

ANTIFREEZE VALVE

PURPOSE

The main purpose of this valve is to prevent the formation of ice in piping systems and equipment, located in cold environments, releasing fluid from inside of circuit or pipe where it is installed, when the temperature reaches a value of +3°C

APPLICATIONS

The most recommended application is in aerothermal and heat-pump air conditioning systems. These antifreeze valves must be installed in the section of pipes exposed to the outside, which connect to the external module, both in its supply circuit and in its return circuit.

Due to their operation, these valves can also be installed in a general way, in circuits where it is desired to prevent the formation of ice inside the pipes.

TEMPERATURE RANGES

- The working temperature range of this device is from 0°C to +80°C
- The ambient temperature range is from -30°C to +60°C
- The fluid temperature (measured in water) to start the release opening is +3°C
- The fluid temperature (measured in water) to start the release closing is +4°C

Thread	Width	Height	Vacuum control valve height
1"	52 mm	92 mm	33 mm

MAXIMUM WORKING PRESSURE

Maximum working pressure for this type of valves is 10 Bar.

CAUDAL DE DESCARGA

Pressure	Flow rate	Outside temp.
3 bar	0,5 l/h	-5°C
	1,0 l/h	-20°C

Test conditions of release are with a straight pipe of 1m long and Ø12mm, exposed to outside. The water temperature inside the house at 18°C.



SENSOR OPERATING (RESET)

This is a sensor made of materials from different alloys, thus obtaining a set of parts with different contraction/expansion coefficients. This set of materials is sensitive to thermal changes and is specially designed so that when the temperature drops, from 3°C and below, there is a kind of internal piston that opens the bore of fluid to the outside of the pipe. When the temperature rises, from 4°C and above, this piston closes the bore of fluid to the outside. This reset is automatic, without the need for any manual intervention. The sensor is maintenance-free and does not need to be replaced, unless it is detected that the valve is not functioning correctly.

ANTIFREEZE VALVE

GENERAL INSTALLATION INSTRUCTIONS

1. In air conditioning systems by aerothermal or heat pump, these valves must be installed in the section of pipes exposed to the outside, which connect to the external module, both in the supply circuit and in the return circuit.
2. To achieve optimal and correct release of the fluid to the outside, this valve must be installed in a completely vertical position, orienting the outlet downwards, in such a way that it can release, if necessary, exclusively by gravity.
3. Always install these valves at the lowest external point of the installation or of pipe system.
4. Always avoid installations with lyres or siphons (loops). These installation types prevent the pipe from being discharged.
5. These valves should always be installed away from any possible heat source to avoid altering their operation.
6. Always install these valves at least 15 to 20 cm from the ground, thus preventing small ice columns from forming on the bottom, that avoid the free discharge or release of the fluid.
7. When the supply and return circuits are placed one above the other, always install these valves with a separation between them of at least 15 to 20 cm, preventing any valve from discharging onto another.
8. These valves must be left installed without insulation. However, they must be protected from direct sunlight, rain, snow or any other factor that may affect their operation.
9. Always keep the system under pressure.
10. Direct any discharges that may be generated to a drain. Ensure that the surroundings are free of risks.
11. It is mandatory to make a sweep inside of installation pipes prior to installing the valve, ensuring the absence of foreign bodies or elements that may alter its normal operation or even damage any of its internal components.
12. Check that the connections are free of tension, such as traction, compression, torsion, bending or shearing.
13. Choose the optimal valve size, in accordance with the size of the installation pipes and its flow rate.
14. Always connect the valve to the network appliance or pipe using the sealing elements and connection accessories suitable for each type of valve. These accessories must comply with the specifications of the regulations and standards required by the directives and legislation in force.
15. If accessories requiring welding operations are used, NEVER carry out such operations with the accessory connected to the valve, as excessive temperatures could damage its vital operating and sealing parts. Also, make sure to remove any parts of the accessory that are made of rubber or that could be damaged during a welding operation.
16. Once the installation is complete, it is mandatory to carry out the tightness tests required by current regulations. These tests must always be carried out prior to commissioning the appliance, installation or network.