

Product Application Reference Flow Switch

EFS22 Flow Switch



Summary

EFS22 designed for use prove flow of water by giving an alarm or use to control the condenser pump in the HVAC system. The EFS22 flow switch responds to low fluid flow rates in applications with a pipe size below 1" to 3" in diameter. The EFS22 flow switch is a Single-Pole, Double-Throw (SPDT) flow switch that is used in liquid lines carrying water, ethylene glycol, or other liquids that are not classified as non-hazardous. It can be wired to energize one device and e-energize another device powered from the same source when liquid flow either exceeds or falls below the set flow rate.

Feature

- 1 to 6 pipe size
- 3 pieces paddle included
- SPDT contact for NC or NO operation

Contact rating

Rated Current A		Rated voltage V		
		Power COS ϕ	125V AC	250V AC
No induced load current		1	15	15
Induced load	Full load current	0.75	3.5	2.5
	Instantaneous current	0.45	21	15

Specifications

Contact Rating	AC 230V 10A
Medium Temperature Range	0 to 120°C
Connection	(11-1/2)NPT
Max Pressure Allowable	18Bar
IP Protection	IP65
Ambient Temperature	-20°...50° as per IEC721-3-3
Ambient Humidity	5...95% rH (non Condensing)
Inventory Temperature	+70°C as per IEC 721-3-2
Certification	CE
Shipping Weight	700g

Figure 1: Technological Parameter 1

Valve Size	Conn-ector	Max-Pressure (Mpa)	Prote-ction	Allowable Medium Temp.	Weight (Kg)	Modulating Range of Flow				
						Pipe Size	Min.		Max.	
							Flow decrease	Flow increase	Flow decrease	Flow increase
3"	1"-11 ½ (NPT)	1.60	IP65	-30~120	0.6	1"	2.5	4.2	8.5	8.8
						2"	9.5	27.5	27	29
						3"	19	13.7	50	53

Figure 2: Technological Parameter 2

When there is sufficient fluid through the pipe, the loop closes up between red and blue contacts.

Figure 3: Switch Action

Mounting:

- Mount the EFS22 in a section of pipe where there is a straight run of at least five pipe diameters on each side of the flow switch.
- The switch should be mounted so that the terminals or wire leads are easily accessible for wiring.
- Screw the flow switch into position such that the flat of the paddle is at a right angle to the flow. The arrow on the side of the case must point in the direction of the flow.
- The EFS22 must be mounted in a horizontal pipeline or a vertical pipeline with upward liquid flow. It is not recommended for installations where liquid flow is downward. When mounted in a vertical pipe with upward flow, the switch trips will operate at a slightly higher flow than shown in Figure 4: "Typical Flow Rates", due to the effect of gravity on the switch mechanism.
- All wiring connections must be made using copper conductors only.
- All wiring must be installed in accordance with the National Electric Code and local regulations.

Figure 4: Typical Flow Rate

- GPM figures are for a switch with a 6" paddle. For 4" and 5" line pipes, the 6" paddle is trimmed to a 4" and 5" length, respectively.
- For switching action, refer to Figure 3

Minimum Flow Rate

		GPM (m3/hr) Required to Actuate Switch									
Pipe Size(in.)		1	1-1/4	1-1/2	2	2-1/2	3	4*	5*	6*	8*
Minimum Adjustment	Flow increasing red → yellow closed**	4.2 (1.0)	5.8 (1.3)	7.5 (1.7)	13.7 (3.1)	18.0 (4.1)	27.5 (6.2)	65.0 (14.8)	125.0 (28.4)	190.0 (43.1)	375.0 (85.2)
	Flow decreasing red → blue closed**	2.5 (0.6)	3.7 (0.8)	5.0 (1.1)	9.5 (2.2)	18.0 (4.1)	19.0 (4.3)	50.0 (11.4)	101.0 (22.9)	158.0 (35.9)	320.0 (72.7)
Minimum Adjustment	Flow increasing red → yellow closed**	8.8 (2.0)	13.3 (3.0)	19.2 (4.4)	29.0 (6.6)	34.5 (7.8)	53.0 (12.0)	128.0 (29.1)	245.0 (55.6)	375.0 (85.2)	760.0 (172.6)
	Flow decreasing red → blue closed**	8.5 (1.9)	12.5 (2.8)	18.0 (4.1)	27.0 (6.1)	32.0 (7.3)	50.0 (11.4)	122.0 (27.7)	235 (53.4)	360.0 (81.8)	730.0 (165.8)

※ CE Compliance EMC (89/336/EEC) according to the standard EN60947-1:2004