

Antifreeze valve



108 series



Function

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.

PATENT PENDING

Product range

108 series Antifreeze valve

1" - 1 1/4" - 1 1/2"

Technical specifications

Materials

Body: brass EN 12164 CW617N (code 108701-108801)
brass EN 12165 CW617N (code 108601)
Obturator: brass EN 12164 CW617N (code 108701-108801)
brass EN 12164 CW617N (code 108601)
Springs: stainless steel EN 10270-3 (AISI 302)
Seals: EPDM
Connections: 1", 1 1/4", 1 1/2"

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
Accuracy: ±1 °C
Kv (straight path): 55 m³/h (108601)
70 m³/h (108701)
72 m³/h (108801)

Discharge flow rate

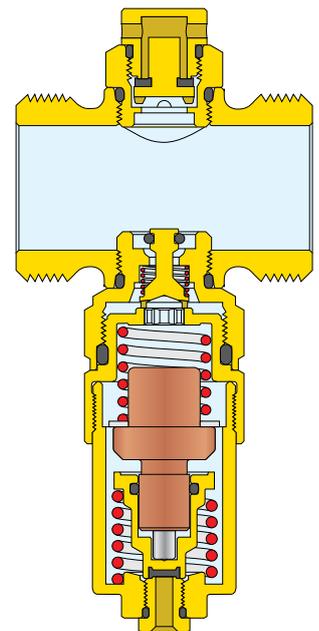
P (bar)	T outside (°C)	Flow rate (l/h)
3	-5	0.5
	-20	1

Test conditions:

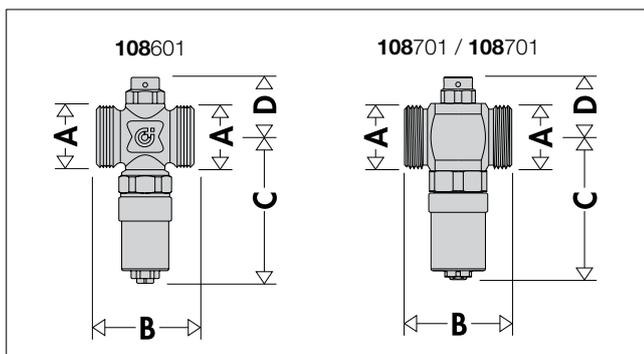
- straight pipe (Ø12 mm, length 1 m) exposed to the outside;
- water temperature inside building 18 °C.

Operating principle

When the temperature of the water in the pipe drops below 3 °C, the obturator of the antifreeze valve opens and drains off the water. The obturator closes when the medium temperature returns to 4 °C.

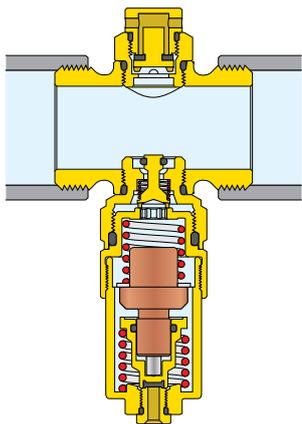


Dimensions

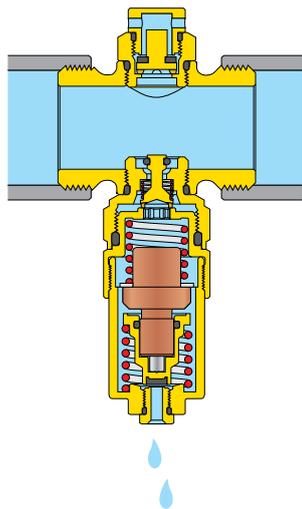


Code	A	B	C	D
108601	1"	52	78,6	32
108701	1 1/4"	59	83	36
108801	1 1/2"	62	83	36

Medium temperature > 3 °C
Obturator closed



Medium temperature < 3 °C
Device being drained



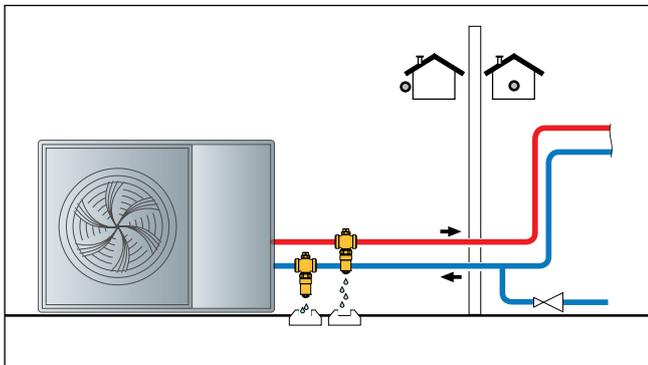
Installation

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 not operating. They must also not be placed close to heat sources which could interfere with proper function.

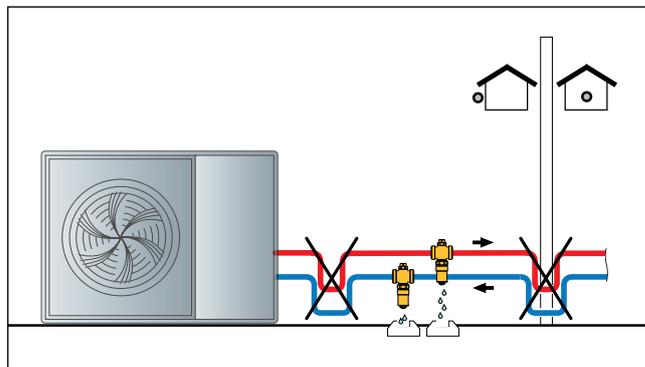
It is recommended to install the antifreeze valves on both pipes (flow and return). Otherwise, water may be left in one pipe which could then freeze.

For the device to work properly, keep the system under pressure at all times, even when draining the antifreeze valve.



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), part of the pipe will not be able to drain and frost protection will no longer be guaranteed.

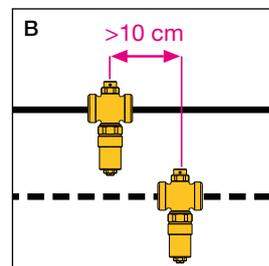
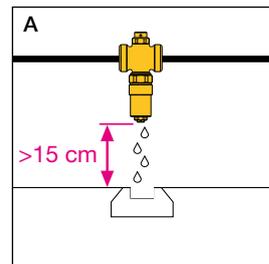


Leave at least 15 cm clearance from the ground (fig. A) to prevent the block of ice which may form below from stopping water from draining from the valve.

Route the drain to a suitable collection point.

Keep a distance of at least 10 cm between the antifreeze valves (fig. B). The 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.



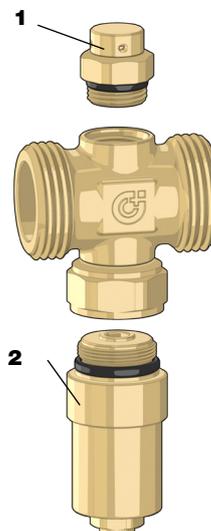
Antifreeze valve replacement

In the event of a malfunction, the vacuum breaker (1) can be replaced.

Thermostatic cartridge replacement

In the event of a malfunction, the thermostatic cartridge (2) can be replaced.

An automatic shut-off cock prevents the water from draining while the cartridge is being replaced, thereby keeping the system pressurised.



SPECIFICATION SUMMARY

108 series

Antifreeze valve. Threaded 1" M connections (ISO 228-1) (from 1" to 1 1/2"). Brass body. Maximum working pressure 10 bar. Working temperature range 0–65 °C. Ambient temperature range: -30–60 °C. Medium temperature for opening: 3 °C. Medium temperature for closing: 4 °C.

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