

KELCO

TW Series Trailing Wire Flow Switch

Features

- Unique trailing wire sensor
- 0 to 500V AC 15 Amp S.P.D.T switch standard or;
- Low voltage version also available ('RL' model)
- 1" BSP or NPT models available
- 316 Stainless or Polypropylene models
- Easily Serviceable
- 400 Bar 5800 psi rated models available
- Manual Override built in to all 'TW-H' models
- Seal-less magnetic drive
- Adjustable Sensitivity
- IP67 Weatherproof

Outline

The TW Series Trailing Wire flow switches use a flexible stainless wire sensor rather than a conventional paddle to sense flow. They are suitable for sensing flow in open discharge applications or in pipes of any diameter from 50mm (2") upwards. The flexible stainless wire sensor offers major advantages over conventional paddles in applications where solids or semi solids are present, such as in sewage pumping. They are also suitable for use in slurry and mining applications and in many normal pumping situations where the flow velocity is high and conventional paddle type switches are unsuitable.

The TW series trailing wire flow switch is supplied with a Polypropylene or 316 stainless steel process connection in 1" BSP or NPT. A Single Pole Double Throw (S.P.D.T) microswitch for general control circuit applications is supplied as standard with the TW series switch. In addition a low voltage low wetting current switch with gold contacts is available for signaling applications.

A unique feature of all the 'TW-H' models in the Series is a built in manual override. Using the manual override allows the system to be manually started at any time by simply pressing the button. It also makes testing and commissioning of systems very simple.

The TW flow switch is available with wire sensors in various lengths from 50mm to 300mm (2" to 12"). The required wire length must be specified when ordering. The flow rate required to actuate the TW flow switch will depend on many variables such as turbulence, liquid viscosity and the exact surface area of sensor wire exposed to the flow. The optimum wire length for a specific application can be obtained using our online calculator. The calculator can be accessed at:

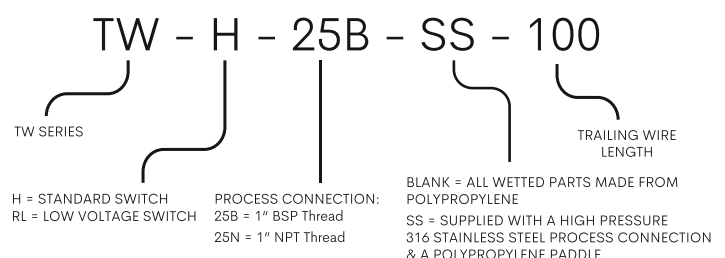
<http://www.kelco.com.au/paddle-trimming-calculator>



Ordering

The below shows the different switch models available in the TW Series. Wire length refers to the distance from the tip of the wire to the bottom end face of the process connection.

Available Wire Lengths: 50mm, 80mm, 100mm, 140mm, 160mm, 180mm, 200mm, 250mm, 300mm



TW SERIES DATA

Operating Limits

Parameter	All Polypropylene model	With Stainless Steel Process Connection
Maximum operating pressure (static or dynamic) at ambient temperature	18 Bars (261 psi)	400 Bars (5800 psi)
Minimum burst pressure at ambient temperature	45 Bars (652 psi)	500 Bars (7215 psi)
Maximum operating temperature	60°C (see note below)	80°C (176°F)
Minimum operating temperature	-20°C (-4°F)	-20°C (-4°F)
Ingress protection rating	IP67	IP67

Please note: Maximum operating pressure of the Polypropylene process connection optioned TW switch must be linearly de-rated as operating temperature is increased so that at 60°C (140°F) the maximum permissible operating pressure for the switch does not exceed one Bar (15 psi) absolute.

Electrical Data for the 'H' Switch

The 'TW-H' flow switches house 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.

These switches 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.

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	1.5A	15A	5A	2.5A	
250 VAC	15A	2.5A	1.25A	1.25A	15A	3A	1.5A	
500 VAC	10A	1.5A	0.75A	0.75A	6A	1.5A	0.75A	
8 VDC	15A	3A	1.5A	1.5A	15A	5A	2.5A	
14 VDC	15A	3A	1.5A	1.5A	10A	5A	2.5A	
30 VDC	6A	3A	1.5A	1.5A	5A	5A	2.5A	
125 VDC	0.5A	0.5A	0.25A	0.25A	0.05A	0.05A	0.05A	
250 VDC	0.5A	0.5A	0.25A	0.25A	0.03A	0.03A	0.03A	

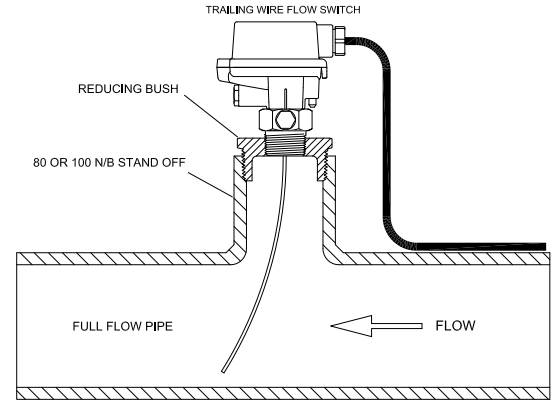
Electrical Data for the 'RL' Switch

The 'TW-RL' 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, signaling 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.

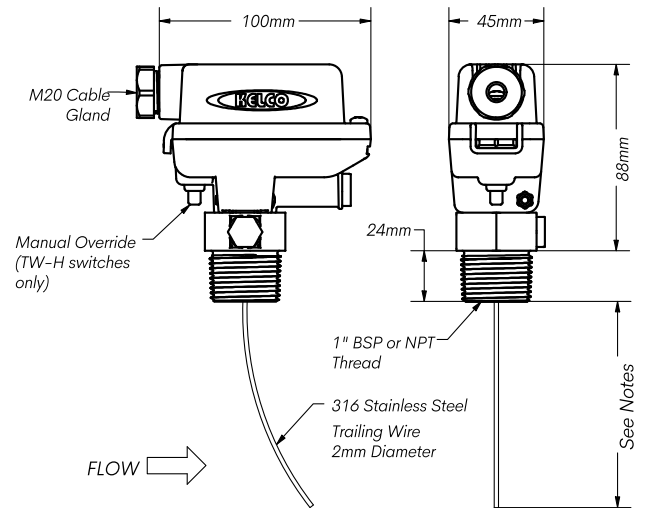
Switch Type:	Dry Contact Reed Switch
Contact Configuration:	S.P.D.T Break Before Make
Switched Power:	20W / VA Maximum
Switch Voltage Maximum:	140V AC 150V DC
Switched Current (Resistive):	1 Amp Maximum
Carry Current:	2 Amp Maximum
Breakdown Voltage:	200V Minimum
Typical Applications:	PLC, Telemetry & General Low Voltage Control

TYPICAL MOUNTING SCENARIO



Typical dead leg stand off prevents solids reaching the switch body.

Dimensions



SPARE PARTS

The TW Series trailing wire flow switches are very simple to service, and most components are available in spare part kits.

Hazardous Applications

The 'TW-RL' models can be used in hazardous areas. These switches are classed as a 'simple device' and do not contain components capable of storing or producing an electric charge. As a simple device the TW-RL switches can be used in hazardous applications provided it is isolated by an intrinsically safe barrier, a Zener barrier.

The high compliance single pole double throw switch used in the standard TW Series Flow Switch is approved to the following international standards:

UL (File No. E32667), CSA (File No. LR21642) SEV (File No. S20/163), CE.

Approved Standards

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