

FM SERIES HEAVY DUTY FLOW SWITCH FOR ALL PIPE SIZES 25mm (1") AND LARGER

FEATURES

- 0 to 500V AC 15 Amp S.P.D.T switch
- Low Voltage Gold contact model available
- 316 Stainless Process Connection
- Super Tough Billet Aluminium Housing
- Manual override built in
- 3/4" & 1" models available with BSP or NPT threads
- 400 Bar (5800 psi) pressure rating
- Seal-less magnetic drive
- Dieselene & High Temperature versions available
- Weatherproof IP67 housing
- Easily serviceable

OUTLINE

The FM series flow switch is built tough for the most arduous industrial and mining applications. It is a rugged but highly sensitive paddle flow switch suitable for a wide range of flow sensing applications in both hot and cold liquid.

The FM series flow switch can be supplied with a glass fibre reinforced Polypropylene paddle or a stainless steel paddle. The paddle can be cut and shaped as required to suit pipework 25mm (1") or larger. A unique feature of the FM flow switch is its built in manual override. The manual override allows the flow switch to be switched on at any time at the press of a button regardless of lack of flow. Using the manual override allows pumps to be manually started at any time by simply pressing the button. It also makes the testing and commissioning of systems very simple.

A magnetic coupling system is built into each FM flow switch and couples the paddle's movement to the high compliance switch through a solid wall of stainless steel and aluminium. The result is a high-pressure flow switch with no seals diaphragms or bellows or other points of potential failure. The FM flow switch is supplied as standard with a one piece 316 stainless steel process connection and a fully machined billet aluminium housing. The switch is suitable for use in bore water, sea water and in many chemical solutions. There is also a dedicated Dieselene and high temperature compatible version available with a stainless steel paddle.

ORDERING

FM - H - 25B - D

FLOW SWITCH WITH A METAL BODY (ALUMINIUM)

H = STANDARD HEAVY DUTY SWITCH
L = LOW VOLTAGE SWITCH WITH GOLD CONTACTS

PROCESS CONNECTION
20B = 3/4" BSP Thread
20N = 3/4" NPT Thread
25B = 1" BSP Thread
25N = 1" NPT Thread

BLANK = SUPPLIED WITH A POLYPROPYLENE PADDLE FOR WATER USE

D = SUPPLIED WITH A STAINLESS STEEL PADDLE FOR DIESELINE & HIGH TEMPERATURE APPLICATIONS



OPERATING LIMITS

Parameter	Standard FM Switch with a Polypropylene Paddle	FM-D FM Switch with a Stainless Steel Paddle
Maximum operating pressure (Static or Dynamic) at ambient temperature	400 Bars (5800 psi)	400 Bars (5800 psi)
Minimum burst pressure at ambient temperature	800 Bars (11600 psi)	800 Bars (11600 psi)
Maximum operating temperature	80°C (176°F)	100°C (212°F)
Minimum operating temperature	-60°C (-76°F)	-60°C (-76°F)
Ingress protection rating	IP67	IP67

FM DATA

ELECTRICAL DATA

The FM flow switch houses a S.P.D.T (Single Pole Double Throw) switch. The standard switch is suitable for all general control circuit applications up to 500V AC. It is ideal for the control of pump starters, relay logic circuits, and for the direct control of contactors and timers.

IMPORTANT

The standard H switch can operate at ANY voltage from 5 to 500VAC. It can be used to directly control pump motors up to 375 Watts (0.5HP) at 240VAC. For larger motors always use an interposing contactor or relay between the flow switch and the motor.

ELECTRICAL LIMITS FOR THE STANDARD SWITCH

Electrical Data								
RATED VOLTAGE	NON INDUCTIVE LOADS				INDUCTIVE LOADS			
	RESISTIVE LOAD		LAMP LOAD		INDUCTIVE LOAD		MOTOR LOAD	
	NO	NC	NO	NC	NO	NC	NO	NC
125 VAC	15A		3A	1.5A	15A		5A	2.5A
250 VAC	15A		2.5A	1.25A	15A		3A	1.5A
500 VAC	10A		1.5A	0.75A	6A		1.5A	0.75
8 VDC	15A		3A	1.5A	15A		5A	2.5A
14 VDC	15A		3A	1.5A	10A		5A	2.5A
30 VDC	6A		3A	1.5A	5A		5A	2.5A
125 VDC	0.5A		0.5A	0.25A	0.05A		0.05A	0.05A
250 VDC	0.5A		0.5A	0.25A	0.03A		0.03A	0.03A

Note: Do not apply maximum voltage at maximum current across the switch contacts. See main data table for current limits at specific voltages and for specific loads.

Maximum Switched Voltage	500VAC
Maximum Switched Current	15A
Minimum Switched Voltage	5VDC
Minimum Switched Current	160mA

ELECTRICAL LIMITS FOR THE "L" MODEL

In addition to the standard switch, a S.P.D.T. low voltage low wetting current model with gold contacts, designated "L" is also available as an option.

Maximum Switched Voltage	30VDC
Maximum Switched Current	26mA
Minimum Switched Voltage	5VDC
Minimum Switched Current	1mA

Note: Do not apply loads in excess of the limits in the table above. Do not apply inductive or capacitive loads to the L microswitch. The "L" microswitch will be damaged by loads in excess of the limits in the table.

APPROVED STANDARDS

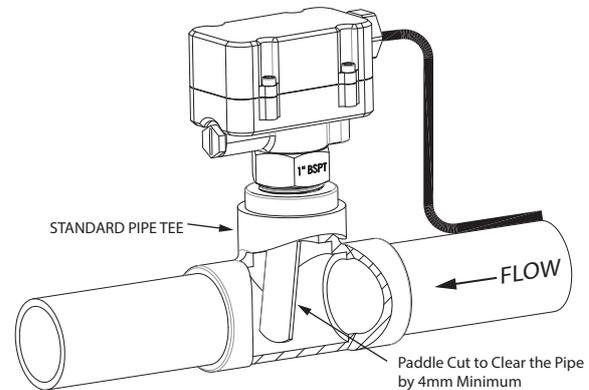
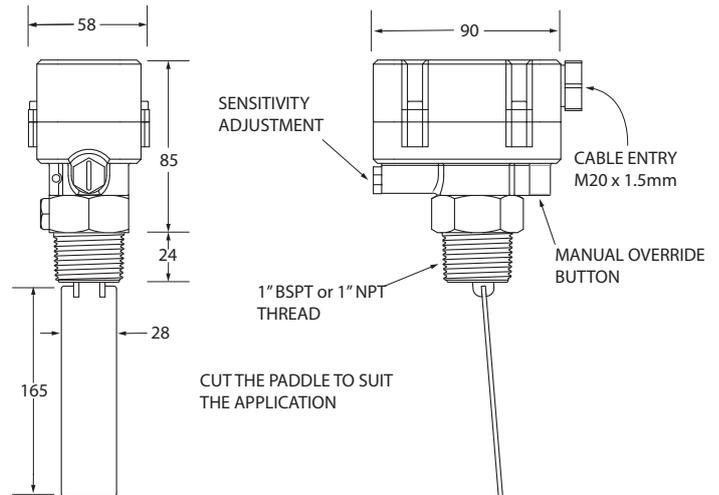
The heavy duty single pole double throw switch used in the FM-H flow switch is approved to the following international standards: UL (File No. E32667), CSA (File No. LR21642) SEV (File No. S20/163) and CE.

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DIMENSIONS



TYPICAL SMALL PIPE INSTALLATION

FLOW SENSITIVITY

The flow rates required to actuate the FM flow switch will depend on many variables such as turbulence, liquid viscosity and the exact area of the paddle face exposed to the flow. For an accurate estimate of the switch performance and to determine the effect of paddle trimming, an online flow calculator is available at :-

<http://www.kelco.com.au/paddle-trimming-calculator-2>

HAZARDOUS APPLICATIONS

The FM-L flow switch can be used in hazardous areas. The flow switch is classed as a simple device and does not contain components capable of storing or producing an electric charge. As a simple device the FM-L can be used in hazardous applications provided it is isolated by an intrinsically safe barrier, a zener barrier.