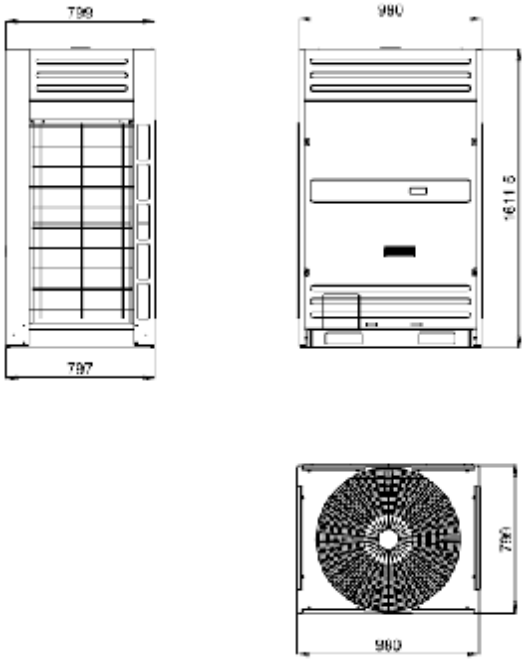
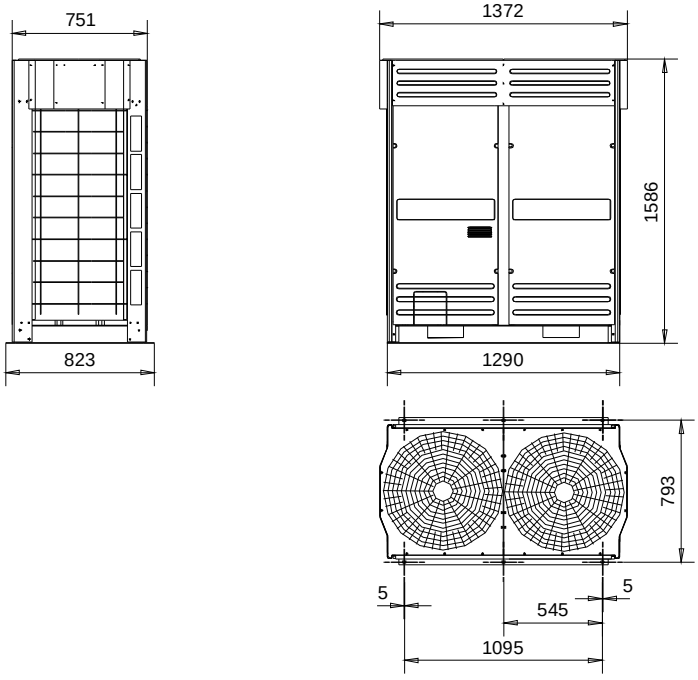
## 2. Dimensions

MDV-D252W/CSN1 MDV-D280W/CSN1 MDV-D335W/CSN1




MDV-D400W/CSN1 MDV-D450W/CSN1

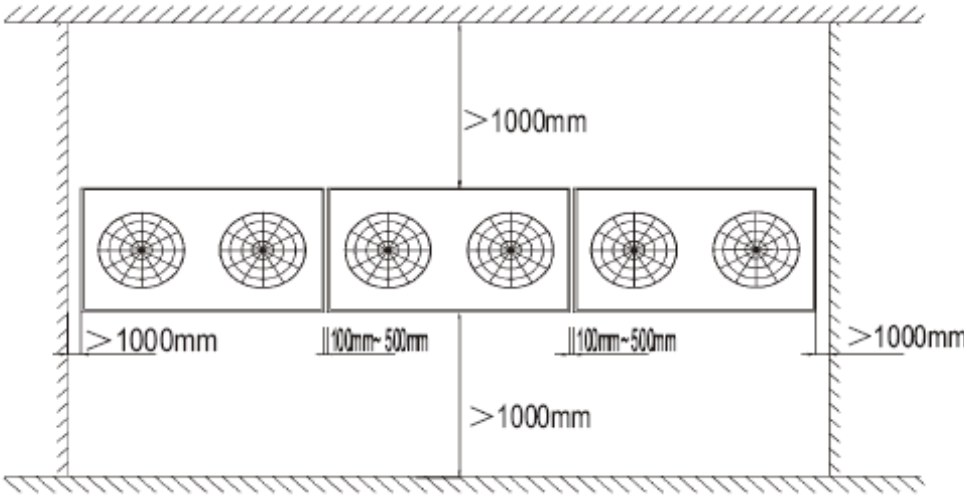



## 3. Service Space

**3.1** Power supply equipment is preferred to be installed by the side of the outdoor unit;

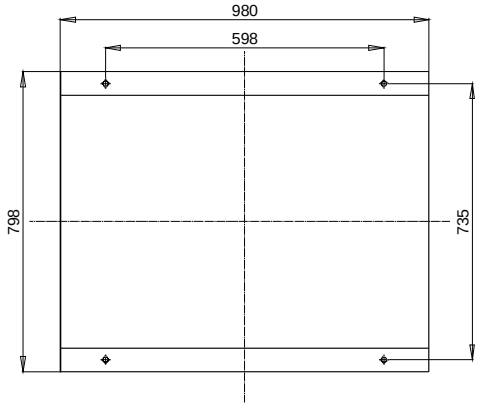
**3.2** Ensure there is sufficient space for the maintenance of the outdoor unit;

**3.3** Proper space between outdoor units should be kept;

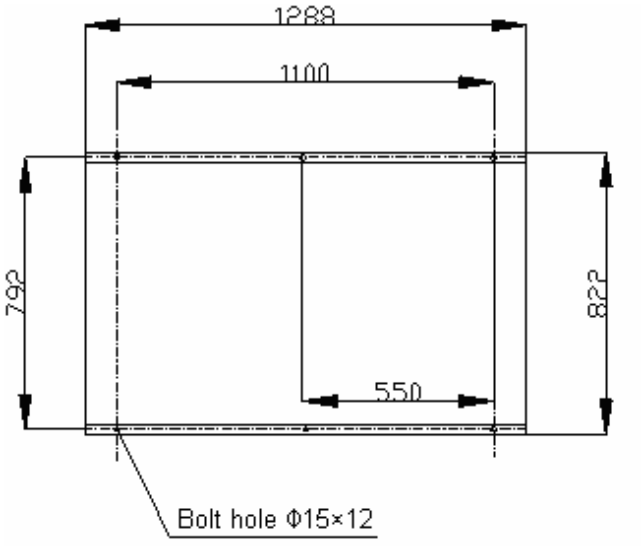



**3.4** Distance between foot screws is shown as follows; (unit: mm)

MDV-D252W/CSN1 MDV-D280W/CSN1 MDV-D335W/CSN1



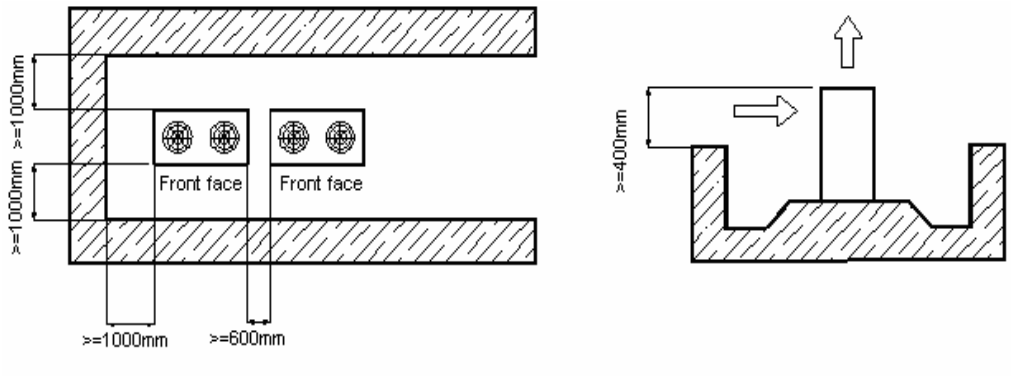

MDV-D400W/CSN1 MDV-D450W/CSN1



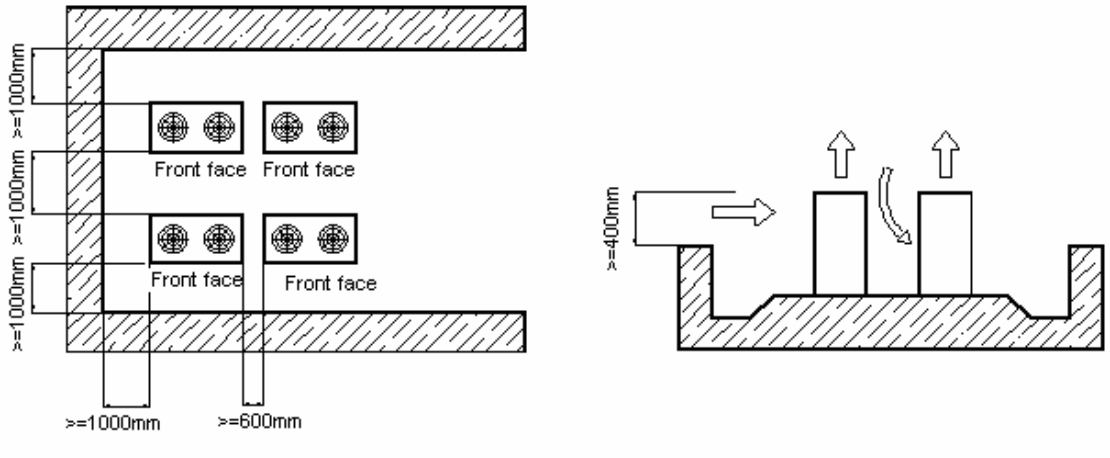

**3.5** Outdoor unit arrangement

Outdoor units are higher than the surrounding buildings

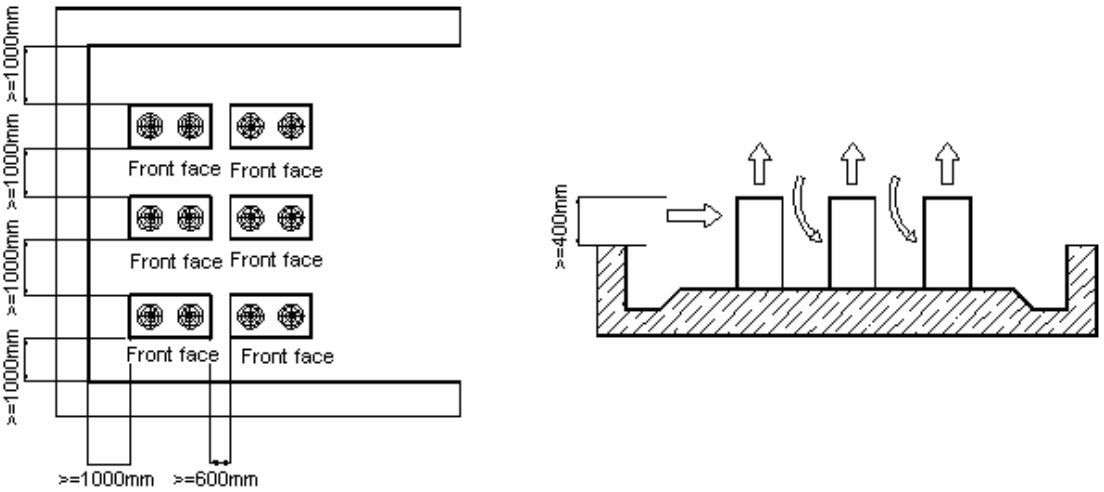
Outdoor units are aligned in one line




Outdoor units are aligned in two lines



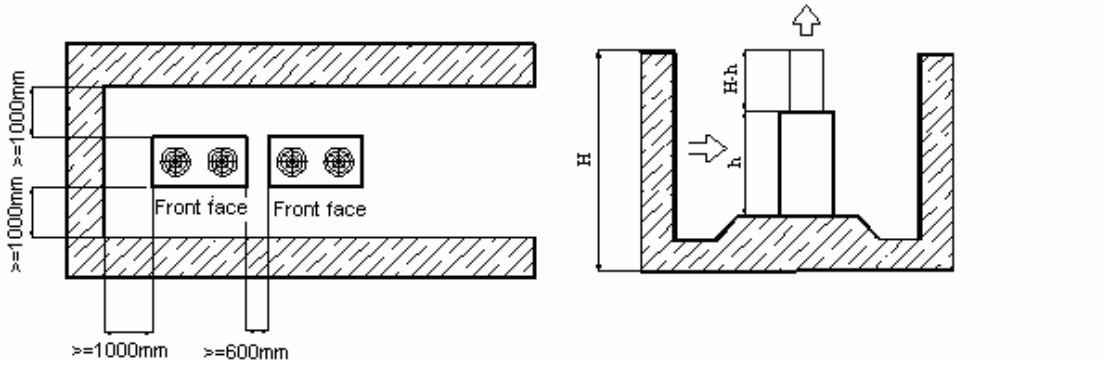

More than 2 lines of outdoor units



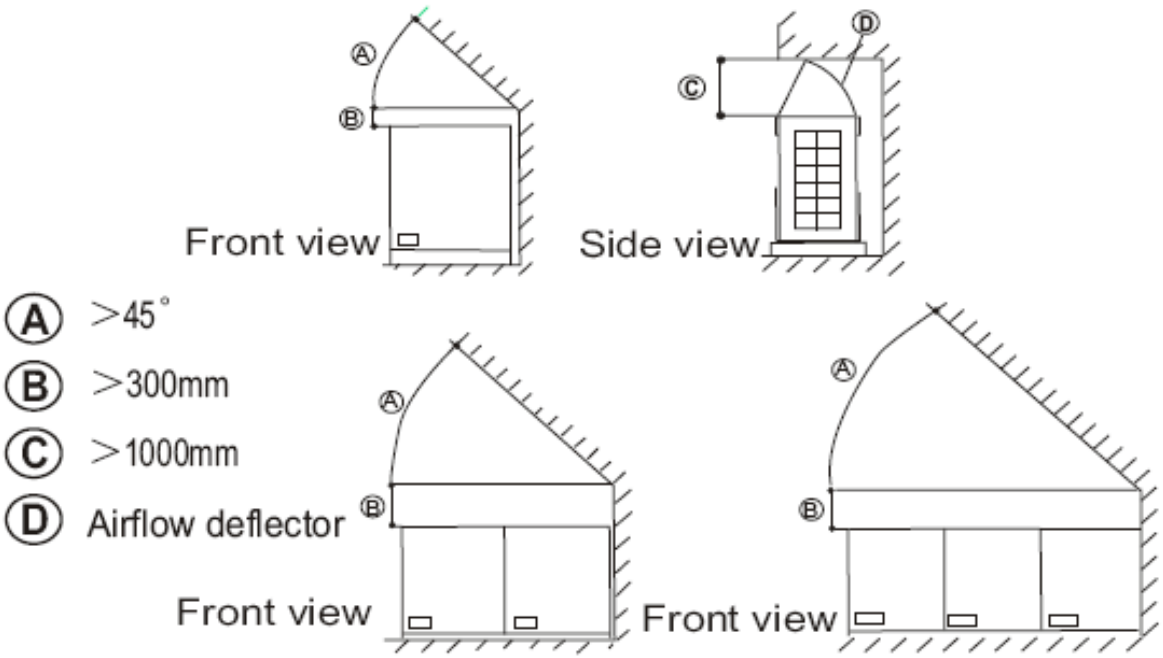

**3.6** Outdoor units are lower than the surrounding obstacles

If the outdoor units are lower than the surrounding obstacles, in order to ensure an effective “heat exchange “a conduit is strongly recommended to help the heat emission and avoid the discharging air

being absorbed into the system again. The conduit is made on the installation spot with the height HD=H-h.（Note: Because the outdoor fan motor have no enough static pressure, the Max. Length should be less than 3meters.）




**3.7** When there are obstacles above the outdoor unit:




The top of any pile around the outdoor unit should be at least 800mm below the unit top, unless there is mechanism for air discharging.

## 4. Piping Diagrams

**4.1** Refrigerant System Diagram

There's no constant speed compressor "F2" in the 8、10、12HP system.

**4.2** Function of key parts

ST1: when the operating mode of A/C system changes, turn the flow direction of the refrigerant;

ST2: change the heat exchanger area according to the load in cooling mode;

EXV: adjust the refrigerant flux;

SV1: when there're more than one module in the combination, SV1 is used to cut off the refrigerant flow among modular. If the module is in standby mode, Sv1 will be closed and refrigerant can't enter the module;

SV2: cooling down the compressor when the discharge gas temperature of any compressor is more than 100C ;

SV3: adjust heat-exchanger area of outdoor when in heating mode;

SV5: used when starting heating mode or defrosting mode;

SV6: adjust the refrigerant flux in cooling mode. And in heating mode it will be always open.

**4.3** How to check the valves:

a) Electronic Expansion Valve (EXV): when the outdoor unit is power on , the two EXVs firstly close with 700p,then they open with 350p and enter standby mode, two EXVs' action is not at the same time.

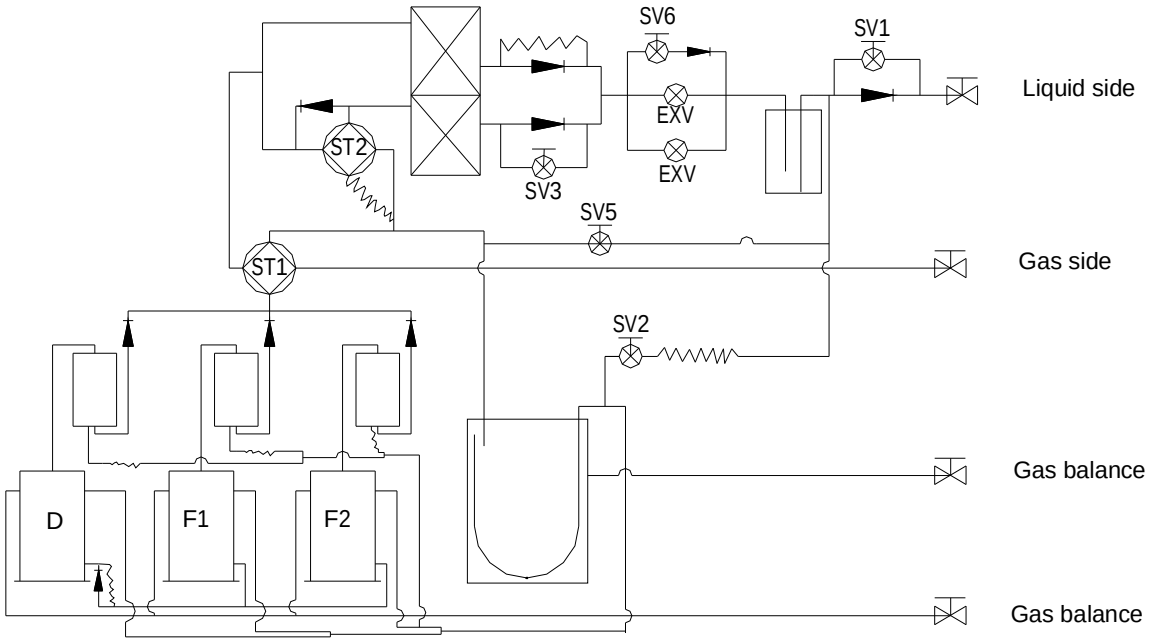
b) Electromagnetic Valve:

when the outdoor unit is power on, the SV1 open immediately, so you can check the valve as soon as the outdoor unit is power on;

when the compressor starts working in heating mode, the SV3 is open immediately, so you can check the valve as soon as the compressor start; 5 minutes after the outdoor unit start heating mode,SV5 will open;

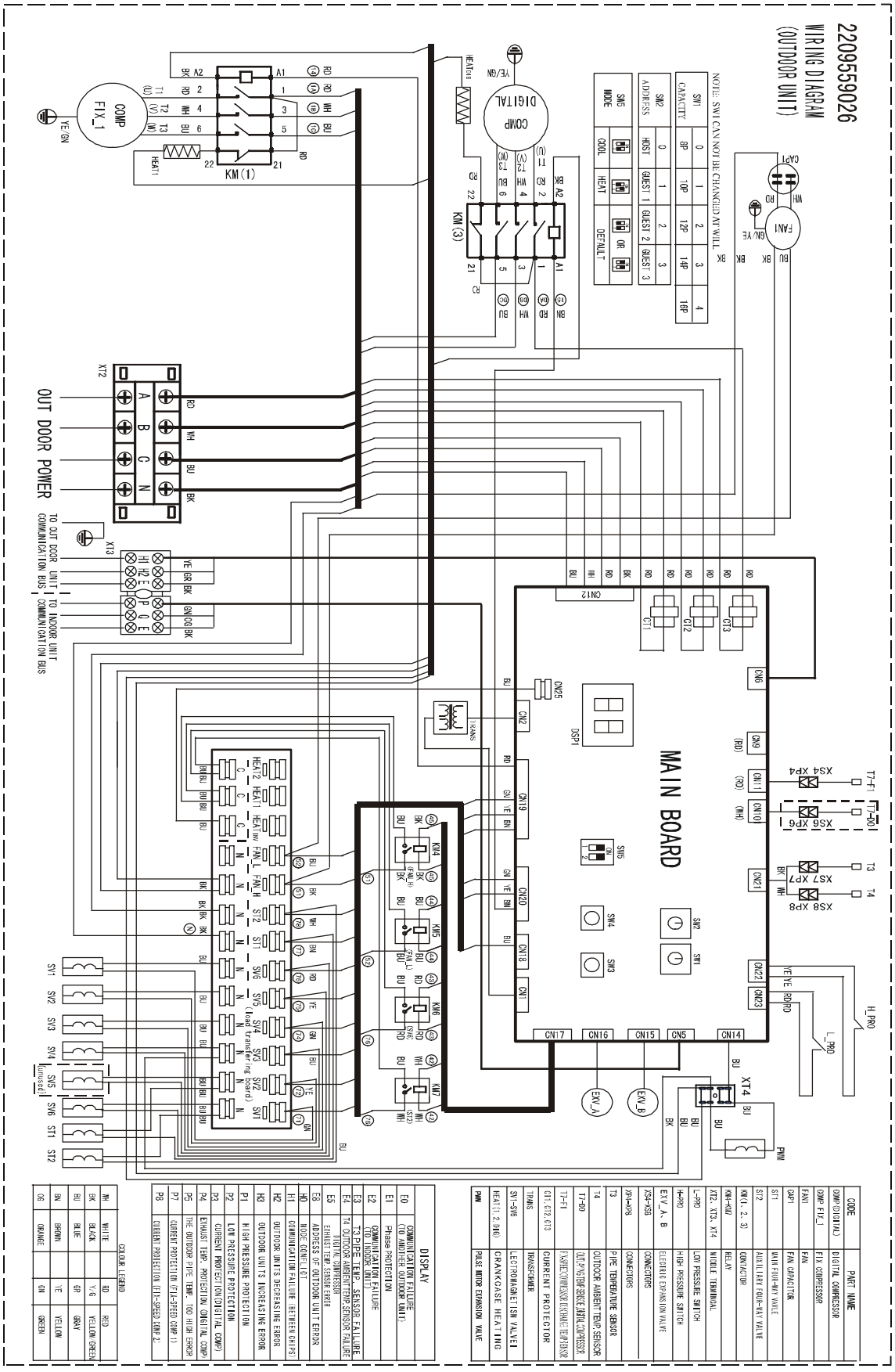
when the compressor starts working in cooling mode, the SV6 open immediately, so you can check the valve as soon as the compressor starts; control the discharge temperature by adjusting the resistance of the temperature sensor, when the discharge temperature is higher than 105℃ ， SV2 open immediately.

c) Four way valve: when starting heating mode , main four-way valve ST1 turn direction after the compressor has worked for 55s; when the capacity demanded by the indoor unit is less than 12 ,the auxiliary four-way valve ST2 turn direction.

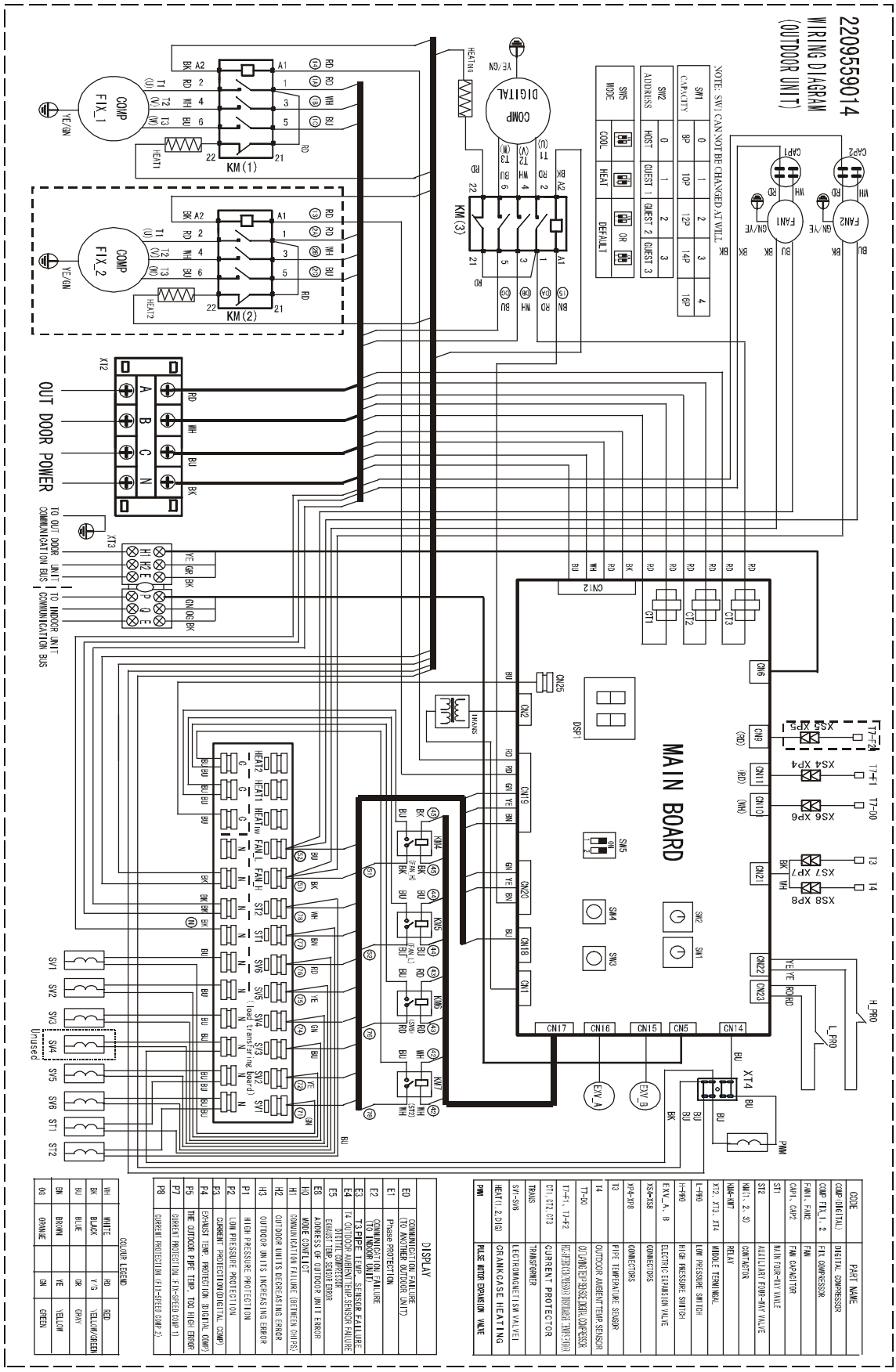


## 5. Wiring Diagrams

MDV-D252W/CSN1 MDV-D280W/CSN1 MDV-D335W/CSN1



MDV-D400W/CSN1 MDV-D450W/CSN1



# 6. Functional parts and safety devices

| Part | Model | | MDV-D252, 280W/CSN1 | MDV-D335W/CSN1 |
|---|---|---|---|---|
| Compressor | Digital Scroll | | ZPD72KCE-TFD-433 | |
| | Constant Scroll | | ZP57K3E-TFD-422 | ZP67KCE-TFD-420 |
| | Opening temperature | | 110±5℃/ 145±5℃ | 110±5℃ / 145±5℃ |
| | Trip current | | 64A (2~10s) /47 A (2~10s) | 64A (2~10s) / 55A ( 2~10s) |
| | Crank case heater | | 70W×2 | |
| Security Devices | Outdoor fan motor | | **YDK400-8-YA** | |
| | Safety thermostat of fan motor | On | 145±5℃ | |
| | | Off | 95±15℃ | |
| | High pressure switch | | OFF：44kg/cm$^2$ / ON：32kg/cm$^2$ | |
| | Low pressure switch | | OFF：0.5kg/cm$^2$ / ON：1.5kg/cm$^2$ | |
| Temperature sensor | Temperature sensor (condenser outlet) | | 25℃=10KΩ | |
| | Thermostat (Digital discharge)<br>Thermostat (Fixed discharge) | | When Tmax≥118℃ all the compressors are off | |

| Part | Model | | MDV-D400,450W/CSN1 |
|---|---|---|---|
| Compressor | Digital Scroll / Constant Scroll | | ZPD72KCE-TFD-433 / ZP67KCE-TFD-420 (X2) |
| | Opening temperature | | 110±5℃ / 145±5℃ |
| | Trip current | | 64A (2~10s) / 55A ( 2~10s) |
| | Crank case heater | | 70X3 W |
| Security Devices | Outdoor fan motor | | **YKD450-6A ×2** |
| | Safety thermostat of fan motor | On | 145±5℃ |
| | | Off | 95±15℃ |
| | High pressure switch | | OFF：44kg/cm$^2$ / ON：32kg/cm$^2$ |
| | Low pressure switch | | OFF：0.5kg/cm$^2$ / ON：1.5kg/cm$^2$ |
| Temperature sensor | Temperature sensor (condenser outlet) | | 25℃=10KΩ |
| | Thermostat (Digital discharge)<br>Thermostat (Fixed discharge) | | When Tmax≥118℃ all the compressors are off |