Liquid flow switch

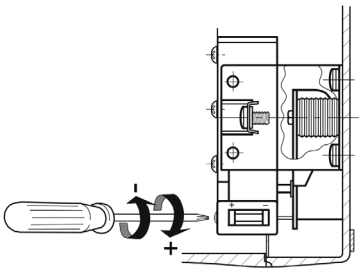
FS

Description

The flow switch serie FS is designed for controlling flow rates in pipes and ducts employed in HVAC applications from 1” up to 8”, optionally up to 10”. In particular for monitoring flow in water, for pumps in oil circulation, cooling and lubrication systems, heat exchangers, compressors and is used as flow control device or as water failure protection switch. Models available with brass and stainless steel body for aggressive media.

Technical specifications

Flow rate	See schedule
Switching output	Dustproof microswitch as potential-free SPDT contact
Electrical rating	16 (8) A, 24 - 250 VAC, at 24 VAC min. 150 mA
Lifetime	100.000 cycles at nominal load
Electrical connection	Screw terminal, wire up to 1,5 mm², cable Ø 6…9 mm
Max. pressure	See schedule
Calibration	The flowswitch is factory calibrated at its min. sensitivity in horizontal position. To increase the set value turn clockwise the adjustment screw (see drawing 1). The cut-out value must be ≥ the minimum flow necessary to guarantee the protection of the plant. The units without “T” fittings are supplied with 4 paddles, which must be cut off according to the pipe. All devices can be supplied with “T” connection on request as schedule indications.
Housing	ABS, RAL 9010, UV resistant
Cable conduit	M20 x 1,5 mm
Body and lever material	1” GAS, brass or stainless steel Aisi 316, optionally with 1” NPT thread
Paddles material	Stainless steel Aisi 316
Dimensions	See drawing
Weight	600 gr
Protection type	IP65
Protection class	III
Max. fluid temperature	-25 …+120°C
Working humidity RH	10...95% RH, non-condensing
Working temperature °C	-40 …+85°C
Storage temperature	-20 …+60°C
Installation	Horizontal and vertical, screw-in thread, Rp 1” (ISO7/1) shall be installed far from elbows or throttlings, with arrow on flow direction. If pipe is vertical, recalibrate range to balance paddle weight on the adjusting screw for the switch-on/off values clockwise. If the device is downwards mounted take care to slags, and apply it in a straight pipe far from filters, valves, etc with length at least 5 times the diameter of pipe upstream and downstream the unit. The paddles must be installed starting from the shortest.
Standards	CE conformity, RoHS



drawing 1

Models	Fluid	Max. pressure	Body material
FS1	normal	15 bar	brass
FS2	aggressive	30 bar	stainless steel Aisi 316

Option suffix **NPT** for body with 1” NPT thread
suffix **-10** with 8” paddle for 10” pipe size

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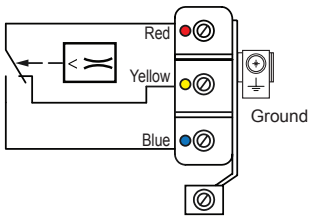
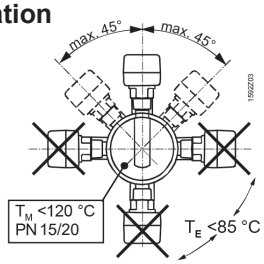
Electrical wirings

Red – Blue: flow velocity ≥ switch-on value
Red – Yellow: No flow or flow velocity has fallen below the adjusted switch-off value



Installation

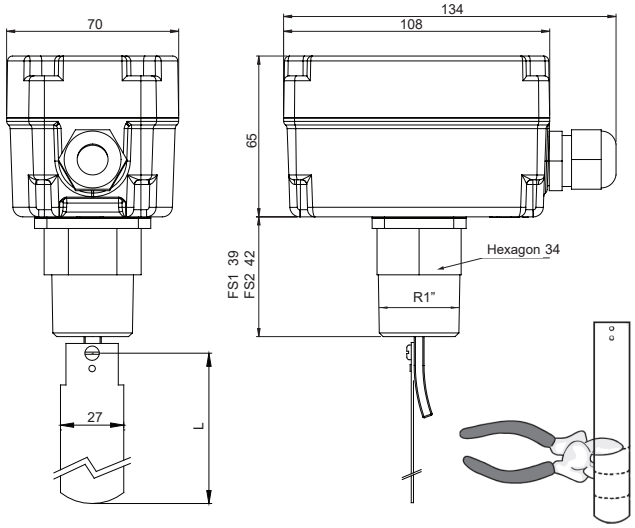


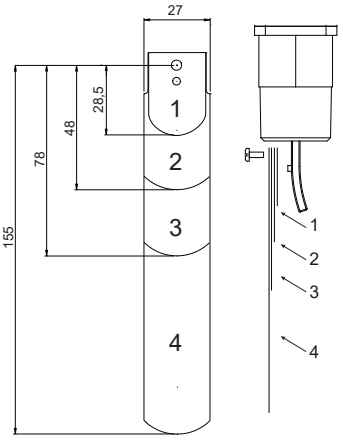
Flow rates in m³/h

Line pipe size	Paddle size	Flow m³/h				
		Flow increase Min. flow rate R to B closes	Flow increase Max. flow rate R to B closes	Flow decrease Min. flow rate R to Y closes	Flow decrease Max. flow rate R to Y closes	Max. recommended flow m³/h
1”	1	0,8	2,2	1,2	2,3	3,6
1” 1/4	1	0,93	2,52	1,5	2,8	6,1
1” 1/2	1, 2	1,1	3,9	2,37	4,3	9,2
2”	1, 2	2,0	6,05	3,8	6,5	15
2” 1/2	1, 2, 3	3,0	7,3	4,4	8,4	24
3”	1, 2, 3	5,0	11,7	6,2	12,6	36
4”	1, 2, 3	10,0	30,0	8,06	36,0	60
5”	1, 2, 3	21,1	51,4	24,0	69,0	94
6”	1, 2, 3, 4	12.4	29,0	20,0	33,7	120
	1, 2, 3	24,0	72,0	32,7	90,0	120
8”	1, 2, 3, 4	23,9	83,4	34,6	96,0	240
	1, 2, 3	48,4	174	66,8	200	240
10” *	1, 2, 3, 5	51	180	69	198	360

The values of minimum and maximum flow rate can be changed during installation shortening the paddles. The values in the table were measured by mounting the flow switch with the body horizontally. * Flow rates for this size are calculated.

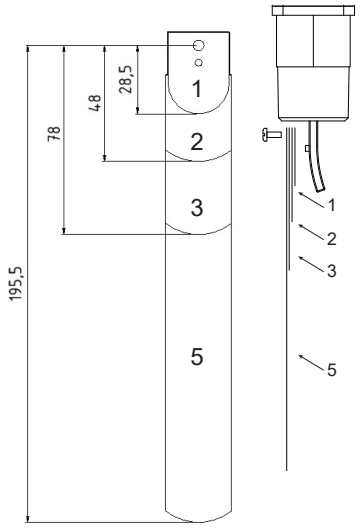
Dimensions (mm)





Standard paddle set for 1-8“ pipe size

The paddles must be installed starting from the shortest.



Special version for 1-10“ pipe size

ATTENTION

If flowswitch is used as a minimum flow controller, it is necessary to add another device downstream for alarm condition activation.

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