

# Anti-freeze safety device Garden tap, ball-type, with anti-freeze safety device



**603 series**



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## Function

The anti-freeze safety device prevents ice build-up in domestic water circuits, avoiding possible damage to water storages and pipes in hydraulic, solar and irrigation systems. When the minimum ambient operating temperature is reached, it automatically opens so that a minimum quantity of water may flow toward the drain, enabling a small continuous inflow of water; this prevents water from freezing inside the pipe. When the ambient temperature increases or in the event of contact with warmer water, the opposite action occurs, causing the device to shut off and circuit normal operating conditions to be restored.

A particular product has been developed by combining the freeze protection device with a garden tap, ball-type, specifically constructed for these installations.

**Patent application No. MI2009U000006**

## Product range

Code **603041** Anti-freeze safety device 1/2" F nut  
 Code **603450** Garden tap, ball-type, with anti-freeze safety device 1/2" M x 3/4" M with hose connection

## Technical specifications

### Materials

#### Garden tap

Body: brass EN 12165 CW617N, chrome plated  
 Ball: brass EN 12164 CW614N, chrome plated  
 Ball control stem: brass EN 12164 CW614N, chrome plated  
 Seal elements: EPDM  
 Control lever: stainless steel  
 Lever fixing nut: stainless steel

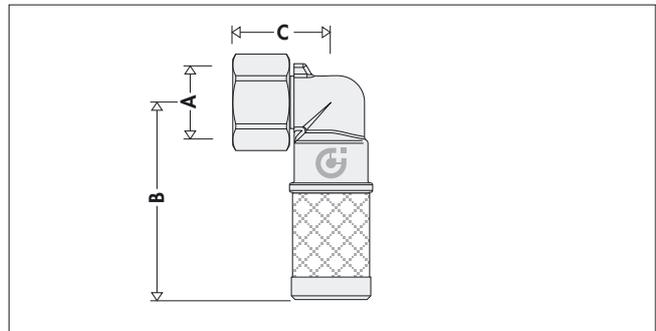
#### Anti-freeze device

Body: brass EN 12165 CW617N, chrome plated  
 Obturator stem: brass UNI EN 12164 CW614N  
 Seal seat: stainless steel  
 Springs: stainless steel  
 Seal elements: NBR  
 Strainers: stainless steel

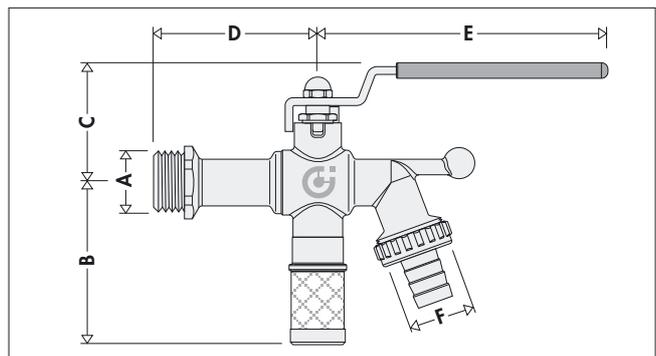
### Performance

Medium: water  
 Max. working pressure: 10 bar  
 Ambient temperature range: -30-90°C  
 Opening temperature: 3°C  
 Closing temperature: 4°C  
 Accuracy: ±1°C  
 Connections: - anti-freeze device (603041): 1/2" F with nut  
 - garden tap (603450): 1/2" M x 3/4" M with hose connection for Ø 15 mm pipe

## Dimensions



Code	A	B	C	Weight (kg)
<b>603041</b>	1/2"	52,5	26	0,120



Code	A	B	C	D	E	F	Weight (kg)
<b>603450</b>	1/2"	63	47	66	100	3/4"	0,450

## Operating principle

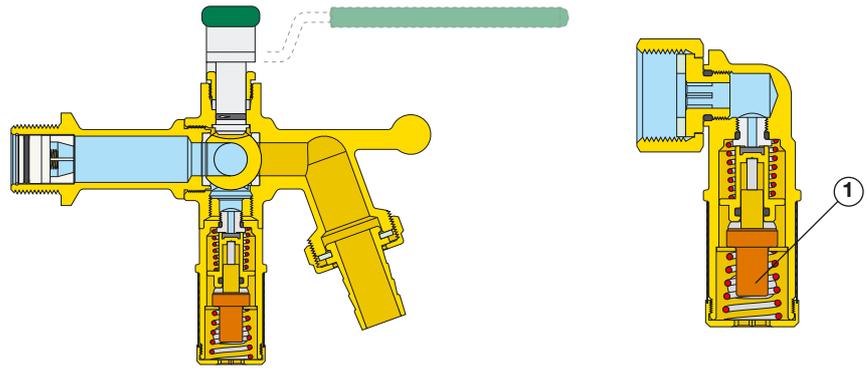
A thermostatic element (1) in contact with the ambient air controls a shut-off obturator fitted to a passage seat in contact with the water contained in the pipe (2).

When the ambient temperature drops to the minimum intervention value, the thermostat contracts. This causes the obturator to move and open a tiny passage so that water can drain out, allowing a small amount of water to flow in continuously; this prevents water from freezing inside the pipe.

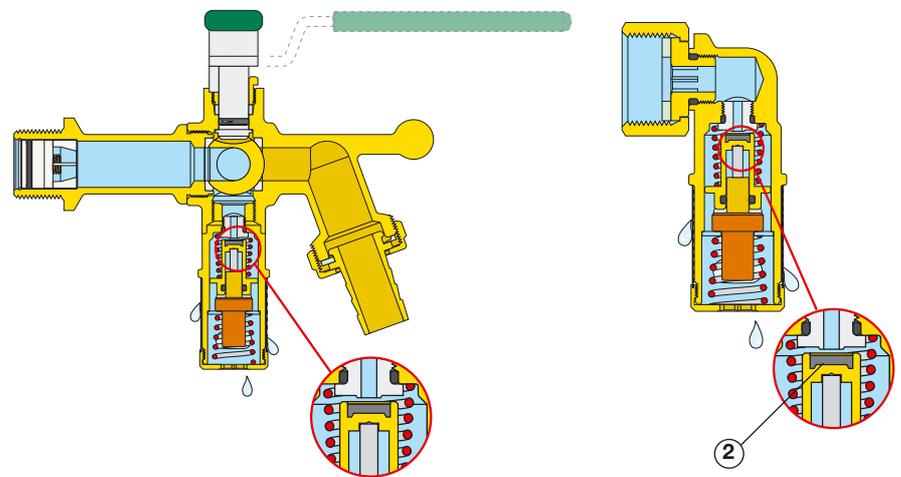
Water from the supply network, which is usually warmer than the air temperature up to the intervention value, laps the thermostat and causes the opposite action: the channel closes again and normal circuit operating conditions are restored.

For optimal system operation without the risk of freezing, it is recommended that the part of the circuit in which the safety device is installed is connected to the water supply network and a suitable pressure level maintained.

## ANTI-FREEZE SAFETY DEVICE CLOSED



## ANTI-FREEZE SAFETY DEVICE OPEN



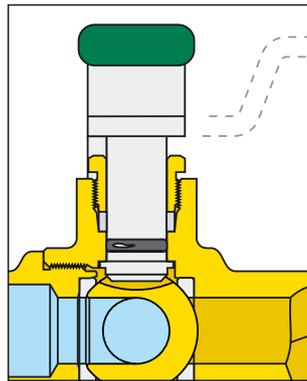
## Volume of water drained

While the anti-freeze device is in operation, the drain outlet will drip as a result of the cyclical opening and closing phases taking place correctly. The amount of water drained out varies in accordance with the outdoor temperature, the temperature of the water in the pipe and the length of piping exposed to the air.

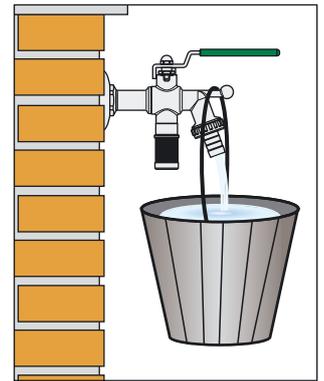
As a general guide, in the worst case conditions, the amount of water drained out is less than 500 cm<sup>3</sup>/h.

## Construction details

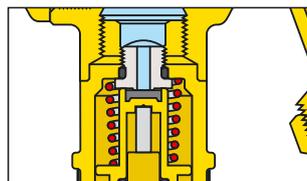
The valve is fitted with a ball featuring blow-out proof design, double O-ring seal and packing gland; the control lever and fixing nut are made of stainless steel, for total resistance against corrosion in different climatic conditions.



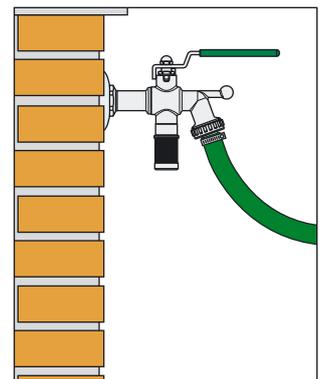
The tap is fitted with a special hooking system so that a bucket or water container can be hung easily on it while being filled.



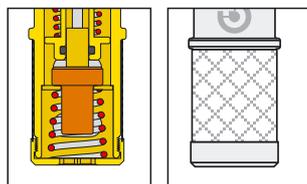
The anti-freeze safety device drain seat is made using stainless steel, so as to guarantee a perfect water tightness without any corrosion problems caused by contact with drained water.



The outlet thread on the tap is designed to allow direct coupling with hose connections and the normal accessories used in conjunction with garden hoses, for easier and more straightforward operation.



The drain zone is also protected by a metal mesh outside the body, to prevent dirt from entering and causing the device to malfunction.



## Installation

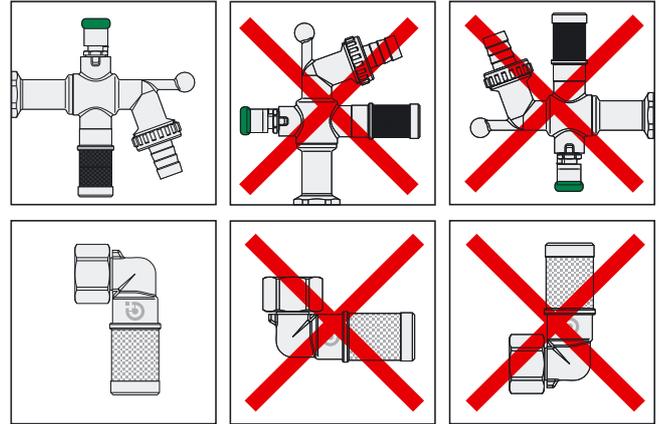
Before installing the device, make sure that the system has been flushed and cleaned to remove any traces of dirt that may have accumulated during installation.

The device must only be installed in vertical position, as shown in the diagram, so as to permit a free and unrestricted downward flow of the water as it drains out.

The device must be installed in the points of the circuit at risk of freezing so that the water may flow freely and in order to prevent pipes, storages or components located upstream of the device from freezing.

Pipes downstream of the device must be protected from frost if, due to the intervention of the device, the water contained in them remains stagnant without flowing.

In the case of exposed outdoor pipes, the installation of a suitable heating cable will provide effective protection.



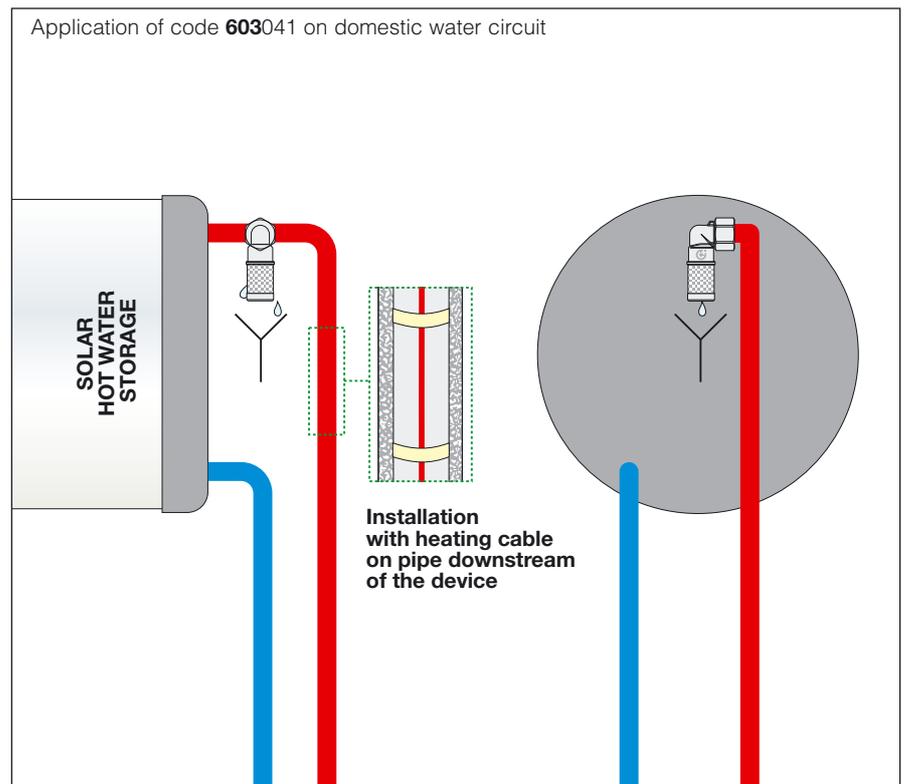
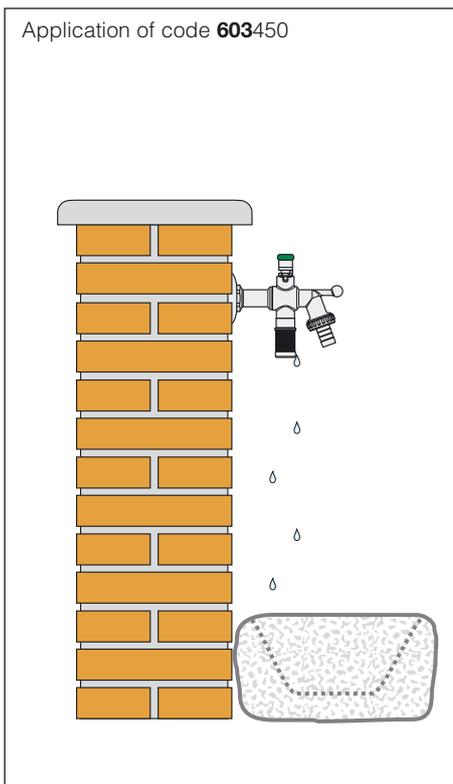
## Backflow prevention device

When installing the device on a drinking water system, the garden tap must be installed in accordance with current regulations relating to anti-pollution protection, as specified by standard EN 1717.

The tap may be connected to a garden hose and the water contained within the hose may come into contact with hazardous substances.

A suitable backflow preventer, double check valve or vacuum breaker valve should be selected and fitted in accordance with type of use and the corresponding hazard level.

## Application diagrams



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## SPECIFICATION SUMMARY

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### **code 603041**

Anti-freeze safety device. Connection 1/2" F with nut. Brass body, chrome plated. Brass obturator stem. Stainless steel seal seat. NBR seal elements. Medium water. Working temperature range from -30°C to 90°C. Maximum working pressure 10 bar. Opening temperature 3°C. Closing temperature 4°C. Accuracy ±1°C.

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### **code 603450**

Ball-type garden tap, with anti-freeze safety device. Connection 1/2" M x 3/4" M with hose connection for Ø 15 mm pipe. Brass body. Chrome plated. Brass ball and control stem, chrome plated. EPDM seal elements. Stainless steel control lever and fixing nut. Medium water. Working temperature range from -30°C to 90°C. Maximum working pressure 10 bar.

Complete with: anti-freeze safety device. Brass body, chrome plated. Brass obturator stem. Stainless steel seal seat. NBR seal elements. Medium water. Working temperature range from -30°C to 90°C. Maximum working pressure 10 bar. Opening temperature 3°C. Closing temperature 4°C. Accuracy ±1°C.

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