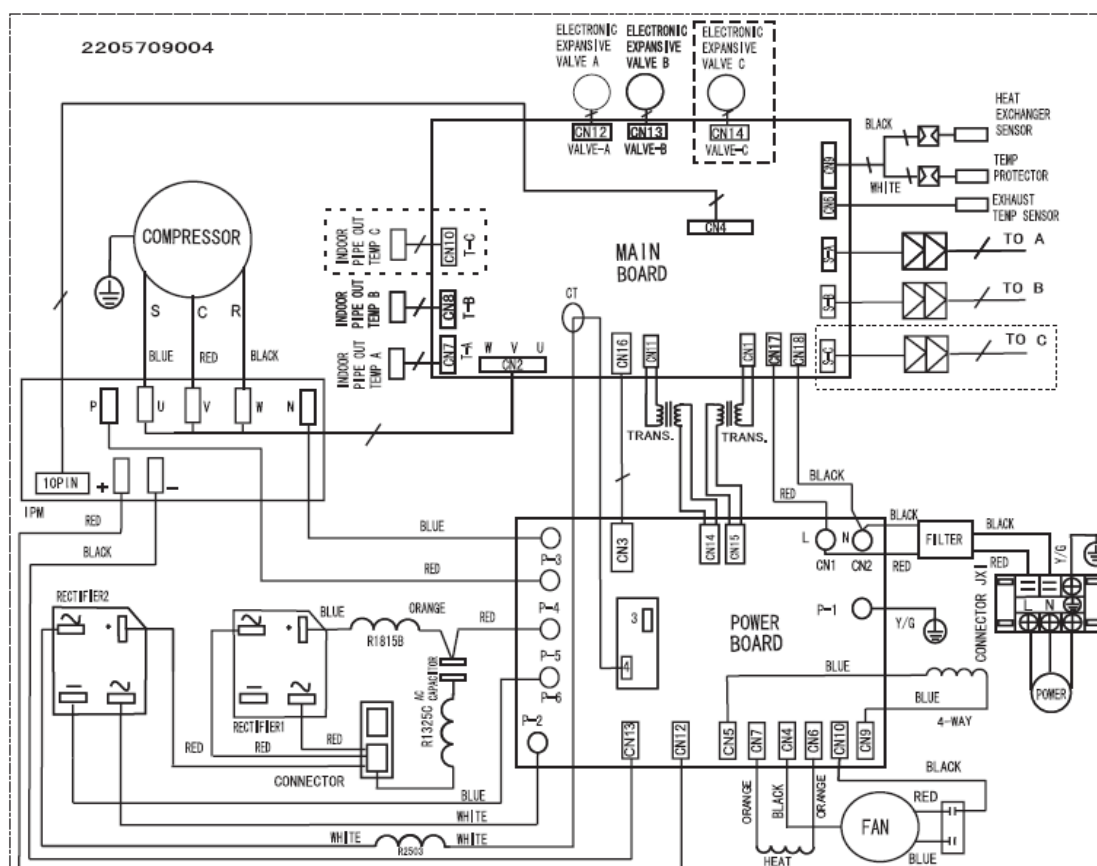


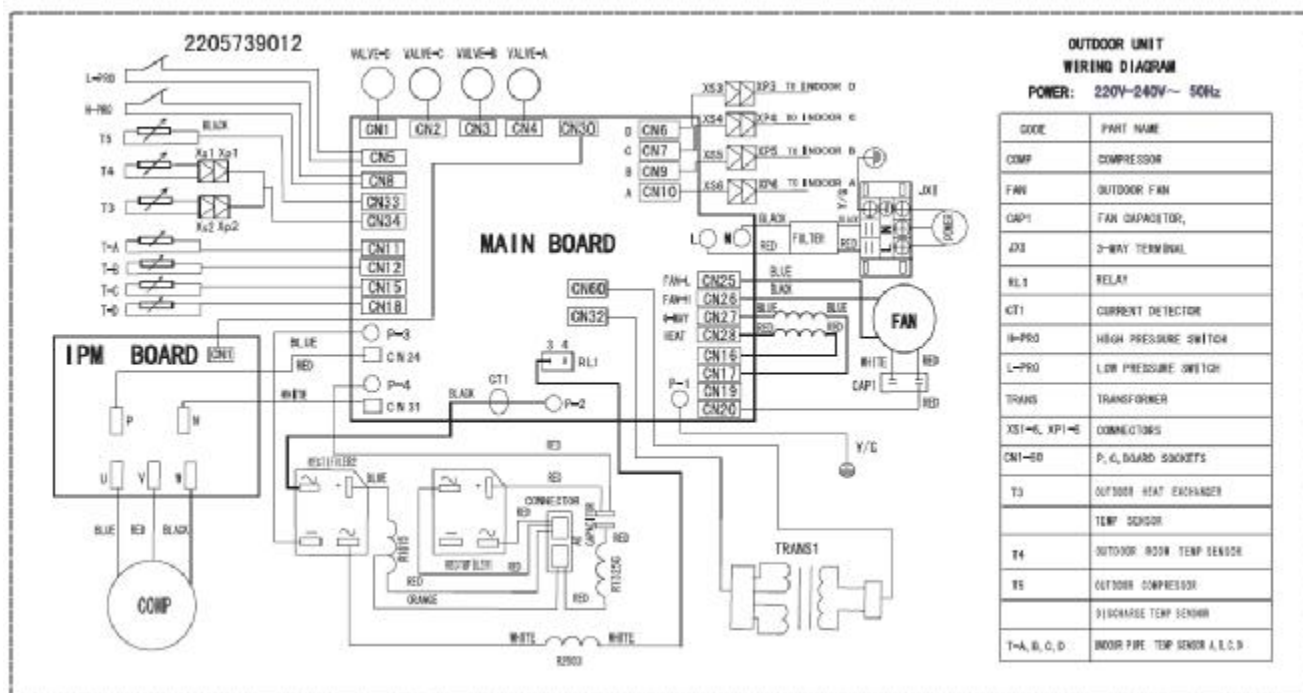
## 6. Wiring Diagrams

### M2OA-18HRDN1, M3OA-27HRDN1



### M2OB-18HRDN1



**M40A-27HRDN1**

## 7. Combination capacity table

### Cooling

| Comb.     | Combinations |           |           |           | Rated capacity(kW)<br>(Nom. cooling) |           |           |           | total cooling<br>capacity(kW) |               |              | total power input<br>(kW) |               |              | EER<br>(W/W)      | ENERGY<br>LABEL |
|-----------|--------------|-----------|-----------|-----------|--------------------------------------|-----------|-----------|-----------|-------------------------------|---------------|--------------|---------------------------|---------------|--------------|-------------------|-----------------|
|           | Unit<br>A    | Unit<br>B | Unit<br>C | Unit<br>D | Unit<br>A                            | Unit<br>B | Unit<br>C | Unit<br>D | min.<br>data                  | rated<br>data | max.<br>data | min.<br>data              | rated<br>data | max.<br>Data | rated<br>capacity |                 |
| BI (1x1)  | 7K           | —         | —         | —         | 2.05                                 | —         | —         | —         | 1.03                          | 2.05          | 3.08         | 0.25                      | 0.64          | 0.83         | 3.21              | A               |
|           | 9K           | —         | —         | —         | 2.64                                 | —         | —         | —         | 1.03                          | 2.64          | 3.56         | 0.35                      | 0.81          | 1.08         | 3.27              | A               |
|           | 12K          | —         | —         | —         | 3.52                                 | —         | —         | —         | 1.48                          | 3.52          | 4.71         | 0.47                      | 1.11          | 1.52         | 3.16              | B               |
| BI (1x2)  | 7k           | 7k        | —         | —         | 2.05                                 | 2.05      | —         | —         | 1.56                          | 4.10          | 5.42         | 0.48                      | 1.23          | 1.60         | 3.34              | A               |
|           | 7k           | 9k        | —         | —         | 2.05                                 | 2.64      | —         | —         | 1.78                          | 4.69          | 6.24         | 0.56                      | 1.43          | 1.93         | 3.29              | A               |
|           | 7k           | 12k       | —         | —         | 2.04                                 | 3.50      | —         | —         | 1.61                          | 5.54          | 6.92         | 0.54                      | 1.67          | 2.23         | 3.31              | A               |
|           | 9k           | 9k        | —         | —         | 2.64                                 | 2.64      | —         | —         | 1.95                          | 5.28          | 6.23         | 0.59                      | 1.59          | 2.01         | 3.32              | A               |
|           | 9k           | 12k       | —         | —         | 2.37                                 | 3.17      | —         | —         | 2.33                          | 5.54          | 6.65         | 0.71                      | 1.70          | 2.24         | 3.26              | A               |
|           | 12K          | 12k       | —         | —         | 2.77                                 | 2.77      | —         | —         | 1.94                          | 5.54          | 6.48         | 0.68                      | 1.80          | 2.35         | 3.08              | B               |
| TRI (1x1) | 7K           | —         | —         | —         | 2.05                                 | —         | —         | —         | 0.86                          | 2.05          | 2.91         | 0.25                      | 0.63          | 0.89         | 3.24              | A               |
|           | 9K           | —         | —         | —         | 2.64                                 | —         | —         | —         | 1.06                          | 2.64          | 3.48         | 0.34                      | 0.81          | 1.06         | 3.27              | A               |
|           | 12K          | —         | —         | —         | 3.52                                 | —         | —         | —         | 1.13                          | 3.52          | 4.75         | 0.38                      | 1.09          | 1.48         | 3.21              | A               |
| TRI (1x2) | 7k           | 7k        | —         | —         | 2.05                                 | 2.05      | —         | —         | 1.48                          | 4.10          | 5.40         | 0.48                      | 1.27          | 1.68         | 3.24              | A               |
|           | 7k           | 9k        | —         | —         | 2.05                                 | 2.64      | —         | —         | 1.59                          | 4.69          | 6.21         | 0.52                      | 1.44          | 1.92         | 3.26              | A               |
|           | 7k           | 12k       | —         | —         | 2.05                                 | 3.52      | —         | —         | 2.28                          | 5.57          | 7.30         | 0.68                      | 1.71          | 2.25         | 3.26              | A               |
|           | 9k           | 9k        | —         | —         | 2.64                                 | 2.64      | —         | —         | 1.69                          | 5.28          | 6.96         | 0.55                      | 1.62          | 2.22         | 3.25              | A               |
|           | 9k           | 12k       | —         | —         | 2.64                                 | 3.52      | —         | —         | 2.40                          | 6.15          | 8.00         | 0.76                      | 1.96          | 2.72         | 3.14              | B               |
|           | 12k          | 12k       | —         | —         | 3.52                                 | 3.52      | —         | —         | 2.74                          | 7.03          | 9.14         | 0.86                      | 2.21          | 2.94         | 3.19              | B               |
| TRI (1x3) | 7k           | 7k        | 7k        | —         | 2.05                                 | 2.05      | 2.05      | —         | 1.78                          | 6.15          | 7.58         | 0.63                      | 1.92          | 2.43         | 3.21              | A               |
|           | 7k           | 7k        | 9k        | —         | 2.05                                 | 2.05      | 2.64      | —         | 2.56                          | 6.74          | 9.03         | 0.79                      | 2.04          | 2.76         | 3.31              | A               |
|           | 7k           | 7k        | 12k       | —         | 2.05                                 | 2.05      | 3.52      | —         | 2.67                          | 7.62          | 10.17        | 0.89                      | 2.36          | 3.16         | 3.23              | A               |
|           | 7k           | 9k        | 9k        | —         | 2.04                                 | 2.62      | 3.49      | —         | 3.10                          | 8.15          | 10.11        | 0.87                      | 2.53          | 3.42         | 3.22              | A               |
|           | 7k           | 9k        | 12k       | —         | 2.05                                 | 2.64      | 2.64      | —         | 2.42                          | 7.33          | 9.82         | 0.78                      | 2.27          | 3.06         | 3.23              | A               |
|           | 7k           | 12k       | 12k       | —         | 1.84                                 | 3.16      | 3.16      | —         | 2.77                          | 8.15          | 10.60        | 0.93                      | 2.59          | 3.63         | 3.14              | B               |
|           | 9k           | 9k        | 9k        | —         | 2.64                                 | 2.64      | 2.64      | —         | 2.77                          | 7.91          | 10.40        | 0.83                      | 2.42          | 3.25         | 3.27              | A               |
|           | 9k           | 9k        | 12k       | —         | 2.45                                 | 2.45      | 3.26      | —         | 3.18                          | 8.15          | 11.09        | 1.05                      | 2.63          | 3.58         | 3.10              | B               |
| QUA (1x1) | 7K           | —         | —         | —         | 2.05                                 | —         | —         | —         | 0.84                          | 2.05          | 2.67         | 0.24                      | 0.63          | 0.88         | 3.24              | A               |
|           | 9K           | —         | —         | —         | 2.64                                 | —         | —         | —         | 1.01                          | 2.64          | 3.43         | 0.30                      | 0.77          | 1.06         | 3.41              | A               |
|           | 12K          | —         | —         | —         | 3.52                                 | —         | —         | —         | 1.29                          | 3.52          | 4.57         | 0.44                      | 1.01          | 1.36         | 3.47              | A               |
|           | 18K          | —         | —         | —         | 5.28                                 | —         | —         | —         | 2.00                          | 5.28          | 6.86         | 0.60                      | 1.63          | 2.16         | 3.25              | A               |
| QUA (1x2) | 7k           | 7k        | —         | —         | 2.05                                 | 2.05      | —         | —         | 1.64                          | 4.10          | 5.33         | 0.46                      | 1.18          | 1.67         | 3.48              | A               |
|           | 7k           | 9k        | —         | —         | 2.05                                 | 2.64      | —         | —         | 1.78                          | 4.69          | 6.10         | 0.56                      | 1.41          | 1.86         | 3.32              | A               |
|           | 7k           | 12k       | —         | —         | 2.05                                 | 3.52      | —         | —         | 2.16                          | 5.57          | 7.24         | 0.64                      | 1.71          | 2.23         | 3.25              | A               |
|           | 7k           | 18k       | —         | —         | 2.64                                 | 2.64      | —         | —         | 2.06                          | 5.28          | 6.86         | 0.63                      | 1.61          | 2.16         | 3.27              | A               |
|           | 9k           | 9k        | —         | —         | 2.64                                 | 3.52      | —         | —         | 1.83                          | 6.15          | 8.00         | 0.63                      | 1.91          | 2.64         | 3.22              | A               |
|           | 9k           | 12k       | —         | —         | 3.52                                 | 3.52      | —         | —         | 2.64                          | 7.03          | 9.14         | 0.82                      | 2.18          | 3.04         | 3.22              | A               |
|           | 9k           | 18k       | —         | —         | 5.28                                 | 2.05      | —         | —         | 2.78                          | 7.33          | 8.57         | 0.84                      | 2.23          | 2.94         | 3.29              | A               |
|           | 12k          | 12k       | —         | —         | 5.28                                 | 2.64      | —         | —         | 2.90                          | 7.91          | 10.29        | 1.02                      | 2.48          | 3.35         | 3.19              | B               |
|           | 12k          | 18k       | —         | —         | 4.89                                 | 3.26      | —         | —         | 3.26                          | 8.15          | 9.62         | 1.00                      | 2.57          | 3.42         | 3.17              | B               |
|           | 18k          | 18k       | —         | —         | 4.08                                 | 4.08      | —         | —         | 3.10                          | 8.15          | 10.19        | 0.93                      | 2.61          | 3.53         | 3.12              | B               |
| QUA (1x3) | 7k           | 7k        | 7k        | —         | 2.05                                 | 2.05      | 2.05      | —         | 2.49                          | 6.15          | 9.42         | 0.65                      | 1.86          | 2.55         | 3.31              | A               |
|           | 7k           | 7k        | 9k        | —         | 2.05                                 | 2.05      | 2.64      | —         | 2.56                          | 6.74          | 9.93         | 0.77                      | 2.06          | 2.70         | 3.28              | A               |
|           | 7k           | 7k        | 12k       | —         | 2.05                                 | 2.05      | 3.52      | —         | 2.52                          | 7.62          | 9.14         | 0.92                      | 2.35          | 3.18         | 3.24              | A               |
|           | 7k           | 7k        | 18k       | —         | 1.78                                 | 1.78      | 4.58      | —         | 3.17                          | 8.15          | 10.11        | 0.85                      | 2.49          | 3.32         | 3.28              | A               |
|           | 7k           | 9k        | 9k        | —         | 1.68                                 | 2.16      | 4.32      | —         | 2.60                          | 8.15          | 9.78         | 0.90                      | 2.46          | 3.35         | 3.32              | A               |
|           | 7k           | 9k        | 12k       | —         | 2.04                                 | 2.62      | 3.49      | —         | 2.52                          | 8.15          | 9.86         | 0.80                      | 2.47          | 3.30         | 3.30              | A               |
|           | 7k           | 9k        | 18k       | —         | 2.05                                 | 2.64      | 2.64      | —         | 3.07                          | 7.33          | 9.16         | 0.79                      | 2.30          | 3.16         | 3.19              | B               |
|           | 7k           | 12k       | 12k       | —         | 1.84                                 | 3.16      | 3.16      | —         | 2.57                          | 8.15          | 11.02        | 0.84                      | 2.49          | 3.35         | 3.27              | A               |
|           | 7k           | 12k       | 18k       | —         | 1.54                                 | 2.64      | 3.97      | —         | 3.17                          | 8.15          | 10.27        | 0.95                      | 2.56          | 3.56         | 3.18              | B               |

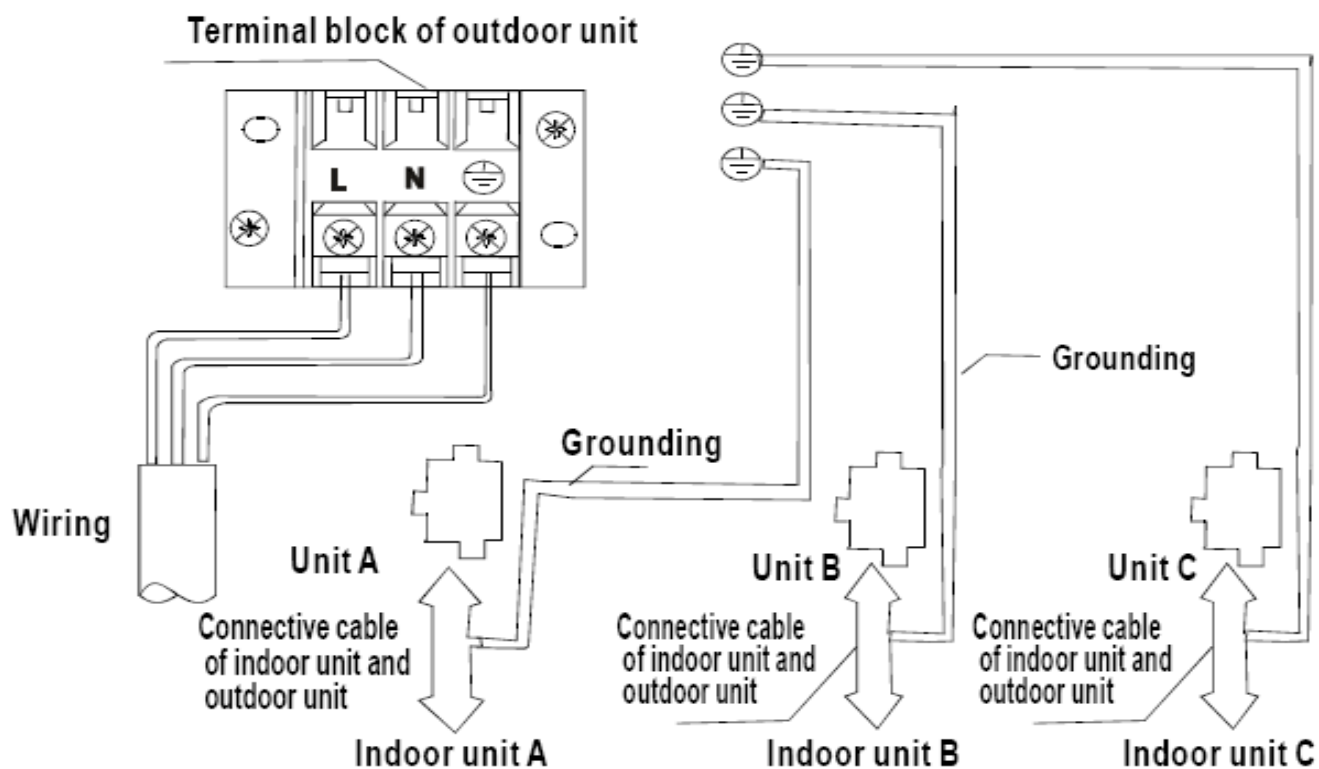
| Comb.    | Combinations |           |           |           | Rated capacity(kW)<br>(Nom. cooling) |           |           |           | total cooling<br>capacity(kW) |               |              | total power input<br>(kW) |               |              | EER<br>(W/W)      | ENERGY<br>LABEL |
|----------|--------------|-----------|-----------|-----------|--------------------------------------|-----------|-----------|-----------|-------------------------------|---------------|--------------|---------------------------|---------------|--------------|-------------------|-----------------|
|          | Unit<br>A    | Unit<br>B | Unit<br>C | Unit<br>D | Unit<br>A                            | Unit<br>B | Unit<br>C | Unit<br>D | min.<br>data                  | rated<br>data | max.<br>data | min.<br>data              | rated<br>data | max.<br>Data | rated<br>capacity |                 |
| Comb.    | 9k           | 9k        | 9k        | —         | 2.64                                 | 2.64      | 2.64      | —         | 2.56                          | 7.91          | 10.83        | 0.84                      | 2.43          | 3.24         | 3.26              | A               |
|          | 9k           | 9k        | 12k       | —         | 2.45                                 | 2.45      | 3.26      | —         | 2.62                          | 8.15          | 9.94         | 0.92                      | 2.54          | 3.52         | 3.21              | A               |
|          | 9k           | 9k        | 18k       | —         | 2.04                                 | 2.04      | 4.08      | —         | 3.18                          | 8.15          | 10.11        | 0.90                      | 2.58          | 3.61         | 3.16              | B               |
|          | 9k           | 12k       | 12k       | —         | 2.22                                 | 2.96      | 2.96      | —         | 2.83                          | 8.15          | 11.00        | 0.98                      | 2.53          | 3.38         | 3.22              | A               |
|          | 9k           | 12k       | 18k       | —         | 1.88                                 | 2.51      | 3.76      | —         | 3.45                          | 8.15          | 10.03        | 0.85                      | 2.52          | 3.47         | 3.23              | A               |
|          | 12k          | 12k       | 12k       | —         | 2.72                                 | 2.72      | 2.72      | —         | 3.07                          | 8.15          | 11.00        | 1.16                      | 2.58          | 3.48         | 3.16              | B               |
|          | 12k          | 12k       | 18k       | —         | 2.04                                 | 2.04      | 2.04      | —         | 3.07                          | 8.15          | 11.00        | 1.16                      | 2.58          | 3.48         | 3.16              | B               |
| QUA(1x4) | 7k           | 7k        | 7k        | 7k        | 2.04                                 | 2.04      | 2.04      | 2.04      | 2.70                          | 8.15          | 10.35        | 0.97                      | 2.48          | 3.28         | 3.29              | A               |
|          | 7k           | 7k        | 7k        | 9k        | 1.90                                 | 1.90      | 1.90      | 2.45      | 2.84                          | 8.15          | 10.27        | 0.95                      | 2.50          | 3.41         | 3.26              | A               |
|          | 7k           | 7k        | 7k        | 12k       | 1.73                                 | 1.73      | 1.73      | 2.96      | 3.04                          | 8.15          | 10.76        | 0.87                      | 2.52          | 3.49         | 3.24              | A               |
|          | 7k           | 7k        | 7k        | 18k       | 1.46                                 | 1.46      | 1.46      | 3.76      | 3.61                          | 8.15          | 10.92        | 0.94                      | 2.49          | 3.34         | 3.27              | A               |
|          | 7k           | 7k        | 9k        | 9k        | 1.78                                 | 1.78      | 2.29      | 2.29      | 3.05                          | 8.15          | 11.00        | 0.99                      | 2.48          | 3.41         | 3.29              | A               |
|          | 7k           | 7k        | 9k        | 12k       | 1.63                                 | 1.63      | 2.10      | 2.79      | 3.19                          | 8.15          | 11.17        | 0.95                      | 2.52          | 3.50         | 3.23              | A               |
|          | 7k           | 7k        | 12k       | 12k       | 1.50                                 | 1.50      | 2.57      | 2.57      | 3.32                          | 8.15          | 11.17        | 1.07                      | 2.56          | 3.45         | 3.19              | B               |
|          | 7k           | 9k        | 9k        | 9k        | 1.68                                 | 2.16      | 2.16      | 2.16      | 3.17                          | 8.15          | 11.09        | 0.92                      | 2.51          | 3.43         | 3.25              | A               |
|          | 7k           | 9k        | 9k        | 12k       | 1.54                                 | 1.98      | 1.98      | 2.64      | 3.35                          | 8.15          | 11.25        | 0.92                      | 2.58          | 3.47         | 3.16              | B               |
|          | 7k           | 9k        | 12k       | 12k       | 1.43                                 | 1.83      | 2.45      | 2.45      | 3.71                          | 8.15          | 11.17        | 0.90                      | 2.61          | 3.60         | 3.12              | B               |
|          | 9k           | 9k        | 9k        | 9k        | 2.04                                 | 2.04      | 2.04      | 2.04      | 3.36                          | 8.15          | 10.76        | 0.88                      | 2.62          | 3.50         | 3.11              | B               |
|          | 9k           | 9k        | 9k        | 12k       | 1.88                                 | 1.88      | 1.88      | 2.51      | 3.50                          | 8.15          | 11.00        | 1.01                      | 2.60          | 3.50         | 3.14              | B               |

## Heating

| Comb.     | Combinations |           |           |           | Rated capacity(kW)<br>(Nom. heating) |           |           |           | total heating<br>capacity(kW) |               |              | total power input<br>(kW) |               |              | COP<br>(W/W)      | ENERGY<br>LABEL |
|-----------|--------------|-----------|-----------|-----------|--------------------------------------|-----------|-----------|-----------|-------------------------------|---------------|--------------|---------------------------|---------------|--------------|-------------------|-----------------|
|           | Unit<br>A    | Unit<br>B | Unit<br>C | Unit<br>D | Unit<br>A                            | Unit<br>B | Unit<br>C | Unit<br>D | min.<br>data                  | rated<br>data | max.<br>data | min.<br>data              | rated<br>data | max.<br>Data | rated<br>capacity |                 |
| BI (1x1)  | 7K           | —         | —         | —         | 2.49                                 | —         | —         | —         | 1.00                          | 2.49          | 3.24         | 0.26                      | 0.68          | 0.88         | 3.69              | A               |
|           | 9K           | —         | —         | —         | 3.08                                 | —         | —         | —         | 1.08                          | 3.08          | 4.09         | 0.34                      | 0.82          | 1.10         | 3.74              | A               |
|           | 12K          | —         | —         | —         | 3.96                                 | —         | —         | —         | 1.50                          | 3.96          | 4.99         | 0.46                      | 1.09          | 1.52         | 3.62              | A               |
| BI (1x2)  | 7k           | 7k        | —         | —         | 2.49                                 | 2.49      | —         | —         | 1.40                          | 4.98          | 6.88         | 0.50                      | 1.35          | 1.75         | 3.69              | A               |
|           | 7k           | 9k        | —         | —         | 2.49                                 | 3.08      | —         | —         | 1.84                          | 5.57          | 6.63         | 0.58                      | 1.49          | 2.00         | 3.75              | A               |
|           | 7k           | 12k       | —         | —         | 2.45                                 | 3.88      | —         | —         | 2.03                          | 6.33          | 7.85         | 0.60                      | 1.69          | 2.25         | 3.75              | A               |
|           | 9k           | 9k        | —         | —         | 3.08                                 | 3.08      | —         | —         | 2.34                          | 6.15          | 8.25         | 0.60                      | 1.63          | 2.08         | 3.77              | A               |
|           | 9k           | 12k       | —         | —         | 2.77                                 | 3.56      | —         | —         | 2.66                          | 6.33          | 7.98         | 0.73                      | 1.84          | 2.42         | 3.45              | B               |
|           | 12k          | 12k       | —         | —         | 3.17                                 | 3.17      | —         | —         | 2.28                          | 6.33          | 8.42         | 0.75                      | 2.00          | 2.67         | 3.17              | C               |
| TRI (1x1) | 7K           | —         | —         | —         | 2.49                                 | —         | —         | —         | 0.95                          | 2.49          | 3.16         | 0.27                      | 0.67          | 0.94         | 3.72              | A               |
|           | 9K           | —         | —         | —         | 3.08                                 | —         | —         | —         | 1.08                          | 3.08          | 4.22         | 0.35                      | 0.84          | 1.10         | 3.65              | A               |
|           | 12K          | —         | —         | —         | 3.96                                 | —         | —         | —         | 1.50                          | 3.96          | 5.30         | 0.37                      | 1.07          | 1.44         | 3.71              | A               |
| TRI (1x2) | 7k           | 7k        | —         | —         | 2.49                                 | 2.49      | —         | —         | 2.14                          | 4.98          | 6.38         | 0.51                      | 1.35          | 1.79         | 3.68              | A               |
|           | 7k           | 9k        | —         | —         | 2.49                                 | 3.08      | —         | —         | 2.12                          | 5.57          | 7.41         | 0.55                      | 1.53          | 2.04         | 3.63              | A               |
|           | 7k           | 12k       | —         | —         | 2.49                                 | 3.96      | —         | —         | 2.56                          | 6.45          | 8.38         | 0.70                      | 1.75          | 2.30         | 3.68              | A               |
|           | 9k           | 9k        | —         | —         | 3.08                                 | 3.08      | —         | —         | 2.34                          | 6.15          | 8.00         | 0.56                      | 1.65          | 2.26         | 3.72              | A               |
|           | 9k           | 12k       | —         | —         | 3.08                                 | 3.96      | —         | —         | 2.67                          | 7.03          | 9.71         | 0.76                      | 1.95          | 2.71         | 3.60              | A               |
|           | 12k          | 12k       | —         | —         | 3.96                                 | 3.96      | —         | —         | 2.72                          | 7.91          | 10.29        | 0.86                      | 2.21          | 2.94         | 3.58              | B               |
| TRI (1x3) | 7k           | 7k        | 7k        | —         | 2.49                                 | 2.49      | 2.49      | —         | 2.84                          | 7.47          | 9.27         | 0.67                      | 2.04          | 2.59         | 3.66              | A               |
|           | 7k           | 7k        | 9k        | —         | 2.49                                 | 2.49      | 3.08      | —         | 2.95                          | 8.06          | 10.80        | 0.86                      | 2.20          | 2.98         | 3.67              | A               |
|           | 7k           | 7k        | 12k       | —         | 2.49                                 | 2.49      | 3.96      | —         | 3.19                          | 8.94          | 11.62        | 0.93                      | 2.47          | 3.31         | 3.62              | A               |
|           | 7k           | 9k        | 9k        | —         | 2.42                                 | 2.98      | 3.83      | —         | 3.51                          | 9.23          | 12.28        | 0.86                      | 2.51          | 3.39         | 3.68              | A               |
|           | 7k           | 9k        | 12k       | —         | 2.49                                 | 3.08      | 3.08      | —         | 3.19                          | 8.65          | 11.24        | 0.83                      | 2.42          | 3.26         | 3.58              | B               |
|           | 7k           | 12k       | 12k       | —         | 2.20                                 | 3.52      | 3.52      | —         | 3.60                          | 9.23          | 12.19        | 0.92                      | 2.56          | 3.59         | 3.60              | A               |
|           | 9k           | 9k        | 9k        | —         | 3.08                                 | 3.08      | 3.08      | —         | 3.32                          | 9.23          | 12.37        | 0.88                      | 2.54          | 3.41         | 3.64              | A               |
|           | 9k           | 9k        | 12k       | —         | 2.81                                 | 2.81      | 3.61      | —         | 3.14                          | 9.23          | 12.09        | 1.05                      | 2.62          | 3.56         | 3.53              | B               |

| Comb.     | Combinations |           |           |           | Rated capacity(kW)<br>(Nom. heating) |           |           |           | total heating<br>capacity(kW) |               |              | total power input<br>(kW) |               |              | COP<br>(W/W)      | ENERGY<br>LABEL |
|-----------|--------------|-----------|-----------|-----------|--------------------------------------|-----------|-----------|-----------|-------------------------------|---------------|--------------|---------------------------|---------------|--------------|-------------------|-----------------|
|           | Unit<br>A    | Unit<br>B | Unit<br>C | Unit<br>D | Unit<br>A                            | Unit<br>B | Unit<br>C | Unit<br>D | min.<br>data                  | rated<br>data | max.<br>data | min.<br>data              | rated<br>data | max.<br>Data | rated<br>capacity |                 |
| QUA (1x1) | 7K           | —         | —         | —         | 2.49                                 | —         | —         | —         | 0.97                          | 2.49          | 3.29         | 0.25                      | 0.66          | 0.92         | 3.77              | A               |
|           | 9K           | —         | —         | —         | 3.08                                 | —         | —         | —         | 1.48                          | 3.08          | 4.00         | 0.32                      | 0.81          | 1.11         | 3.79              | A               |
|           | 12K          | —         | —         | —         | 3.96                                 | —         | —         | —         | 1.70                          | 3.96          | 5.28         | 0.46                      | 1.07          | 1.44         | 3.69              | A               |
|           | 18K          | —         | —         | —         | 6.01                                 | —         | —         | —         | 2.22                          | 6.01          | 7.81         | 0.58                      | 1.59          | 2.11         | 3.78              | A               |
| QUA (1x2) | 7k           | 7k        | —         | —         | 2.49                                 | 2.49      | —         | —         | 2.24                          | 4.98          | 6.48         | 0.52                      | 1.34          | 1.91         | 3.71              | A               |
|           | 7k           | 9k        | —         | —         | 2.49                                 | 3.08      | —         | —         | 1.84                          | 5.57          | 7.60         | 0.61                      | 1.52          | 2.00         | 3.67              | A               |
|           | 7k           | 12k       | —         | —         | 2.49                                 | 3.96      | —         | —         | 2.97                          | 6.45          | 8.38         | 0.65                      | 1.73          | 2.25         | 3.72              | A               |
|           | 7k           | 18k       | —         | —         | 3.08                                 | 3.08      | —         | —         | 2.34                          | 6.15          | 8.00         | 0.64                      | 1.64          | 2.20         | 3.75              | A               |
|           | 9k           | 9k        | —         | —         | 3.08                                 | 3.96      | —         | —         | 2.53                          | 7.03          | 8.84         | 0.63                      | 1.91          | 2.63         | 3.69              | A               |
|           | 9k           | 12k       | —         | —         | 3.96                                 | 3.96      | —         | —         | 2.61                          | 7.91          | 10.56        | 0.78                      | 2.07          | 2.88         | 3.82              | A               |
|           | 9k           | 18k       | —         | —         | 5.98                                 | 2.48      | —         | —         | 3.21                          | 8.45          | 11.19        | 0.85                      | 2.27          | 2.99         | 3.73              | A               |
|           | 12k          | 12k       | —         | —         | 5.59                                 | 2.86      | —         | —         | 3.21                          | 8.45          | 10.97        | 0.94                      | 2.29          | 3.09         | 3.69              | A               |
|           | 12k          | 18k       | —         | —         | 5.10                                 | 3.36      | —         | —         | 3.10                          | 8.45          | 11.07        | 0.90                      | 2.31          | 3.08         | 3.66              | A               |
|           | 18k          | 18k       | —         | —         | 4.23                                 | 4.23      | —         | —         | 3.28                          | 8.45          | 11.16        | 0.83                      | 2.32          | 3.13         | 3.64              | A               |
| QUA (1x3) | 7k           | 7k        | 7k        | —         | 2.49                                 | 2.49      | 2.49      | —         | 2.64                          | 7.47          | 9.90         | 0.70                      | 2.03          | 2.78         | 3.68              | A               |
|           | 7k           | 7k        | 9k        | —         | 2.49                                 | 2.49      | 3.08      | —         | 2.77                          | 8.06          | 10.67        | 0.79                      | 2.10          | 2.77         | 3.83              | A               |
|           | 7k           | 7k        | 12k       | —         | 2.36                                 | 2.36      | 3.74      | —         | 2.83                          | 8.45          | 11.36        | 0.86                      | 2.20          | 2.96         | 3.85              | A               |
|           | 7k           | 7k        | 18k       | —         | 1.92                                 | 1.92      | 4.62      | —         | 3.42                          | 8.45          | 12.77        | 0.80                      | 2.34          | 3.12         | 3.61              | A               |
|           | 7k           | 9k        | 9k        | —         | 1.82                                 | 2.25      | 4.39      | —         | 2.84                          | 8.45          | 11.40        | 0.83                      | 2.27          | 3.09         | 3.73              | A               |
|           | 7k           | 9k        | 12k       | —         | 2.21                                 | 2.73      | 3.51      | —         | 2.88                          | 8.45          | 12.09        | 0.75                      | 2.30          | 3.07         | 3.67              | A               |
|           | 7k           | 9k        | 18k       | —         | 2.44                                 | 3.01      | 3.01      | —         | 3.35                          | 8.45          | 12.11        | 0.80                      | 2.34          | 3.22         | 3.61              | A               |
|           | 7k           | 12k       | 12k       | —         | 2.02                                 | 3.22      | 3.22      | —         | 2.95                          | 8.45          | 12.18        | 0.76                      | 2.27          | 3.05         | 3.73              | A               |
|           | 7k           | 12k       | 18k       | —         | 1.69                                 | 2.68      | 4.08      | —         | 3.48                          | 8.45          | 12.31        | 0.85                      | 2.30          | 3.19         | 3.67              | A               |
|           | 9k           | 9k        | 9k        | —         | 2.82                                 | 2.82      | 2.82      | —         | 2.91                          | 8.45          | 12.21        | 0.79                      | 2.29          | 3.06         | 3.69              | A               |
|           | 9k           | 9k        | 12k       | —         | 2.57                                 | 2.57      | 3.31      | —         | 2.99                          | 8.45          | 12.25        | 0.84                      | 2.32          | 3.21         | 3.65              | A               |
|           | 9k           | 9k        | 18k       | —         | 2.14                                 | 2.14      | 4.17      | —         | 3.49                          | 8.45          | 12.43        | 0.84                      | 2.41          | 3.37         | 3.51              | B               |
|           | 9k           | 12k       | 12k       | —         | 2.37                                 | 3.04      | 3.04      | —         | 3.18                          | 8.45          | 12.24        | 0.92                      | 2.37          | 3.17         | 3.56              | B               |
|           | 9k           | 12k       | 18k       | —         | 2.00                                 | 2.56      | 3.89      | —         | 3.78                          | 8.45          | 12.28        | 0.81                      | 2.40          | 3.30         | 3.52              | B               |
|           | 12k          | 12k       | 12k       | —         | 2.82                                 | 2.82      | 2.82      | —         | 3.35                          | 8.45          | 11.88        | 1.05                      | 2.33          | 3.14         | 3.63              | A               |
| QUA(1x4)  | 7k           | 7k        | 7k        | 7k        | 2.11                                 | 2.11      | 2.11      | 2.11      | 2.98                          | 8.45          | 11.83        | 0.90                      | 2.30          | 3.05         | 3.67              | A               |
|           | 7k           | 7k        | 7k        | 9k        | 2.00                                 | 2.00      | 2.00      | 2.46      | 3.11                          | 8.45          | 11.87        | 0.88                      | 2.32          | 3.16         | 3.65              | A               |
|           | 7k           | 7k        | 7k        | 12k       | 1.84                                 | 1.84      | 1.84      | 2.93      | 3.33                          | 8.45          | 11.89        | 0.80                      | 2.30          | 3.19         | 3.68              | A               |
|           | 7k           | 7k        | 7k        | 18k       | 1.56                                 | 1.56      | 1.56      | 3.77      | 3.93                          | 8.45          | 12.13        | 0.88                      | 2.33          | 3.13         | 3.62              | A               |
|           | 7k           | 7k        | 9k        | 9k        | 1.89                                 | 1.89      | 2.34      | 2.34      | 3.27                          | 8.45          | 12.09        | 0.91                      | 2.28          | 3.13         | 3.71              | A               |
|           | 7k           | 7k        | 9k        | 12k       | 1.75                                 | 1.75      | 2.17      | 2.78      | 3.48                          | 8.45          | 12.31        | 0.86                      | 2.30          | 3.18         | 3.68              | A               |
|           | 7k           | 7k        | 12k       | 12k       | 1.63                                 | 1.63      | 2.59      | 2.59      | 3.85                          | 8.45          | 12.22        | 0.98                      | 2.33          | 3.14         | 3.63              | A               |
|           | 7k           | 9k        | 9k        | 9k        | 1.80                                 | 2.22      | 2.22      | 2.22      | 3.46                          | 8.45          | 12.24        | 0.85                      | 2.32          | 3.17         | 3.65              | A               |
|           | 7k           | 9k        | 9k        | 12k       | 1.67                                 | 2.06      | 2.06      | 2.66      | 3.65                          | 8.45          | 12.19        | 0.82                      | 2.41          | 3.09         | 3.50              | B               |
|           | 7k           | 9k        | 12k       | 12k       | 1.57                                 | 1.93      | 2.48      | 2.48      | 4.09                          | 8.45          | 12.38        | 0.81                      | 2.34          | 3.22         | 3.61              | A               |
|           | 9k           | 9k        | 9k        | 9k        | 2.11                                 | 2.11      | 2.11      | 2.11      | 3.61                          | 8.45          | 12.41        | 0.78                      | 2.38          | 3.10         | 3.55              | B               |
|           | 9k           | 9k        | 9k        | 12k       | 1.97                                 | 1.97      | 1.97      | 2.54      | 3.77                          | 8.45          | 12.28        | 0.91                      | 2.36          | 3.15         | 3.58              | B               |

## 8. Field Wiring



## 9. Electric Characteristics

| Model        | Outdoor Unit |         |      |      | Power Supply |      |     | OFM   |       |
|--------------|--------------|---------|------|------|--------------|------|-----|-------|-------|
|              | Hz           | Voltage | Min. | Max. | MCA          | TOCA | MFA | KW    | FLA   |
| M2OA-18HRDN1 | 50           | 220-240 | 198  | 254  | 6            | 16   | 25  | 0.053 | 0.676 |
| M2OB-18HRDN1 | 50           | 220-240 | 198  | 254  | 6            | 15.4 | 21  | 0.053 | 0.676 |
| M3OA-27HRDN1 | 50           | 220-240 | 198  | 254  | 6            | 16   | 25  | 0.053 | 0.676 |
| M4OA-27HRDN1 | 50           | 220-240 | 220  | 254  | \            | 15.3 | 20  | 0.053 | 0.67  |

### Remark:

MCA: Min. Current Amps. (A)

TOCA: Total Over-current Amps. (A)

MFA: Max. Fuse Amps. (A)

MSC: Max. starting Amps. (A)

RLA: Rated Locked Amps. (A)

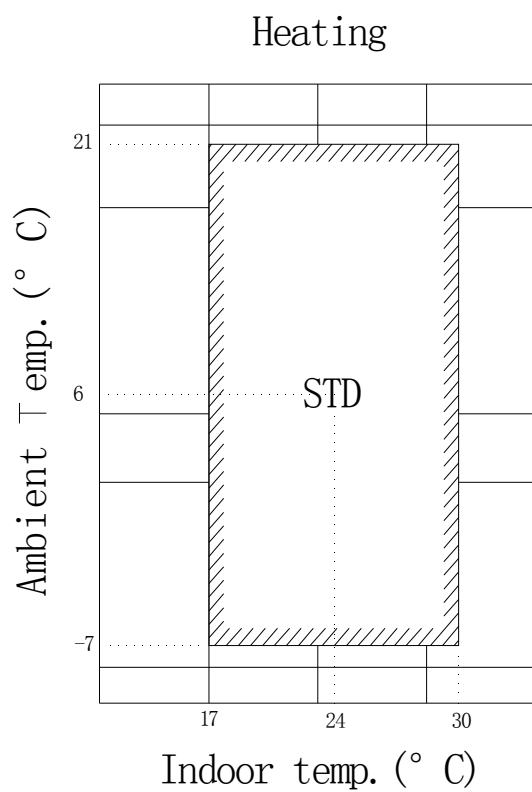
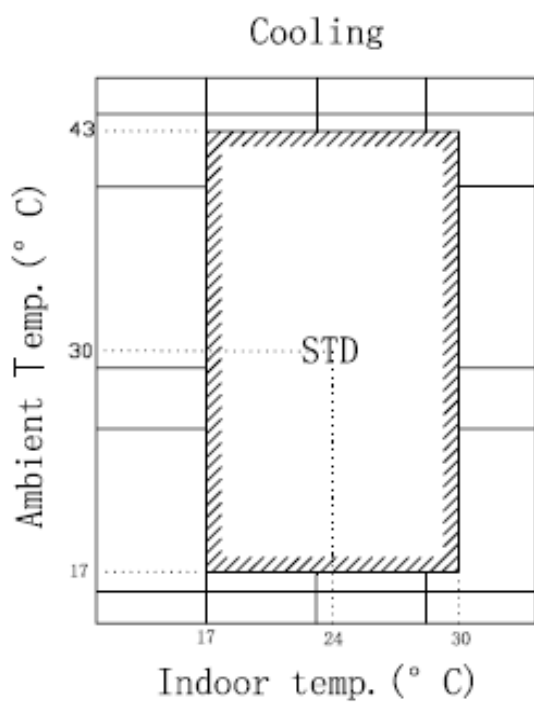
OFM: Fan Motor.

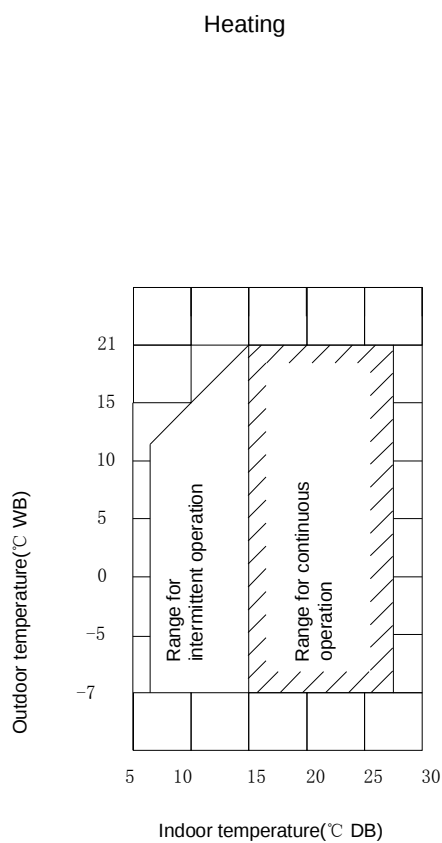
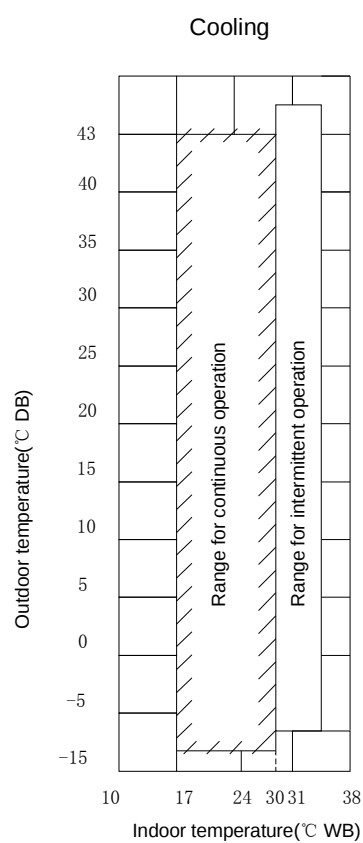
FLA: Full Load Amps. (A)

KW: Rated Motor Output (kW)

## 10. Operation Limits

For M2OA-18HRDN1, M2OB-18HRDN1, M3OA-27HRDN1



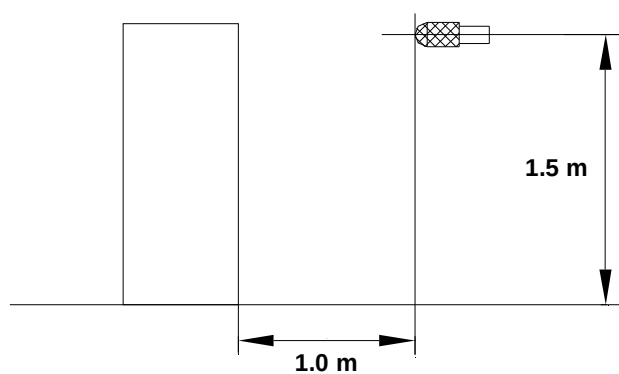
**For M4OA-27HRDN1**

## 11. Sound Levels

| Model        | Noise level dB(A) |
|--------------|-------------------|
| M2OA-18HRDN1 | 58.5              |
| M2OB-18HRDN1 | 53                |
| M3OA-27HRDN1 | 59.5              |
| M4OA-27HRDN1 | 60.5              |

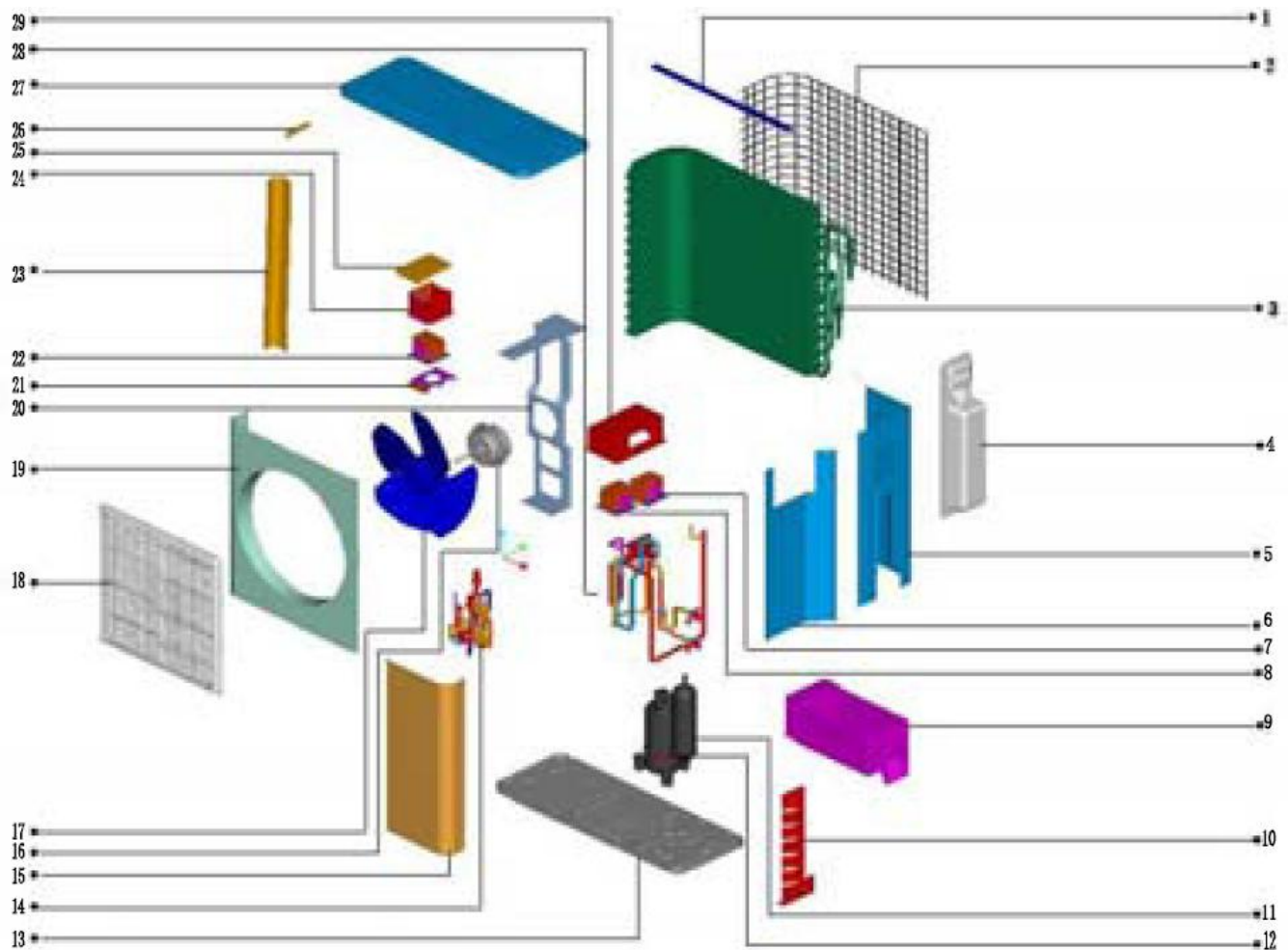
**Outdoor unit**

**Microphone**

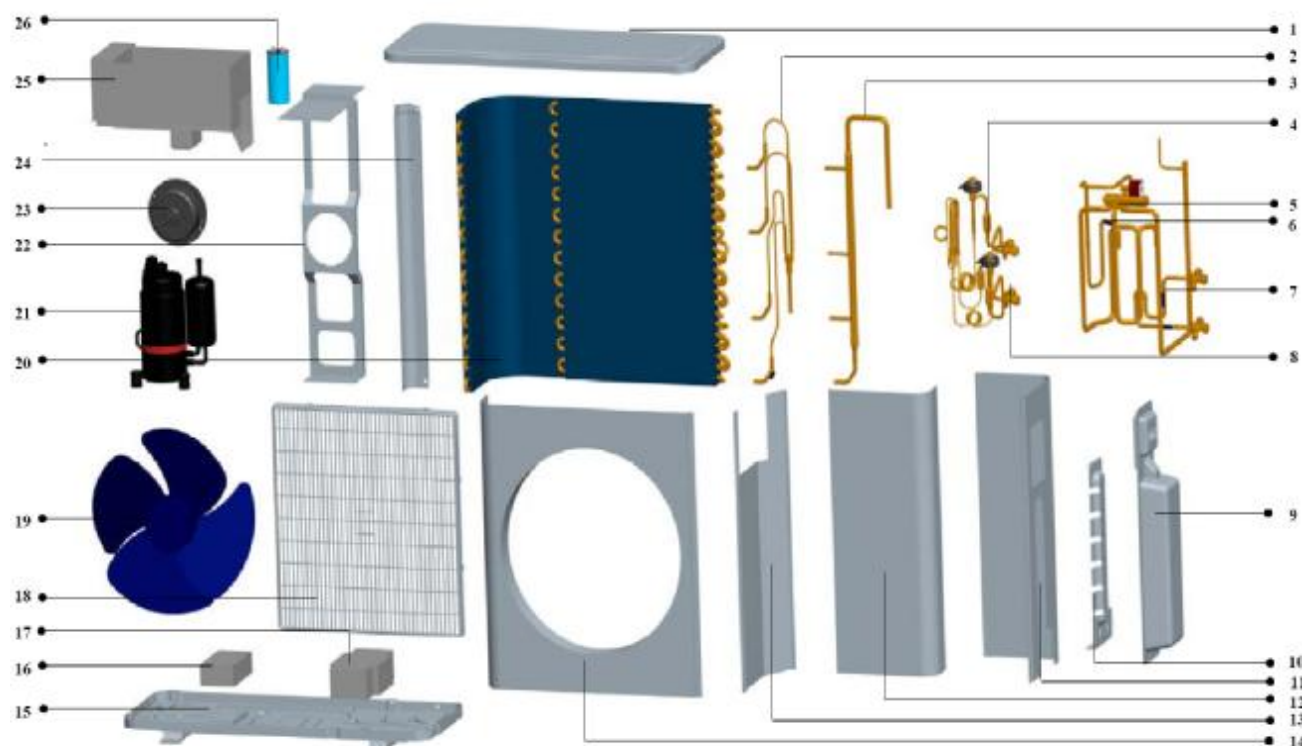


## 12. Exploded View

### M2OA-18HRDN1

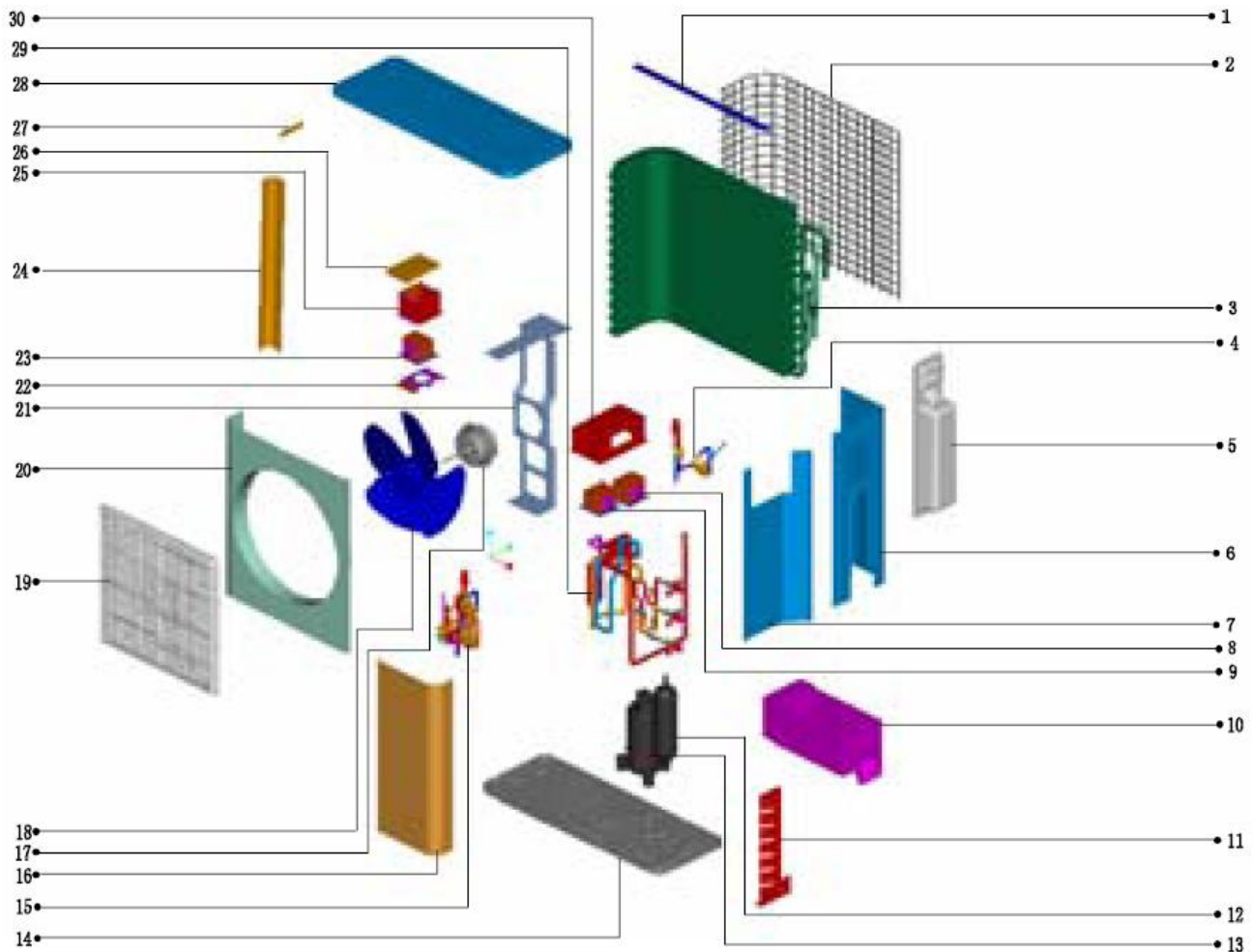


| No.  | Part Name                                                   | nos | No.  | Part Name                            | nos |
|------|-------------------------------------------------------------|-----|------|--------------------------------------|-----|
| 1    | Support board for motor holder                              | 1   | 10   | Valve plate                          | 1   |
| 2    | Rear net                                                    | 1   | 11   | Compressor                           | 1   |
| 3    | Condenser coil assembly                                     | 1   | 12   | Electric heater for compressor       | 1   |
| 4    | Water collector                                             | 1   | 13   | Base pan assembly                    | 1   |
| 5    | Rear right clapboard assembly                               | 1   | 14   | Liquid valve subassembly             | 1   |
| 6    | Partition plate assembly                                    | 1   | 14.1 | Check valve                          | 1   |
| 7    | Reactance filter                                            | 1   | 14.2 | The electronics inflation valve body | 2   |
| 8    | Reactance filter                                            | 1   | 14.3 | Control wire for EEV                 | 2   |
| 9    | Electric parts assy subassembly                             | 1   | 14.4 | Liquid valve                         | 2   |
| 9.1  | Cover for E-box                                             | 1   | 15   | Front right clapboard assembly       | 1   |
| 9.2  | Wire joint                                                  | 1   | 16   | Fan motor                            | 1   |
| 9.3  | Electrical engineering electric capacity                    | 1   | 17   | Axial flow fan                       | 1   |
| 9.4  | Clip, capacitor I                                           | 1   | 18   | Net for air-out frame                | 1   |
| 9.5  | Power control board subassembly                             | 1   | 19   | Front panel                          | 1   |
| 9.6  | Capacitor, compressor                                       | 1   | 17   | Axial flow fan                       | 1   |
| 9.7  | E-parts installation box                                    | 1   | 18   | Net for air-out frame                | 1   |
| 9.8  | Lend support to function transformer                        | 1   | 19   | Front panel                          | 1   |
| 9.9  | Transformer                                                 | 1   | 20   | Motor mounting bracket assembly      | 1   |
| 9.10 | electricity controls a box of breeze way to block the plank | 1   | 21   | Holder board for inductance          | 1   |
| 9.11 | Plate, wire                                                 |     | 22   | Reactance filter                     | 1   |
| 9.12 | Washer for wire joint                                       | 1   | 23   | Left holder                          | 1   |
| 9.13 | Wire joint                                                  | 1   | 24   | Protecting board for inductance      | 1   |
| 9.14 | E-part box                                                  | 1   | 25   | Cover for inductance                 | 1   |
| 9.15 | EMC filter                                                  | 1   | 26   | Small handle                         | 1   |
| 9.16 | Insulation board for radiator                               | 1   | 27   | Top cover assembly                   | 1   |
| 9.17 | Rectifier bridge                                            | 1   | 28   | 4-way valve subassembly              | 1   |
| 9.18 | The U type protects the line card                           | 1   | 28.1 | 4-way valve                          | 1   |
| 9.19 | Rubber, wire crossing I                                     | 1   | 28.2 | Four valve coils of electromagnetism | 1   |
| 9.20 | Inverter control board subassembly                          | 1   | 28.3 | Gas valve                            | 3   |
| 9.21 | Main control board subassembly                              | 1   | 29   | Inductance box                       | 1   |
| 9.22 | Heat exchange                                               | 1   |      |                                      |     |

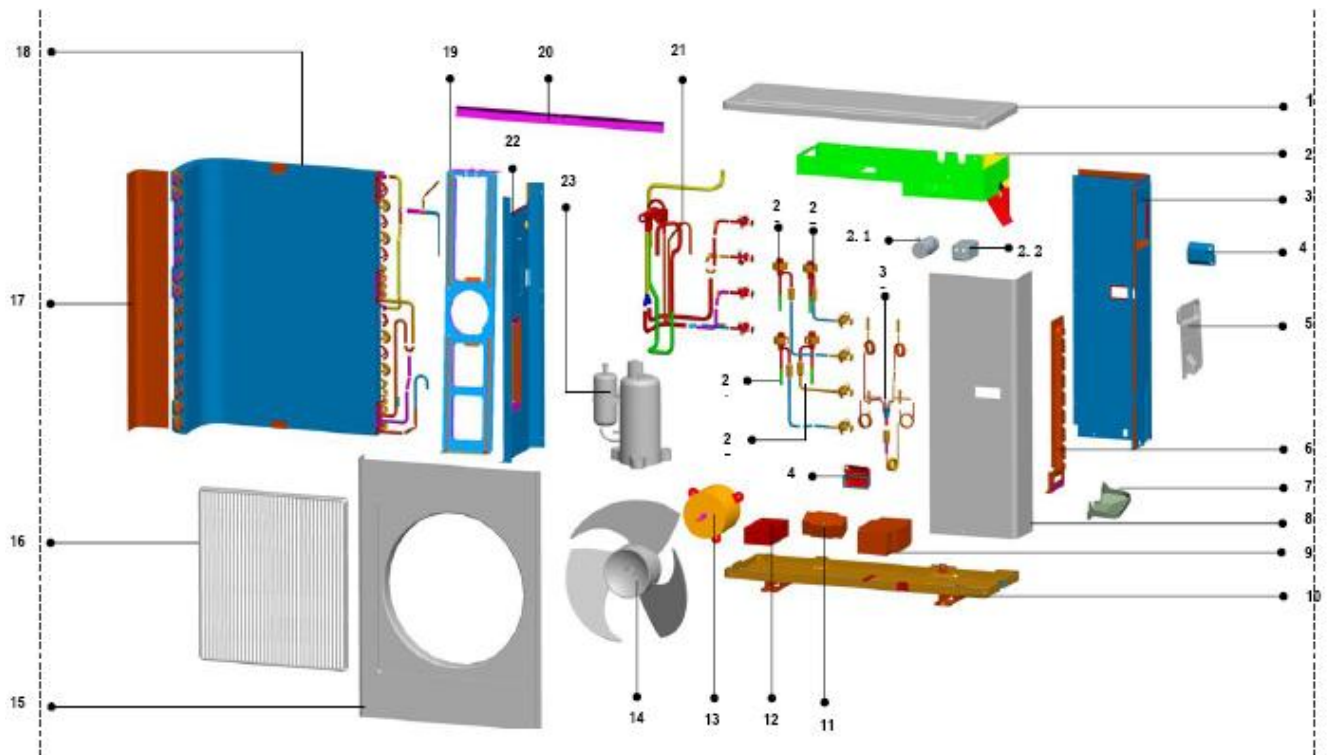
**M2OB-18HRDN1**

| No. | Part Name                           | Quantity | No.  | Part Name                                             | Quantity |
|-----|-------------------------------------|----------|------|-------------------------------------------------------|----------|
| 1   | top cover subassembly               | 1        | 15   | base pan subassembly                                  | 1        |
| 2   | input pipe subassembly              | 1        | 16   | reactance filter                                      | 1        |
| 3   | output pipe subassembly             | 1        | 17   | inductance box                                        | 1        |
| 4   | high valve subassembly              | 1        | 18   | guard fan                                             | 1        |
| 4.1 | electronic expansion valve solenoid | 2        | 19   | fan, propeller                                        | 1        |
| 4.2 | electronic expansion valve          | 2        | 20   | condenser                                             | 1        |
| 4.3 | high valve                          | 2        | 20.1 | Temp. sensor subassembly<br>environment, outdoor unit | 1        |
| 4.4 | copper nut                          | 2        | 21   | compressor (SANYO)                                    | 1        |
| 5   | 4-way valve subassembly             | 1        | 21.1 | electric heater band                                  | 1        |
| 5.1 | 4-way valve                         | 1        | 22   | motor bracket subassembly                             | 1        |
| 5.2 | 4-way valve solenoid                | 2        | 23   | Fan motor                                             | 1        |
| 5.3 | low valve                           | 2        | 24   | left bracket                                          | 1        |
| 6   | Compressor discharge temp. sensor   | 1        | 25   | electrical box subassembly                            | 1        |
| 7   | Temp. sensor subassembly            | 2        | 25.1 | capacitance of fan motor                              | 1        |
| 8   | copper nut                          | 2        | 25.2 | main controller subassembly                           | 1        |
| 9   | water collector                     | 1        | 25.3 | transformer                                           | 1        |
| 10  | valve plate                         | 1        | 25.4 | frequency conversion<br>module subassembly            | 1        |
| 11  | front right clapboard subassembly   | 1        | 25.5 | bridge rectifier                                      | 2        |
| 12  | back right clapboard subassembly    | 1        | 25.6 | filter                                                | 1        |
| 13  | partition plate subassembly         | 1        | 26   | capacitance of compressor                             | 1        |
| 14  | front clapboard                     | 1        |      |                                                       |          |

## M30A-27HRDN1



| No.   | Part Name                                                       | nos | No.   | Part Name                            | nos |
|-------|-----------------------------------------------------------------|-----|-------|--------------------------------------|-----|
| 1     | Support board for motor holder                                  | 1   | 10.19 | Rubber, wire crossing I              | 1   |
| 2     | Rear net                                                        | 1   | 10.20 | Inverter control board subassembly   | 1   |
| 3     | Condenser coil assembly                                         | 1   | 10.21 | Main control board subassembly       | 1   |
| 4     | Liquid valve subassembly A                                      | 1   | 10.22 | Heat exchange                        | 1   |
| 4.1   | Liquid valve                                                    | 1   | 11    | Valve plate                          | 1   |
| 4.2   | The electronics inflation valve valve body                      | 1   | 12    | Compressor                           | 1   |
| 4.3   | Control wire for EEV                                            | 1   | 13    | Electric heater for compressor       | 1   |
| 5     | Water collector                                                 | 1   | 14    | Base pan assembly                    | 1   |
| 6     | Rear right clapboard assembly                                   | 1   | 15    | Liquid valve subassembly             | 1   |
| 7     | Partition plate assembly                                        | 1   | 15.1  | Check valve                          | 1   |
| 8     | Reactance filter                                                | 1   | 15.2  | The electronics inflation valve body | 2   |
| 9     | Reactance filter                                                | 1   | 15.3  | Control wire for EEV                 | 2   |
| 10    | Electric parts assy subassembly                                 | 1   | 15.4  | Liquid valve                         | 2   |
| 10.1  | Cover for E-box                                                 | 1   | 16    | Front right clapboard assembly       | 1   |
| 10.2  | Wire joint                                                      | 1   | 17    | Fan motor                            | 1   |
| 10.3  | Electrical engineering electric capacity                        | 1   | 18    | Axial flow fan                       | 1   |
| 10.4  | Clip, capacitor                                                 | 1   | 19    | Net for air-out frame                | 1   |
| 10.5  | Power control board subassembly                                 | 1   | 20    | Front panel                          | 1   |
| 10.6  | Capacitor, compressor                                           | 1   | 21    | Motor mounting bracket assembly      | 1   |
| 10.7  | E-parts installation box                                        | 1   | 22    | Holder board for inductance          | 1   |
| 10.8  | Lend support to the function transformer                        | 1   | 23    | Reactance filter                     | 1   |
| 10.9  | Transformer                                                     | 1   | 24    | Left holder                          | 1   |
| 10.10 | The electricity controls a box of breeze way to block the plank | 1   | 25    | Protecting board for inductance      | 1   |
| 10.11 | Plate, wire                                                     | 1   | 26    | Cover for inductance                 | 1   |
| 10.12 | Washer for wire joint                                           | 1   | 27    | Small handle                         | 1   |
| 10.13 | Wire joint                                                      | 1   | 28    | Top cover assembly                   | 1   |
| 10.14 | E-part box                                                      | 1   | 29    | 4-way valve subassembly              | 1   |
| 10.15 | EMC filter                                                      | 1   | 29.1  | 4-way valve                          | 1   |
| 10.16 | Insulation board for radiator                                   | 1   | 29.2  | Four valve coils of electromagnetism | 1   |
| 10.17 | Rectifier bridge                                                | 1   | 29.3  | Gas valve                            | 3   |
| 10.18 | The U type protects the line card                               | 1   | 30    | Inductance box                       | 1   |

**M40A-27HRDN1**

| No.  | Part Name                                    | nos | No.  | Part Name                                           | nos |
|------|----------------------------------------------|-----|------|-----------------------------------------------------|-----|
| 1    | Top cover assembly                           | 1   | 19   | partition plate assembly                            | 1   |
| 2    | Electric part sassy subassembly              | 1   | 20   | suction pipe subassembly                            | 1   |
| 2.1  | Electric control box                         | 1   | 20.1 | press controller, low                               | 1   |
| 2.2  | Electric control box                         | 1   | 21   | accumulator cylinder                                | 1   |
| 2.3  | EMC filter                                   | 1   | 22   | capillary pipe subassembly                          | 1   |
| 2.4  | Transformer                                  | 1   | 23   | liquid valve subassembly A                          | 1   |
| 2.5  | Main control board subassembly               | 1   | 23.1 | electronic expansion valve                          | 1   |
| 2.6  | module subassembly, outdoor unit             | 1   | 23.2 | electronic expansion valve Solenoid                 | 1   |
| 3    | Handle                                       | 2   | 23.3 | liquid valve                                        | 1   |
| 4    | Rear right clapboard assembly                | 1   | 24   | liquid valve subassembly B                          | 1   |
| 5    | Water collector                              | 1   | 24.1 | electronic expansion valve                          | 1   |
| 6    | valve plate                                  | 1   | 24.2 | electronic expansion valve Solenoid                 | 1   |
| 7    | front right clapboard assembly               | 1   | 24.3 | liquid valve                                        | 1   |
| 8    | base pan assembly                            | 1   | 25   | liquid valve subassembly C                          | 1   |
| 9    | inductance box                               | 1   | 25.1 | electronic expansion valve                          | 1   |
| 10   | reactance filter                             | 1   | 25.2 | electronic expansion valve Solenoid                 | 1   |
| 11   | a synchronism motor(iron)                    | 1   | 25.3 | liquid valve                                        | 1   |
| 12   | compressor                                   | 1   | 26   | liquid valve subassembly D                          | 1   |
| 13   | fan, propeller                               | 1   | 26.1 | electronic expansion valve                          | 1   |
| 14   | front panel                                  | 1   | 26.2 | electronic expansion valve Solenoid                 | 1   |
| 15   | guard fan                                    | 1   | 26.3 | liquid valve                                        | 1   |
| 16   | condenser coil assembly                      | 1   | 27.  | 4-way valve subassembly                             | 1   |
| 16.1 | condenser                                    | 1   | 27.1 | 4-way valve                                         | 1   |
| 16.2 | input pipe                                   | 1   | 27.2 | 4-way valve solenoid                                | 1   |
| 16.3 | output pipe                                  | 1   | 27.3 | gas valve                                           | 4   |
| 16.4 | connecting pipe ass'y subassembly            | 1   | 27.4 | press controller, high                              | 1   |
| 16.5 | Temp. sensor assembly for pipe, outdoor unit | 1   | 28   | Temp. sensor assembly for environment, outdoor unit | 1   |
| 17   | Under prop, left side                        | 1   | 29   | Temp. sensor subassembly                            | 1   |
| 18   | motor mounting bracket subassembly           | 1   | 30   | Temp. sensor subassembly for pipe                   | 4   |

## 13. Troubleshooting

### Indoor unit's LED indication of Corona DC inverter unit

| Display | LED STATUS                                                           |
|---------|----------------------------------------------------------------------|
| E0      | EEPROM error                                                         |
| E1      | outdoor communication error                                          |
| E2      | Zero-crossing examination error                                      |
| E3      | Fan speed beyond control                                             |
| E5      | Outdoor units temp. sensor or connector of temp. sensor is defective |
| E6      | Indoor units temp. sensor or connector of temp. sensor is defective  |
| P0      | Inverter module protection                                           |
| P1      | Outdoor voltage protection                                           |
| P2      | Compressor top protection against temperature                        |
| P3      | Compressor current protection                                        |
| P5      | Outdoor low temp. protection                                         |

### Indoor unit's LED indication of Alfa DC inverter unit

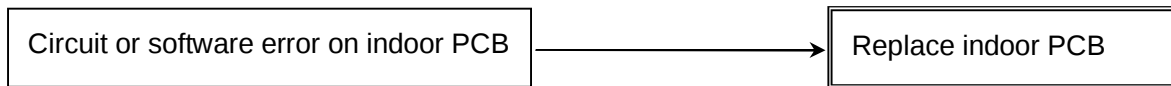
| Display | LED STATUS                                                           |
|---------|----------------------------------------------------------------------|
| E0      | EEPROM error                                                         |
| E1      | outdoor communication error                                          |
| E2      | Zero-crossing examination error                                      |
| E3      | Fan speed beyond control                                             |
| E5      | Outdoor units temp. sensor or connector of temp. sensor is defective |
| E6      | Indoor units temp. sensor or connector of temp. sensor is defective  |
| P0      | Inverter module protection                                           |
| P1      | Outdoor voltage protection                                           |
| P2      | Compressor top protection against temperature                        |
| P3      | Compressor current protection                                        |

### Indoor unit's LED indication of Vertu DC inverter unit

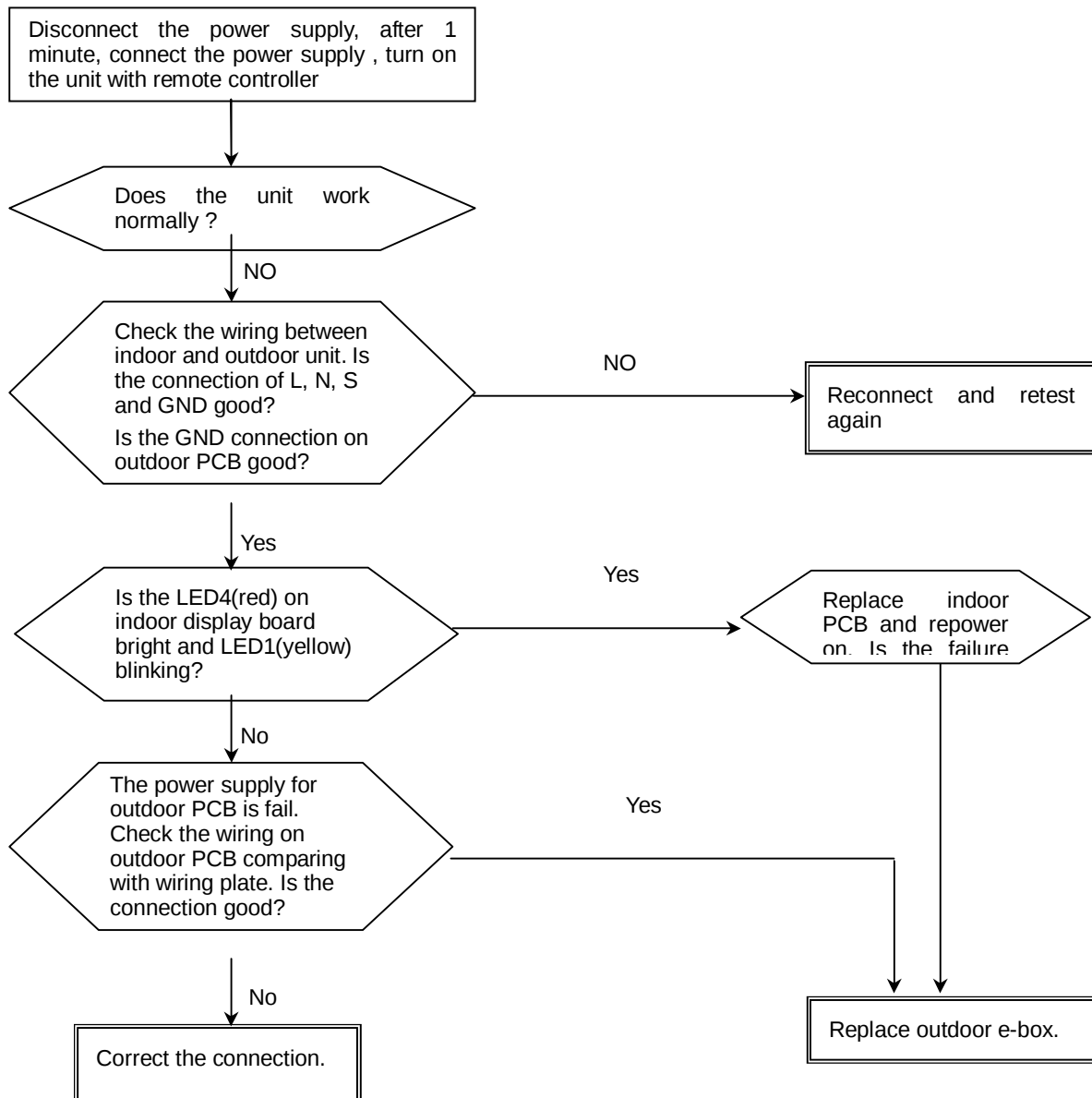
| Display | LED STATUS                                                           |
|---------|----------------------------------------------------------------------|
| E0      | EEPROM error                                                         |
| E1      | outdoor communication error                                          |
| E2      | Zero-crossing examination error                                      |
| E3      | Fan speed beyond control                                             |
| E5      | Outdoor units temp. sensor or connector of temp. sensor is defective |
| E6      | Indoor units temp. sensor or connector of temp. sensor is defective  |
| P0      | Inverter module protection                                           |
| P1      | Outdoor unit voltage protection                                      |
| P2      | Compressor top temperature protection                                |
| P3      | Outdoor low temp. protection                                         |
| P4      | Inverter compressor drive protection                                 |
| P5      | Mode conflict protection                                             |

### Indoor unit trouble shooting

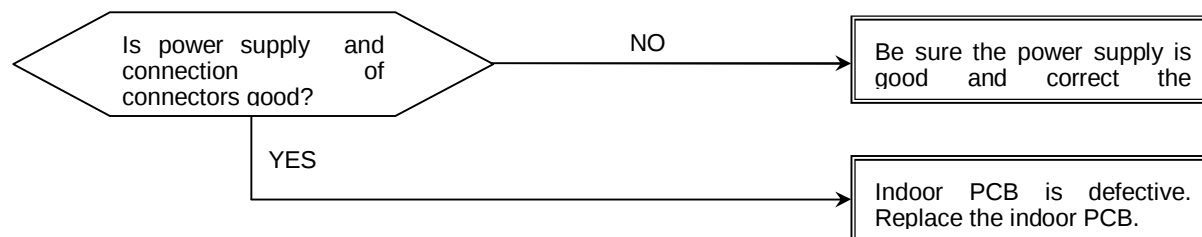
| Indoor unit display | LED STATUS   |
|---------------------|--------------|
| E0                  | EEPROM error |



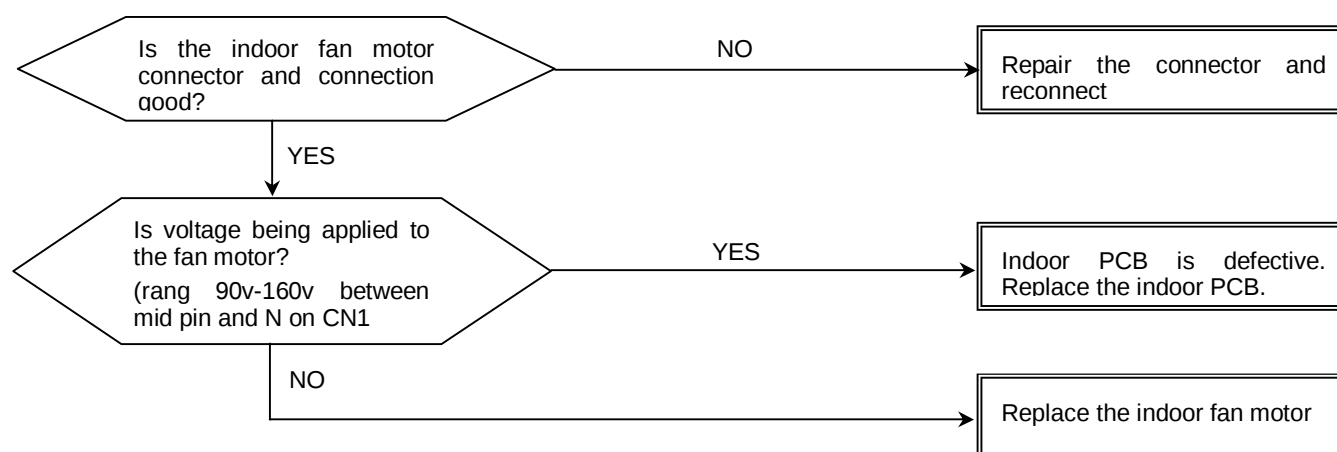
| Indoor unit display | LED STATUS                  |
|---------------------|-----------------------------|
| E1                  | outdoor communication error |



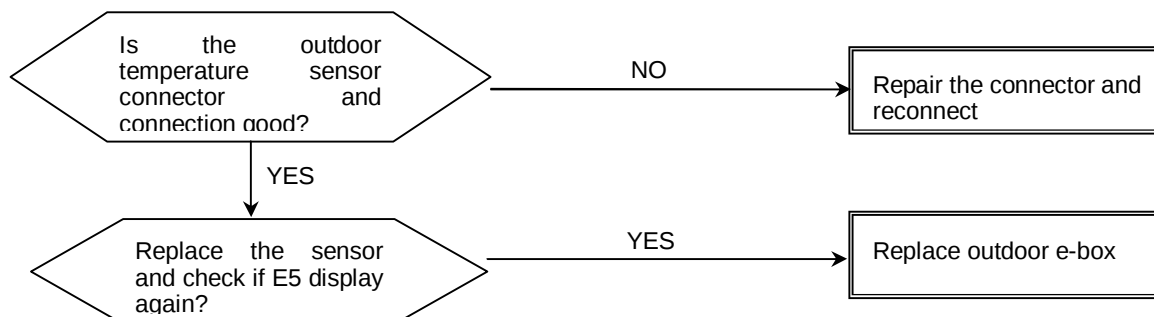
| Indoor unit display | LED STATUS                      |
|---------------------|---------------------------------|
| E2                  | Zero-crossing examination error |



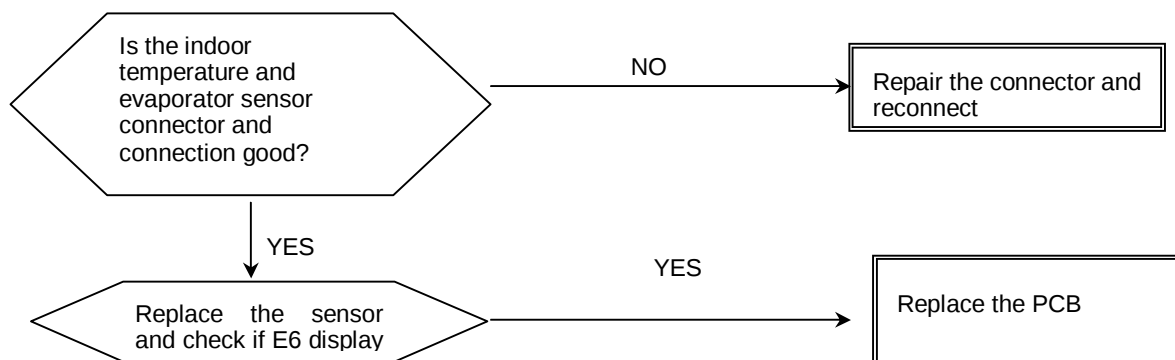
| Indoor unit display | LED STATUS               |
|---------------------|--------------------------|
| E3                  | Fan speed beyond control |



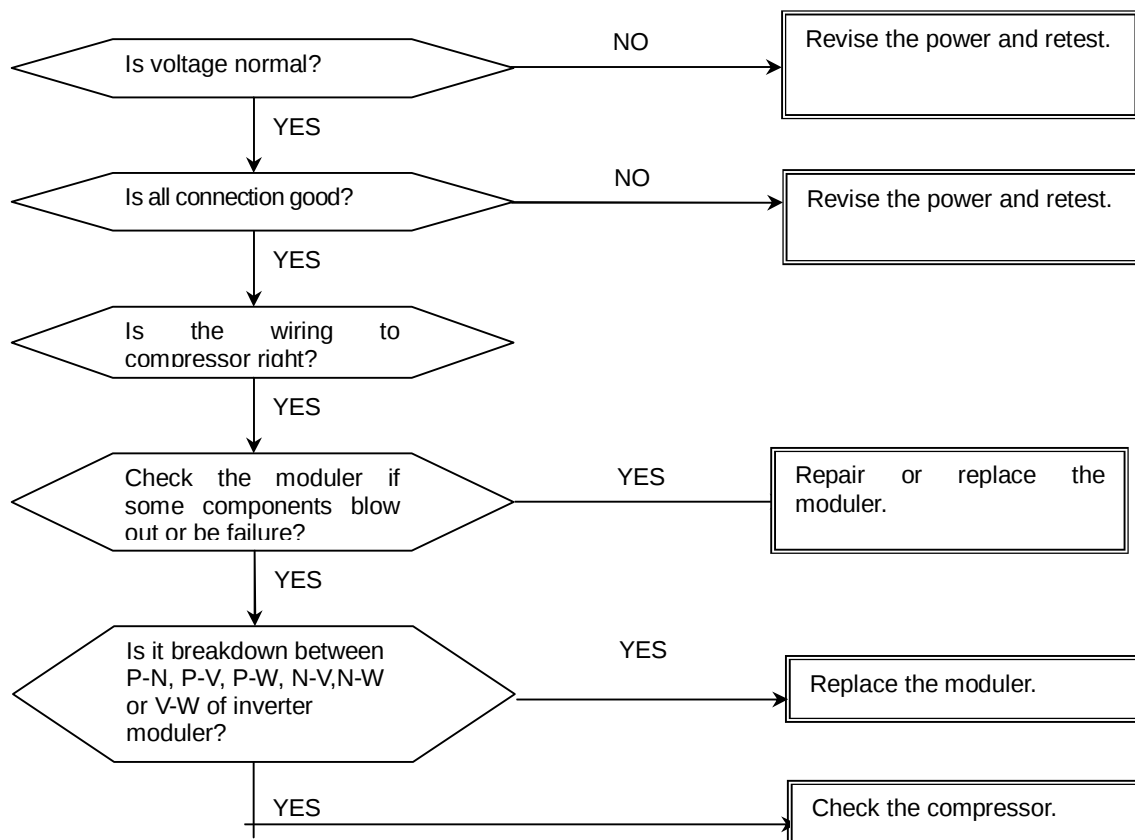
| Indoor unit display | LED STATUS                                                           |
|---------------------|----------------------------------------------------------------------|
| E5                  | Outdoor units temp. sensor or connector of temp. sensor is defective |



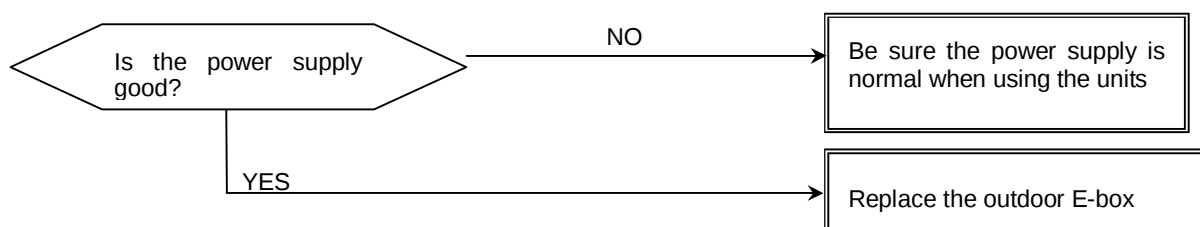
| Indoor unit display | LED STATUS                                                          |
|---------------------|---------------------------------------------------------------------|
| E6                  | Indoor units temp. sensor or connector of temp. sensor is defective |



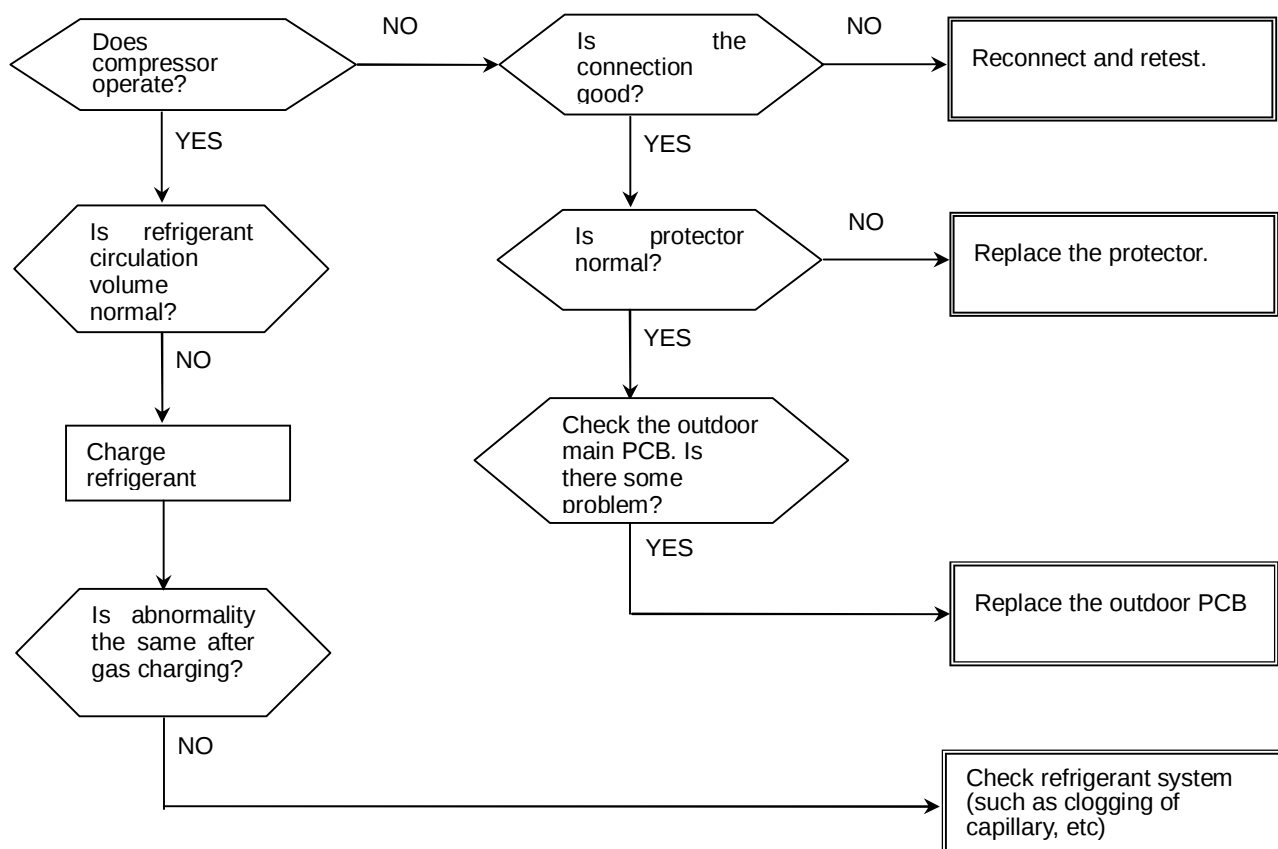
| Indoor unit display | LED STATUS                 |
|---------------------|----------------------------|
| P0                  | Inverter module protection |



| Indoor unit display | LED STATUS                 |
|---------------------|----------------------------|
| P1                  | Outdoor voltage protection |



| Indoor unit display | LED STATUS                                    |
|---------------------|-----------------------------------------------|
| P2                  | Compressor top protection against temperature |

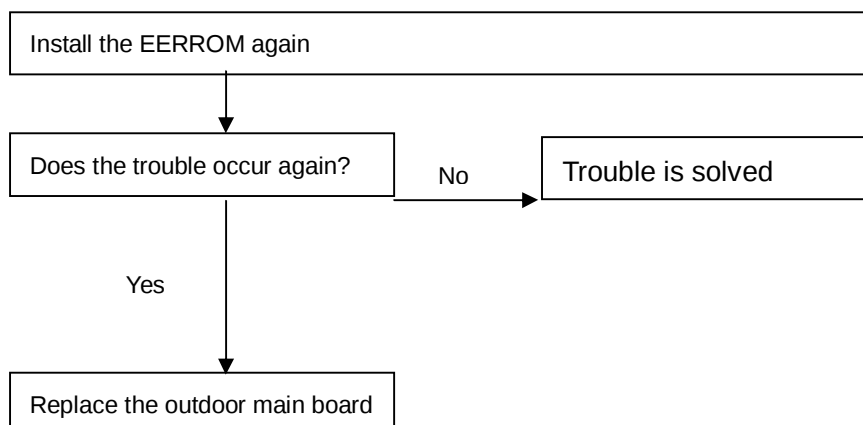


The trouble shooting of the P3,P4,P5 protection are the same as the outdoor unit,please refer to the outdoor trouble-shooting.

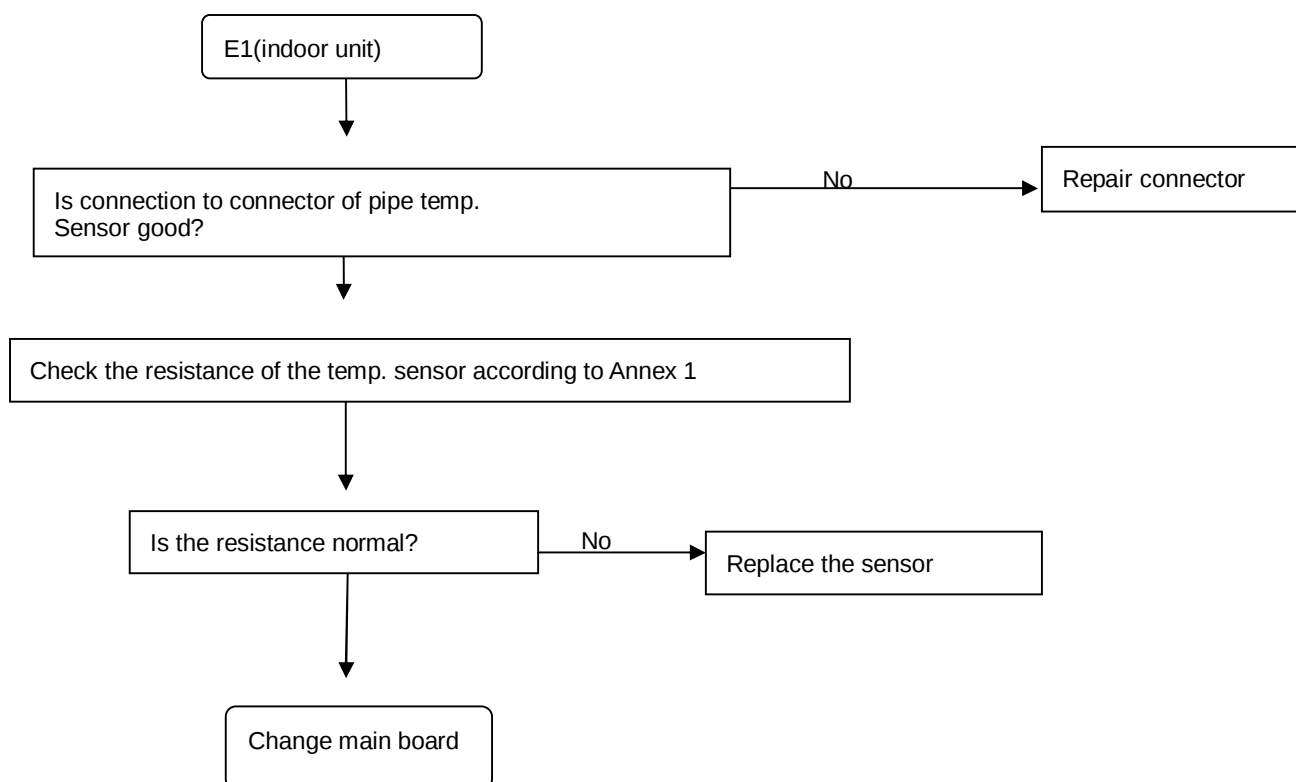
# Outdoor unit's LED indication

| Display | Explanation                                                                        |
|---------|------------------------------------------------------------------------------------|
| E0      | EEPROM error                                                                       |
| E1      | No 1 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |
| E2      | No 2 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |
| E3      | No 3 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |
| E4      | Outdoor temp. Sensor or connector of temp. sensor is defective                     |
| E5      | Compressor voltage protection                                                      |
| E6      | No 4 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |
| E7      | Communication malfunction between outdoor IC and DSP                               |
| P0      | Compressor discharge temperature protection                                        |
| P1      | High pressure protection                                                           |
| P2      | Low pressure protection                                                            |
| P3      | Compressor current protection                                                      |
| P4      | Module protection                                                                  |
| P5      | Outdoor low temp. protection                                                       |
| P6      | Condenser high-temperature protection                                              |
| P7      | reserve                                                                            |
| P8      | reserve                                                                            |

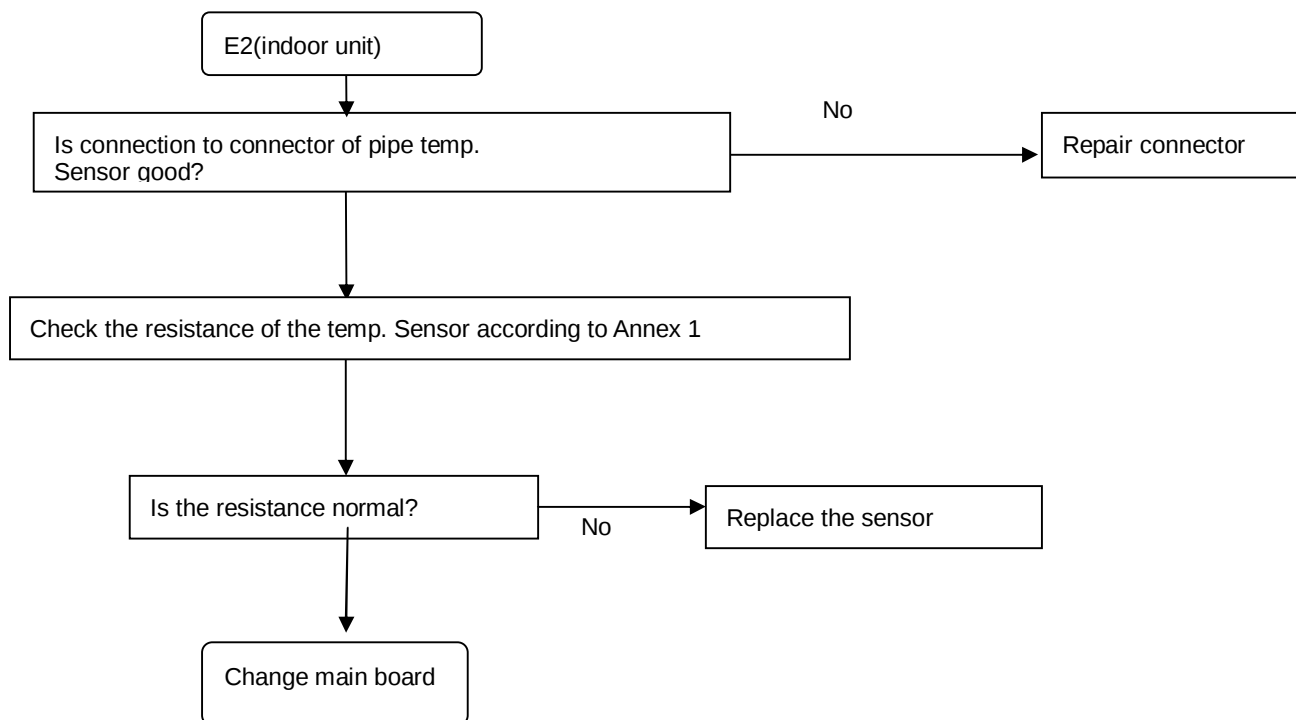
| Display | Malfunction or Protection |
|---------|---------------------------|
| E0      | EEPROM Malfunction        |



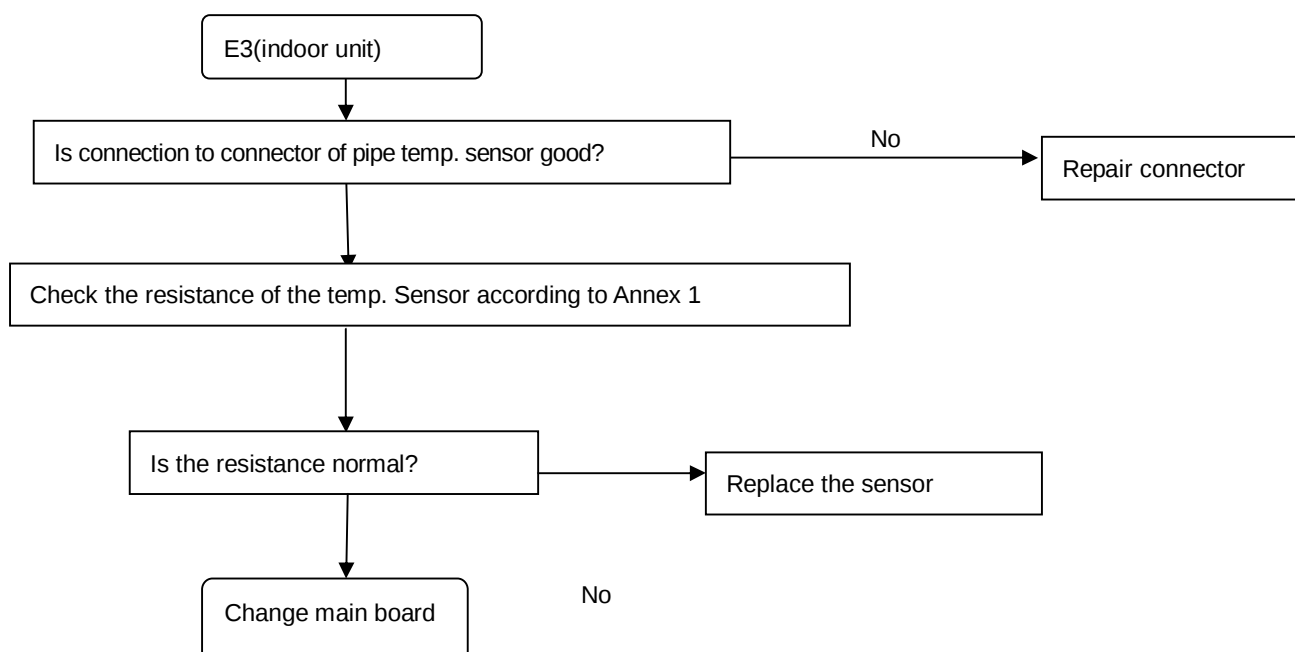
| Display | Malfunction or Protection                                                          |
|---------|------------------------------------------------------------------------------------|
| E1      | No 1 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |



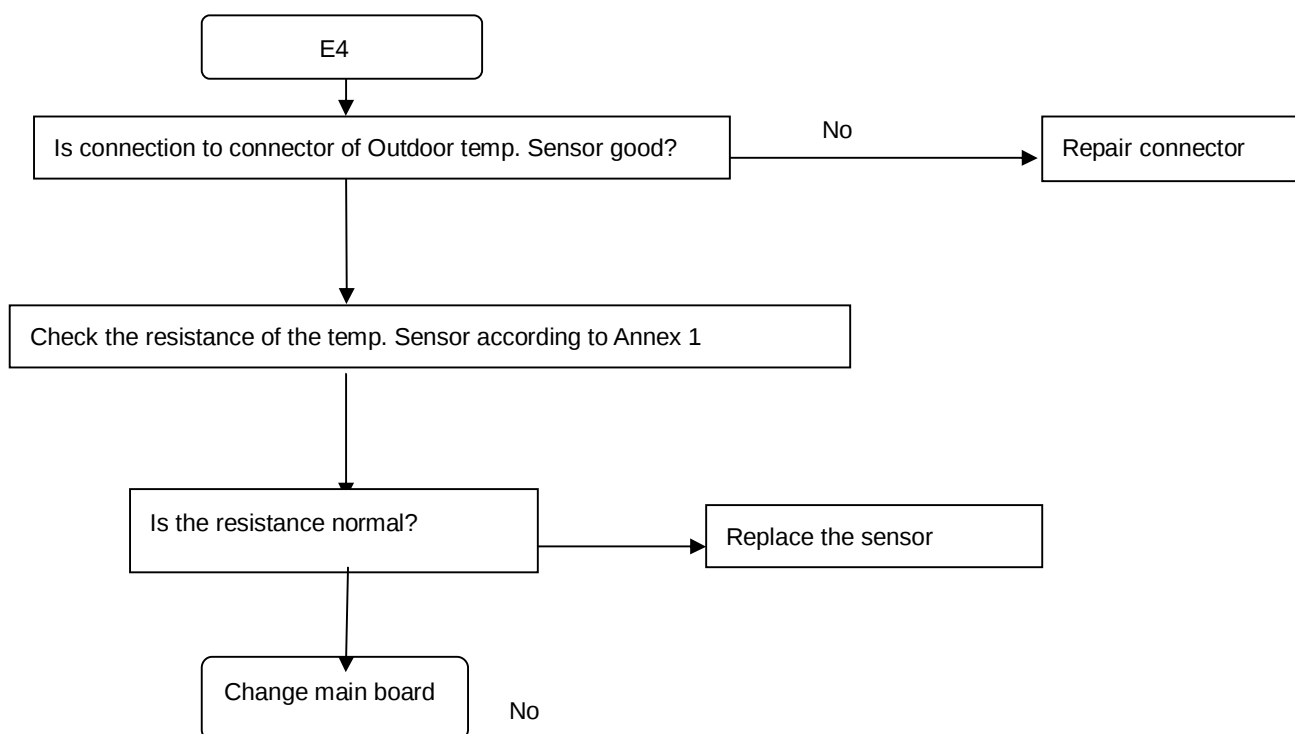
| Display | Malfunction or Protection                                                          |
|---------|------------------------------------------------------------------------------------|
| E2      | No 2 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |



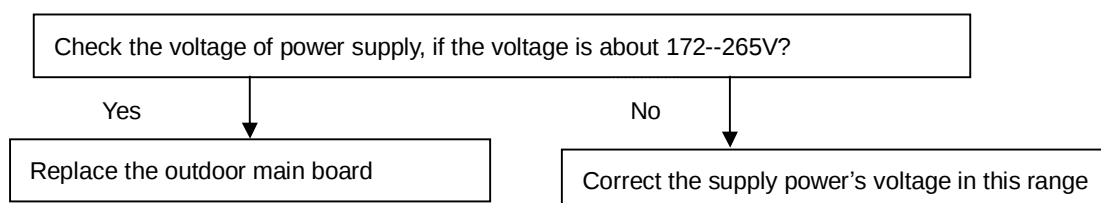
| Display | Malfunction or Protection                                                          |
|---------|------------------------------------------------------------------------------------|
| E3      | No 3 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective |



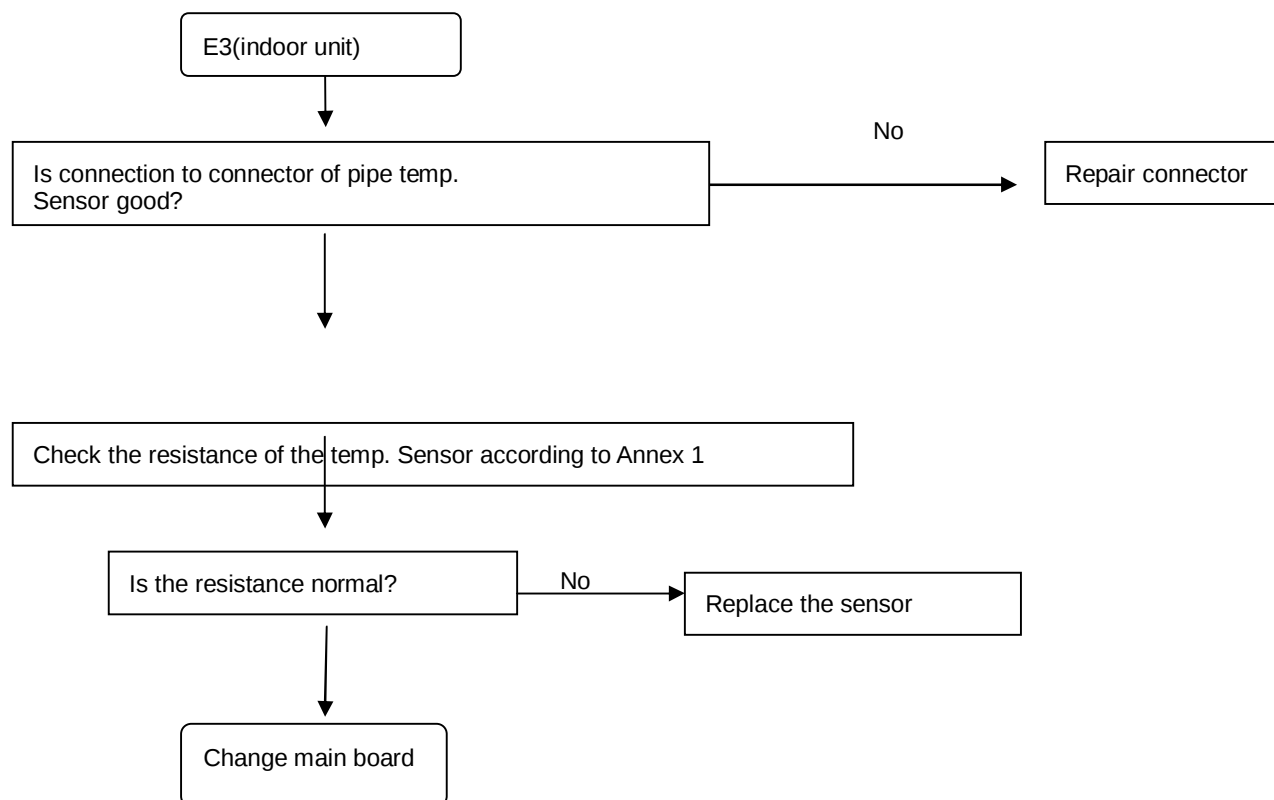
| Display | Malfunction or Protection                                      |
|---------|----------------------------------------------------------------|
| E4      | Outdoor temp. Sensor or connector of temp. sensor is defective |



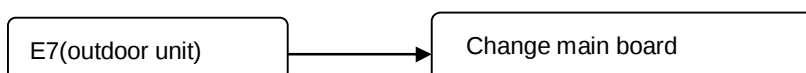
| Display | Malfunction or Protection     |
|---------|-------------------------------|
| E5      | Compressor Voltage protection |



| Display   | Malfunction or Protection                                                                 |
|-----------|-------------------------------------------------------------------------------------------|
| <b>E6</b> | <b>No 4 Indoor units pipe temp. Sensor or connector of pipe temp. sensor is defective</b> |

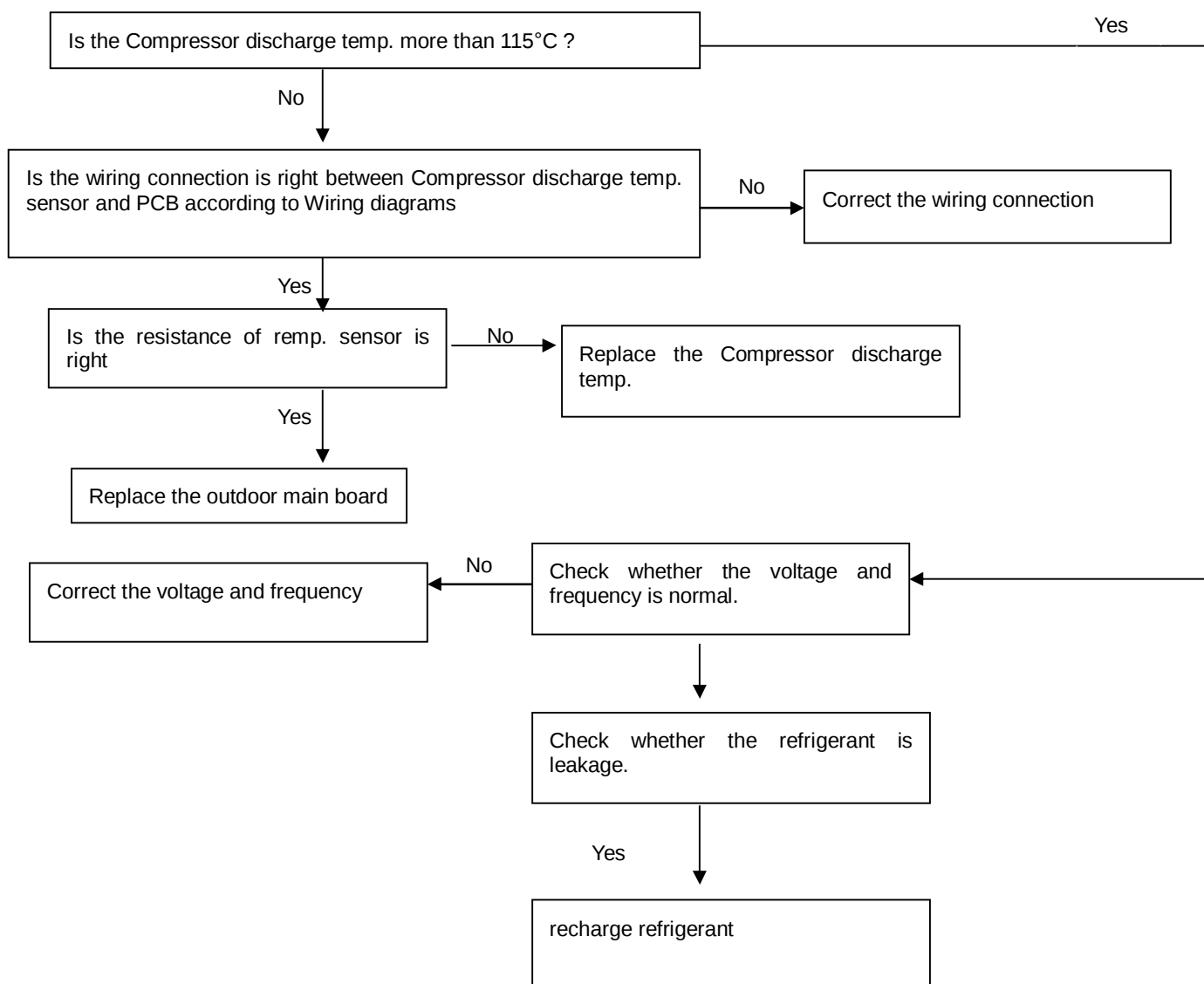


| Display   | Malfunction or Protection                                   |
|-----------|-------------------------------------------------------------|
| <b>E7</b> | <b>Communication malfunction between outdoor IC and DSP</b> |

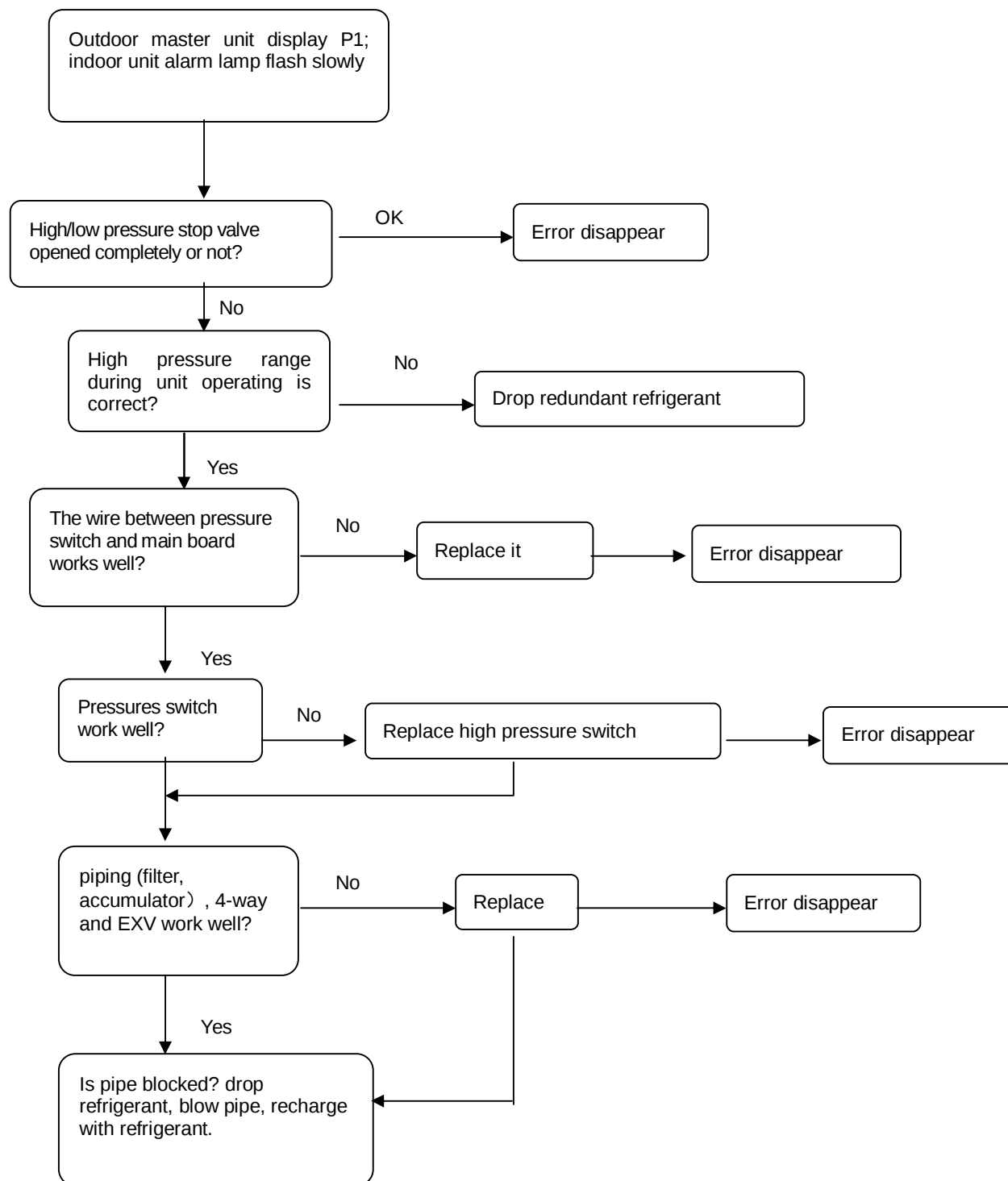


| Display | Malfunction or Protection                   |
|---------|---------------------------------------------|
| P0      | Compressor discharge temperature protection |

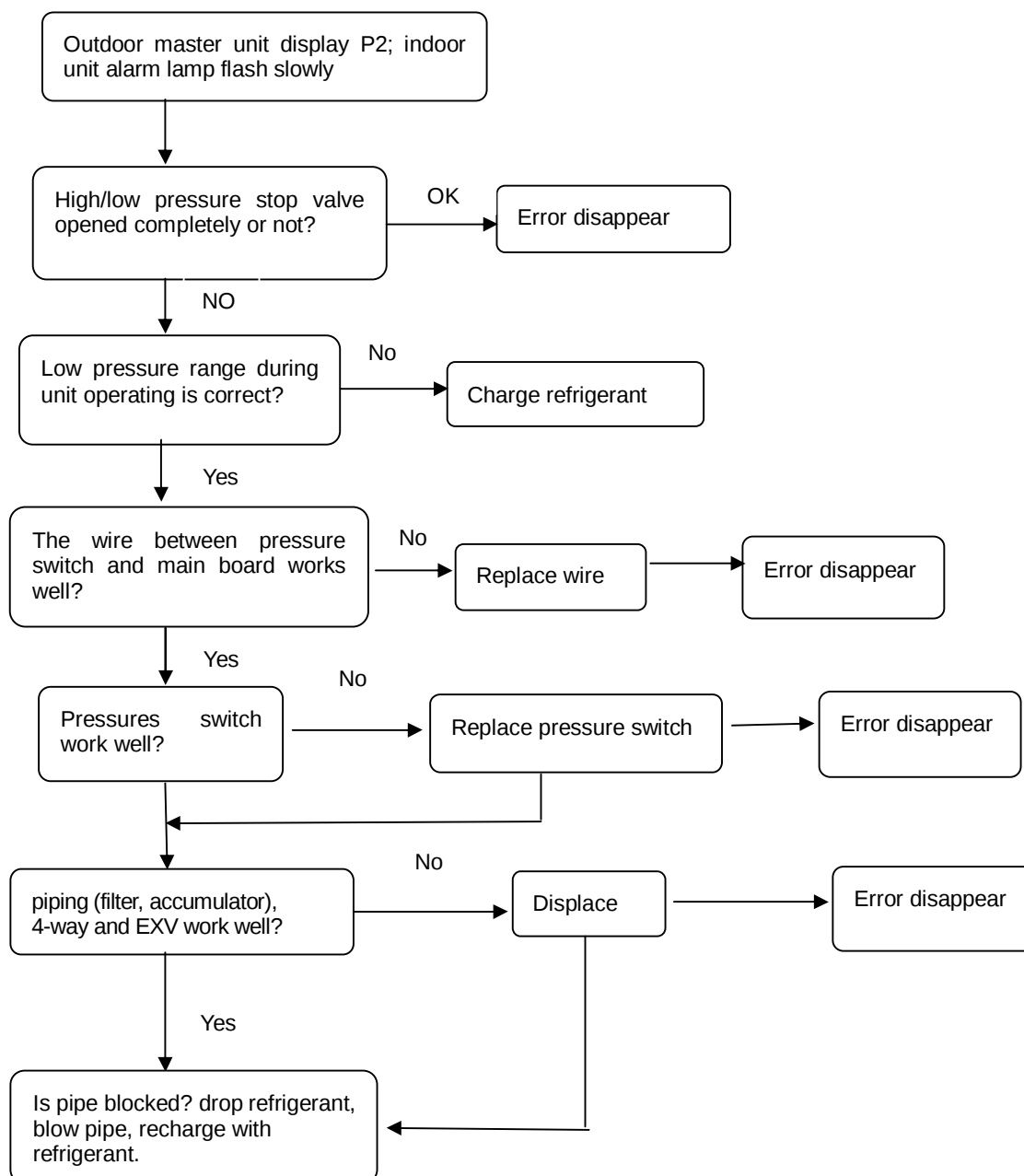
When Compressor discharge temp. is more than 115°C, the unit will stop, and unit runs again when Compressor discharge temp. less than 90°C.



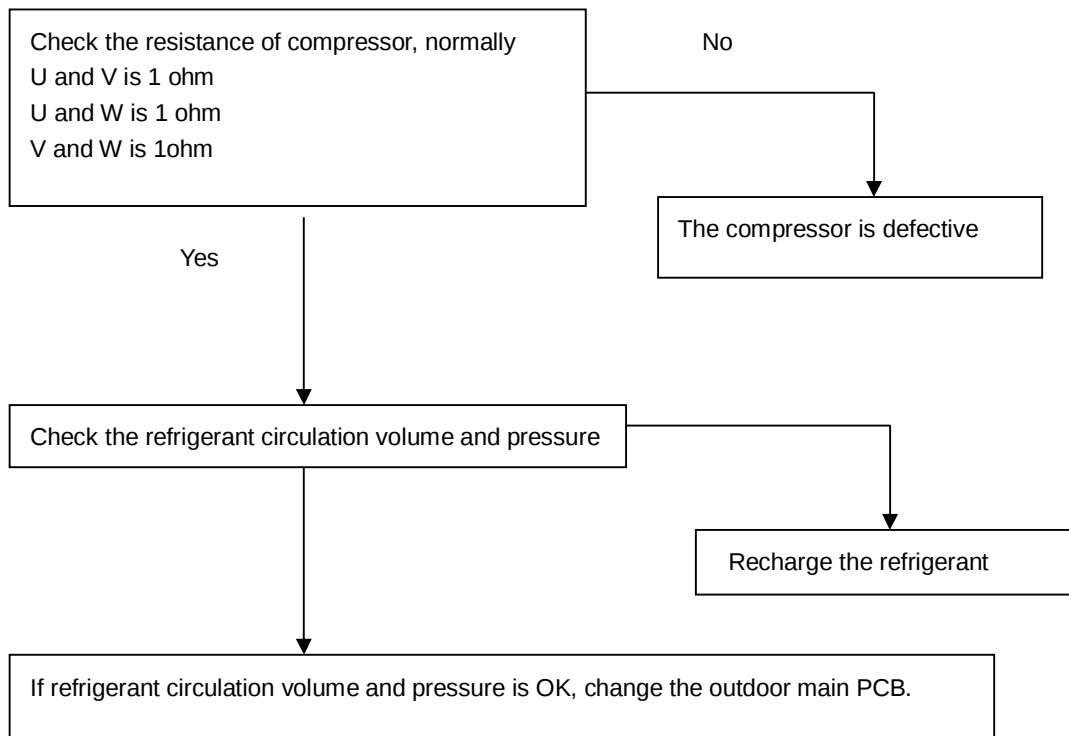
| Display | Malfunction or Protection |
|---------|---------------------------|
| P1      | High pressure protection  |



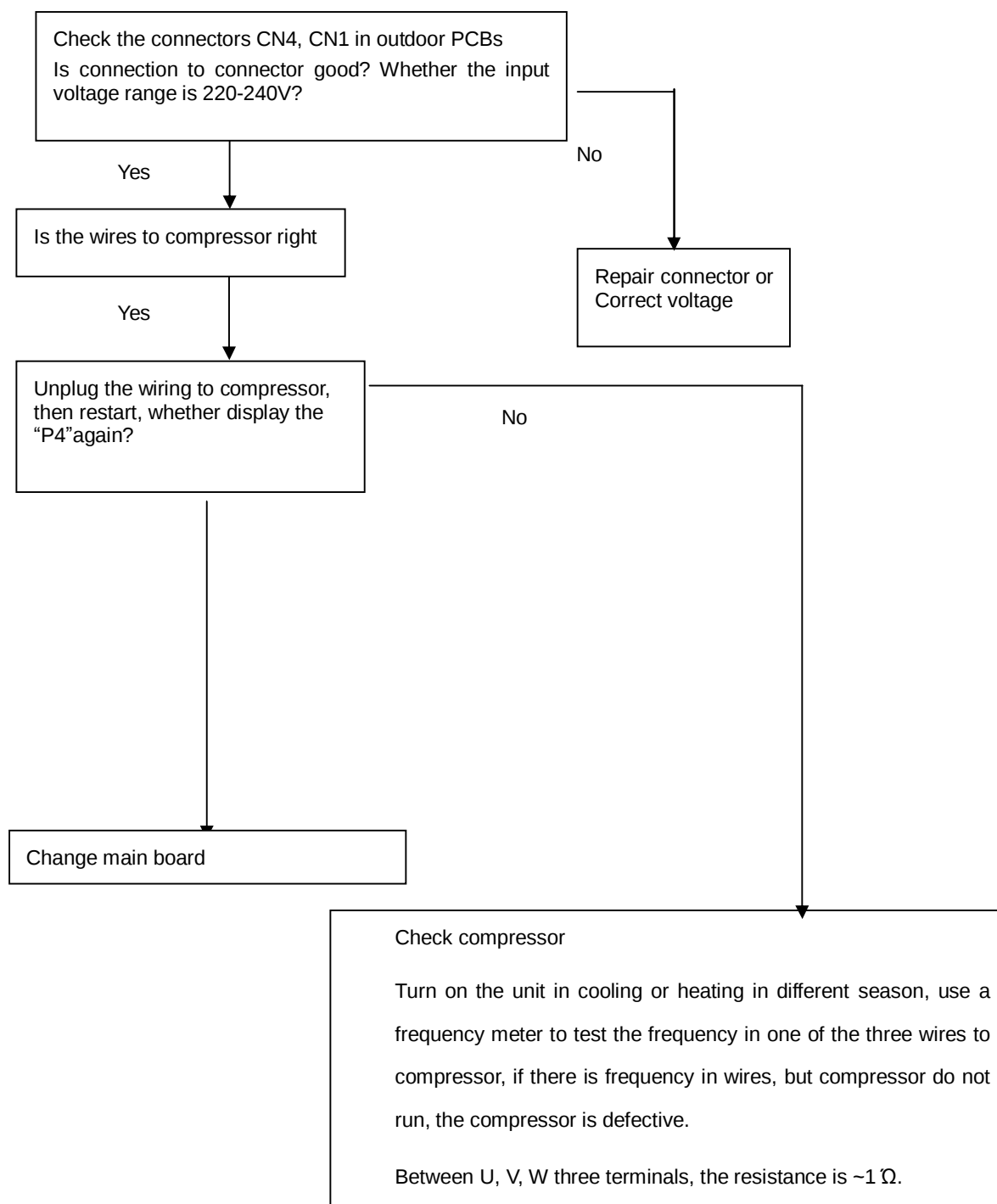
| Display | Malfunction or Protection |
|---------|---------------------------|
| P2      | Low pressure protection   |



| Display | Malfunction or Protection     |
|---------|-------------------------------|
| P3      | Compressor current protection |

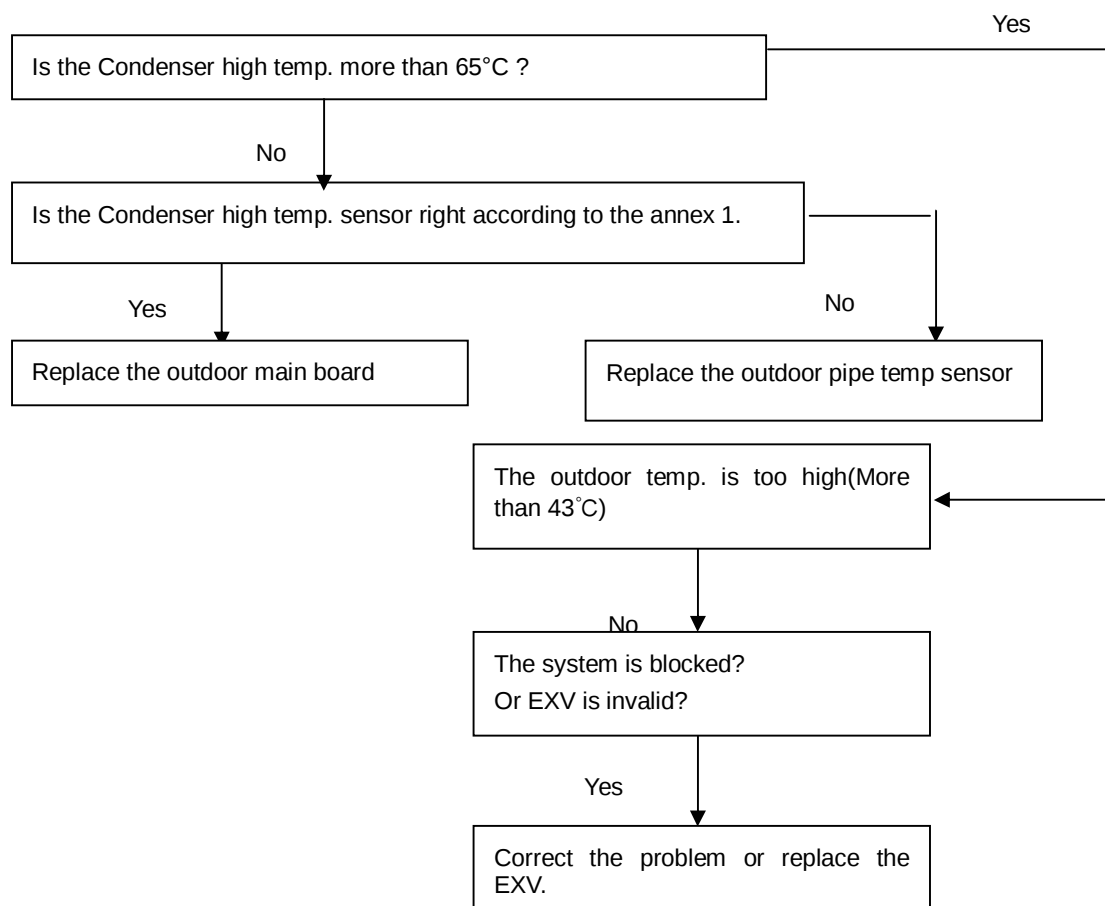


| Display(LED flashes for thirteen times) | Malfunction or Protection |
|-----------------------------------------|---------------------------|
| P4                                      | Module protection         |



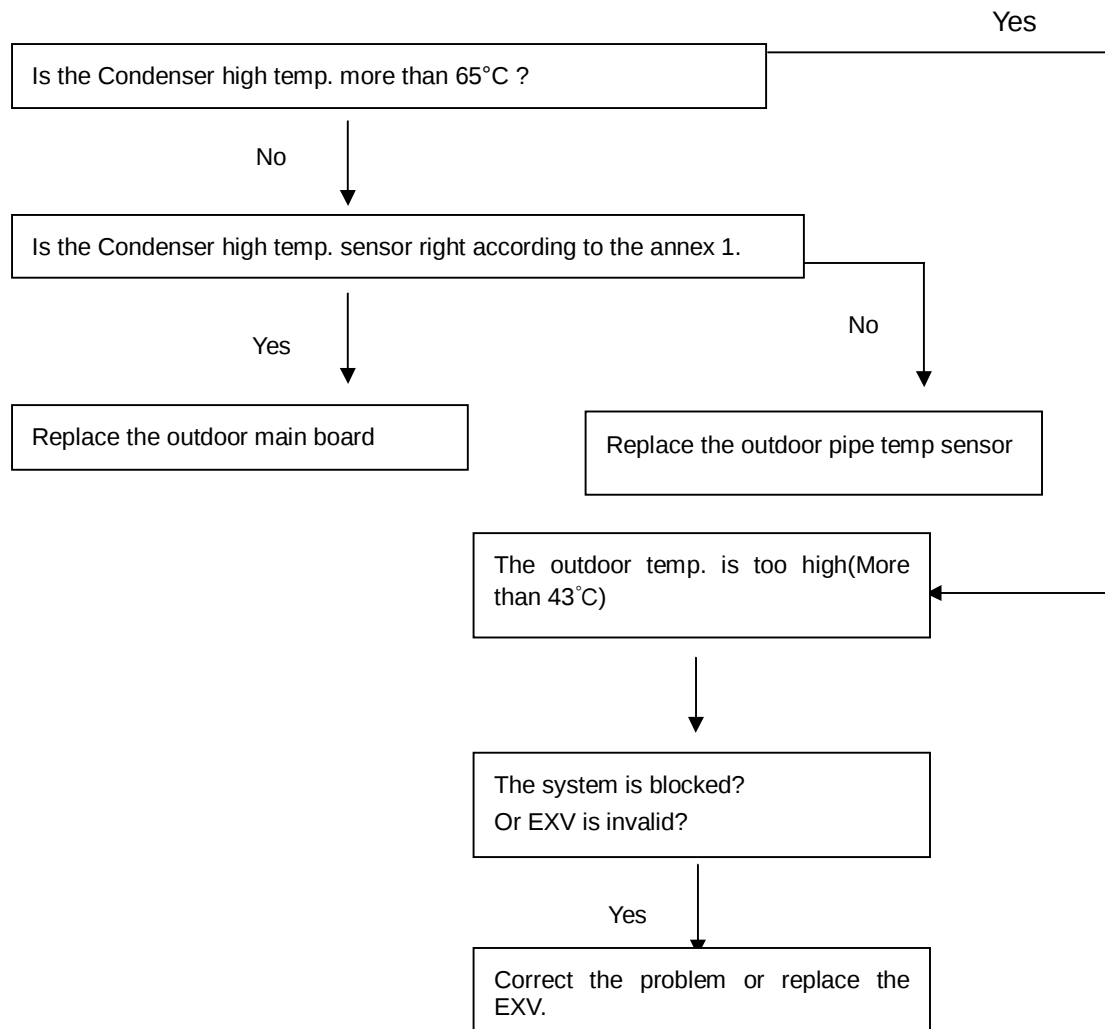
| Display | Malfunction or Protection          |
|---------|------------------------------------|
| P5      | Outdoor low temperature protection |

When outdoor temp. is lower than -15°C for more than 1 hour, the unit will stop, when the outdoor temp. is higher than -12°C for more than 10 minutes and the compressor has stopped for more than 1 hour, or the outdoor temp. is higher than 5°C for more than 10 minutes, the unit will be started again.



| Display | Malfunction or Protection             |
|---------|---------------------------------------|
| P6      | Condenser high temperature protection |

When Condenser high temp. is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temp. less than 52°C.



**Remark:** 1. Test digital discharge temperature, outdoor condenser temperature T3

2. Test system pressure

3. High digital discharge temperature is likely owing to the lack of refrigerant, air leakage or system blockade. Check the above items respectively to solve the problem.

4. Condenser high temperature protection owes to the overcharge of refrigerant, air leakage or bad ventilation and heat-emission conditions.

# Part 4

## Installation

|                                                 |     |
|-------------------------------------------------|-----|
| 1. Installation and operation instructions..... | 127 |
| 2. Precaution on Installation .....             | 129 |
| 3. Vacuum dry and leakage checking .....        | 131 |
| 4. Refrigerant charge .....                     | 133 |
| 5. Water drainage.....                          | 134 |
| 6. Insulation work .....                        | 137 |

# 1. Installation and operation instructions

## CAUTIONS

For correct installation read this manual before starting installation and save this manual in a safe place for future reference.

Only trained and qualified service personnel should install repair or service air conditioning equipment. Users should not install the air conditioner by themselves.

Nominal cooling capacity of outdoor unit is tested under the condition that outdoor ambient dry/wet bulb temperature is 35°C/24°C. Actual max. Output capacity depends on outdoor ambient temperature and connection method, which may differ from nominal value. According to refrigeration system design and operation requirement, this outdoor unit should work with indoor units with corresponding total capacity, which ensures optimal performance and safe operation. To meet users' demand, this unit is specially designed that unit can work even though required total capacity of indoor units exceeds nominal value. Under this condition, actual output capacity of single indoor unit may be attenuated and less than nominal value. We disclaim all responsibility for malfunction caused by users' noncompliance of this installation and operation instructions.

Please read the instructions carefully and follow the requirements below:

### 1.1 Type of Indoor Unit

| Type              | Nominal Capacity K But/h |
|-------------------|--------------------------|
| Wall Mounted      | 7                        |
|                   | 9                        |
|                   | 12                       |
| Duct              | 7                        |
|                   | 9                        |
|                   | 12                       |
|                   | 18                       |
| Cassette          | 7                        |
|                   | 9                        |
|                   | 12                       |
|                   | 18                       |
| Floor and Ceiling | 12                       |
|                   | 18                       |

### 1.2 Connection Rules of DC Inverter One-two Split Type

| Nominal Capacity<br>K Btu/h | One indoor unit | two indoor units |          |           |
|-----------------------------|-----------------|------------------|----------|-----------|
|                             | 7               | 7<br>+7          | 9<br>+9  | 1<br>2+12 |
|                             | 9               | 7<br>+9          | 9<br>+12 |           |
|                             | 12              | 7<br>+12         |          |           |

DC inverter multi system connect different style indoor units, includes Wall Mounted type, Duct type, Cassette type and Floor and Ceiling type. All type indoor units can be freely combined.

### 1.3 Connection Rules of DC Inverter One -three Split Type

| Nominal Capacity<br>K Btu/h | one indoor unit | two indoor units |      |       | three indoor units |         |
|-----------------------------|-----------------|------------------|------|-------|--------------------|---------|
| 7                           |                 | 7+7              | 9+9  | 12+12 | 7+7+7              | 7+9+12  |
| 9                           |                 | 7+9              | 9+12 |       | 7+7+9              | 7+12+12 |

|  |    |      |  |  |        |        |
|--|----|------|--|--|--------|--------|
|  | 12 | 7+12 |  |  | 7+7+12 | 9+9+9  |
|  |    |      |  |  | 7+9+9  | 9+9+12 |

DC inverter multi system connect different style indoor units, includes Wall Mounted type, Duct type, Cassette type and Floor and Ceiling type. All type indoor units can be freely combined.

#### 1.4 Collocation Rules of Inverter One-Four Split Type

| Nominal Capacity<br>K Btu/h | one indoor unit | two indoor units |       |       | three indoor units |         |         |          | four indoor units |          |           |
|-----------------------------|-----------------|------------------|-------|-------|--------------------|---------|---------|----------|-------------------|----------|-----------|
|                             | 7               | 7+7              | 9+9   | 12+18 | 7+7+7              | 7+9+9   | 7+12+18 | 9+12+12  | 7+7+7+7           | 7+7+9+9  | 9+9+9+9   |
|                             | 9               | 7+9              | 9+12  | 18+18 | 7+7+9              | 7+9+12  | 9+9+9   | 9+12+18  | 7+7+7+9           | 7+7+9+12 | 9+9+9+12  |
|                             | 12              | 7+12             | 9+18  |       | 7+7+12             | 7+9+18  | 9+9+12  | 12+12+12 | 7+7+7+12          | 7+9+9+9  | 7+7+12+12 |
|                             | 18              | 7+18             | 12+12 |       | 7+7+18             | 7+12+12 | 9+9+18  |          | 7+7+7+18          | 7+9+9+12 | 7+9+12+12 |

DC inverter multi system connect different style indoor units, includes Wall Mounted type, Duct type, Cassette type and Floor and Ceiling type. All type indoor units can be freely combined.

#### CAUTIONS:

In case the ambient relative humidity exceeds 74%, Indoor unit MST2I-18HRIN1 May give off a little water. the max. Quantity of bend of 90° on the piping between single indoor unit and outdoor unit is 2. The equivalent of one bend is 1.2m piping.

## 2. Precaution on Installation

1). Measure the necessary length of the connecting pipe, and make it by the following way.

a. Connect the indoor unit at first, then the outdoor unit.

Bend the tubing in proper way. Do not harm them.

Specially Notice the pipe length/height/dimension of each capacity.

**Maximum pipe length**

| Model        | Max. Length | Max. Elevation |
|--------------|-------------|----------------|
| M2OA-18HRDN1 | 30          | 10             |
| M2OB-18HRDN1 | 30          | 10             |
| M3OA-27HRDN1 | 45          | 10             |
| M4OA-27HRDN1 | 60          | 10             |

### Piping sizes

| Model        | Liquid(mm/inch) | Gas(mm/inch) |
|--------------|-----------------|--------------|
| 18,000 BTU/H | 6.35(1/4")      | 9.53(3/8")   |
| 27,000 BTU/H | 6.35(1/4")      | 9.53(3/8")   |

### CAUTIONS

- ! Daub the surfaces of the flare pipe and the joint nuts with frozen oil, and wrench it for 3~4 rounds
- ! With hands before fasten the flare nuts.
- ! Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.

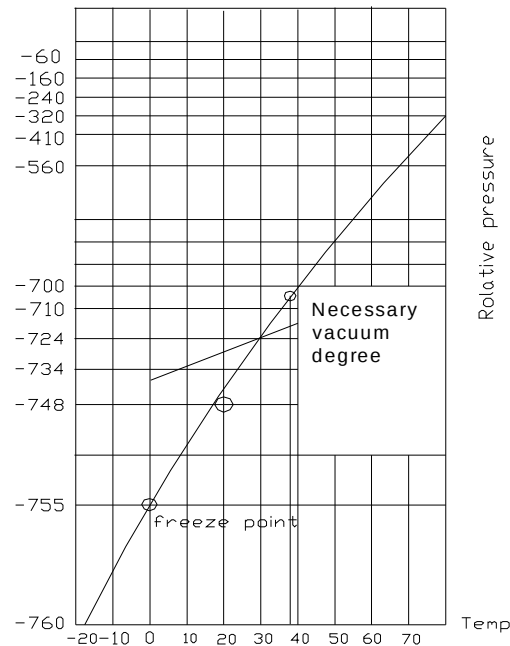
| Tubing size | Torque                          |
|-------------|---------------------------------|
| 6.35        | 1420~1720N.cm(144~176kgf.cm)    |
| 9.52        | 3270~3990N.cm(333~407kgf.cm)    |
| 12.7        | 4950~6030N.cm(504~616kgf.cm)    |
| 16          | 6180~7540N.cm(630~770kgf.cm)    |
| 19          | 9720~11860N.cm(990~12106kgf.cm) |

- b. The stop valve of the outdoor unit should be closed absolutely (as original state). Every time you connect it, first loosen the nuts at the part of stop valve, then connect the flare pipe immediately (in 5 minutes). If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction later. So please expel the air out of the pipe with refrigerant before connection.
  - c. Expel the air after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.
- 2) Locate The Pipe
- a. Drill a hole in the wall (suitable just for the size of the wall conduit), then set on the fittings such as the wall conduit and its cover.
  - b. Bind the connecting pipe and the cables together tightly with binding tapes. Do not let air in, which will cause water leakage by condensation.
  - c. Pass the bound connecting pipe through the wall conduit from outside. Be careful of the pipe allocation to do no damage to the tubing.
- 3) Connect the pipes.
- 4) Then, open the stem of stop valves of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.

- 5) Be sure of no leakage by checking it with leak detector or soap water.
- 6) Cover the joint of the connecting pipe to the indoor unit with the soundproof / insulating sheath (fittings), and bind it well with the tapes to prevent leakage.

### 3. Vacuum dry and leakage checking

- 1) Vacuum Dry: use vacuum pump to change the moisture (liquid) into steam (gas) in the pipe and discharge it out of the pipe to make the pipe dry. Under one atmospheric pressure, the boiling point of water(steam temperature) is 100°C. Use vacuum pump to make the pressure in the pipe near vacuum state, the boiling point of water falls relatively. When it falls under outdoor temperature, the moisture in the pipe will be vaporized.

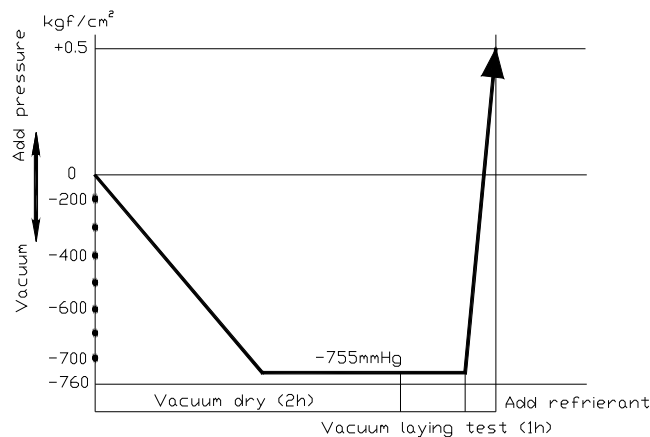


#### 2) Vacuum dry procedure

There are two methods of vacuum dry due to different construction environment: common vacuum dry, special vacuum dry.

##### ① Common vacuum dry procedure

- I Vacuum dry (for the first time)---connect the all-purpose detector to the inlet of liquid pipe and gas pipe, and run the vacuum pump more than two hours (the vacuum pump should be below -755mmHg)
- I If the pump can't achieve below -755mmHg after pumping 2 hours, moisture or leakage point will still exist in the pipe. At this time, it should be pumped 1 hour more.
- I If the pump can't achieve -755mmHg after pumping 3 hours, please check if there are some leakage points.
- I Vacuum placement test: place 1 hour when it achieves -755mmHg, pass if the vacuum watch shows no rising. If it rises, it shows there's moisture or leakage point.
- I Vacuuming from liquid pipe and gas pipe at the same time.
- I Sketch map of common vacuum dry procedure.



## ② Special vacuum dry procedure

**I** This vacuum dry method is used in the following conditions:

**n** There's moisture when flushing the refrigerant pipe.

**n** Rainwater may enter into the pipe.

**I** Vacuum dry for the first time ..... 2h pumping

**I** Vacuum destroy for the second time ..... Fill nitrogen to 0.5Kgf/cm<sup>2</sup>

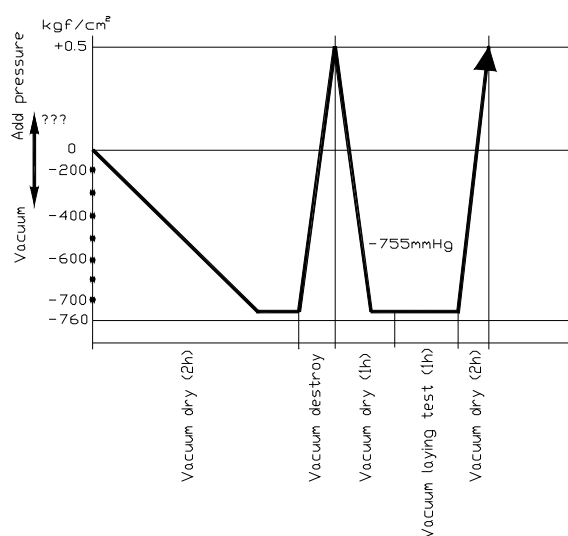
Because nitrogen is for drying gas, it has vacuum drying effect during vacuum destroy. But if the moisture is too much, this method can't dry thoroughly. So, please pay more attention to prevent water entering and forming condensation water.

## ④ Vacuum dry for the second time.....1h pumping

Determinant: Pass if achieving below -755mmHg. If -755mmHg can't be achieved in 2h, repeat procedure ③ and ④.

## ⑤ Vacuum placing test ..... 1h

## ⑥ Sketch map of special vacuum dry procedure



## 4. Refrigerant charge

- 1). When the length of the one-way pipe is less than 5m, additional refrigerant charge after vacuuming is unnecessary.
- 2). When the length of one-way pipe is over 5m, the additional charge quantity is as follows (unit in gram):

Calculation method:

| Refrigerant | Liquid diameter (mm) | Unit amount (g/m) | Formula           |
|-------------|----------------------|-------------------|-------------------|
| R410A       | Φ6.35                | 15                | $(L-5) \times 15$ |

- Remark: 1. The additional refrigerant charge is simply related with the liquid pipe diameter.
- 2, In the up formula, "L" means the length of liquid pipe between each indoor unit and outdoor unit (unit: m).

## 5. Water drainage

### 5.1 Gradient and Supporting

- 1) Keep the drainpipe sloping downwards at a gradient of at least 1/100. Keep the drainpipe as short as possible and eliminate the air bubble.
- 2) The horizontal drainpipe should be short. When the pipe is too long, a prop stand must be installed to keep the gradient of 1/100 and prevent bending. Refer to the following table for the specification of the prop stand.

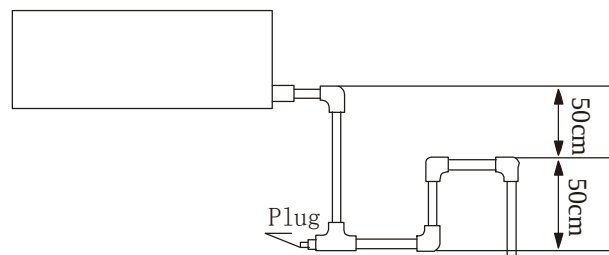
|               | Diameter | Distance between the prop stands |
|---------------|----------|----------------------------------|
| Hard PVC pipe | 25~40mm  | 1.5~2m                           |

#### 3). Precautions

- The diameter of drainpipe should meet the drainage requirement at least.
- , the drainpipe should be heat-insulated to prevent atomization.
- f** Drainpipe should be installed before installing indoor unit. After powering on, there is some water in water-receiver plate. Please check if the drain pump can operate correctly.
- „ All connection should be firm.
- ... Wipe color on PVC pipe to note connection.
- † Climbing, horizontal and bending conditions are prohibited.
- ‡ The dimension of drainpipe can't less than the connecting dimension of indoor drainpipe.
- ^ Heat-insulation should be done well to prevent condensation.
- % Indoor units with different drainage type can't share one convergent drainpipe.

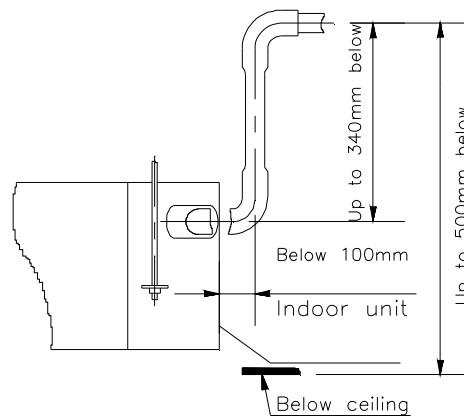
### 5.2 Drainpipe Trap

- 1) If the pressure at the connection of the drainpipe is negative, it needs to design drainpipe trap.
- 2) Every indoor unit needs one drainpipe trap.
- 3) A plug should be designed to do cleaning.



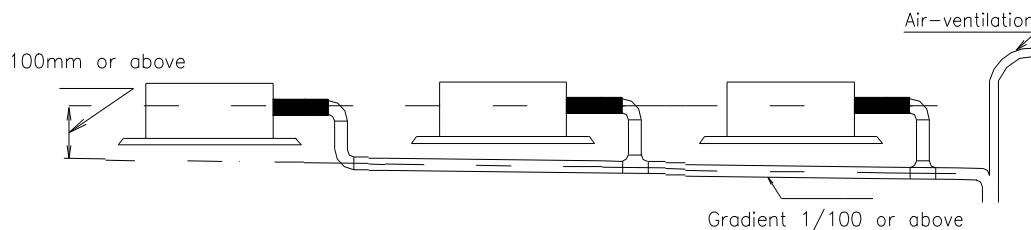
### 5.3 Upwards drainage(drain pump)

- 1) To ensure the gradient 1/100, the drainpipe can be lifted to 340mm. After upwards, place downwards, or it will cause malfunction to drain pump.



### 5.4 Convergent drainage

- 1) The number of indoor units should be as small as possible to prevent the traverse main pipe overlong.
- 2) Indoor unit with drain pump and indoor unit without drain pump should be in different drainage system.



### 3) Selecting the diameter

Number of connecting indoor units → Calculate drainage volume → Select the diameter

Calculate allowed volume = Total cooling capacity of indoor units(HP) × 2 (l/ hr)

|          | Allowed volume(lean 1/100) (l/ hr) | I.D. (mm) | Thick |
|----------|------------------------------------|-----------|-------|
| Hard PVC | $\leq 14$                          | Ø 25      | 3.0   |
| Hard PVC | $14 < \leq 88$                     | Ø 30      | 3.5   |
| Hard PVC | $88 < \leq 334$                    | Ø 40      | 4.0   |
| Hard PVC | $175 < \leq 334$                   | Ø 50      | 4.5   |
| Hard PVC | $334 < \leq$                       | Ø 80      | 6.0   |

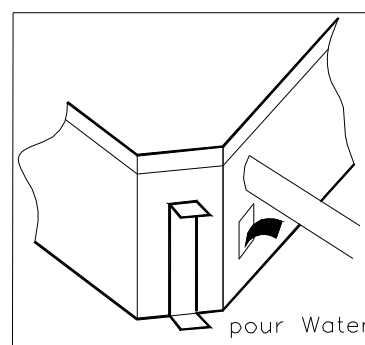
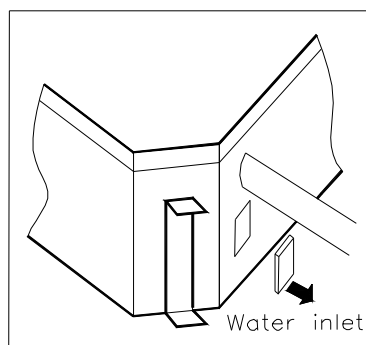
### 5.5 Drainage test

#### 1) Drainage without drain pump

After finishing drainpipe installation, pour some water into the water receiver plate to check if the water flows smoothly.

#### 2) Drainage with drain pump

- Poke the Water Level Switch , remove the cover, use water pipe to pour 2000ml water into the water receipt plate through the water inlet.



- , Turn on the power to Cooling operation. Check the pump's operation and switch on the Water Level Switch. Check the pump's sound and look into the transparent hard pipe in the outlet at the same time to check if the water can discharge normally.
- f** Stop the air conditioner running, turn off the power, and put back the cover.
- l** Stop the air conditioner. After 3 minutes, check if it has abnormality. If the collocation of drainpipes is illogical, the water will flow back overfull, which will cause the alarm lamp flashes, even overflow from the water receipt plate.
- l** Keep on pouring water until it gives an alarm signal for high water level, check if the pump drains water at once. If the water level can't fall below the alarmed water level after 3 minutes, the air conditioner will stop. Turn off the power and drain the remained water, and then turn on the air conditioner.

Note: the drain stuff in the main water receipt plate is for maintenance. Stuff up the drain stuff to prevent water leakage.

## 6. Insulation work

### 6.1 Insulation material and thickness

#### 1) Insulation material

Insulation material should adopt the material which is able to endure the pipe's temperature: no less than 70°C in the high-pressure side, no less than 120°C in the low-pressure side (For the cooling type machine, no requirements at the low-pressure side.)

Example: Heat pump type----Heat-resistant Polyethylene foam (withstand above 120°C)

Cooling only type---- Polyethylene foam (withstand above 100°C)

#### 2) Thickness choice for insulation material

Insulation material thickness is as follows:

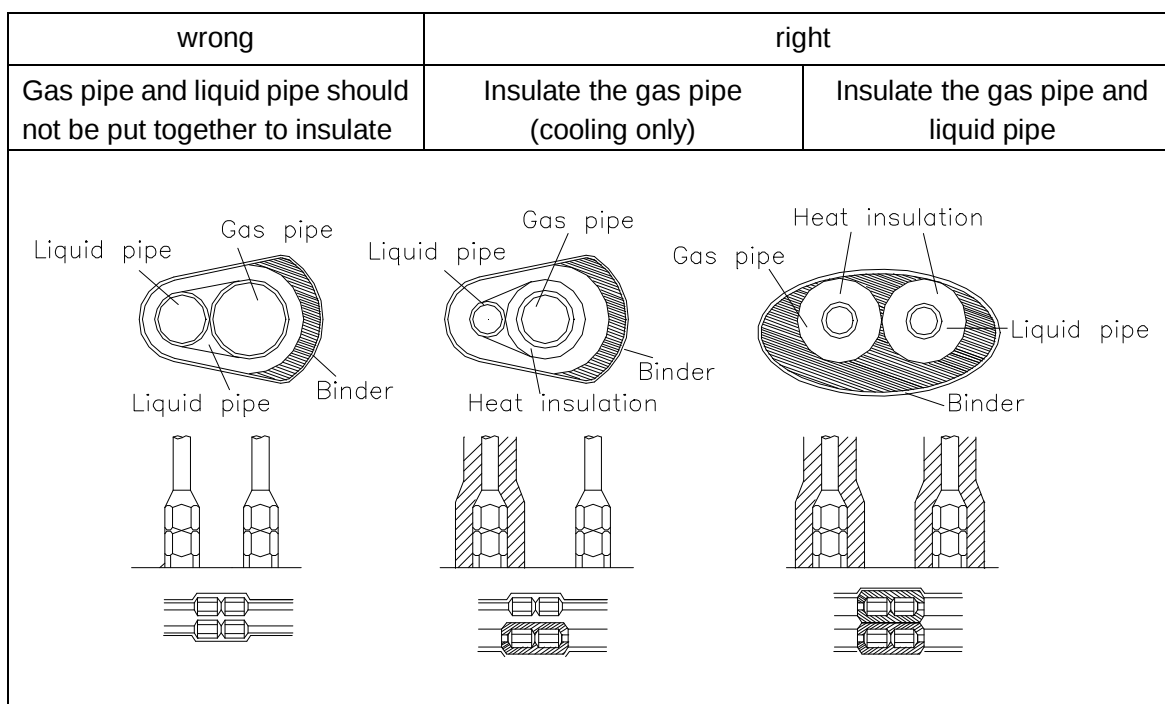
|                  | Pipe diameter (mm)     | Adiabatic material thickness |
|------------------|------------------------|------------------------------|
| Refrigerant pipe | Φ6.4—Φ25.4             | 10mm                         |
|                  | Φ28.6—Φ38.1            | 15mm                         |
| Drainage pipe    | Inner diameter Φ20—Φ32 | 6mm                          |

### 6.2 Refrigerant pipe insulation

#### 1) Work Procedure

- Before laying the pipes, the non-jointing parts and non-connection parts should be heat insulated.
- When the gas proof test is eligible, the jointing area, expanding area and the flange area should be heat insulated

#### 2) Insulation for non-jointing parts and non-connection parts

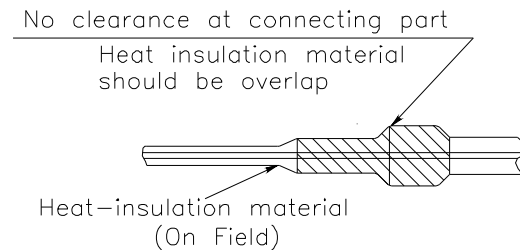


For construction convenience, before laying pipes, use insulation material to insulate the pipes to be deal with, at the same time, at two ends of the pipe, remain some length not to be insulated, in order to be welded and check the leakage after laying the pipes.

#### 3) Insulate for the jointing area, expanding area and the flange area

- Insulate for the jointing area, expanding area and the flange area should be done after checking leakage of the pipes

- , Make sure there's no clearance in the joining part of the accessorial insulation material and local preparative insulation material.



### 6.3 Drainage pipe insulation

- 1) The connection part should be insulated, or else water will be condensing at the non-insulation part.

### 6.4 Note

- 1) The jointing area, expanding area and the flange area should be heat insulated after passing the pressure test
- 2) The gas and liquid pipe should be heat insulated individually, the connecting part should be heat insulated individually.
- 3) Use the attached heat-insulation material to insulate the pipe connections (pipes' tie-in ,expand nut ) of the indoor unit.

## 7. Test operation

- 1) **The test operation must be carried out after the entire installation has been completed.**
- 2) **Please confirm the following points before the test operation.**

The indoor unit and outdoor unit are installed properly.

Tubing and wiring are correctly completed.

The refrigerant pipe system is leakage-checked.

The drainage is unimpeded.

The ground wiring is connected correctly.

The length of the tubing and the added stow capacity of the refrigerant have been recorded.

The power voltage fits the rated voltage of the air conditioner.

There is no obstacle at the outlet and inlet of the outdoor and indoor units.

The gas-side and liquid-side stop valves are both opened.

The air conditioner is pre-heated by turning on the power.

- 3) **According to the user's requirement, install the remote controller when the remote controller's signal can reach the indoor unit smoothly.**

### 4) Test operation

Indoor unit

Whether the switch on the remote controller works well.

Whether the buttons on the remote controller works well.

Whether the air flow louver moves normally.

Whether the room temperature is adjusted well.

Whether the indicator lights normally.

Whether the drainage is normal.

Whether there is vibration or abnormal noise during operation.

# Part 5

## Control System

|                          |     |
|--------------------------|-----|
| 1. Control function..... | 140 |
| 2. Control device.....   | 149 |

# 1. Control function

## 1.1 Electronic control function

### 1.1.1 Electric Control working environment.

1.1.1.1 Input voltage: 175~254V.

1.1.1.2 Input power frequency: 50Hz.

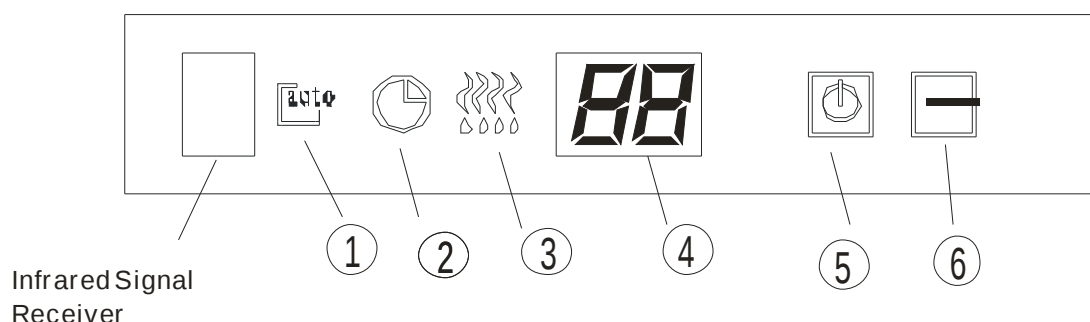
1.1.1.3 Indoor fan normal working amp. is less than 1A.

1.1.1.4 Outdoor fan. Normal working amp. is less than 1.5A.

1.1.1.5 Four-way valve normal working amp. is less than 1A.

1.1.1.6 Swing motor: DC12V.

### 1.1.2 Indoor unit's display board (only available for wall mounted indoor unit)



#### 1.1.2.1 AUTO indicator

This indicator illuminates when the air conditioner is in AUTO operation.

#### 1.1.2.2 TIMER indicator

This indicator illuminates when TIMER is set ON/OFF.

#### 1.1.2.3 PRE.-DEF. Indicator (For Cooling & Heating models only)

This indicator illuminates when the air conditioner starts defrosting automatically or when the warm air control feature is activated in heating mode.

#### 1.1.2.4 TEMPERATURE indicator

- Usually it displays the temperature settings. When change the setting temperature, this indicator begins to flash, and stops 20 seconds later.
- It displays the room temperature when the air conditioner is in FAN only operation.
- When the unit stops operation, it returns to original factory settings.
- Displays the malfunction code or protection code.

#### 1.1.2.5 OPERATION indicator

This indicator flashes after power is on and illuminates when the unit is in operation.

#### 1.1.2.6 SLEEP indicator

This indicator appears when the unit is in Energy-saving operation.

### 1.1.3 Digital display in outdoor PCB

There is a digital display tube in outdoor PCB.

#### 1.1.3.1 Digital display tube display function

- I In standby , The LED displays “— —”,
- I In compressor operation, the LED display the frequency,
- I In defrosting mode, The LED displays “dF”
- I In compressor pre-heating, The LED displays “1 1”
- I In protection or malfunction, the LEC displays error code or protection code.

### 1.1.4 Outdoor unit point check function

There is a check switch in outdoor PCB.

Push the switch SW1 to check the states of unit when the unit is running. The digital display tube will display the follow procedure when push SW1 each time:

Capacity demand→Running mode →revised capacity → fan state →No.1 evaporator pipe temp. →No.2 evaporator pipe temp.→No.3 evaporator pipe temp.→No.4 evaporator pipe temp.→outdoor pipe temp. → Outdoor temp. →discharge gas temp.→current of outdoor unit → No. 1 opening degree of electronic expansion valve → No. 2 opening degree of EXV → No. 3 opening degree of EXV→No. 4 opening degree of EXV→indoor unit number→last protection/error code→capacity demand(cycle)

Explanation for the some display content:

#### 1.1.4.1Running mode:

| Display | Corresponding mode |
|---------|--------------------|
| 0       | Off                |
| 1       | Cooling mode       |
| 2       | Heating mode       |

#### 1.1.4.2Fan state:

| Display | Corresponding mode |
|---------|--------------------|
| 0       | Off                |
| 1       | Low fan            |
| 2       | High fan           |

#### 1.1.4.3Opening degree of EXV:

Opening degree equals the display data times 8;

#### 1.1.4.4Number of indoor unit

The indoor unit that can communicate with outdoor unit normally.

#### 1.1.4.5 Outdoor ambient temp:

| Display | Corresponding temp. | Display | Corresponding temp. | Display | Corresponding temp. |
|---------|---------------------|---------|---------------------|---------|---------------------|
| 15      | -7.5                | 50      | 10                  | 80      | 25                  |
| 16      | -7                  | 51      | 10.5                | 81      | 25.5                |
| 17      | -6.5                | 52      | 11                  | 82      | 26                  |
| 18      | -6                  | 53      | 11.5                | 83      | 26.5                |
| 19      | -5.5                | 53      | 11.5                | 84      | 27                  |
| 20      | -5                  | 54      | 12                  | 85      | 27.5                |
| 21      | -4.5                | 55      | 12.5                | 86      | 28                  |
| 22      | -4                  | 56      | 13                  | 87      | 28.5                |
| 23      | -3.5                | 57      | 13.5                | 88      | 29                  |
| 24      | -3                  | 58      | 14                  | 89      | 29.5                |
| 26      | -2                  | 59      | 14.5                | 90      | 30                  |
| 27      | -1.5                | 60      | 15                  | 91      | 30.5                |
| 28      | -1                  | 61      | 15.5                | 92      | 31                  |
| 29      | -0.5                | 62      | 16                  | 93      | 31.5                |
| 30      | 0                   | 63      | 16.5                | 93      | 31.5                |
| 31      | 0.5                 | 63      | 16.5                | 94      | 32                  |

| Display | Corresponding temp. | Display | Corresponding temp. | Display | Corresponding temp. |
|---------|---------------------|---------|---------------------|---------|---------------------|
| 32      | 1                   | 64      | 17                  | 95      | 32.5                |
| 33      | 1.5                 | 65      | 17.5                | 96      | 33                  |
| 34      | 2                   | 65      | 17.5                | 97      | 33.5                |
| 35      | 2.5                 | 66      | 18                  | 98      | 34                  |
| 36      | 3                   | 67      | 18.5                | 99      | 34.5                |
| 37      | 3.5                 | 68      | 19                  | 10.     | 35~40               |
| 38      | 4                   | 69      | 19.5                | 11.     | 40~45               |
| 39      | 4.5                 | 70      | 20                  | 12.     | 45~50               |
| 40      | 5                   | 71      | 20.5                | 13.     | 50~55               |
| 41      | 5.5                 | 72      | 21                  | 14.     | 55~60               |
| 42      | 6                   | 73      | 21.5                | 15.     | 60~65               |
| 43      | 6.5                 | 74      | 22                  | 16.     | 65~70               |
| 44      | 7                   | 75      | 22.5                |         |                     |
| 45      | 7.5                 | 75      | 22.5                |         |                     |
| 46      | 8                   | 76      | 23                  |         |                     |
| 47      | 8.5                 | 77      | 23.5                |         |                     |
| 48      | 9                   | 78      | 24                  |         |                     |
| 49      | 9.5                 | 79      | 24.5                |         |                     |

#### 1.1.4.6 Outdoor pipe temp.

Refers to 1.1.4.5

#### 1.1.4.7 Current of outdoor unit

| Display | Corresponding mode |
|---------|--------------------|
| 44      | 6.0 A              |
| 46      | 6.2 A              |
| 54      | 7.4 A              |
| 55      | 7.6 A              |
| 58      | 7.6 A              |
| 62      | 8.0 A              |
| 66      | 8.6 A              |
| 67      | 8.8 A              |
| 68      | 9.0 A              |
| 70      | 9.2 A              |
| 72      | 9.5 A              |
| 76      | 10.0 A             |
| 78      | 10.2 A             |
| 80      | 10.4 A             |
| 82      | 10.6 A             |
| 84      | 11.0 A             |
| 88      | 11.6 A             |
| 92      | 12.0 A             |
| 94      | 12.2 A             |

- 1.1.4.8 No. 1 opening degree of electronic expansion valve:  
Opening degree equals the display data times 8
- 1.1.4.9 No. 2 opening degree of electronic expansion valve:  
Opening degree equals the display data times 8
- 1.1.4.10 No. 3 opening degree of electronic expansion valve:  
Opening degree equals the display data times 8
- 1.1.5 Protection
- 1.1.5.1 3 minutes delay at restart for compressor.
- 1.1.5.2 Discharge temperature protection of compressor, compressor stops when the temp. of discharge is more than 115°C and last out 5 s. compressor runs when the temp. of discharge is less than 90°C.
- 1.1.5.3 Temperature protection of compressor top, compressor stops when the temp. of top of compressor is more than 120°C, compressor runs when the temp. of top of compressor is less than 105°C.
- 1.1.5.4 When AC voltage  $\geq 270V$  for 30 seconds, Outdoor Unit stops operation and alarms. When AC voltage  $\leq 260V$  for 30 seconds, Outdoor Unit resumes operation.
- 1.1.3.5 Inverter module Protection , Inverter module Protection itself has a protection function against current, voltage and temperature.
- 1.1.5.6 Sensor protection at open circuit and breaking disconnection
- 1.1.5.7 Fan Speed is out of control. When Indoor Fan Speed is too high(higher than High Fan+300RPM)or too low(lower than 400RPM), the unit stops and LED displays failure information and can't return to normal operation automatically.
- 1.1.5.8 Cross Zero signal error warning. If there is no Cross Zero signals in 4 minutes, the unit stops and LED displays failure information and can't return to normal operation automatically. (only available for wall mounted indoor unit)
- 1.1.5.9 Current protection: When the current is more than 20A, the compressor stops.
- 1.1.5.10 Outdoor condenser high temperature protection: Under cooling mode, if  $T_3 > 65^\circ C$  for 3 minutes, the compressor will stop. When  $T_3 < 52^\circ C$ , the protection is not valid.
- 1.1.5.11 Outdoor low temperature protection: If the outdoor temperature is lower than  $-15^\circ C$  for 1 hour, the compressor and fan motor will stop. If the outdoor temperature is higher than  $-12^\circ C$  for 10 minutes and the compressor stops operation for 1h, or the outdoor temperature is higher than  $5^\circ C$  for 10 minutes, then restart and enter into the prior operation mode.
- 1.1.5.12 Compressor pre-heating function: When the outdoor temperature is lower than  $3^\circ C$  and the compressor stops operation for more than 3 hours, or the outdoor temperature is lower than  $3^\circ C$  and the power is just put on, the compressor enters into pre-heating condition. When outdoor temp. is more than  $5^\circ C$  or user operate it, pre-heating condition will finish.
- 1.1.6 Fan-only mode  
Fan speed is high/mid/low/ Auto
- 1.1.7 Cooling mode
- 1.1.7.1 Indoor fan keeps running, fan speed can be set in high/mid/low/ Auto:
- 1.1.7.2 Auto fan at cooling mode: (T=Indoor Temp.-Setting Temp.)

|                 | Condition                     | Indoor fan speed |
|-----------------|-------------------------------|------------------|
| Room temp. up   | $T < 1.5^\circ C$             | Low              |
|                 | $1.5^\circ C < T < 4^\circ C$ | Mid.             |
|                 | $T > 4^\circ C$               | High             |
| Room temp. down | $T > 3^\circ C$               | High             |
|                 | $1^\circ C < T < 3^\circ C$   | Mid.             |
|                 | $T < 1^\circ C$               | Low              |

## 1.1.7.3 Anti-freezing control to indoor evaporator at cooling mode( T: evaporator temp. )

|  | Evaporator Temp.        | Compressor |
|--|-------------------------|------------|
|  | $T < 4^{\circ}\text{C}$ | Off        |
|  | $T > 8^{\circ}\text{C}$ | On         |

## 1.1.8 Dehumidifying mode

## 1.1.8.1 the indoor fan is fixed in low speed

## 1.1.8.2 Low room temperature protection:

When room temperature decreases to below  $10^{\circ}\text{C}$ , indoor fan stop, when room temperature restores to over  $12^{\circ}\text{C}$ , indoor fan start.

## 1.1.8.3 At dehumidifying mode, the anti-freezing function of the indoor heat exchanger is the same as that of cooling mode.

## 1.1.9 Heating mode

## 1.1.9 1Indoor Fan actions at heating mode

Indoor Fan can be set at HIGH/MID/LOW/AUTO by using a remote controller, but Anti-cold wind function prevails.

Anti-cold wind control function at heating mode

|                             | Condition<br>T= Indoor exchanger temp.        | Indoor fan speed  |
|-----------------------------|-----------------------------------------------|-------------------|
| Indoor exchanger temp. up   | $T < 34^{\circ}\text{C}$                      | Off               |
|                             | $34^{\circ}\text{C} < T < 37^{\circ}\text{C}$ | Breeze            |
|                             | $37^{\circ}\text{C} < T < 44^{\circ}\text{C}$ | Low speed         |
|                             | $T > 44^{\circ}\text{C}$                      | Setting fan speed |
| Indoor exchanger temp. down | $T > 38^{\circ}\text{C}$                      | Setting fan speed |
|                             | $33^{\circ}\text{C} < T < 38^{\circ}\text{C}$ | Low speed         |
|                             | $24^{\circ}\text{C} < T < 33^{\circ}\text{C}$ | Breeze            |
|                             | $T < 24^{\circ}\text{C}$                      | Off               |

## 1.1.9.2 Auto wind at heating mode

|                 | Condition<br>T=Indoor Temp.-Setting Temp.       | Indoor fan speed |
|-----------------|-------------------------------------------------|------------------|
| Room temp. up   | $T < 1.5^{\circ}\text{C}$                       | High             |
|                 | $1.5^{\circ}\text{C} < T < 2.5^{\circ}\text{C}$ | Mid.             |
|                 | $T > 2.5^{\circ}\text{C}$                       | Low              |
| Room temp. down | $T < 1.0^{\circ}\text{C}$                       | High             |
|                 | $1.0^{\circ}\text{C} < T < 2.0^{\circ}\text{C}$ | Mid.             |
|                 | $T > 2.0^{\circ}\text{C}$                       | Low              |

## 1.1.9.3 Indoor evaporator high-temperature protection at heating mode

| Condition<br>T= Indoor exchanger temp.        | Compressor                       |
|-----------------------------------------------|----------------------------------|
| $T < 48^{\circ}\text{C}$                      | On                               |
| $53^{\circ}\text{C} < T < 63^{\circ}\text{C}$ | Decrease frequency of compressor |
| $T > 63^{\circ}\text{C}$                      | Off                              |

Defrosting operation (Available for heating only).

#### 1.1.10 Defrost

##### 1.1.10.1 Defrosting condition:

The temperature of outdoor heat exchanger remains consecutively lower than  $-2^{\circ}\text{C}$  for more than 40 minutes,

##### 1.1.10.2 Ending condition of defrosting

If one of following conditions is satisfied, end the defrost and turn into heating mode:

- a. The defrost time has reached to 10 minutes.
- b. When the temperature of outdoor heat exchanger rises up to  $15^{\circ}\text{C}$

##### 1.1.10.3 Defrosting Actions:

- a. Compressor runs.
- b. 4 way valve switches off,
- c. Outdoor fan switches off
- d. Indoor fan running according to anti-cold wind function in heating mode.

#### 1.1.11 Automatic operation mode

The air conditioner automatically selects one of the following operation modes: cooling or fan only according to the temp. difference between room temp. (TA) and set temp. (TS).

|                                                            |                |
|------------------------------------------------------------|----------------|
| TA—TS                                                      | Operation mode |
| TA—TS $>2^{\circ}\text{C}$                                 | Cooling        |
| $-1^{\circ}\text{C}\leq\text{TA-TS}\leq+2^{\circ}\text{C}$ | Fan-only       |

#### 1.1.12 Manual switch

##### 1.1.12.1 Mode changes when push this button .

Cooling mode  $\rightarrow$  Auto mode  $\rightarrow$  Unit off  $\rightarrow$  Cooling mode

##### 1.1.12.2 At Cooling mode, after 30 minutes cooling operation whose fan speed is set as low, the A/C operates with a setting temp. of $24^{\circ}\text{C}$ .

##### 1.1.12.3 At auto mode, the A/C operates with a set temp. of $24^{\circ}\text{C}$

#### 1.1.13 Timer Function

##### 1.1.13.1 The maximum length of timer is 24 hours and the minimum resolving power is 15 minutes.

##### 1.1.13.2 Timer on: first turn off the A/C, the A/C will be automatically on at the set time.

##### 1.1.13.3 Timer off: first turn on the A/C, the A/C will be automatically off at the set time

##### 1.1.13.4 Timer on/off function( on time is earlier than off time): first turn off the A/C, it will be automatically on at set time, and later be off at the set time, then unit turns on at set time.

##### 1.1.13.5 Timer off/on function( off time is earlier than on time): first turn on the A/C, it will be automatically off at set time, and later be on at the set time, then unit turns off at set time.

#### 1.1.14 Sleep mode(only available for wall mounted indoor unit)

##### 1.1.14.1 It is available at cooling, heating or auto mode.

##### 1.1.14.2 Cooling:

The set temperature rise  $1^{\circ}\text{C}$  per hour. Two hours later, the set temperature will maintain as a constant and the fan speed is kept at low speed.

##### 1.1.14.3 Heating:

The set temperature decrease  $1^{\circ}\text{C}$  per hour. Two hours later, the set temperature will maintain as a constant and the air circulation is kept at low speed (Cold air proof function takes precedence over all).

##### 1.1.14.4 Auto:

The Sleep Mode running function operates in accordance with selected running mode by auto mode.

##### 1.1.14.5 After 7 hours, unit cancels this mode automatically.

|           |         |         |         |         |
|-----------|---------|---------|---------|---------|
| J2        | On      | On      | Off     | Off     |
| J3        | On      | Off     | On      | Off     |
| Stop time | 7 hours | 8 hours | 6 hours | 7 hours |

#### 1.1.15 Plasma(only available for alfa or corona type wall mounted indoor unit)

Plasma turns on when the indoor fan runs.

Plasma turns off automatically when front panel is opened.

#### 1.1.16 Mode conflict

The indoor units can not work cooling mode and heating at same time.

Heating mode has a priority.

##### 1.1.16.1 Definition

|              | Cooling mode | Heating Mode | Fan | Off |
|--------------|--------------|--------------|-----|-----|
| Cooling mode | No           | Yes          | No  | No  |
| Heating Mode | Yes          | No           | Yes | No  |
| Fan          | No           | Yes          | No  | No  |
| Off          | No           | No           | No  | No  |

No: No mode conflict;

Yes: Mode conflict

##### 1.1.16.2 Unit action

- In case of one Indoor unit working in cooling mode or fan mode, and another indoor unit is set to heating mode, the indoor unit working in cooling mode or fan mode will change to stand by. The outdoor unit will work in heating mode.

In case of one Indoor unit working in heating mode, and another indoor unit is set to cooling mode or fan mode, the indoor unit setting to cooling mode or fan mode will change to stand by.

#### 1.1.17 Auto restart function

In case of a sudden power failure, this function automatically sets the unit to previous settings before the power failure when power returns.

#### 1.1.18 Indoor unit indicator display function

##### 1.1.18 .1 Indoor unit error code explanation: T6-panel

| LED3<br>DEFR | LED2<br>TIMER | LED1<br>AUTO | LED0<br>OPER | Explanation                                       |
|--------------|---------------|--------------|--------------|---------------------------------------------------|
| ×            | ×             | ○            | ☆            | Modular Protection                                |
| ○            | ×             | ×            | ☆            | Temp Protection of Top Compressor                 |
| ×            | ○             | ×            | ☆            | Outdoor Ambient Sensor Open or Short Circuit      |
| ×            | ○             | ○            | ☆            | Voltage Too High or Too Low                       |
| ○            | ×             | ○            | ☆            | Mode conflict                                     |
| ○            | ○             | ○            | ☆            | Room Sensor Open or Short Circuit                 |
| ○            | ○             | ☆            | ☆            | Indoor Fan Speed Out of Control                   |
| ☆            | ×             | ○            | ☆            | Zero-Cross Signal Error                           |
| ○            | ○             | ○            | ○            | EEPROM Error                                      |
| ☆            | ☆             | ☆            | ☆            | Communication Protection Between Indoor & Outdoor |
| ☆            | ×             | ☆            | ☆            | Outdoor unit current protection                   |

○—Bright

×—Extinguished

☆—Blink

## 1.1.18 .2 Indoor unit error code explanation: Elite-panel

LED4: operation LED1: auto LED2: timer LED3: defrost

| LED3<br>DEFR | LED2<br>TIMER | LED1A<br>UTO | LED4<br>OPER | LED state                                                                  |
|--------------|---------------|--------------|--------------|----------------------------------------------------------------------------|
| X            | X             | O            | ☆            | Inverter module protection                                                 |
| O            | X             | X            | ☆            | Compressor top temp. protection (PRCOM)                                    |
| X            | O             | X            | ☆            | Outdoor sensor open or short circuit                                       |
| X            | O             | O            | ☆            | Outdoor voltage protection                                                 |
| O            | X             | O            | ☆            | Mode conflict                                                              |
| O            | O             | O            | ☆            | Indoor room temp. sensor or indoor pipe temp. sensor open or short-circuit |
| O            | O             | ☆            | ☆            | Indoor fan speed out of control                                            |
| ☆            | X             | O            | ☆            | Zero-cross signal error                                                    |
| X            | X             | ☆            | ☆            | EEPROM error                                                               |
| ☆            | O             | ☆            | ☆            | Air-conditioner matching error                                             |
| ☆            | ☆             | ☆            | ☆            | Indoor and outdoor communication error                                     |
| X            | ☆             | ☆            | ☆            | Outdoor low temp. protection                                               |
| ☆            | X             | ☆            | ☆            | Outdoot current protection                                                 |

O: (bright) X: (extinguished) ☆: (blink)

## 1.1.18 .3 Indoor unit error code explanation: cassette/duct/ceiling and floor

| Operation | Timer | De-frost | Alarm | State                                          |
|-----------|-------|----------|-------|------------------------------------------------|
| ê         | X     | X        | X     | Indoor room temp. sensor open or short-circuit |
| X         | X     | ★        | X     | Indoor pipe temp. sensor open or short-circuit |
| X         | ê     | X        | X     | Indoor and outdoor communication error         |
| X         | X     | X        | ★     | Water level alarm                              |
| ê         | ê     | X        | X     | EEPROM error                                   |
| ê         | X     | X        | ~     | Inverter module protection                     |
| ê         | ~     | X        | X     | Outdoor sensor open or short circuit           |
| ê         | ~     | X        | ~     | Outdoor voltage protection                     |
| ê         | X     | ~        | X     | Compressor top temp. protection                |
| ê         | X     | ~        | ~     | Mode conflict                                  |
| ê         | X     | ê        | ê     | Outdoor current protection                     |

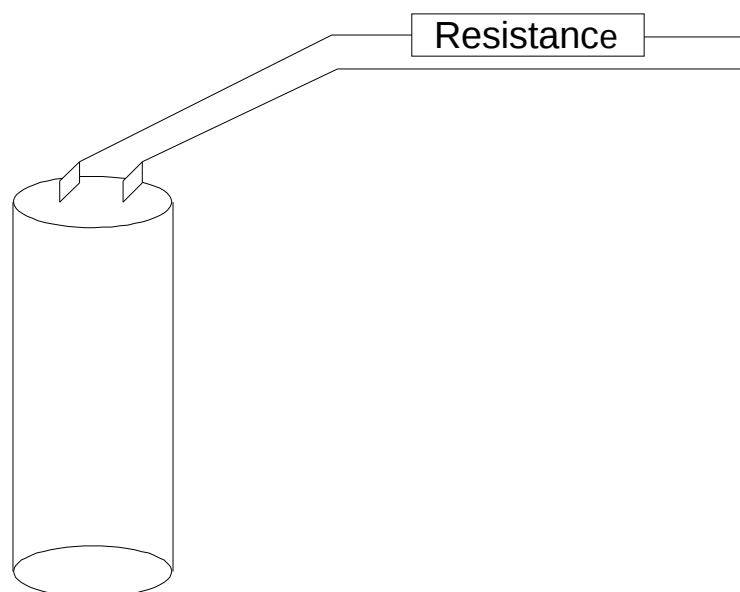
ê flash, ~ light, X extinguished.

## 1.2.Troubleshooting

## 1.2.1 Safety

Because of there are capacitors in PCB and relative circuit in outdoor unit, even shut down the power supply, electricity power still are kept in capacitors, do not forget to discharge the electricity power in capacitor.

The value of resistance is about 1500 ohms to 2000 ohms



The voltage in P3 and P4 in outdoor PCB is high voltage about 310V

The voltage in P5 and P6 in outdoor PCB is high voltage about 310V

### 1.2.2 LED error code display for outdoor unit

| Display | LED STATUS                                                                         |
|---------|------------------------------------------------------------------------------------|
| E0      | EEPROM error                                                                       |
| E1      | No 1 Indoor units pipe temp. sensor or connector of pipe temp. sensor is defective |
| E2      | No 2 Indoor units pipe temp. sensor or connector of pipe temp. sensor is defective |
| E3      | No 3 Indoor units pipe temp. sensor or connector of pipe temp. sensor is defective |
| E4      | Outdoor units temp. sensor or connector of temp. sensor is defective               |
| E5      | Compressor volt protection                                                         |
| E6      | No 4 Indoor units pipe temp. sensor or connector of pipe temp. sensor is defective |
| E7      | Indoor and outdoor communication error                                             |
| P0      | Compressor top protection against temperature                                      |
| P1      | High pressure protection                                                           |
| P2      | Low pressure protection                                                            |
| P3      | Compressor current protection                                                      |
| P4      | Inverter module protection                                                         |
| P5      | Outdoor low temp. protection                                                       |
| P6      | Condenser high-temperature protection                                              |

## 2. Control device

### 2.1 Remote Controller

#### 2.1.1 R71A/E

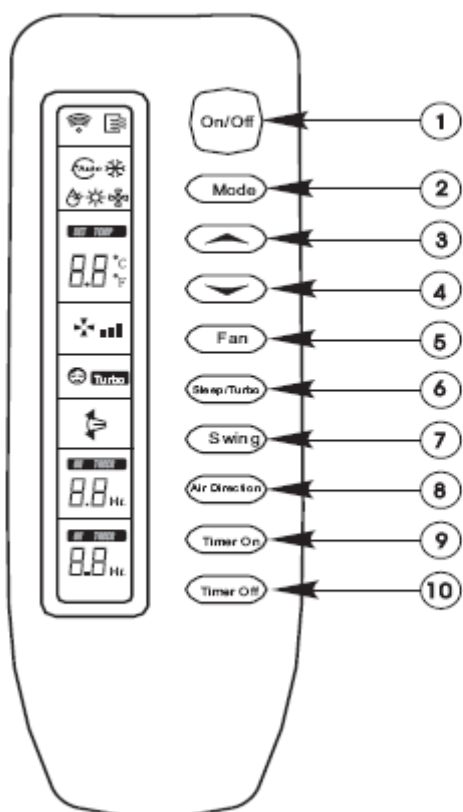
There's one model R71A/E ,for hereinafter types:MSCI-07HRIN1, MSCI-09HRIN1, MSCI-12HRIN1, MSHI-07HRIN1, MSHI-09HRIN1, MSHI-12HRIN1, MST6I-07HRIN1, MST6I-09HRIN1, MST6I-12HRIN1

The below is R71A/E remote controller

#### Remote Controller Specifications

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| Model                                 | R71A/E                               |
| Rated voltage                         | 3.0V                                 |
| Lowest voltage of CPU emitting signal | 2.0V                                 |
| Reaching distance                     | 8m(when using 3.0 voltage,itGets11m) |
| Environment temperature range         | -5~60°C                              |

#### Introduction of Function Buttons on the Remote Controller



① **On/off Button:** Push this button to start the unit operation. Push the button again to stop the unit operation.

② **Mode Button:** Each time you press the button, a mode is selected in a sequence that goes from AUTO、COOL、DRY、HEAT and FAN only as the following figure indicates:



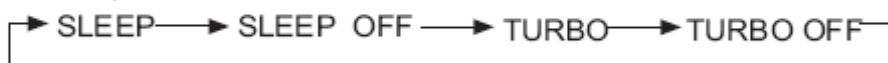
▲ **NOTE:** HEAT only for Heat Pump

③ ▲ **Button :** Push the button to increase the indoor temperature setting to 30℃.

④ ▼ **Button :** Push the button to decrease the indoor temperature setting to 17℃.

⑤ **Fan Button:** This button is used for selecting Fan Speed. Each time you press the button, a fan speed is selected in a sequence that goes from AUTO、LOW、MED to HIGH, then back to Auto. When you select the AUTO or DRY mode, the fan speed will be automatically controlled and you can not set the fan speed.

⑥ **Sleep/Turbo Button:** Press this button to select SLEEP or TURBO mode. Each time you press the button, the operation mode is shifted in the direction of the arrow. When the operation mode is either DRY or FAN only, this function can not be used.



⑦ **Swing Button:** Press the SWING button to activate the swing feature. Push the button again to stop.

⑧ **Air direction Button:** Press this button to change the swing angle of the louver. The swing angle of the louver is 6℃ for each press. When the louver swing at a certain angle which would affect the cooling and heating effect of the air conditioner, it would automatically change the swing direction. No symbol will appear in the display area when press this button.

⑨ **Timer on Button:** Press this button to initiate the auto-on time sequence. Each press will increase the auto-timed setting in 30 minutes increments. When the setting time displays 10Hr, each press will increase the auto-timed setting 60 minutes increments. To cancel the auto-timed program, continue pressing the button until nothing displays.

⑩ **Timer off Button:** Press this button to initiate the auto-off time sequence. Each press will increase the auto-timed setting in 30 minutes increments. When the setting time displays 10Hr, each press will increase the auto-timed setting 60 minutes increments. To cancel the auto-timed program, continue pressing the button until nothing displays.

## Names and Functions of indicators on Remote Controller

### Display Panel

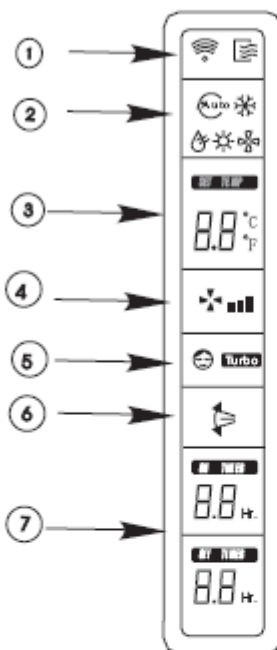


Fig. 2

- ① **TRANSMISSION Indicator:**  
This indicator lights when remote controller transmits signals to indoor unit.
- ② **MODE indicator:**  
Displays the current operation modes. Including AUTO(☁), COOL(❄), DRY(☀), HEAT(❄) or FAN(☁). HEAT only available for heat pump model.
- ③ **TEMPERATURE indicator:**  
Displays the temperature settings(17 °C to 30 °C).
- ④ **FAN SPEED indicator:**  
Displays the selected fan speed, AUTO(☁) and three fan speed levels LOW(☁), MED(☁), HIGH(☁). Displays ☁ (flashing) when the operating mode is either AUTO or DRY.
- ⑤ **SLEEP/TURBO indicator:**  
Each time the Sleep/Turbo button is pushed, the signal displays in the following sequence:  


Nothing appears when the operating mode is either DRY or FAN only
- ⑥ **SWING indicator:**  
This indicator lights up when the SWING button is pressed.
- ⑦ **TIMER indicator:**  
The time set for timer operation is indicated. (0.5 ~ 24 hours)

**⚠ NOTE:** All items are shown in the Fig.2 for the purpose of clear presentation But during the actual operation only the relative functional items are shown on the display panel.

### 2.1.2 R51I4/BGE,R51I4/BGCE

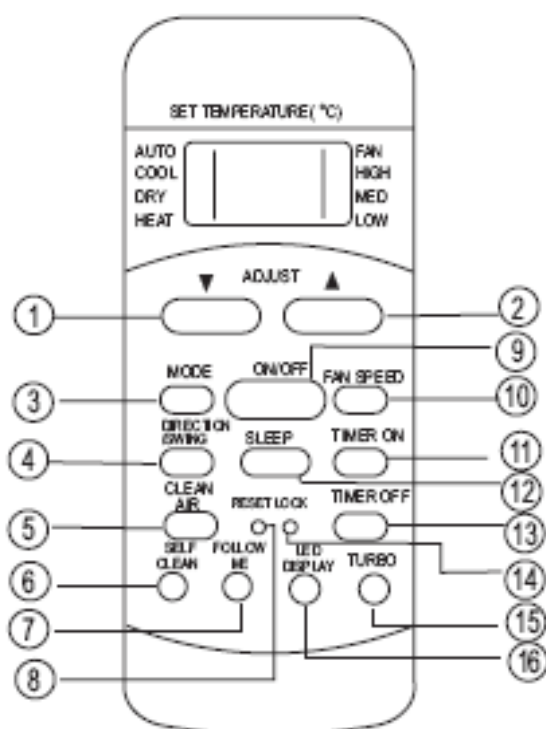
The model R51I4/BGE,R51I4/BGCE ,for hereinafter type:MSV1I-09HRDN1, MSV1I-12HRDN1

The below is R51I4BGE, R51I4/BGCE remote controller

#### Remote Controller Specification

|                                      |                                   |
|--------------------------------------|-----------------------------------|
| Model                                | R51I4BGE,R51I4/BGCE               |
| Rated voltage                        | 3.0V(Dry batteries R03/LR03×2)    |
| Lowest voltage of CPU mitting signal | 2.0V                              |
| Signal receiving range               | 8m(whenusing3.0voltage,itGets11m) |
| Environment                          | -5~60℃                            |

#### Features of Remote controller buttons



- ① **TEMP Button ▼** : Push this button to decrease the indoor temperature setting in 1°C increments to 17°C.
- ② **TEMP Button ▲** : Push this button to increase the indoor temperature setting in 1°C increments to 30°C.
- ③ **MODE Button**: Each time the button is pressed, the operation mode is selected in the sequence of the following:



▲ **NOTE:** Heat mode is for cooling & heating models only.

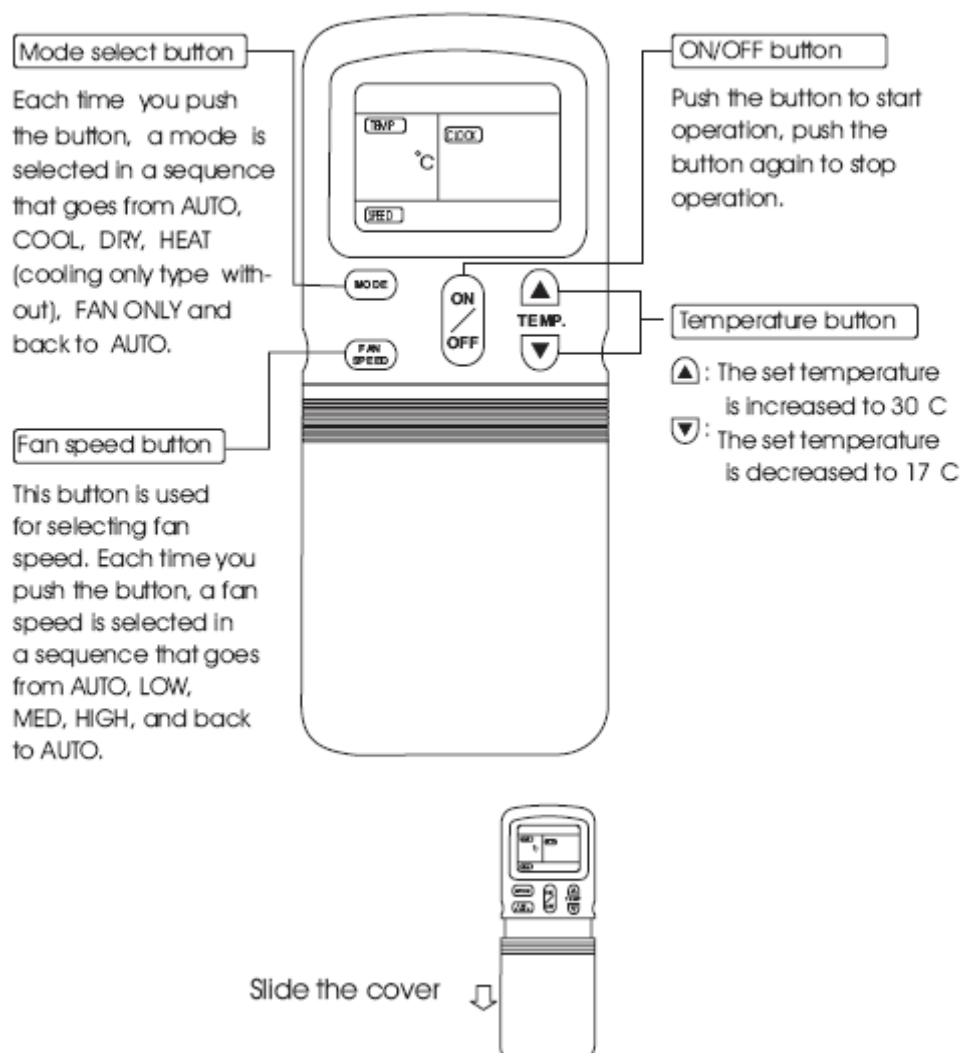
- ④ **DIRECTION/SWING Button:** Press this button once and quickly to change the air flow direction of the horizontal louver a little. The moving angle of the louver is 6° for each press. Press the button without releasing for 2 more seconds, the horizontal louver would swing automatically. Press it again, it would stop moving. When the louver swing/moving at a certain position which would affect the cooling and heating effect of the air conditioner, it would automatically change the swing direction (upward or downward).
- ⑤ **CLEAN AIR Button(on some models):** When push this button, the Ionizer/Plasma Dust Collector(depending on models) is energized and will help to remove pollen and impurities from the air.
- ⑥ **SELF CLEAN(AUTO CLEAN )Button:** Press this button under COOL or DRY mode, the self clean function is activated. Press it again will stop the operation and turn off the unit.
- ⑦ **FOLLOW ME Button(on some models):** Push this button to initiate the Follow Me feature, the remote display is actual temperature at its location. The remote control will send this signal to the air conditioner every 3 minutes interval until press the Follow Me button again. The air conditioner will beep to indicate the Follow Me feature has ended if it does not receive the signal during any 7 minute interval.
- ⑧ **RESET Button:** Once the recessed RESET button is pressed, all of the current settings will be cancelled and the controller will return to the initial settings.
- ⑨ **ON/OFF Button:** Press this button to start the indoor unit. Press again to stop the unit.
- ⑩ **FAN SPEED Button:** Press the button to select the Fan speed in the sequence: AUTO, LOW, MED and HIGH. Each time the button is pressed, the fan speed selection is shifted.

### 2.1.3 R11HG/E

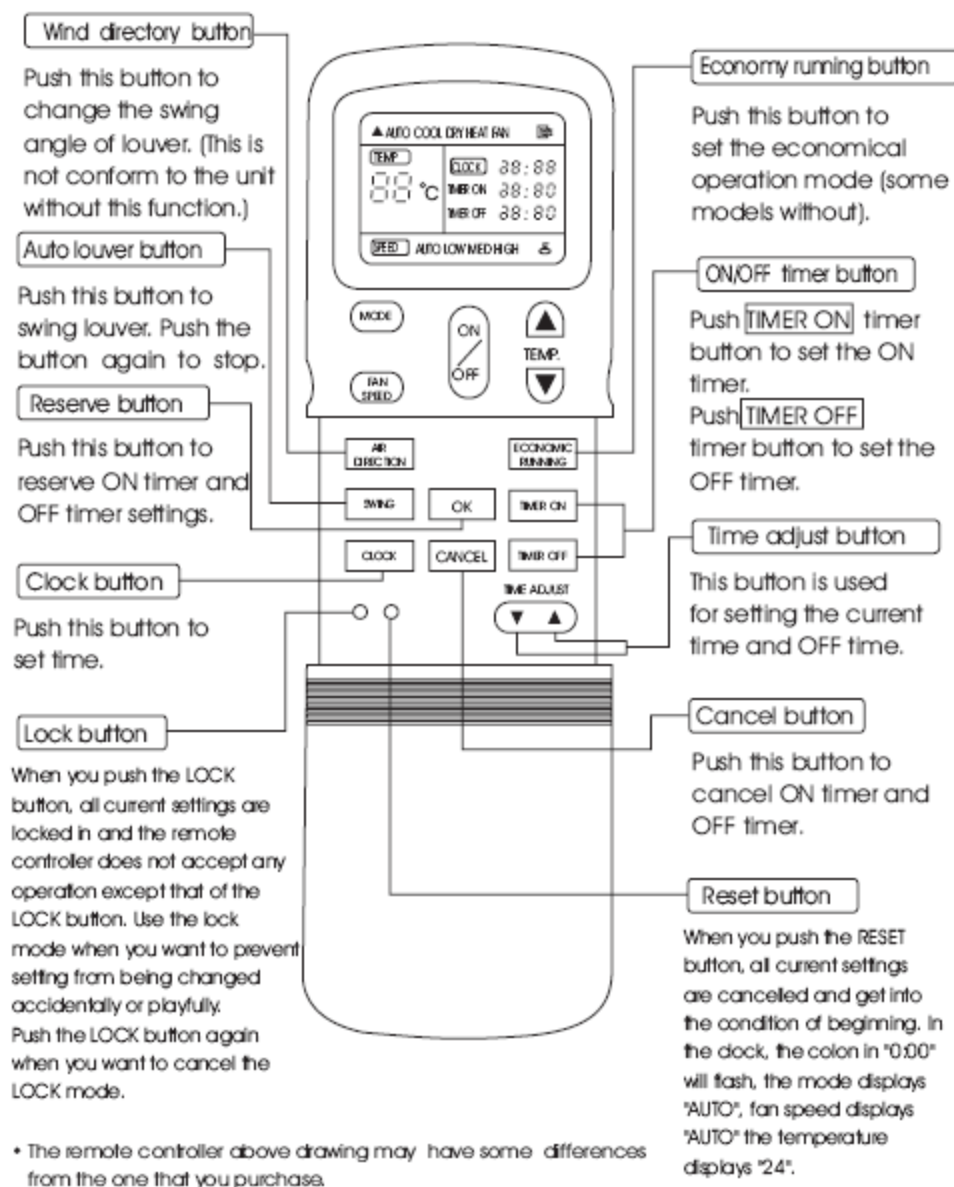
There's one model R11HG/E ,for hereinafter type:MSQ4I-07HRDN1, MSQ4I-09HRDN1, MSQ4I-12HRDN1, MSQ4I-18HRIN1 MST2I-07HRIN1, MST2I-09HRIN1, MST2I-12HRIN1, MST2I-18HRIN1

The below is R11HG/E remote controller

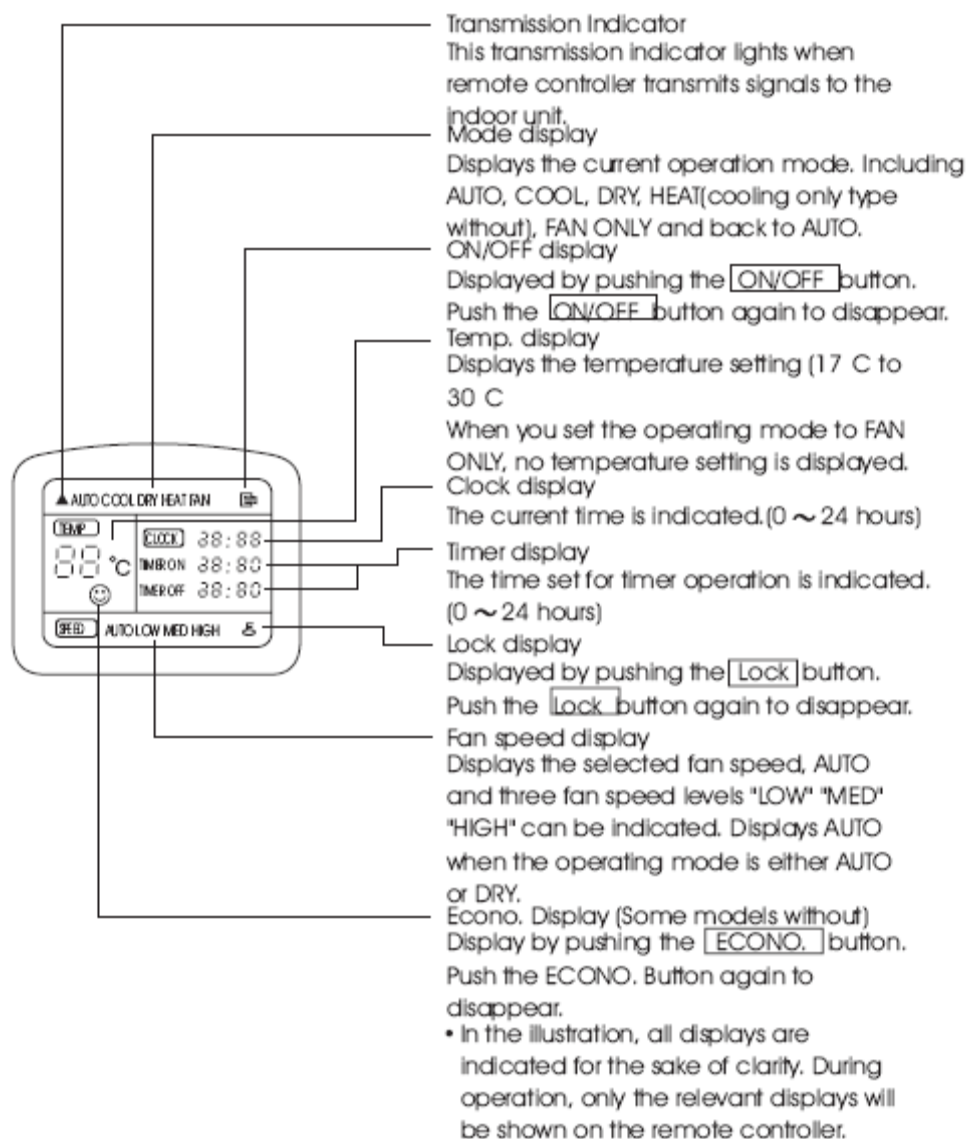
#### REMOTE CONTROLS AND THEIR FUNCTIONS



## REMOTE CONTROLS AND THEIR FUNCTIONS



## NAMES AND FUNCTIONS OF INDICATORS ON REMOTE CONTROLLER



## 2.1.4 R05-BG/E

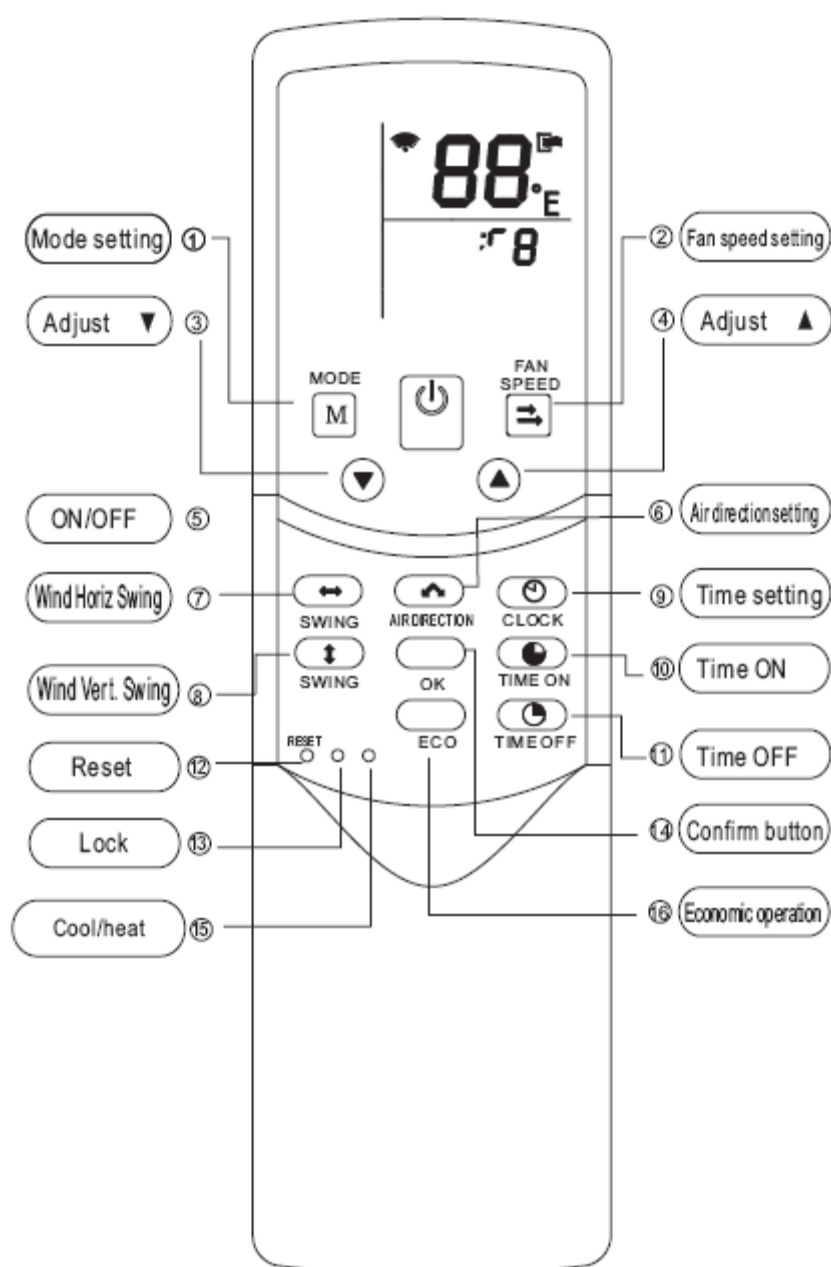
There's one model R05-BG/E. for hereinafter type: MSDLI-12HRIN1, MSDLI-12HRIN1

The below is R05-BG/E remote controller

### MODEL AND SPECIFICATION

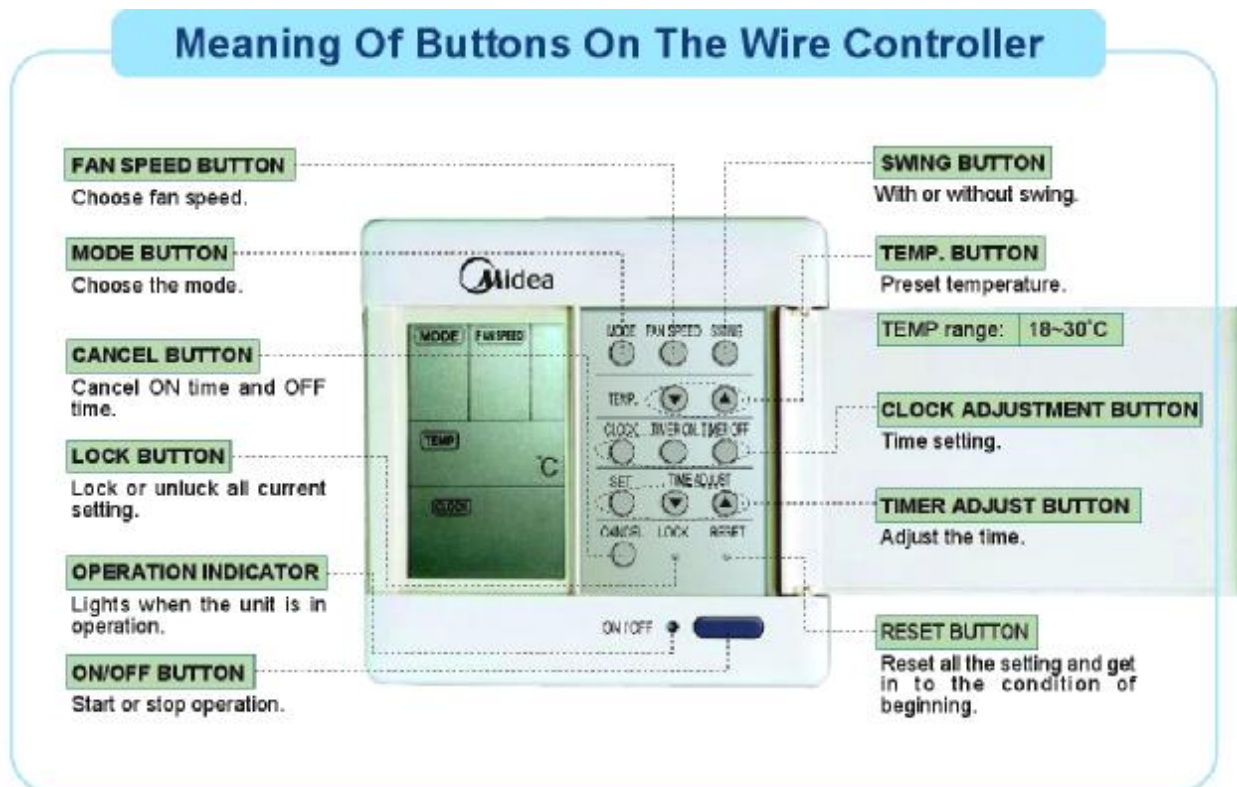
|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Model                                 | R05/BGE                             |
| Rated voltage                         | 3.0V(2pieces of LR03 7 # batteries) |
| Min voltage for sending signal of CPU | 2.4V                                |
| Effective receiving distance          | 8m~11m                              |
| Operation condition                   | -5~60°C                             |

### BUTTONS AND THEIR FUNCTIONS



## 2.2 Wire controllers

### 2.2.1 KJR-01

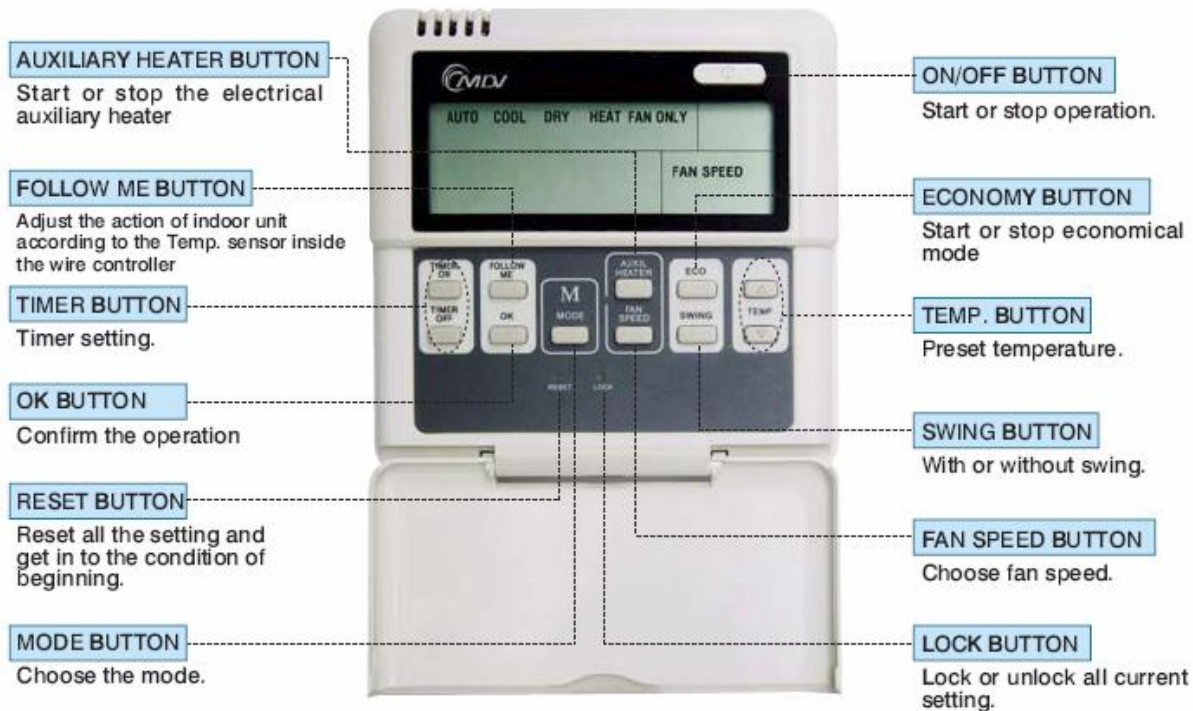


General constant wire controller is available for cooling & heating type as default Its function of Mid-speed Fan can be adjusted by the dial switch (Sw1) in the main panel of wire controller, which is shown as follows:

|                               |                            |                                  |                               |
|-------------------------------|----------------------------|----------------------------------|-------------------------------|
|                               |                            |                                  |                               |
| SW1                           | SW1                        | SW1                              | SW1                           |
| 1 ON<br>2 ON                  | 1 ON<br>2 OFF              | 1 OFF<br>2 ON                    | 1 OFF<br>2 OFF                |
| Mid-speed Fan cooling&heating | Mid-speed Fan cooling only | No mid-speed Fan cooling&heating | No mid-speed Fan cooling only |

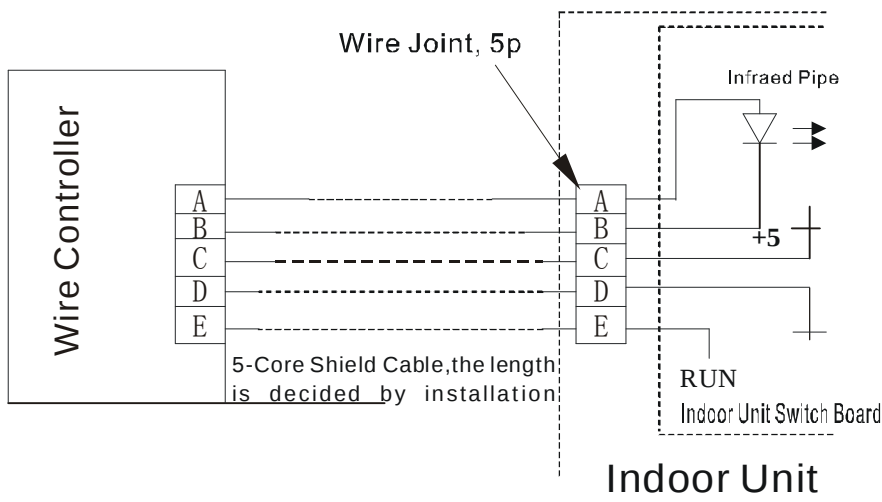
Customers can adjust it according to the model and their requirement. It is necessary to re-electrify after adjustment.

### 2.2.2 KJR-10B/KJR-12B (with a temp. sensor built-in, indoor unit need to be customized)



Remark: The main difference between these two wire controllers is the follow me function. KJR-12B/dP(T) has this function, while KJR-10B/dP(T) hasn't.

Connect sketch to indoor unit:



For wire controller, just connect to indoor units with five terminals of A, B, C, D, E.

#### FUNCTION SUMMARIZE

The wire controller has functions as follows:

1. Connect with indoor units with five terminals of A,B,C,D,E.
2. Set the mode through buttons.
3. LCD display.
4. Display the timer function of remain time

#### FUNCTION OF LCD ON THE WIRE CONTROLLER

**Mode selection button:**

It is used to select mode, push the button one time, then the operation modes will change in turn as follows:

AUTO→COOLING→DEHUMIDIFY→HEATING→FAN

Remarks: no heating mode if wire controller is set as the cool only.

**Timer on button:**

Push the button to set TIMER ON, each time you push the button the time moves forward by 0.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER ON, then adjust the time of TIMER ON as 0.0

**Timer off button:**

Push the button to set TIMER OFF, each time you push the button the time moves forward by 0.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER OFF, then adjust the time of TIMER OFF as 0.0

**CLOCK button:**

Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When push the button for 4 seconds, the hour part on the clock display flashes every 0.5 seconds, then push button and to adjust hour; push the button CLOCK again, the minute part flashes every 0.5 seconds, then push and button to adjust minute. When set clock or alter clock setting, must push the confirm button to complete the setting.

**Confirm button:**

The button is used at the state of CLOCK adjustment. After select the time, push the button to confirm then exit, the current clock will display

**RESET button (hidden):**

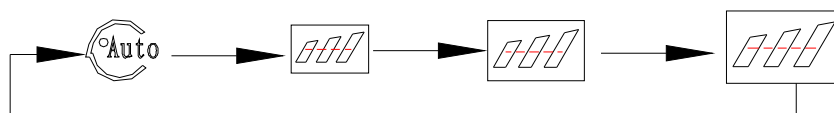
Use a small stick with a diameter of 1mm to push the RESET button to cancel the current settings and get into the condition of resetting

**ON/OFF button:**

Push the button at the condition of OFF, the OPERATION lamp lights, as the wire controller enters into ON operation, simultaneously sends the information of operation mode set currently, temperature, fan speed, timer etc. Push the button at the condition of ON, the OPERATION lamp extinguishes simultaneously sends the OFF. If having set TIMER ON or TIMER OFF, the wire controller will cancel these settings before entering into OFF, close the concern indicator, and then send the OFF information.

**Fan speed selection button (FAN SPEED)**

Select any one fan speed from "AUTO", "LOW", "MED", and "HIGH". Each time push the button, the fan speed will change in turn as fellow.

**Adjustment button:**

Push the button, indoor temperature increases. Push the button continuously then the temperature increases by 1°C per 0.5 seconds.

**Adjustment button:**

Push the button, indoor temperature decreases. Push the button continuously then the temperature decreases by 1°C per 0.5 seconds

**Swing button:**

Push this button for the first time when operation, it will start the swing function. Push the button for the second time, cancel the swing function. (The function is available matched with the concerned unit)

**Economical buttons:**

Push the button to set the economical operation mode for air conditioner, push again then cancel the mode. The operation mode is suitable for sleeping time..

**Cool only/cooling and heating selection button (hidden):**

Use a small stick with a diameter of 1mm to push the button to switch modes. For COOLING ONLY type, it will be no heating mode when pressing MODE. The uniform mode is COOLING and HEATING at the factory.

**LOCK button (hidden):**

Use a small stick with the diameter of 1mm to push the LOCK button to lock the current setting, push the button again then cancel the setting.