FSF50P SERIES FLOW SWITCHES

■ Introduction

FSF series flow switches are SPDT flow switches that are used in measuring and controlling the flow of the liquid in the pipe, as well as in the places where it needs chain effect or cutout protection. FSF series flow switches use micro-SPDT switch, have normally closed contacts and normally open contacts, which the customers can connect as needed. In addition, it has the characteristics of fast action to ensure the instantaneous of flow switches.

The flow switches use engineering plastics and full –sealing structure as its shell, the level of protection is IP55, and stainless steel as its inside components, which can assure its use in any conditions.

■ Technical data

1. Standard Flow

Table1

Required to actuate switch (m^3/hr)											
Pipe size (in.)		1	1-1\4 [a]	1-1\2 [a]	2	2-1\2 [b]	3	4	5	6	8
Min. adjustment	Flow increase R to B closes	0.95	1.32	1.70	3.11	4.09	6.24	8.4★	12.9★	16.8★	46.6★
	Flow decrease R to Y closes	0.57	0.84	1.14	2.16	2.84	4.32	6.1★	9.3★	12.3★	38.6★
Max. adjustment	Flow increase R to B closes	2.00	3.02	4.36	6,59	7.84	12.00	18.4★	26.8★	32.7★	94.3★
	Flow decrease R to Y closes	1.93	2.84	4.09	6.13	7.30	11.40	17.3★	25.2★	30.7★	90.8★

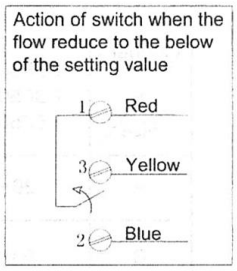
※ the [a] In the table shows that flow value which uses 2" paddle and trim to match the appropriate size of the pipe according to flow sheet trim the template.

※※ the [b] In the table showa that the flow value which uses 3" paddle and trim to match the appropriate size of the pipe according to flow sheet trim the template.

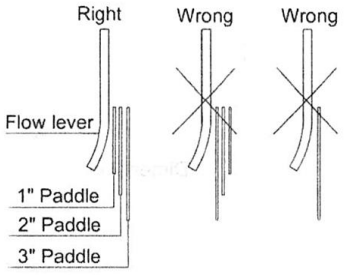
※※※ the★ In the table shows the flow valve using paddle of 1"+2"+3"+ 6" .For the flowv alve of 4" and 5" which use 6" paddle and trim to match the approprizte size of the pipe according to flow sheet trim the template.

※※※※ Flow valves shown in the table applies only to standard water pipe.

2, Liquid temperature range -25～+120°;
3, Ambient temperature range -20～+60°;
4, Max. Liquid pressure 1.5MPa;
5, Max. Allowable flow rate 3m/sec.
6, Contact capacity 220V A.C. 8A;
110V A.C. 16A;



Graph 1



Graph 2

■ Installation

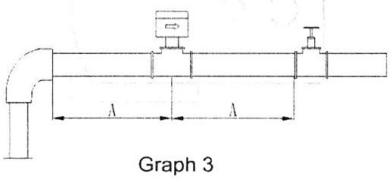
1. Micro switches in the flow switch are SPDT type, contact function shown in Graph 1. Micro-switch terminals are coated with red, yellow, and blue color. The red is common side; it contacts blue side with flow valve increase, otherwise contacts yellow side with the flow decrease.

2. The flow switches are with factory three paddles, which the users can install as needed. If needing other sizes of the flow sheets, you can prune according to the template and the arc length shown in Graph 4. For example: If using 3"pipeline, 1"、2"and 3" flow sheets are needed to install, shown in Figure 2. If using 1-1/2" pipeline, you need to trim 2" flow sheets to the appropriate length according to the template. If installed in 4"、5"、6" pipeline, it is not only to install 1"、2" and 3" flow sheets, but also install 6" flow sheets trimmed to the appropriate length according to the template. For 8" pipeline, apart from installing 1"、2" and 3" flow sheets, and then directly install 6" flow sheets. It is the correct installation position shown in the figure 2.

3. The following things must to be note when the flow switches are installed in the pipeline.

1) The flow switch must be installed in a straight pipe, which it must be at least A = 5 times the length of straight pipe on both sides. (See Graph 3)

2) The flow switch should be installed in horizontal pipes or the vertical pipes of upward flow, not be installed in the vertical pipes of down flow. When installed in the pipes of upward flow, considering to the effect of gravity, the flow switch should be adjusted to slightly above the typical flow value shown in table 1.The adjustment method can be rotated the "adjusting screw" clockwise.



Graph 3

4 To prevent damage during installation, the shell of flow switches do not be allowed holding to screw the three joints; the switch the wrench on the hex flat at the joints must be used to screw tightly.

5 When the flow switch is screwed into the tee, during screwed tightly; it must ensure that the projection plane of the flow sheets are perpendicular to the flow direction, also to sure that the arrow direction on the shell of the switches is the same direction as the flow direction.

6，The flow switches has been set the minimum factory flow value, not be adjusted to less than the factory settings, so as to avoid switch failure.

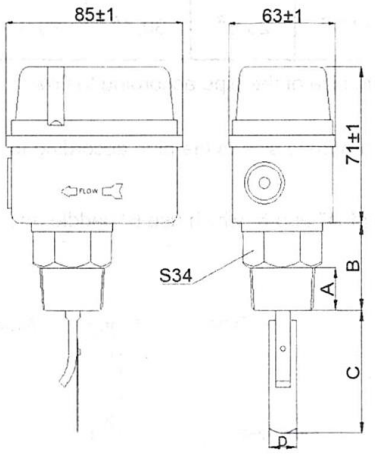
7，The adjusting screws of the micro switches on the main lever pointed sealed plastic are not allowed to adjust freely, otherwise it will damage the control of switches and make the switches are failure.

■ **Adjustments**

1，Remove the flow switches cover. If the flow rate value is increased, it is needed to rotate the adjustment screw clockwise to tighten the spring, otherwise decreased.

Table 2

Trouble Clearing	
1，Phenomenon	Exclusion Methods
2，Bellows damage, fluid enters the shell	Exchange
3，The impurities stuck to the switches, resulting in the switches no action.	Remove impurities
4，Switches contrast	Check the accuracy of wiring
5，The switches do not operate	Check wiring; check whether the paddles touch the pipe.
6，The switches can not be recovered back	The mounting orientation of the switches is consistent with the fluid.
7，No movements when the flow is increasing.	Check the paddles are breakage; it should be replaced if there is.



Dimension

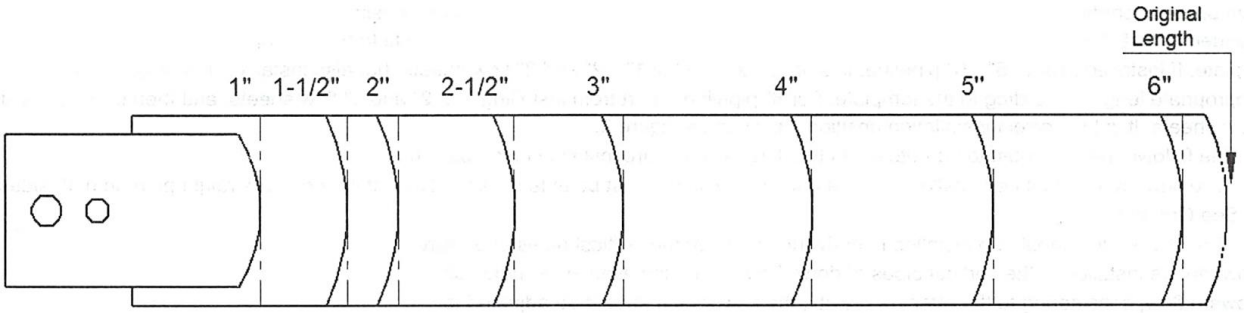
Table 3

Pipe Diameter in.	C	D
1	41	20
2	60	25
3	91	25
6	168	25

The configuration for diameter and paddle

Table 4

Model / Size	FSF50P-1 FSF50P-2 FSF50P-3	FSF50P-1A FSF50P-2A FSF50P-3A	FSF50P-1S FSF50P-2S FSF50P-3S	FSF50P-1SA FSF50P-2SA FSF50P-3SA	FSF50P-1SN FSF50P-2SN FSF50P-3SN
A	26±1	27±1	19±1	22±1	20±1
B	53±1	54±1	43±1	41±1	38±1



Trimimg template for the paddle

Graph 4