



Application:

When the heat pump is applied in cold northern regions, the pipes exposed outdoors may freeze, causing significant damage to the heat pump unit and system. It often occurs when the following problems occur simultaneously:

1. Outdoor temperature remains close to or below 0 °C for a long time;
2. Outdoor pipelines do not have good insulation;
3. The system has not added antifreeze or the addition ratio is insufficient;
4. The heat pump unit is shut down due to malfunction or unexpected power outage.

When these issues arise, the antifreeze valve can automatically open and drain the circulating water in the outdoor pipeline, preventing freezing and protecting equipment such as the host, pipeline, and valves.

summary:

In winter, when the outdoor temperature is below 0 °C, central air conditioning, heat pump units, and solar energy may face the risk of freezing and damaging pipelines, heat exchangers, and solar flat plate heat exchangers. Once the heat exchanger of the heat pump unit is frozen and damaged, the entire unit will face huge losses. When the heat pump unit runs for heating in winter and encounters power outages or heat pump unit failures, it will cause the water in the pipeline and heat pump unit to form ice. If the water in the pipeline and unit cannot be discharged in time, the unit will be damaged. The anti freezing valve is designed to automatically discharge a small amount of water from the pipeline when the water temperature in the pipeline is below the set value, avoiding the volume of water freezing and damaging the unit or pipeline.

Technical parameters:

Sensitivity: ± 1 °C

Action temperature: When it is below 2 °C, the antifreeze valve opens; When the temperature exceeds 5 °C, the valve closes

Environmental temperature range: -30 to 60 °C

Maximum working pressure: 10 bar

Functions:

The antifreeze valve is mainly used in the central air conditioning heat pump water system to protect the main heat exchanger and pipelines from damage caused by icing. When the water temperature in the water pipe drops to the temperature at which the valve opens, the antifreeze valve opens the valve body to

drain water. As the antifreeze valve is installed at the drainage point of the supply and return water pipeline, it can timely discharge the water in the heat pump unit and pipeline, avoiding the freezing and cracking of the unit heat exchanger and the freezing and swelling of the pipeline system, thereby protecting the heat pump unit and water pipeline.

Antifreeze valves are mainly used in solar energy systems to protect solar collectors from damage caused by freezing: when the external temperature of the collector plate drops to the opening temperature of the valve body, the antifreeze valve automatically opens the valve body to drain water. At this time, the hot water in the solar energy storage tank will enter the collector plate, causing the water temperature in the collector plate to rise and avoiding the continuous decrease of water temperature in the collector plate, which may cause freezing and damage to the collector plate; When the water temperature in the collector plate is higher than the opening temperature, the antifreeze valve automatically closes and stops draining.

Installation instructions:

Installation instructions:

Before installing the equipment, please thoroughly clean the pipeline to prevent circulating impurities from affecting its performance.

1. The antifreeze valve should be installed

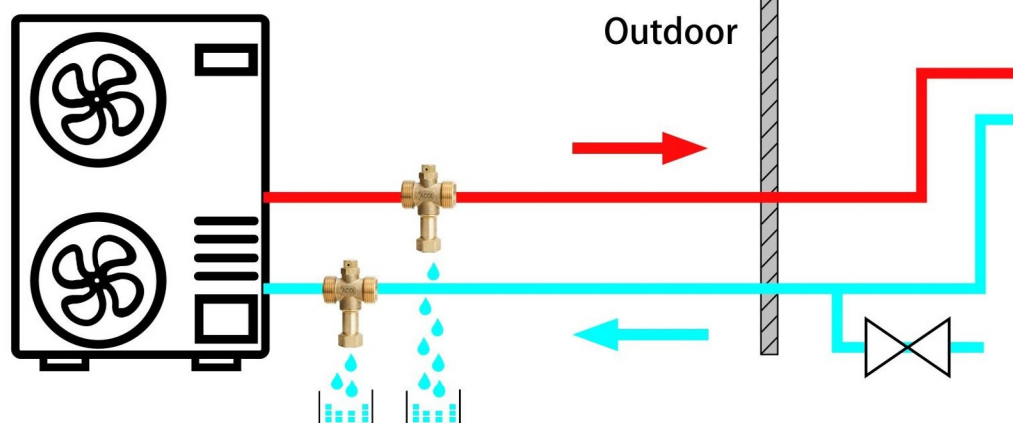
outdoors, in the lowest pipeline of the system, to prevent the heat pump from being blocked. In addition, valves should not be placed near heat sources to avoid interfering with operation.

2. The antifreeze valve can only be installed vertically, with the drain facing downwards and no obstruction in the drainage area to ensure smooth drainage.

3. The antifreeze valve must be installed on the pipeline connecting the outdoor main pipe and the indoor (the place where the pipeline is most prone to freezing when the heat pump is shut down due to power outage or malfunction).

4. It is recommended to install an antifreeze valve in each solar collector panel and heat pump supply and return water circuit, otherwise there is still a risk of freezing in outdoor pipelines. The system must maintain pressure at all times to ensure the normal operation of the antifreeze valve..

5. When the antifreeze valve is installed at the bottom of the heat pump unit or collector plate, it is recommended to regularly inspect and clean the antifreeze valve to avoid valve failure caused by blockage. It is also recommended to provide an appropriate drainage system to prevent ice formation on the ground.



Application in heat pump system