



Model SW100 Thermal Flow and Level Switch

- ◆ All welded 304/316 stainless steel
- ◆ FM Approved explosion proof
- ◆ CE Approved
- ◆ NEMA 4X wash-down proof
- ◆ Single board, "no connectors" design
- ◆ 500 PSIG (35 barg)
- ◆ No moving parts
- ◆ DPDT 5-amp relay
- ◆ Single pot adjustment
- ◆ Works on gases, liquids and slurries
- ◆ Clean and Steam in place
- ◆ $\pm 1\%$ of reading repeatability



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Flow and Level Switch ("The ROCK")

Offering you proven reliability and repeatability, the FOX Model SW100 flow and level switch can be used in liquids, gases and slurries. Suitable for harsh and hazardous environments, the instrument features:

- rugged, no moving parts design
- corrosion resistant sensor
- FM approved explosion-proof housing

The SW100's advanced mass-balanced sensor helps provide long term, repeatable switch point detection. Two sensing elements of the same size and mass optimize performance under changing flow, level or fluid temperature conditions.

The long, thermally isolated sensor ensures that the measurement is not affected by changes in the surrounding environment. This end-loss protection feature eliminates the "switch point drift" that may result from day-to-night or season-to-season temperature variations. In liquid level applications the sensitive, fast response sensor also reacts to differences in fluid thermal conductivity, making it ideal for interface detection.

The ROCK flow and level switch was specifically designed for long-term reliable operation in the harshest industrial environments. Simply insert the SW100 in a line or vessel and adjust the single pot to the desired flow rate. Wetted parts are 304/316 stainless steel for durability and corrosion resistance. The sensors utilize reference grade platinum RTD's resulting in excellent repeatability and rangeability.

Theory of Operation

The Model SW100 operates on the thermal principle of flow measurement. Its electronics provide a constant wattage to the sensor, heating it above the temperature of the fluid. Flow of the fluid causes removal of heat from the sensor, measured as a reduction in temperature. Therefore, the measure of mass flow velocity is the sensor's temperature above the fluid temperature.

SPECIFICATIONS

Operating Specs

Switchpoint Liquid Range:

0.015 to 1 fps (0.005 to 0.3 mps)

Switchpoint Gas Range:

1 to 30 sfps (0.3 to 10 nmfs)

Note:

Higher velocities will not damage the SW100. However, the switchpoint must be within the specified range.

Sensor:

-40 to 200°F (-40 to 93°C)

500 psig (35 barg)

Enclosure:

-40 to 131°F (-40 to 55°C)

Response Time:

2 to 20 seconds (application dependent)

Input Power:

Standard

24 VDC, ± 10%, 0.6 amp max.

Optional

115/230 VAC, ± 10%, 50/60 Hz, 25 watts max.

Relay Contacts:

2 form C (DPDT) 5-amp

250 VAC resistive

Performance Specs

Flow Repeatability: ± 1% of reading switchpoint

Physical Specs

Sensor Material:

304/316 Stainless Steel

Switch Point Adjustment:

Field set with single pot

Clean and Steam in place

Enclosure:

Cast Aluminum; NEMA 4X, explosion-proof, Factory Mutual approved Class I, Division 1, Groups B, C & D (T2C). Class II/III, Division 1, Groups E, F & G (T2A). CE approved.

Common Applications:

Loss of flow detection:

- Cooling water to a process or heat exchanger
- Lube oil to pump or rotating equipment
- Liquid to a pump

Start of flow detection:

- Drain flow line
- Water to emergency showers or eye wash
- Rupture disk release

Increase or decrease of flow:

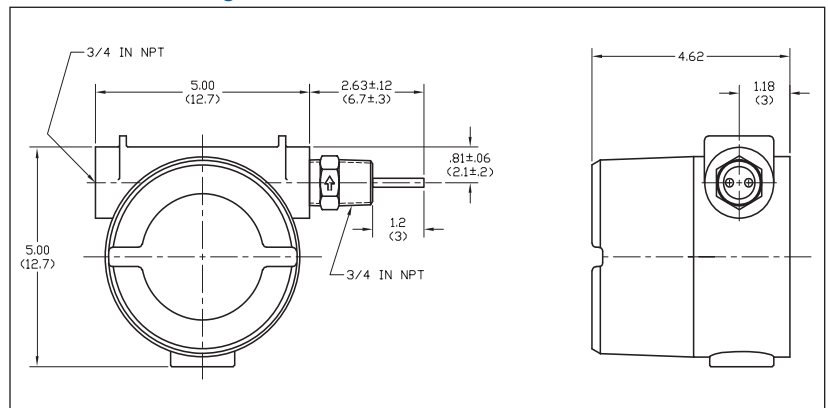
- Tank fill rate
- Pump rate too low for efficient operation
- Flow too low for proper blending

Liquid Level:

- Tank Level Control
- Tank overflow prevention
- Foam level detection

Liquid Interface Detection

Standard Probe Length



Extended Probe Length

