FLOW SWITCH K500

K500

Description

The flow switch K500 is used to control the flow in the pipes of the heating and/or conditioning system. The flow switch is fitted as standard with three blades for use in pipes from DN25 to DN80, plus a fourth blade for pipes with a diameter of (or greater than) DN100. The device is designed in such a way as to ensure hermetic separation of the mechanical part from the electric part. The electric head can be removed and replaced.

Operation

When inserted in the pipe, the blade movement is proportional to the flow that strikes it; the movement is mechanically transmitted to a microswitch that activates or deactivates an electric contact (figure 2). The sensitivity of the flow switch can be adjusted via the setting screw (figure 1). A particular feature of the device is its low load loss.

Main characteristics

- For use in pipes DN25÷200
- Body in nickel-plated brass
- Blades in steel
- Protection blower in NBR
- Spring in steel
- SPDT microswitch
- Contact capacity 250 V - 5 A
- Electric connection by means of DIN 43650A connector
- Protection degree IP65
- Weight 350 g

Technical data

- Max. fluid temperature: 110 °C
- Max. working pressure: 25 bar
- Average loss of pressure: 0,15 bar (at maximum capacity)
- Precision: ±15%

Installation

The number of blades to be used depends on the pipe diameter (D) and the intervention capacity.

DN [mm]	Maximum capacity [m³/h]	Intervention capacity Setting range (*) [m³/h]	Blade no.
25	3,6	0,9 ÷ 1	1
32	6	2,3 ÷ 2,7	1
40	9	2,8 ÷ 3,4	1
50	15	6,5 ÷ 7,5	1
		1,9 ÷ 2,4	1+2
65	24	11,4 ÷ 13,3	1
		4,8 ÷ 5,7	1+2
80	36	16,5 ÷ 18,9	1
		7,6 ÷ 8,9	1+2
		2,7 ÷ 3,5	1+2+3
100	60	26,3 ÷ 30,3	1
		13,3 ÷ 15,3	1+2
		6,7 ÷ 8,4	1+2+3
		5,4 ÷ 6,7	1+2+3+4
150	120	31 ÷ 40	1+2+3
		8,6 ÷ 15	1+2+3+4
200	240	55 ÷ 71	1+2+3
		16 ÷ 27	1+2+3+4

Table 1 - Number of blades to use
(*) These data refer to horizontal assembly and decreasing flow with fluid = water

Note.
The setting can be modified, as shown in figure 2.

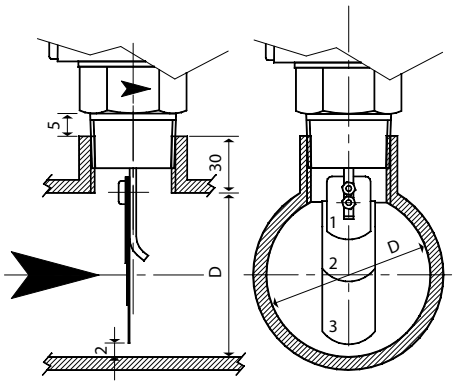


Figure 1 - Geometry of the flow switch / pipe coupling.

Warning.
Check the blade does not touch the bottom of the pipe.
If necessary, cut the blade (refer to figure 1)

Wiring and setting

For the wiring, refer to figure 3. To regulate the intervention capacity (within the temperature range shown in table 1), raise the safety cover on the electric head of the tool, and turn the setting screw clockwise (figure 2).

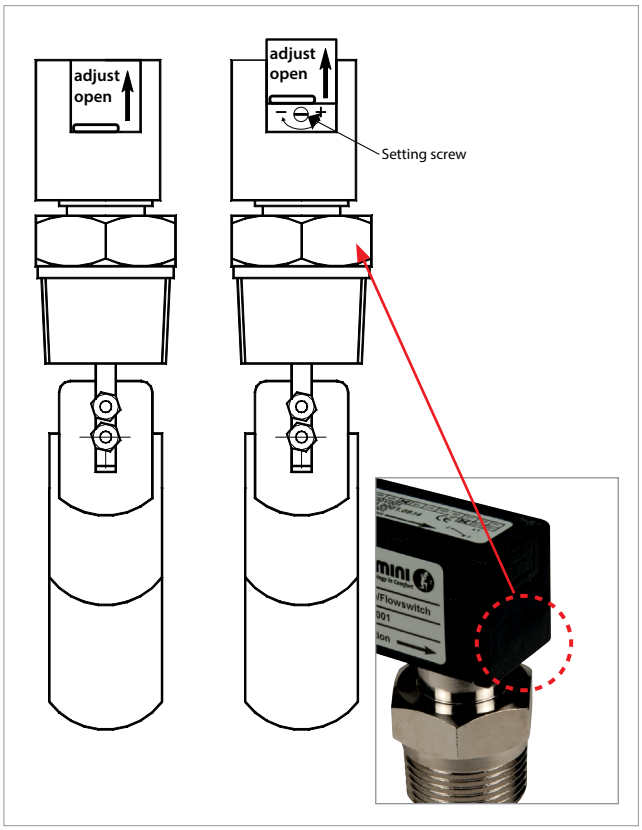


Figure 2 - Regulating the setting screw

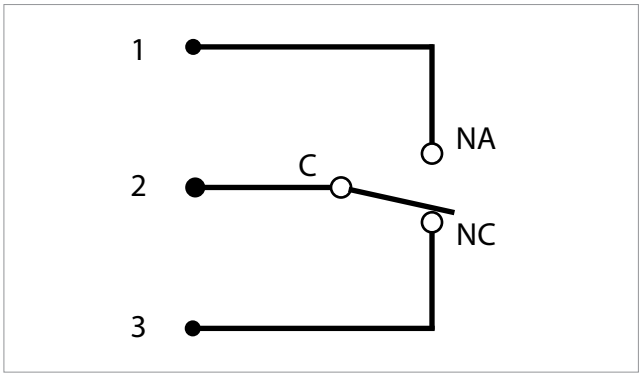


Figure 3 - Electrical connection

Dimensions

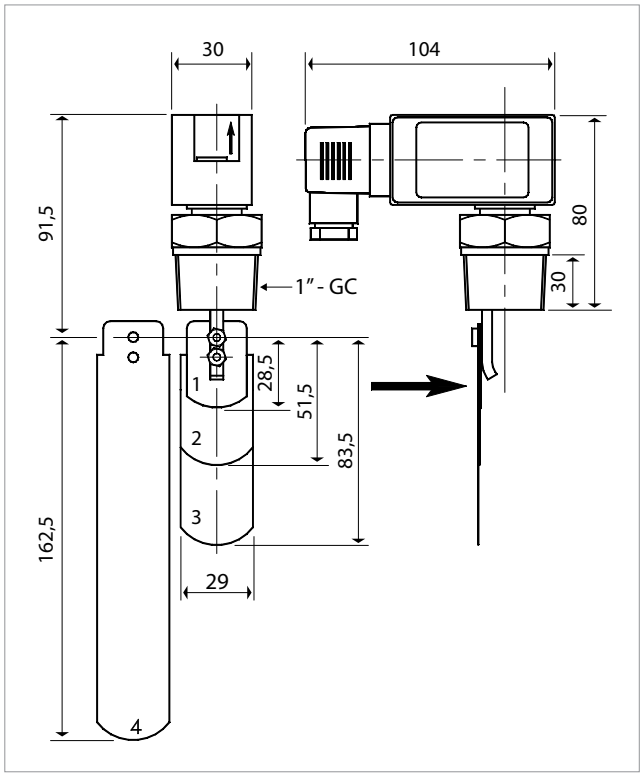


Figure 3 - Dimensions in mm

Product specifications

K500

Flow switch for pipes with DN25÷200, with nickel-plated brass body; blade, blade support and spring made of steel. Magnet in Oxid 300. Precision ±15%. SPDT microswitch 250 V-5°. Hermetic separation between mechanical part and electric part. The electric head can be removed and replaced. Protection degree IP65. Max. fluid temperature 110 °C. Max. working pressure 25 bar. Average loss of pressure 0,15 bar (at maximum capacity).

FLOW SWITCH K500

K500

Description

The flow switch K500 is used to control the flow in the pipes of the heating and/or conditioning system.
The flow switch is equipped with four blades for use in pipes from 1" (DN25) to 8" (DN200). The device is designed in such a way as to ensure hermetic separation of the mechanical part from the electric part.

Versions and product codes

Product code	Size	No. of blades included
K500Y002	1" ÷ 8" (DN25 ÷ DN200)	1 blade of 35 mm 1 blade of 58 mm 1 blade of 89 mm 1 blade of 167 mm

Technical data

- Operating temperature range: -20÷110 °C
- Maximum ambient temperature: 50 °C
- Max. working pressure: 10 bar
- Fixing with G 1" threaded fitting
- Blades for pipes from 1" to 8" (from DN25 to DN200)
- Protection degree: IP65
- Measured flow rate: see the table in the paragraph "installation"

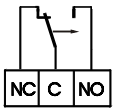
Materials

- Casing: shockproof thermoplastic material
- Body: brass
- Blades: stainless steel AISI 301

Electrical data

- SPDT dust-tight microswitch with approvals UL, cUL, CSA, ENEC.
- Rated insulation voltage: 380 V~
- Rated use voltage: 220÷250 V~
- Rated current for continuous service: 10 A
- Resistive load: 16 A
- Inductive load: 6 A
- Continuous current: 0,2 A

- Increasing flow rate:
  Open contact C - NC
  Close contact C - NO

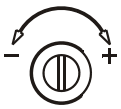


Operation

When inserted in the pipe, the blade movement is proportional to the flow that strikes it; the movement is mechanically transmitted to a microswitch that activates or deactivates an electric contact.
The sensitivity of the flow switch can be adjusted via the setting screw.
A particular feature of the device is its low load loss.

Setting

The flow switch is calibrated at the factory for intervention at the minimum flow rate. Turn the adjustment screw clockwise to increase the flow rate value at which the intervention occurs.



Warning.
If you need to turn the screw anti-clockwise to decrease the flow rate, check that the spring is not too unloaded, as this will affect the reset of the device.

Installation

The flow switch is installed on horizontal pipe sections, away from sources of disturbance or turbulence, such as valves, elbows, etc ... (minimum distance from said devices is equal to 5 times the diameter of the pipe).
For correct operation, respect the maximum distance between the bottom of the appliance and the surface of the pipe (~ 48 mm) (Fig.1).
Once the flow switch has been installed, check the correct operation by pressing on the flow adjustment screw to simulate the flow (Figure 2).

Fig.1

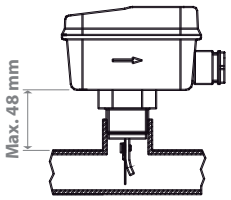
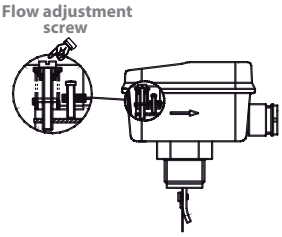


Fig.2



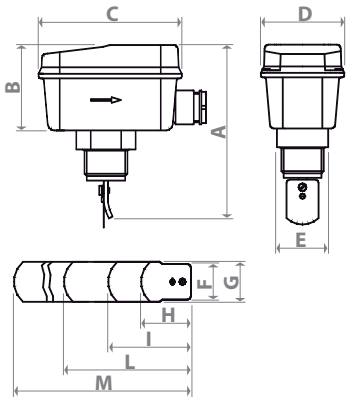
Warning.
The 35 mm blade could interfere with the internal diameter of some 1" fittings. If this occurs simply cut the blade to reduce the length.

The table indicates the flow rate values at which the intervention and recovery occur, the diameters of the corresponding pipes and the blade to use.
If necessary shape the profile of the blades.

Ø piping	Blade length [mm]	MIN Flow rate [m³/h] with flow in:		MAX flow rate [m³/h] with flow in:	
		reduction	increase	reduction	increase
1" (DN25)	35	0,5	1	1,9	2
1 1/4" (DN32)		0,7	1,2	2,7	2,9
1 1/2" (DN40)	58	1	1,6	3,6	3,9
2" (DN50)		2,1	2,9	5,7	6,1
2 1/2" (DN65)	89	2,7	4	6,5	7
3" (DN80)		4,3	6,1	10,7	11,4
4" (DN100)		11,3	14,7	27,6	28,9
	167 *	6,1	7,9	17,3	18,4
5" (DN125)	89	22,8	28,3	53	55,5
	167 *	9,2	12,8	25	26,7
6" (DN150)	89	35,8	43	81,6	85
	167 *	12,2	16,8	30,5	32,5
8" (DN200)	89	72,4	85	165,5	172,3
	167 *	38,5	46,4	90,7	94

* These values are obtained by adding the longer blade

Dimensions



A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]
132	66	110	65	ch. 38	25	28	35	58	89	167

Product specifications

K500

Flow switch to control the flow in the pipes of the heating and/or conditioning system. The flow switch is equipped with four blades for use in pipes from 1" (DN25) to 8" (DN200). Operating temperature range: -20÷ 110 °C. Maximum ambient temperature: 50 °C. Max. working pressure: 10 bar. Fixing with G 1" threaded fitting. Protection degree: IP65.