

F21 SERIES HEAVY DUTY FLOW SWITCHES

FOR ALL PIPE SIZES 25MM (1") AND LARGER



FEATURES

- 0 TO 500VAC 15AMP S.P.D.T SWITCH
- PLC VERSIONS AVAILABLE
- 316 STAINLESS OR POLYPROPYLENE MODELS
- 1" BSP & 1" NPT MODELS AVAILABLE
- MANUAL OVERRIDE BUILT IN
- MODULAR CONSTRUCTION
- 200 BAR PRESSURE RATING
- SEAL-LESS MAGNETIC DRIVE
- DIESELINE MODELS AVAILABLE
- WEATHERPROOF IP67 HOUSING
- EASILY SERVICEABLE

OUTLINE

The F21 flow switch is a tough but highly sensitive paddle flow switch suitable for a wide range of flow control applications in both hot and cold liquids. The electrical housing of the switch is a separate assembly and locks onto the wet end of the switch. It can be easily and safely removed for servicing, without disturbing electrical wiring. This unique feature, and the inclusion of a built in manual override make the F21 a very versatile flow switch. In addition to the standard microswitch models the F21 is available fitted with reed switches for PLC, relay logic and telemetry applications.

The electrical module of the F21 flow switch is completely separate from the process connection and wet end of the switch. The wet end assembly and the electrical module lock together with a single externally accessible screw. This feature allows the flow switch to be disassembled and unscrewed from pipework without the need to disturb electrical wiring. All F21 flow switches are supplied with an extra long glass fibre reinforced polypropylene paddle. The paddle can be cut and shaped as required to suit pipework 25mm (1") or larger. A unique feature of the standard F21 flow switch is its built in manual override. This 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. Please note: when supplied with a reed switch, no manual override is included in the F21.

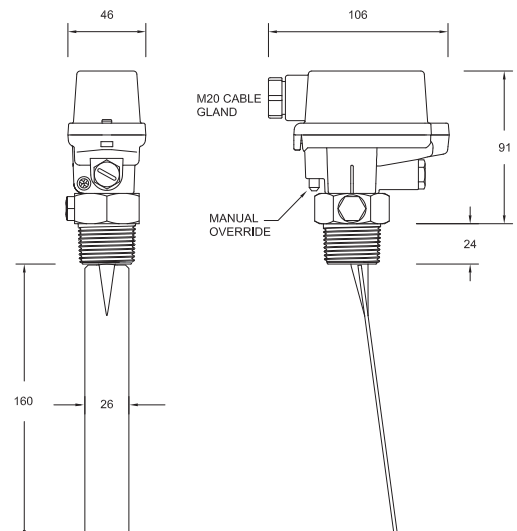
Our well proven magnetic repulsion system is built into each F21 flow switch and couples the paddle's movement to the high compliance switch through a double wall of solid material. The result is a high-pressure flow switch with no seals, diaphragms or bellows or other points of potential failure. The F21 is available in all stainless steel or Polypropylene construction. There are models to suit most applications including use in seawater, bore water, acids, and alkalis and in many chemical solutions and fuels. There is also a dedicated dieseline version available.

OPERATING LIMITATIONS

Model	F21-S (All Poly)	F21-SS (Stainless)	F21-D (Dieseline)
Maximum operating pressure (Static or Dynamic) at ambient temperature	18 Bars (260PSI)	200 Bars (2880 PSI)	100 Bars (1440 PSI)
Minimum burst pressure at ambient temperature	45 Bars (650 PSI)	500 Bars (7200 PSI)	500 Bars (7200 PSI)
Maximum operating temperature	60°C See note below	80°C	80°C See note below
Minimum operating temperature	0°C	0°C	0°C
Ingress protection rating	IP67	IP67	IP67

Please note: Maximum operating pressure of the Polypropylene F21-S must be linearly de-rated as operating temperature is increased so that at 60°C the maximum permissible operating pressure for the switch does not exceed one Bar absolute.

DIMENSIONS



F21 SERIES

ELECTRICAL DATA

ELECTRICAL DATA FOR REED SWITCH MODELS

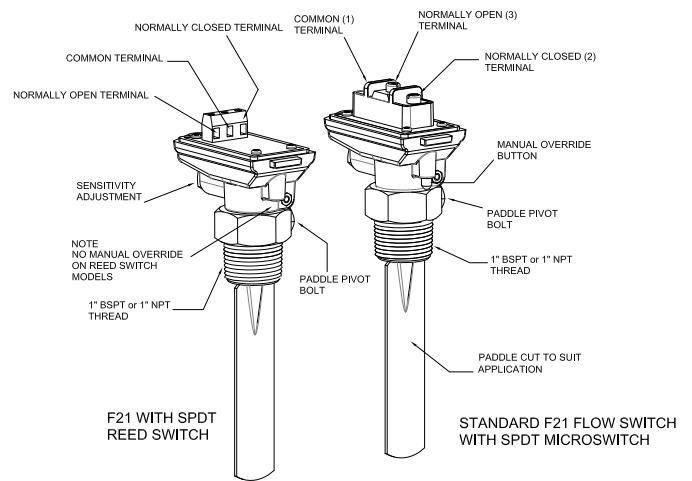
The reed switch models are supplied with a high compliance single pole double throw reed switch suitable for all low wetting current and low voltage applications. Such applications include PLC control, signalling in telemetry systems and relay logic circuits. **Please note: the reed switch models are not suitable for use with inductive loads such as contactors or high wattage relays.**

SWITCH TYPE	CONTACT	SWITCHED POWER	SWITCHED VOLTAGE MAXIMUM	SWITCHED CURRENT (RESISTIVE)	CARRY CURRENT	BREAKDOWN VOLTAGE	TYPICAL APPLICATIONS
DRY CONTACT REED SWITCH	S.P.D.T BREAK BEFORE MAKE	20W/VA MAX.	140VAC 150VDC	1 AMP MAX.	2.0A MAX.	200V MIN	PLC, TELEMETRY & GENERAL LOW VOLTAGE CONTROL APPLICATIONS

ELECTRICAL DATA FOR STANDARD MICROSWITCH MODELS

The standard F21 flow switch is suitable for all general control circuit applications up to 500VAC. It is ideal for the control of pump starters, relay logic circuits, and for the direct control of contactors and electronic timers.

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 VDC	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



ORDERING

F21 - S - R - BSP

S = POLYPROPYLENE
SS = 316 STAINLESS STEEL
D = DIESELINE SWITCH

SWITCH TYPE
BLANK = STANDARD SPDT MICROSWITCH
R = REED SWITCH FOR LOW CURRENT USE

PROCESS CONNECTION
BSP = 1" BSPT
NPT = 1" NPT

FLOW SENSITIVITY

The flow rates required to actuate the F21 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 www.kelco.com.au

HAZARDOUS APPLICATIONS

The F21 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 F21 can be used in hazardous applications provided it is isolated by an intrinsically safe barrier, a zener barrier.

The Kelco F21 Series flow switches are protected by a 12 month return to base warranty. Full details of our warranty can be downloaded from: <http://www.kelco.com.au/menu/information/warranty-statement/>

MADE IN AUSTRALIA BY **KELCO Engineering Pty Ltd**

ABN 20 002 834 844 Head office and factory:
9/9 Powells Road Brookvale NSW 2100 Australia
Postal Address: PO Box 496 Brookvale NSW 2100 Australia
Phone: +61 2 9905 6425 Fax: +61 2 9905 6420
Email: sales@kelco.com.au Web: www.Kelco.com.au
©2011 Kelco Engineering Pty Ltd

PLEASE NOTE: Kelco Engineering Pty Ltd reserves the right to change the specification of this product without notice. Kelco Engineering Pty Ltd accepts no liability for personal injury or economic loss as a consequence of the use of this product. All rights reserved copyright Kelco Engineering Pty Ltd © 2011