

01052 



# Flow switch

**Series 626**

**AISI 316  
stainless steel  
bellows unit  
with  
microplasm  
welding**

Protection class:  
**IP 54**

**Microswitch  
protection and  
flow switch  
cover made of  
self-extinguishing  
polycarbonate**



 **ISO 9001**  
Quality Assured Firm



**CALEFFI**  
Heating & Plumbing Components

## Applications

The flow switch is used when the presence or lack of flow in various types of systems must be detected:

- heating systems;
- air conditioning systems;
- hot water systems with instantaneous heat exchangers;
- pumping systems;
- water treatment systems;
- additive inlet systems;
- process systems and plants in general.

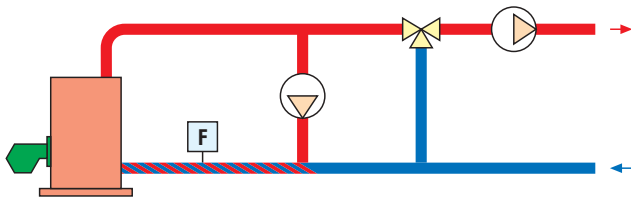
It carries out the following functions:

- control of the following items of equipment: pumps, burners, compressors, refrigerators, motorized valves;
- activation of signalling units;
- activation of warning devices;
- regulation of equipment for metering water additives.

## Example of its use on heating systems

On heating systems the flow switch is used to cause the burner to switch off whenever it is inadequate or there is no circulation of the vector fluid in the boiler circuit.

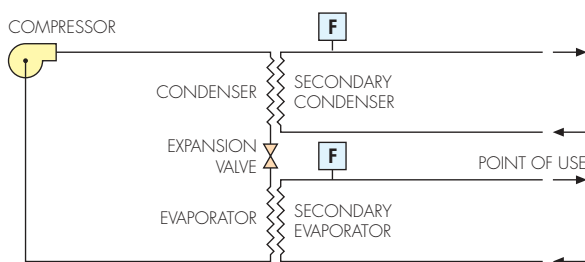
The lack of circulation or inadequate circulation would jeopardise the use of safety and protection devices which are sensitive to the temperature such as thermostats, thermal discharge valves and fuel isolation valves.



## Example of the use of the flow switch on a cooling system

A useful application of the flow switch is generally on machines where the circulation of the water is considered essential for the correct operation of the items of equipment themselves.

A typical example is represented by the refrigerator unit shown in the illustration.

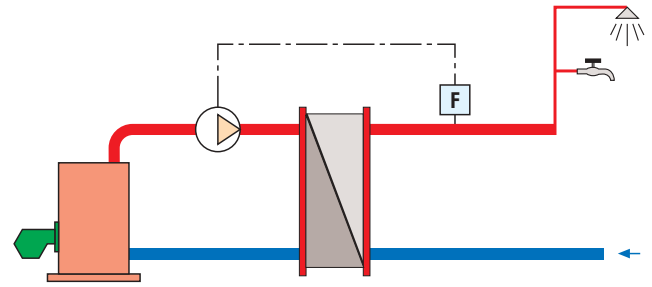


The two flow switches are operated to interrupt the operation of the compressor if one of the following conditions should occur:

- inadequate or no cooling water flow in the condenser (danger of overheating);
- inadequate or no cooled water flow (danger of the formation of ice on the evaporator and the return of liquid to the compressor intake).

## Example of the use of the flow switch on a hot water system

The flow switch is used on systems for providing instant hot water with heat exchangers to control the pump and enable water to be circulated in the primary circuit of the heat exchanger when hot water is required.



## Design characteristics

The part subjected to the greatest stress in the flow switch is the metal bellows unit which separates the electrical from the hydraulic components. To make them stronger and more reliable and so that they can be used with every type of fluid the bellows unit and the parts connected to it are made completely of stainless steel.

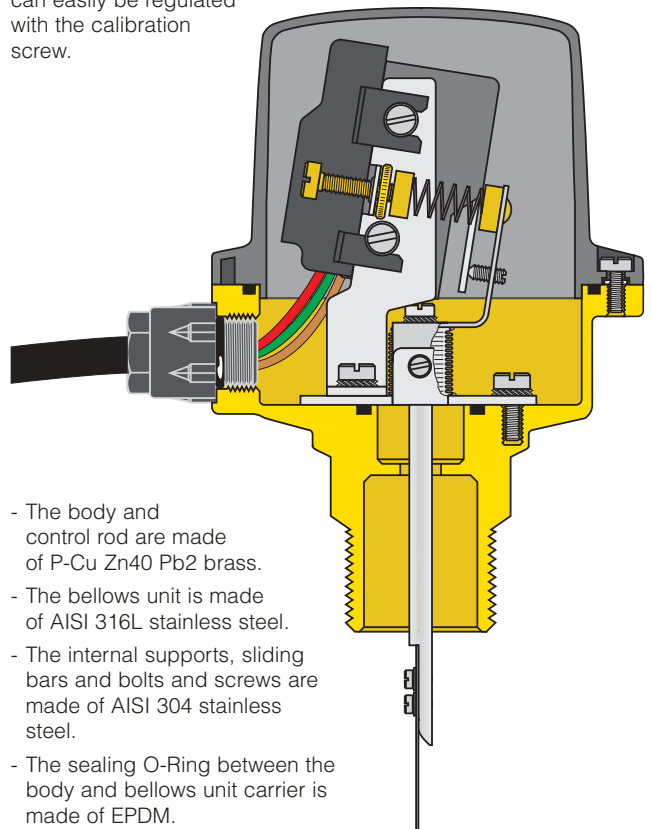
The TIG method of welding is used to weld the bellows unit to the control rod.

The insulating protective cover over the microswitch avoids the danger of accidental contacts during the calibration operation.

With protection class IP 54 the valve can be used in particularly humid and dusty environments.

With the electric contact in changeover mode any electrical device within range of use can be activated or disconnected as required.

The point of operation can easily be regulated with the calibration screw.



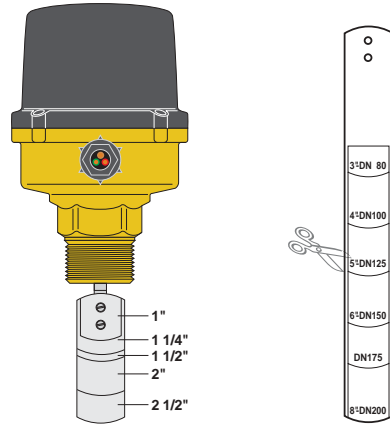
- The body and control rod are made of P-Cu Zn40 Pb2 brass.
- The bellows unit is made of AISI 316L stainless steel.
- The internal supports, sliding bars and bolts and screws are made of AISI 304 stainless steel.
- The sealing O-Ring between the body and bellows unit carrier is made of EPDM.
- The microswitch protection and cover are made of Class V-0 self-extinguishing polycarbonate.

## General data

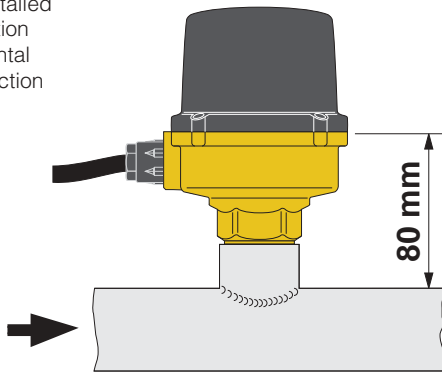
Maximum operating pressure:	10 bar
Maximum temperature of the fluid:	120°C
Minimum temperature of the fluid:	-30°C
Maximum ambient temperature:	55°C
Pipe connection:	1"
Can be used with the following pipes:	from 1" to 8"

## Installation

The valve is fitted with a series of blades to be used for the various pipe diameters which are of special size for easy installation and minimum loss of pressure.



The flow switch is installed on the pipe in a position which may be horizontal according to the direction of flow shown by the arrow located on the cover and on the external part of the body. For the blade to function correctly the flow switch must be installed so that it corresponds to the dimension shown on the drawing.

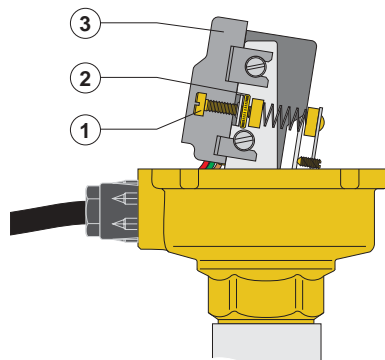


## Calibration

The valve is calibrated by turning the screw in the clockwise direction for the contacts to be closed at higher flow values or in the anticlockwise direction at lower values.

Once the valve has been adjusted the calibration screw is locked with the attachment ring nut.

The operator is protected from the danger of accidental contact with the parts of the flow switch subjected to electric voltage by a protective insulating cover fitted over the microswitch.



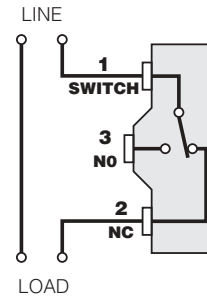
- 1 Calibration screw
- 2 Attachment ring nut
- 3 Microswitch protection

## Electrical data

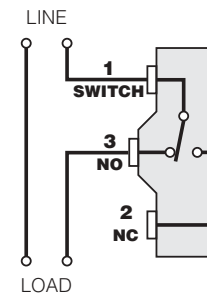
Voltage:	240 V
Current strength:	15 (7) A
Protection class:	IP 54
Mark:	CE

## Schematic representation of the microswitch connections:

A) Flow switch used to activate an appliance when **there is no flow**



B) Flow switch used to activate an appliance when **there is a flow**



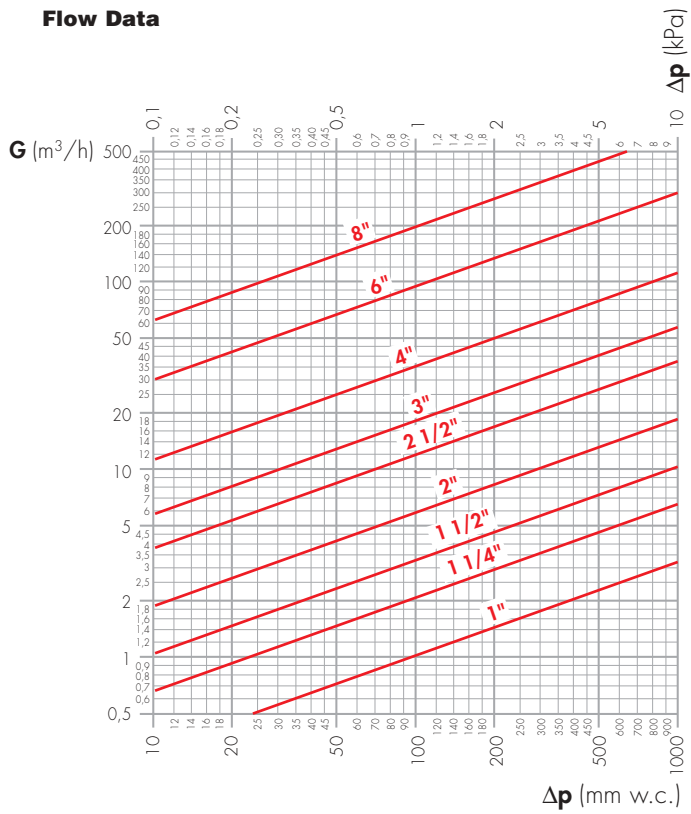
## Hydraulic data

Operating flow rate (m<sup>3</sup>/h)

Pipe diameter	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	
MINIMUM CALIBRATION	with increasing flow	1,3	1,7	2,6	3	5	6,8	10	16,5	37
	with decreasing flow	0,9	1,25	1,9	2,2	3,7	5,2	8,5	14,5	33
MAXIMUM CALIBRATION	with increasing flow	2,8	3,8	5,9	6,7	11,7	15,8	21,5	43	76
	with decreasing flow	2,7	3,7	5,8	6,6	11,5	15,6	21	36	70

When the operating flow rate is reached or exceeded with an increasing flow contacts 1 and 3 of the microswitch close whilst contacts 1 and 2 open. This is reversed when the operating flow rate is reached with a reduced flow and contacts 1 and 2 close.

### Flow Data



### Localized coefficient of pressure loss $\xi$

$\varnothing$ Tube	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
$\xi$	9	6	5	4	3	2	1	1	0,5

### Dimensions

