

# Flow Switch Operation Manual

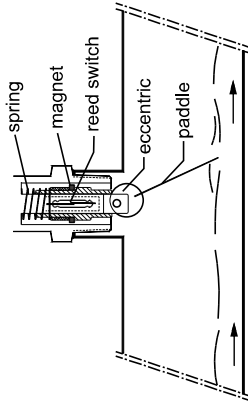
## DIMENSION

### PRINCIPLE

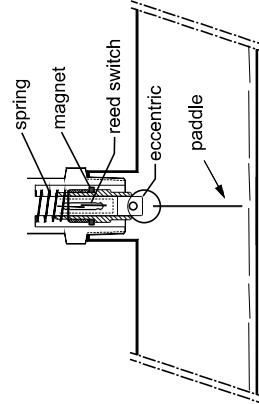
Flow Switch utilizes the force of liquid flow to propel its paddle in order to detect the incoming flow or moving of the existing liquid in pipe. In condition of static liquid or no liquid, the spring is expanding and press the magnet downward vertically. Reed switch contact is N.O.

As flow occurs and the paddle is thrust and raised at an upward angle of 20°~30°, the eccentric of paddle will push the magnet upward to actuate the reed switch which is thus in a close circuit.

The length of paddle can be adjusted with the diameter of a pipe.

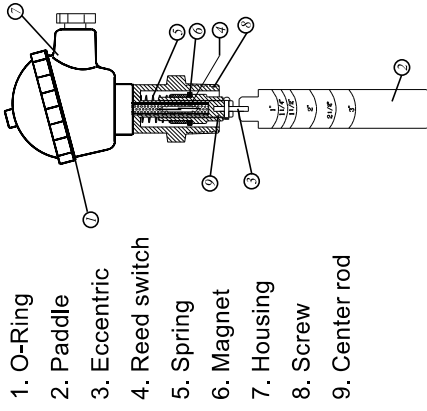


Switch on in case of liquid flowing in pipes



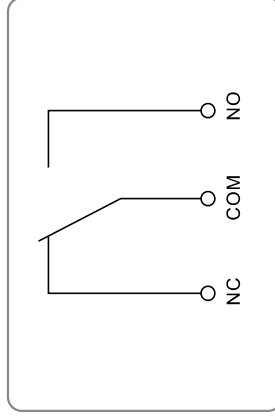
Switch off in case of no moving liquid in pipes

### SECTIONAL DRAWINGS

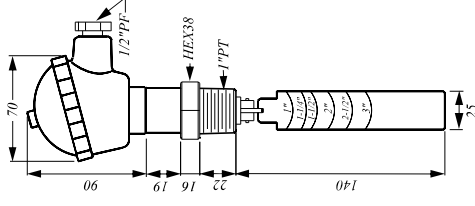


1. O-Ring
2. Paddle
3. Eccentric
4. Reed switch
5. Spring
6. Magnet
7. Housing
8. Screw
9. Center rod

### WIRING



MODEL: FSW-25  
Standard type



### SPECIFICATION

Model	FSW-25	
Housing material	Standard type Aluminum Alloy, IP65	
Process temp.	-30 ~ 150°C	
Wetted material	SUS304	
Operation pressure	Max.355 PSIG	
Pressure drop allowance	3 PSIG	
Set point tolerance	±25%	
Repeatability tolerance	±5%	
Contact capacity	1A, 60W 220Vac / 200Vdc SPDT	
Certification	N/A	

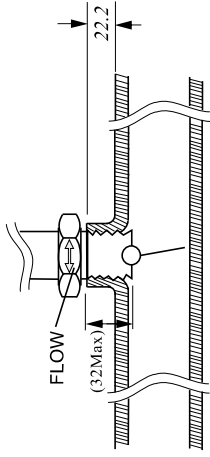
### FLOW CONTROL RANGE TABLE

Pipe spec.	1"		1-1/2"		2"		2-1/2"		3"	
	Act.	De-Act.	Act.	De-Act.	Act.	De-Act.	Act.	De-Act.	Act.	De-Act.
Paddle length 1"	4.7	3.9	10.9	8.3	19.9	16.1				
1-1/4"			7.7	6.1	16.5	12.3	31.3	22.8		
1-1/2"			5.7	4.5	13.4	9.5	25.2	18.5		
2"					8.4	6.3	15.1	12.8	29.7	21.9
2-1/2"							13.9	10	20.4	15.4
3"									17.1	12.8

※1 Gallon=3.7854 Litter

## INSTALLATION

- Paddle length conditions actuation point.  
Paddle length is confined by conduit length and desired actuation point. Then cut the paddle from the properly-marked line. (User may also mark the desired length and cut )
  - The paddle must be parallel to the sectional area of a pipe and the mounting screw is 1" NPT.
  - The FLOW mark on the screw hexagon must be parallel to the pipe and the ground.
  - Before installing the unit to T pipe, be sure to apply tape seal to the screw then tighten up.
- It is not recommended to use the 1" NPT plastic pipe.  
(Please refer to below for installation)



## TROUBLE SHOOTING

Abnormal condition	Cause	Solution
Liquid flow, switch indicates no flow	The flow is too low for unable to push the paddle	Increase the flow volume or reduce the diameter of the pipe
	The flow is too large to cause the paddle bent & unable to restore	Slow down the initial speed and replace with a good one
	The paddle is too long against the pipe wall for unable to push	Cut the paddle according to the diameter of the pipe
Liquid stop, the switch indicates the flow	The switch contacts reach the end of life and have poor contact	Contact with the local sales representative.
	The paddle is deformed & touch the pipe wall for unable to return	Flatten the paddle or replace with a new one.
	The magnetic impurities can be attracted to the magnet to prevent the swing of the paddle	Make the change to use SPX flow switch
	Too much sediments in the pipe and affect paddle return	Remove the obstacles and reinstall
	The switch contacts reach the end of life and have poor contact	Contact with the local sales representative.

※ If the failure is not listed or cannot be resolved, please contact your local business representative.