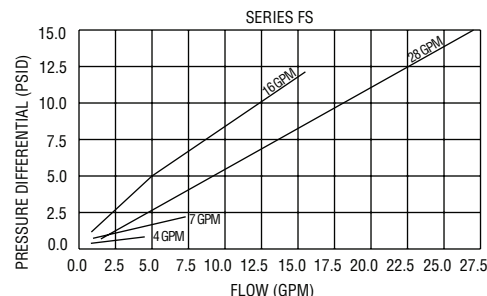
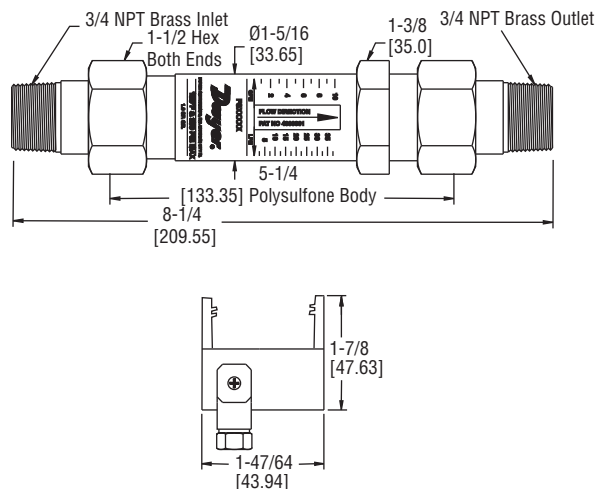
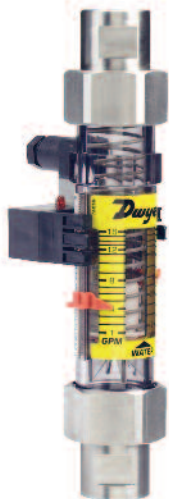




# SERIES FS FLOWMETER with FLOW LIMIT SWITCH

## Specifications - Installation and Operating Instructions



The Series FS Flowmeter with Flow Limit Switch combines the proven technology of direct reading, piston type, variable area flowmeter with a hermetically sealed, solid state switching module. This combination aids the machine designer/troubleshooter by providing instantaneous flow rate indication coupled with an electronic signal module to automatically alert the operator if any incorrect flow rate is detected.

### MECHANICAL INSTALLATION

**CAUTION:** Do not over tighten the threads on the plastic body. Overtightening the NPT threads may cause fracturing of the plastic flowmeter body. The flowmeter is constructed of polysulfone and remains stable to 210°F (99°C). Do not expose the flowmeter to open flames or excessive heat. The meter may melt, crack, or distort. Some pipe dope formulas will react adversely with polysulfone. Use pipe thread sealant tape if a sealing material is necessary.

The Series FS Flowmeter can be mounted in any plane of orientation. Horizontal or vertical mounting does not effect flowmeter accuracy. The inlet and outlet of the flowmeter should be aligned, particularly when high temperature, high pressure, or combination of both may be encountered. Install the flowmeter in the direction of the indicating arrow on the scale. The Series FS Flowmeter does not require lengths of straight pipe at the inlet, or outlet, to stabilize flow through the meter. These meters can tolerate particles that normally will jam other flow controls. If large amounts of particulates are encountered, a 200 mesh or 74 micron filter is recommended.

A separate four conductor female connector is supplied with the limit switch assembly. The connector must be disassembled to solder wires onto it. See Figure 1. The connector has four solder lugs labeled; 1,2,3, and 4. Terminals 3 and 4 are not used. It should be noted before reassembly, which wire is connected to which solder plug. Color coding or labeling the wires is advised. Secure wire to solder lugs and determine the orientation of the connector body. See Figure 2. After choosing orientation A, B, or C, snap the connector back together, pull excess wires out of strain relief, and tighten strain nut. Plug into electric housing and secure with screw.

### SPECIFICATIONS

**Service:** Compatible liquids.

**Wetted Materials:** Polysulfone body, Barium Ferrite, Stainless Steel spring and retaining rings.

**Temperature Limits:** 158°F (70°C).

**Pressure Limits:** 325 psi (22.4 bar).

**Accuracy:** ±5% full scale.

**Repeatability:** 1.0%.

**Set Point:** Adjustable 0 to 100% FS.

**Relay Load:** 1 A @ 30 VDC; 0.5 A @ 125 VAC (resistive).

**Supply Voltage:** 115 VAC, ±10%.

**Current Consumption:** 25 mA max.

**Process Connections:** 1" male NPT Polysulfone or 3/4" male NPT brass.

**Flow Scale:** Calibrated at 1.0 specific gravity @ 70°F (21°C).

**Weight:** 1" male NPT Polysulfone: 0.55 lb (0.25 kg); 3/4" male NPT brass: 0.90 lb (0.41 kg).

**Agency Approvals:** CE.

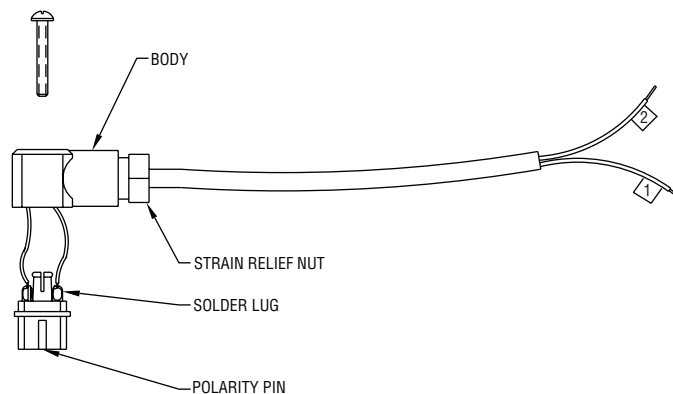


FIGURE 1

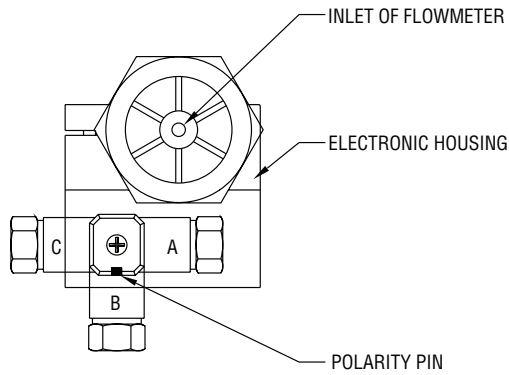


FIGURE 2

**ELECTRICAL INSTALLATION**

The module can only switch loads that consume between 2.5 and 90 watts, or have 5000 Ω to 150 Ω impedance respectively. If the load draws less than 2.5 watts, a 0.47 uF loading capacitor is required. This capacitor will increase the power consumption and ensure complete conduction over 15-20% of full scale, above or below the flow rate setpoint. For loads greater than 90 watts, see Figure 4 and 5.

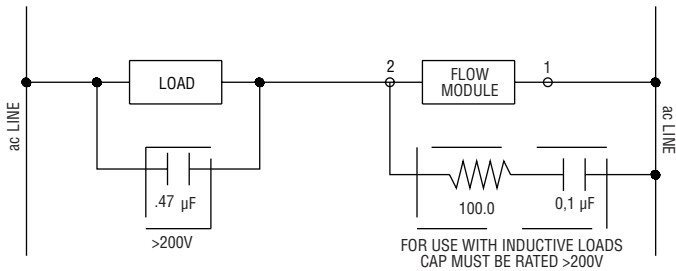


FIGURE 3

Figure 4 demonstrates a SPDT relay with a 115 VAC coil integrated with the limit switch module. This combination allows switching of loads up to the rating on the relay contacts.

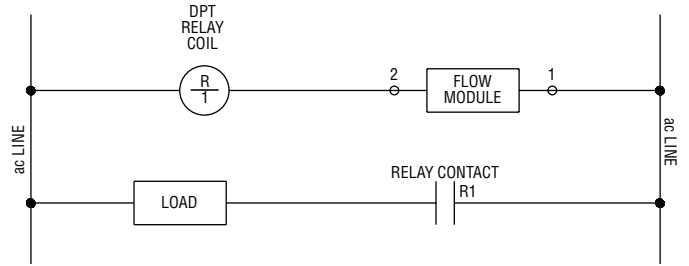


FIGURE 4

The flow switch can be integrated with latching type relays. See Figure 5. The module will turn the relay "on" as flow exceeds or falls below the flow rate setpoint. The relay will remain activated until the reset button is depressed.

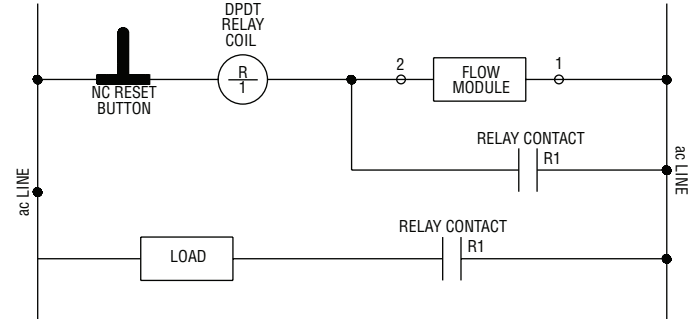


FIGURE 5

**OPERATION**

The limit switch module is designed to turn on or off a variety of different 115 VAC loads such as solenoid valves, warning lights, and AC relay coils. 1) Loosen the cap screw on the flow limit switch. 2) Adjust the assembly so the retaining band centers approximately at the desired flow alert position. 3) Retighten cap screw securely.

**MAINTENANCE**

Periodic check of connections is recommended. The Series FS is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.