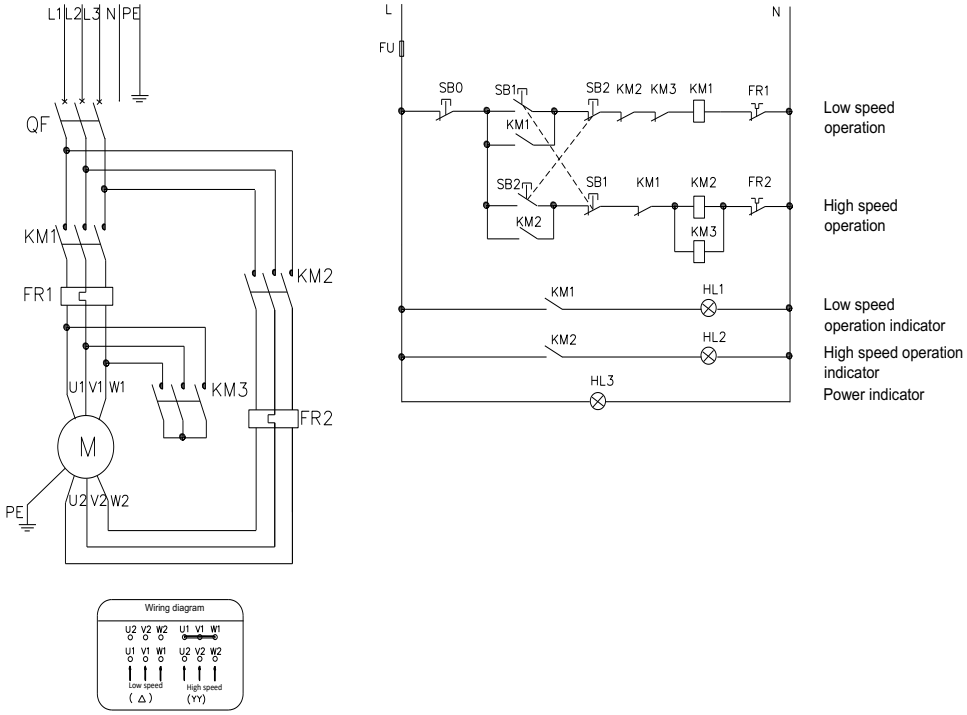


Figure 4.6 Starting wiring diagram of double speed motor

In the figure: QF: Circuit breaker; FU: Fuse; KM1: Low speed contactor of fan; KM2 and KM3: High speed contactor of fan; FR1: Low speed thermal relay; FR2: High speed thermal relay; SBO: Stop button; SB1: Low speed start button; SB2: High speed start button; HL1: Low speed operation indicator; HL2: High speed operation indicator; HL3: Power indicator.

D. For control wiring of the inverter motor, refer to the figure below:

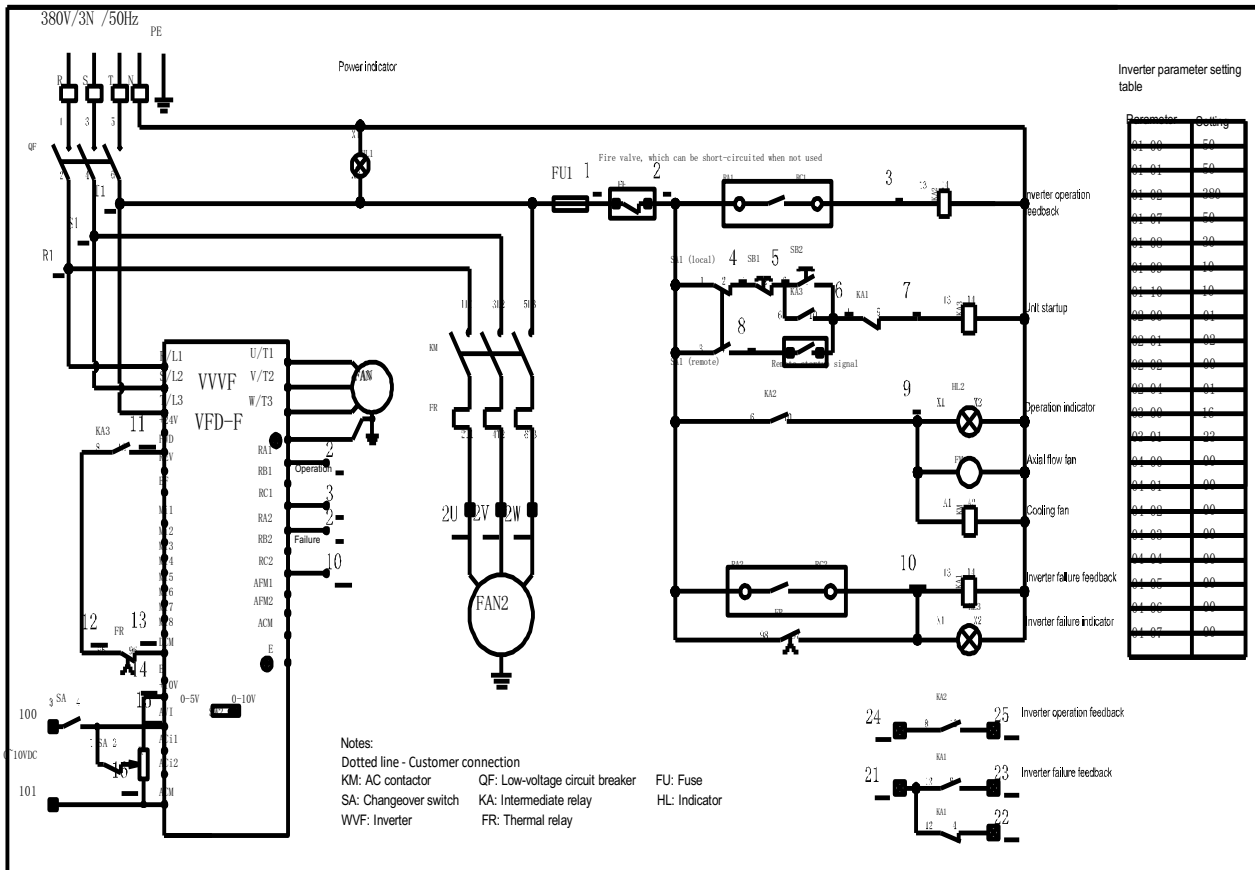


Figure 4.7 Control wiring diagram of the inverter motor

This figure applies to the inverter of Delta brand. For other brands, the connecting terminal for inverter varies, but the other functions are the same.

4.5.3 Wiring of Electric Heater

An overall framework has been made for the electric heater before delivery, internal wiring has been completed, and a power access port is reserved. It is only required to connect to the power supply according to the unit label. For control wiring of the electric heater, refer to the figure below:

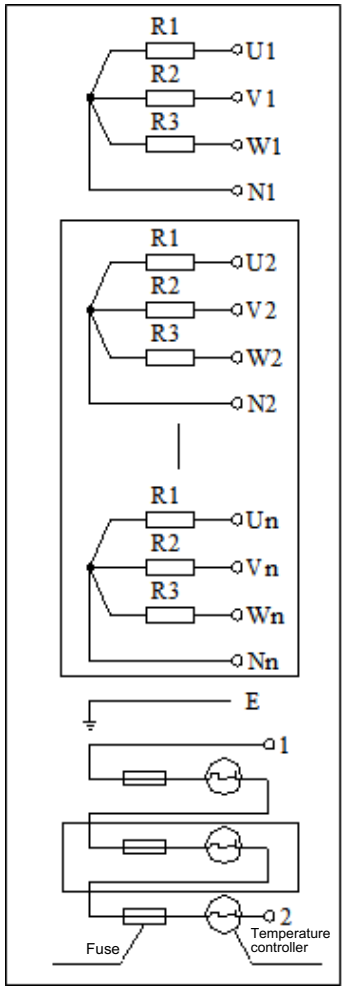


Figure 4.8 Control wiring diagram of the PTC electric heater

Notes: 1. For the electric heater under 150 kW, install two temperature controllers; for the electric heater of 150 kW or above, install three temperature controllers.

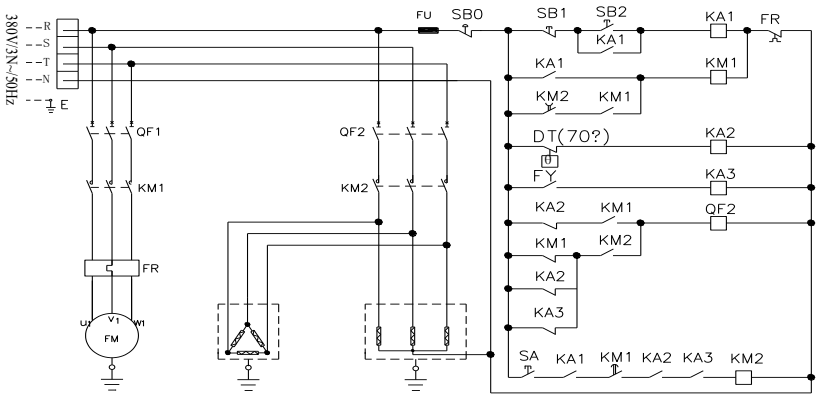
2. Do not debug or use the electric heater when the fan is not operating. The electric heating frame (terminal-E) must be grounded reliably.
3. The electric heater needs to be connected to the control circuit (closed normally); otherwise, the high temperature protection function cannot take effect.
4. For selection of the protective earth wire, refer to the national standard GB 7251.1-2005/IEC 60439-1:1999. When the AC phase line diameter S is less than 16 mm^2, the selected protective earth wire diameter is the same as the phase line diameter; when the AC phase line diameter S is equal to or greater than 16 mm^2 but equal to or less than 35 mm^2, the selected protective earth wire diameter is 16 mm^2; when the AC phase line diameter S is greater than 35 mm^2, the selected protective earth wire diameter is one half of the selected phase line diameter (note: The AC phase line diameter here refers to the required phase line diameter selected for the electric heating power of whole set).
5. Null line diameter selection: The phase line section (copper stranded conductor, 35 mm^2) is taken as the boundary. When the AC phase line diameter S is less than or equal to 35 mm^2, the selected null line diameter is the same as the phase line diameter; when the AC phase line diameter S is greater than 35 mm^2, the selected null line diameter is one half of the phase line diameter but not less than 35 mm^2 (note: It is required to lead out a group of

null lines for each step according to the grading; when the customer adopts controlled silicon control, the null line should be selected according to two times of the live line current).

6. The power cord should be selected according to the table below:

Specification mm^2	1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240
Current A	10	15	20	30	45	59	78	97	120	153	184	214	250	285	344
Power kW	7	10	13	20	30	39	51	64	79	101	121	141	165	188	227

7. The control circuit diagram of electric heater is shown below:



Tubular electric heater PTC electric heater

(NOTE):

Ensure choose the right wiring connection according to the electric heater type presented in this wiring diagram.
QF1: Fan Motor Circuit Breaker
FU: Fuse
KA: Relay
FY: Flow Switch
SB0: Emergency Switch
SB1: Switch – OFF
SB2: Switch – ON
SA: Heater Switch
KM1: Fan motor contactor (with Timer Delay)
KM2: Heater Contactor (with Timer Delay)
QF2: Heater Circuit Breaker (with shunt release)
DT: Overheat Protection

Figure 4.9 Control circuit diagram of electric heater

Warning: The electric heater is a high temperature operating part, and improper circuit handling will lead to a fire or personal injury. Before use, ask a professional to carefully read through the manual and check to confirm the following functions:

(1) Confirm that the overheating protection switch (closed normally) of electric heater has been installed.
(2) Confirm that the overheating switch action of electric heater is normal.
(3) Confirm that the overheating switch of electric heater has been connected to the electric heating

control loop, and wiring is correct.

(4) Confirm that the main loop of electric heating is configured with a circuit breaker (with a shunt release). When the electric heater fails, make sure that the main loop of electric heating is powered off.

(5) Confirm no-wind power-off protection (wind break switch) for the electric heater. The electric heater is linked with the fan. The electric heater can start only when the fan operates normally and maintains the stable air flow as needed.

(6) When the system is stopped, the electric heater is turned off first, and the fan will stop after a delay of five minutes (when the electric heater is too large, the delay time should be prolonged properly), making sure that the electric heating margin is taken away.

4.5.4 Installation and Wiring of Other Electric Appliances

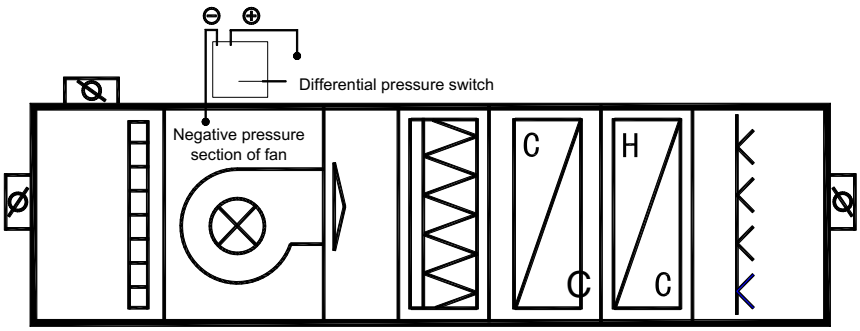
During the control solution design, the electrical wiring of other parts such as humidifiers is subject to the wiring diagram attached to the unit. Pay attention to the following items:

A. The humidifier must be linked with the fan, that is, the humidifier is started after the fan; the fan can be turned off only after the humidifier is turned off; B. If there are electric air valves in the air inlet and outlet and the air system pipeline of the unit, the air valve actuator should be started before the fan starts and stopped after the fan stops, that is, all the air valves in the pipeline are normally open when the fan is operating.

Warning: All the electric appliances must be grounded safely according to the labels and cannot be connected to the null line instead of being connected to the ground. A wiring error will lead to severe explosion, fire, or personal injury accident.

4.6 Installation and Debugging of the Differential Pressure Switch

The differential pressure switch is used to check the fan pressure difference to protect the unit. The difference between the negative pressure section of fan and the atmospheric pressure is calculated. The negative pressure section of fan in the unit is adopted for the pole of negative pressure end (“-” used as the sensor mark); the atmospheric pressure is adopted for the pole of positive pressure end (“+” used as the sensor mark). Debugging method: After the differential pressure switch is wired correctly according to the electrical drawing, adjust the pressure difference value to 50 Pa. After the unit operates normally for 3 minutes, take the pressure tube for the negative pressure end of differential pressure switch from the unit. Now, the unit sends an alarm and stops, and prompts "Fan failure or wind loss protection". The alarm is reset after the pressure tube of differential pressure switch is reinstalled. Start the unit again. The unit operates normally, and the debugging work is finished.



Installation position diagram of the differential pressure switch

Figure 4.10 Installation position of the differential pressure switch

Note: Since the specification, model and brand may change, the instructions related to unit accessories and humidifier in this manual are used for reference only. The specific using methods are subject to the accessory instructions attached to the unit.