

ANTIFREEZE VALVE ZL-7201





DESCRIPTION

The antifreeze valve allows the circuit medium to be drained when its temperature reaches an average value of 3 °C. This prevents ice forming in the circuit of a system, generally with a heat pump, avoiding potential damage to the machine and to the pipes.

Product range

| | | |
|-------------|---|---|
| 7201 series | Antifreeze valve with threaded connections | sizes DN 25 (1"), DN 32 (1 1/4") and DN 40 (1 1/2") |
| 7201series | Antifreeze valve with connections for copper pipe | sizes DN 25 (Ø 28) |

Technical specifications

Materials

| | |
|--------------|---------------------------------------|
| Body: | brass EN 12165 CW617N |
| Springs: | stainless steel EN 10270-3 (AISI 304) |
| Seals: | EPDM |
| Connections: | G 1" (ISO 228-1) |
| | G 1 1/4" (ISO 228-1) |
| | G 1 1/2" (ISO 228-1) |
| | Ø 28 mm for copper pipe |

Performance

| | |
|---|-----------|
| Medium: | water |
| Maximum working pressure: | 10 bar |
| Working temperature range: | 0–65 °C |
| Ambient temperature range: | -30–60 °C |
| Medium temperature (opening): | 3 °C |
| Medium temperature (closing): | 4 °C |
| Enabling of antifreeze function with outside air temperature: | < 5 °C |
| Accuracy: | ±1 °C |
| Kv (straight path): | 55 m³/h |
| | 70 m³/h |
| | 72 m³/h |
| | 64 m³/h |
| Tightening torque: | 80 N·m |

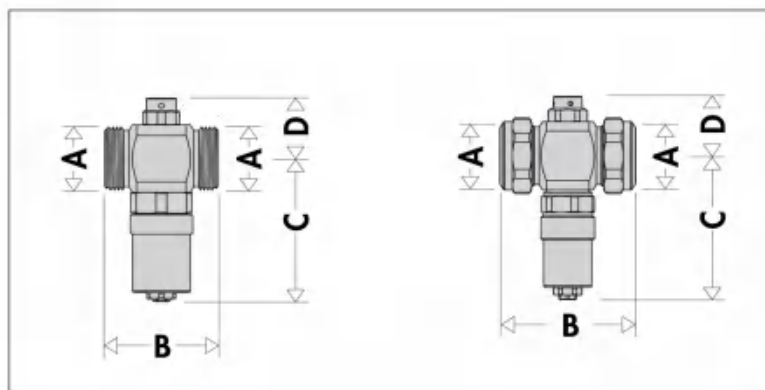
Discharge flow rate

| P (bar) | T outside (°C) | Flow rate (l/h) |
|---------|----------------|-----------------|
| 3 | -5 | 0.5 |
| | -20 | 1 |

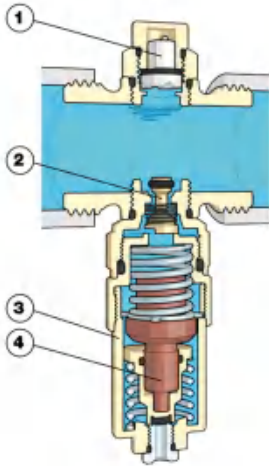
Test conditions:

- straight pipe (Ø 12 mm, length 1 m) exposed to the outside;
- water temperature inside building 18 °C.

| A | B | C | D |
|--------|----|----|----|
| 1" | 52 | 79 | 32 |
| 1 1/4" | 59 | 83 | 36 |
| 1 1/2" | 62 | 83 | 36 |
| 28MM | 71 | 80 | 33 |



Characteristic components

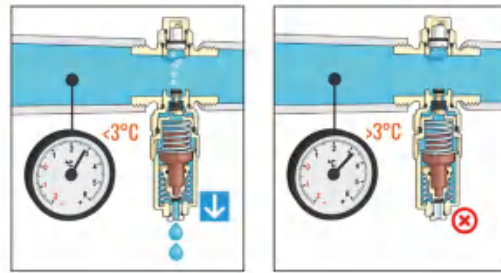
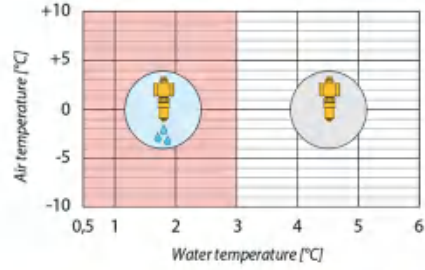


- Antifreeze valve**
1. Vacuum breaker
 2. Automatic shut-off cock
 3. Water temperature sensor cartridge
 4. Water temperature sensor

Operating principle

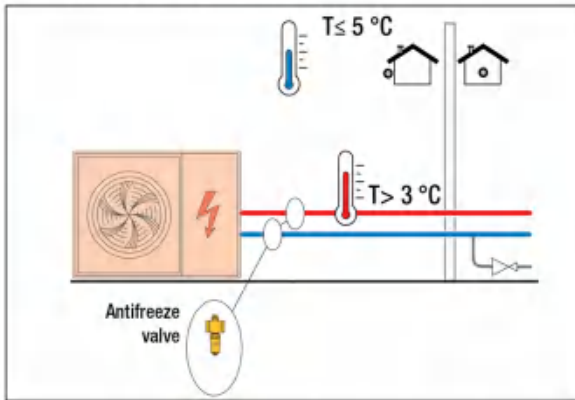
Antifreeze valve

The 7201series antifreeze valve allows drainage of the medium in the circuit when the circuit temperature reaches a value of 3 °C.

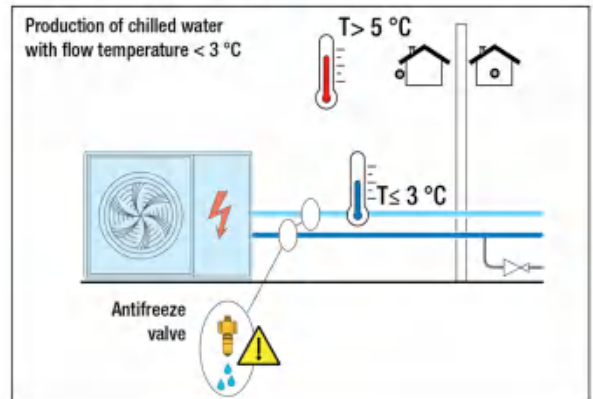


Operating phases

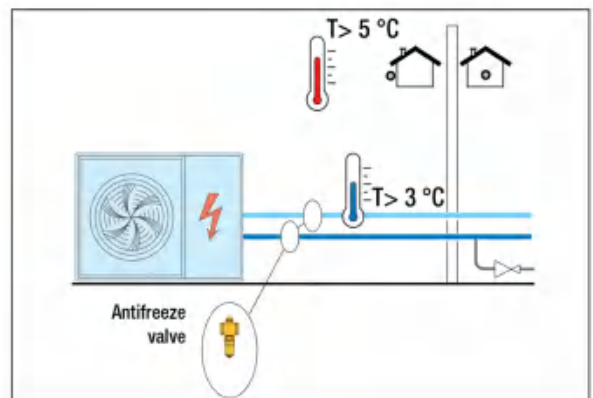
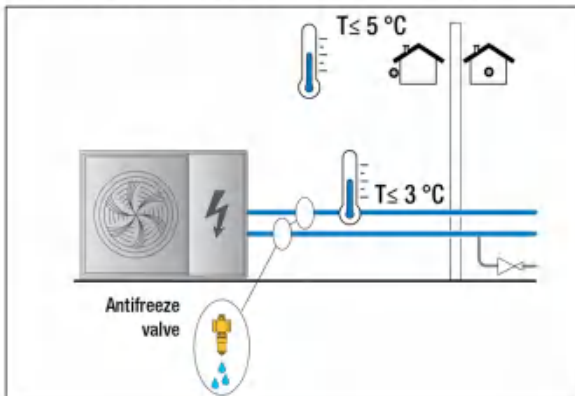
Winter operation in heating mode



Summer operation in cooling mode



Winter operation in the event of electric supply failure



Installation

The device must only be installed in a vertical position, with the outlet facing downwards, to allow the drained water to flow out properly and free from obstructions.

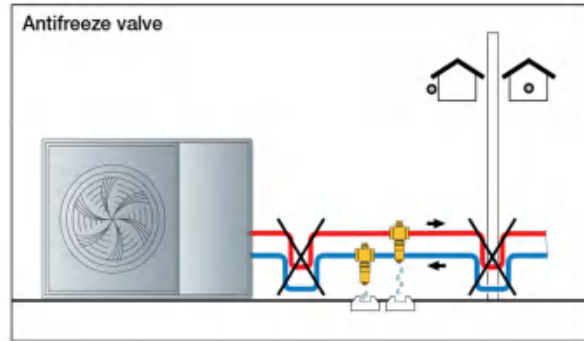
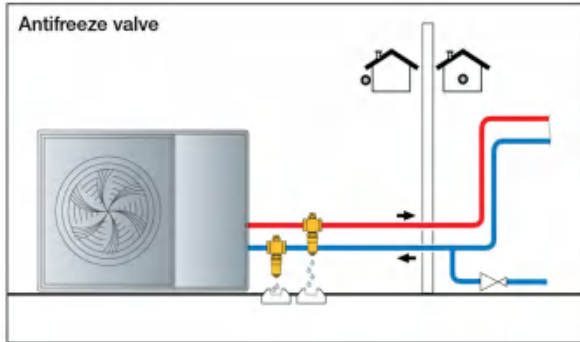
The antifreeze valves must be installed outdoors, where the lowest temperatures can be reached if the heat pump is locked. The antifreeze valves must be positioned well away from sources of heat in order to keep them working properly.

It is recommended to install the antifreeze valves on both pipes (flow and return). Otherwise, water may be left in one pipe which could then freeze.

We recommend always keeping the system pressurised, even while draining, to ensure the antifreeze device works properly.

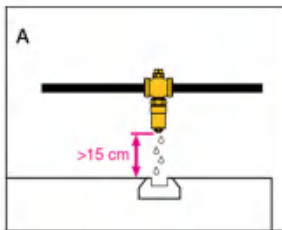
Presence of traps

Do not make any trap connections. If the shape of the connection pipe has the potential to create a trap effect (as shown in the following figure), drainage is inhibited and frost protection will no longer be guaranteed.

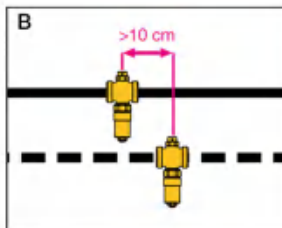


Leave at least 15 cm clearance from the ground (fig. A) to prevent the block of ice which may form below from stopping water from draining from the valve.

Route the drain to a suitable collection point.



Keep a distance of at least 10 cm between the antifreeze valves (fig. B) and 20 cm between the antifreeze valves and the air sensor (fig. C).



The antifreeze valve must be free of insulation for the system to work properly.

When installed outdoors, the antifreeze valve must be protected from rain, snow and direct sunlight.