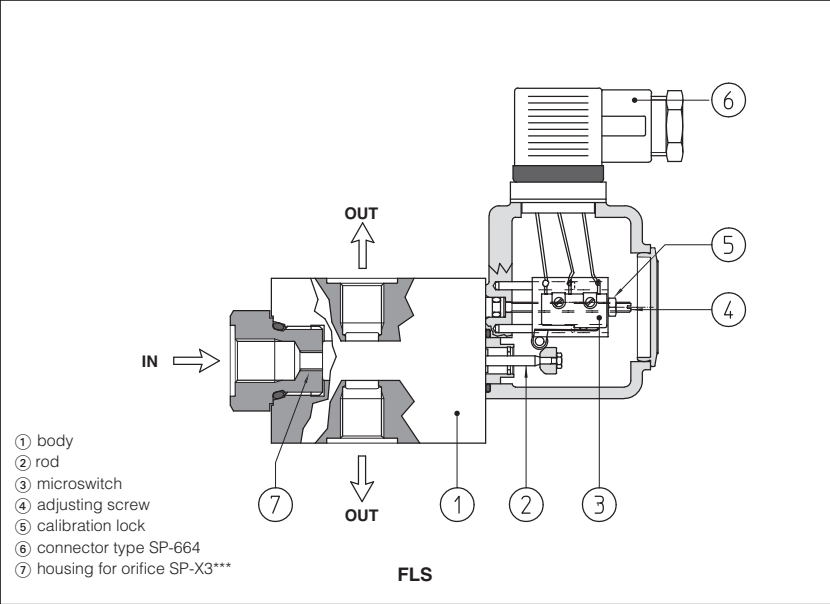# Flow switches type FLS

In line mounting - G 1/4" threaded ports

FLS are flow switches used to check the fluid crossing in lubrication circuits and to activate an electrical alarm signal in case of flow decrease under the setting value.

The SPDT electric contact is released when the flow in the circuit reaches the seting value.

In case of absence of flow in the hydraulic circuit, the rod ②, keeps the microswitch ③ engaged.

When the flow reaches the set value, the rod moves and disengages the microswitch which changes the electric contact state.

The flow rate which causes the switching of the microswitch is regulated by means of the screw ④.

Clockwise rotation increases the flow value which causes the switching.

FLS switches are designed to operate in hydraulic systems with hydraulic mineral oil or synthetic fluid having similar lubricating characteristics.

Max flow up to 4 l/min

Max pressure up to 30 bar

OUT

IN

OUT

① body
② rod
③ microswitch
④ adjusting screw
⑤ calibration lock
⑥ connector type SP-664
⑦ housing for orifice SP-X3***

FLS

1 MODEL CODE

| FLS | - | 06 | / | 0,6 | / | - | | ** |

Flow switches

06 = port IN and OUT of G 1/4"

Switching rated flow [l/min] factory pre-set

0,2 = 0,2 lt	**1,5** = 1,5 lt		
0,3 = 0,3 lt	**2** = 2 lt		
0,4 = 0,4 lt	**2,5** = 2,5 lt		
0,5 = 0,5 lt	**3** = 3 lt		
0,6 = 0,6 lt	**3,5** = 3,5 lt		
1 = 1 lt	**4** = 4 lt		

Design number

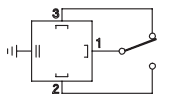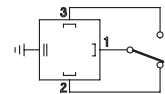**-** = without orifice in the **IN** port
*** = indentifying code of the orifice in the **IN** port

2 MAIN CHARACTERISTICS

Assembly position	Any position
Connections	**IN:** G 3/8" **OUT:** G 3/4"
Fluid	Hydraulic oil according to DIN 51524…535, for other fluids contact our technical office
Recommended viscosity	15 ÷ 150 mm²/sec at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 19/16 achieved with in-line filters at 25 μm con β25 > 75 (recommended)
Fluid temperature	-20°C + 60°C (standard and /WG seals) -20°C + 80°C (/PE seals)
Ambient temperature	from -20°C to +70°C
Checked flow	4 l/min
Max pressure	30 bar
Protection degree	IP65 - DIN 40050
Connector PG 11	DIN 43650 type SP-664 (included in the supply)
Hysteresis	See section ④

3 MAIN CHARACTERISTICS OF INTERNAL MICROSWITCH

	SUPPLY VOLTAGE [V]				CONTACT POSITION	
	125 AC	**250 AC**	**30 DC**	**250 DC**		
Max current – resistive load	7	5	5	0,2		
Max current – inductive load (Cos φ = 0,4)	4	2	3	0,02		
Insulating resistance	≥ 100 MΩ				**Micro engaged** With flow lower than the setting value	**Micro disengaged** With flow higher than the setting value
Contact resistance	≈ 15 mΩ					
Electrical life-expectancy	≥ 1.000.000 switchings					
Mechanical life-expectancy	≥ 10.000.000 switchings					

SK040

| **4**	PERSONALIZED REGULATION OF THE FLOW SWITCH

The following diagrams shows the effective flow values which cause the switching of the microswitch according to the flow nominal values pre-set in the factory (switching flow).

In order to change the flow switch setting value (switching nominal flow), it is necessary to consider the hysteresis between the highest and the lowest switching values.
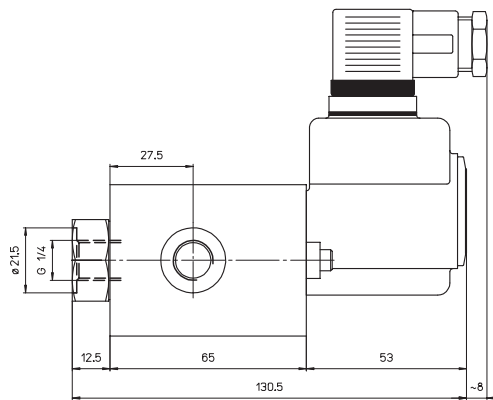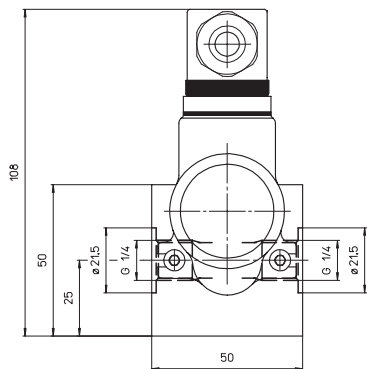
To regulate the flow which causes the switching of the microswitch, proceed in the following way:
- check that the voltage and the current intensity respect the recommended values
- check if the microswitch is engaged in rest position (contact NC)
- loosen the lock nut ⑤ which prevent the accidental change of the setting
- set the intervention point of the microswitch with the proper screw ④ (see figure in the first page) so that, when the required flow passes through, the status of the microswitch changes and it becomes disengaged (contact NO)
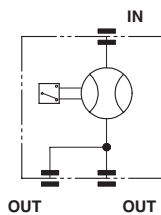- at the end of the setting operations, block the lock nut

5	REAL FLOW / SWITCHING FLOW DIAGRAMS

FLS 0,2 ÷ 0,6

FLS 1 ÷ 4
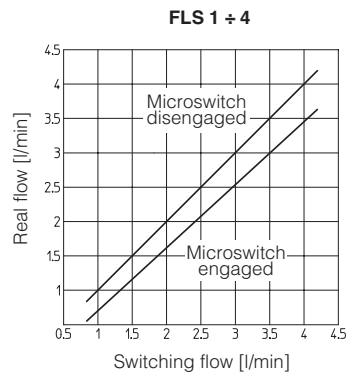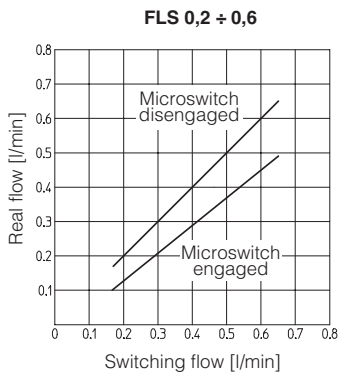
6	DIMENSIONS [mm]

Hydraulic symbol

Mass: 6,2 Kg