DESCRIPTION

AG100/_

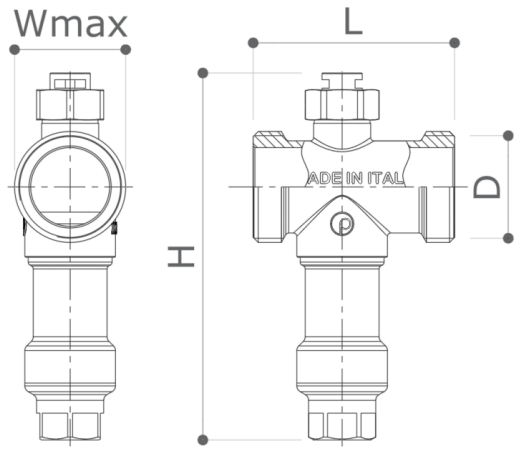
Antifreeze valve designed to ensure safe and efficient operation of heat pumps in harsh climatic conditions. The combination of this situation with the failure of the heat pump (damage/fault/lack of electrical power) can lead to situations in which the temperature of the fluid approaches freezing point, thus exposing the system to possible damage. The valve effectively prevents freezing, protecting the system.

- AG100/2 male x male
- AG100/5 male x female (swivel)
- AG100CM Copper x Copper

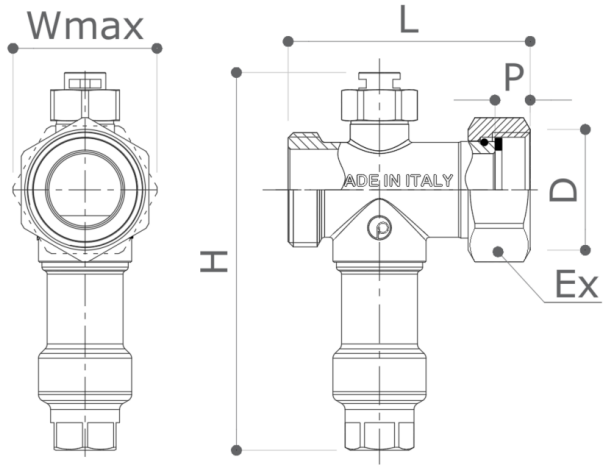
AG100/2 and AG100/5 complete with EPDM-X side gaskets

DIMENSIONS

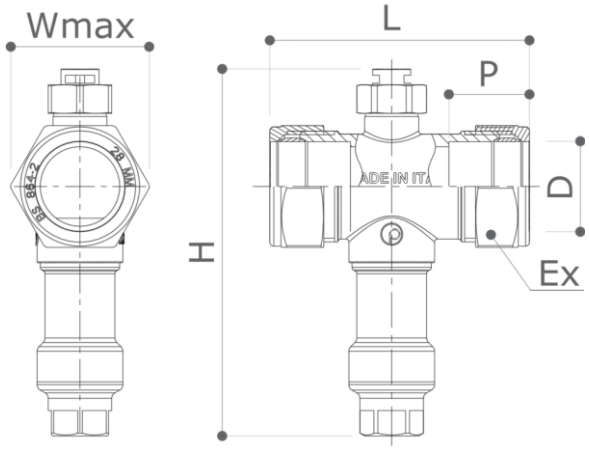
AG100/2



AG100/5



AG100CM



	AG100/2 MxM		AG100/5 MxF		AG100CM
D	1”	1” 1/4	1”	1” 1/4	28mm
L	60	63	70	72	82
H	110	116	110	116	116
P	-	-	10	9	25
Ex	-	-	37	46	38
Wmax	33	42	42	52	44

Dimensions in mm

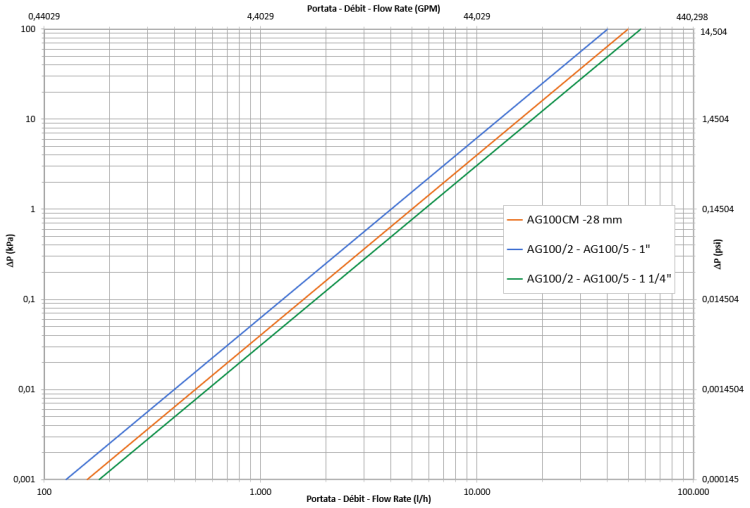
MATERIALS

Body	Brass CW617N CuZn40Pb2	***O-Ring***	EPDM-X
Swivel (/1)	Brass CW617N CuZn40Pb2	***Seals***	EPDM-X
Cartridge body	Brass CW617N CuZn40Pb2	***Vacuum breaker***	POM
Spring	AISI302 Steel	**MM28 Compression nut**	Brass CW617N CuZn40Pb2
Vacuum breaker cap	Brass CW617N CuZn40Pb2	**MM28 Compression ring**	Brass CW602N CuZn36Pb2As

STE0562 rev.01 21/05/2025

CERTIFICATIONS

PRESSURE DROP DIAGRAM



D	Kv
1”	40
1 ¼”	57
28mm	50

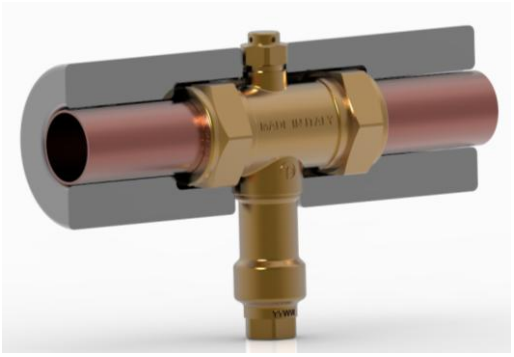
RECOMMENDED PRESSURE/TEMPERATURE LIMITS

Ambient temperature range:	-30 ÷ 65°C	Closing temperature:	4 °C (±0,5°)
Fluid temperature range	0 ÷ 90°C	Working fluid:	Water
Opening temperature:	3 °C (±0,5°)	Maximum operating pressure:	10 bar

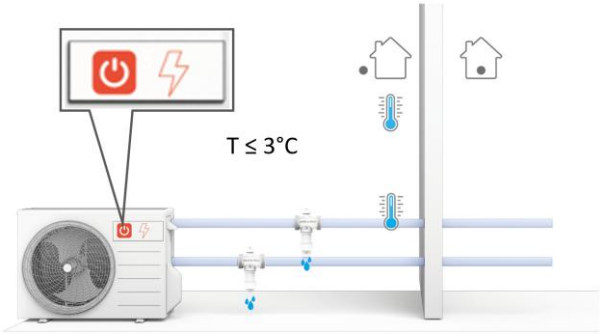
OPERATION

The antifreeze valve for heat pumps is designed to protect the system from damage caused by freezing of the heat transfer fluid, particularly in external piping. When the fluid temperature approaches the freezing point, typically between 2°C and 4°C, the valve activates. This can occur for various reasons, such as a heat pump failure, a circulator blockage, a thermostat malfunction, or more likely due to a power outage. In the event of extended inactivity of the heat pump or failures, the valve prevents ice formation, protecting the pipes and the unit from potential damage.

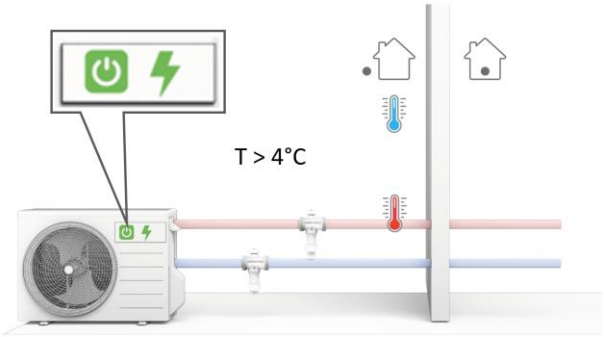
At approximately 3°C, the integrated sensor detects the risk of freezing and triggers the valve to open, allowing controlled discharge of the heat transfer fluid. This discharge continues as long as the sensor remains in concat with water near the freezing temperature. Once the temperature rises to around 4°C, the sensor close, stopping the discharge. To ensure proper functioning, the temperature-sensitive part must be free of insulation and installed in such a way as not to be directly exposed to weather elements such as rain, snow, and direct sunlight.



Winter operation mode without Electricity



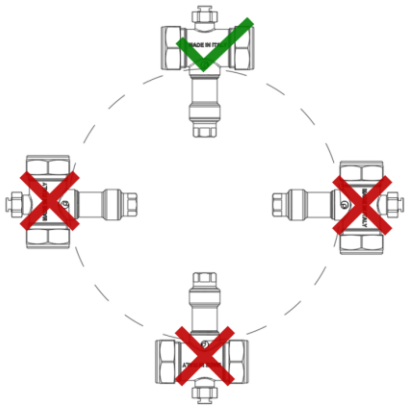
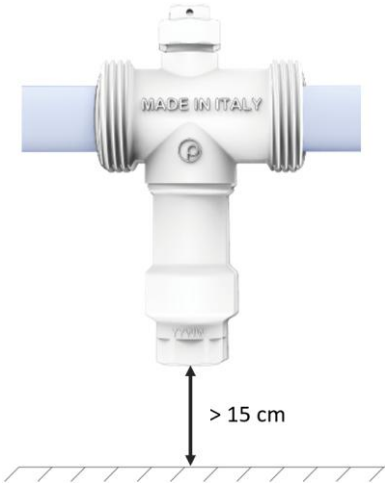
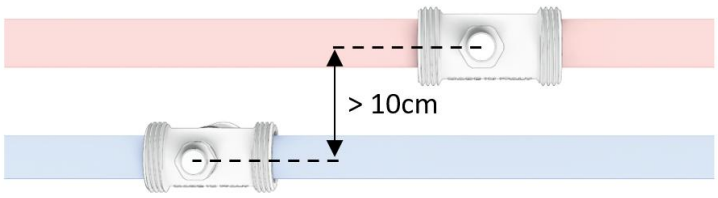
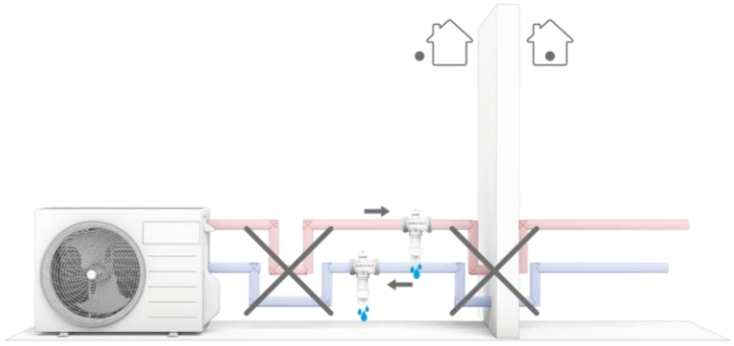
Winter Operation mode in heating



Via Pianelli,38 - 28017 S.Maurizio d’Opaglio (NO) ITALY Tel. +39 0322 96217 - Fax. +39 0322 96546 - www.pettinaroli.com

INSTALLATION

For proper operation, the antifreeze valve for heat pumps must be installed following these guidelines:

Installation Position The valve must be mounted in a vertical position, with the discharge facing downward to allow free drainage of the discharged water. It should be placed outdoors, at the point in the system where temperatures can reach critical values in case of heat pump failure.	
Height Keep the discharge of the valve at least 15 cm above the ground to prevent any ice formation from blocking the outlet.	
Distance It is recommended to install an antifreeze valve on both the supply and return pipes, keeping them at least 10 cm apart with a slight offset. This reduces the risk of water discharged from one valve falling onto the other pipe, thereby preventing the formation of external ice It is recommended to convey the waste to a suitable collection point.	
Drainage Systems It is recommended to direct the discharged water to an appropriate collection point. Avoid siphon configurations in the piping, as these can hinder the proper drainage of the fluid and compromise the antifreeze protection.	

STE0562 rev.01 21/05/2025