108
antifreeze valve

altecnic
CALEFFI group

108 antifreeze valve

Application

The antifreeze valve allows the circuit medium to be drained when the temperature reaches an average of 3˚C.

This prevents ice forming in the circuit of a system, generally with a heat pump, avoiding potential damage to equipment, valves and pipework.

The valves are suitable for a variety of fittings and pipes connected by a union.

Construction Details

Component		Material	Grade
Body:		Brass	BS EN 12164 CW617N
Body:	1½"	Brass	BS EN 12165 CW671N
Obturator:		Brass	BS EN 12164 CW617N
Springs:		Stainless steel	BS EN 10270-3 (AISI 302)
Seals:		EPDM	BS EN 12164 CW617N
Compression Nut:		Brass	BS EN 12165 CW671N
Olive:		Brass	

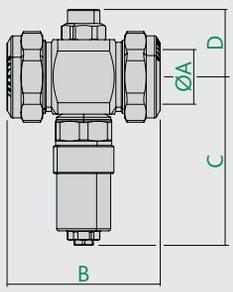
Technical Specification

Medium:		water
Maximum working pressure:		10 bar
Working temperature range:		0 to 65˚C
Ambient temperature range:		-30 to 60˚C
Medium temperature - opening:		3˚C
Medium temperature - closing:		4˚C
Accuracy:		±1˚C
Connection - compression:		BS EN 1254
Connection threads:		BS EN ISO 228-1
Kv - straight path:	28mm & 1"	55 m^3/hr
	1¼"	70 m^3/hr
	1½"	72 m^3/hr

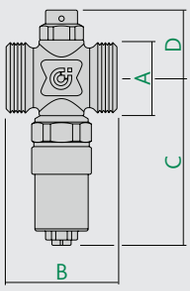
Discharge Flow Rates

P - bar	$T_{outside}$ - ˚C	Flow Rate - l/h
3	-5	0.5
	-20	1

Dimensions



108301



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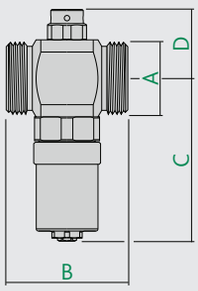
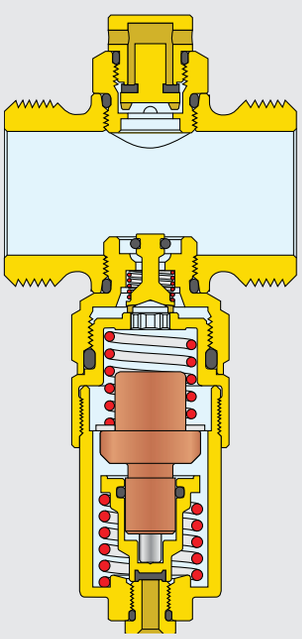


108701 & 108801

Ref No	A	B	C	D
108301	Ø28	71	78	31
108601	G1	52	78.6	32
108701	G1¼	59	83	36
108801	G1½	62	83	36

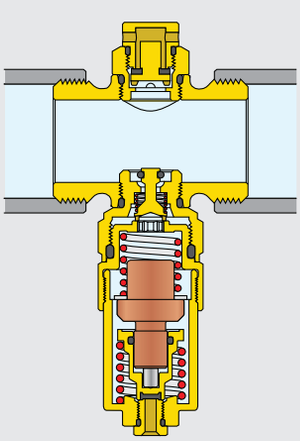
Operating Principle

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.



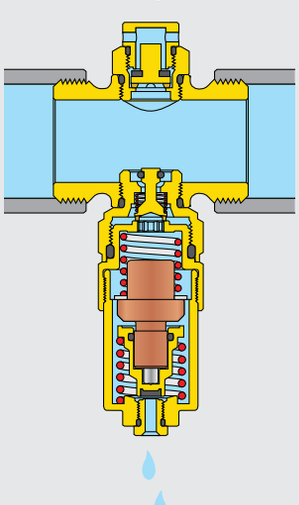
Medium temperature >3˚C

Obturator closed



Medium temperature <3˚C

Valve being drained



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Installation

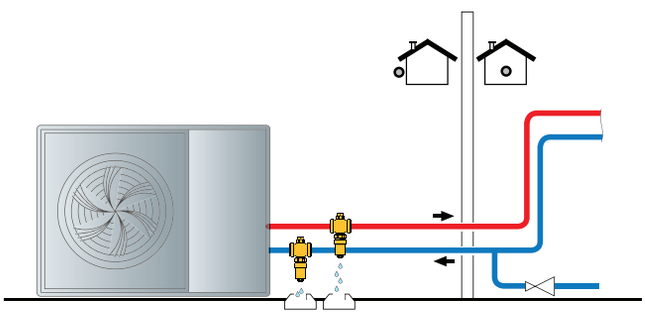
The device must only be installed in a vertical position, with the outlet facing downwards, to allow the draining water to flow out properly and free from obstructions.

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.

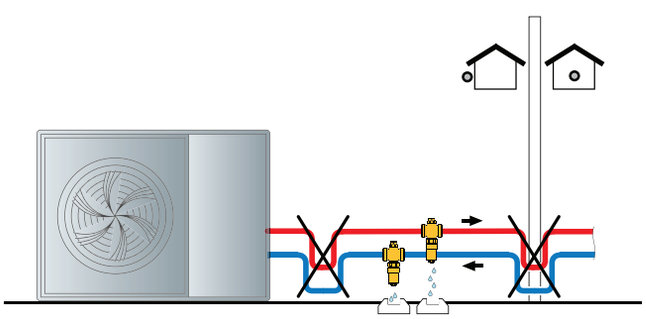
For the device to work properly, keep the system under pressure at all times, even when draining the antifreeze valve.



Presence of Traps

Do not make any trap connections.

If the shape of the connection pipes has the potential to create a trap effect (as shown below), part of the pipe will not be able to drain and frost protection will no longer be ensured.



Installation - Continued

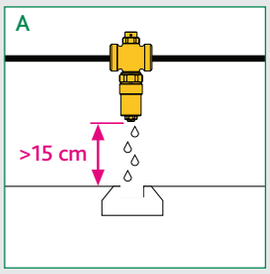
Leave at least 15 cm clearance from the ground (fig. A) to prevent the block of ice which may form below from stopping water from draining from the valve.

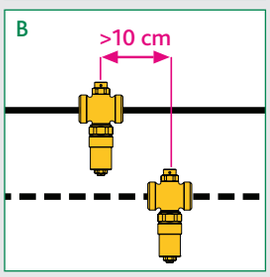
Route the drain to a suitable collection point.

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.





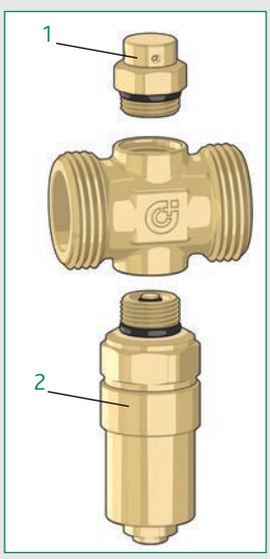
Vacuum Breaker Replacement

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.



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