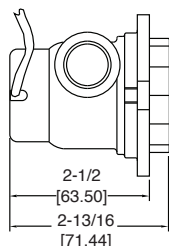
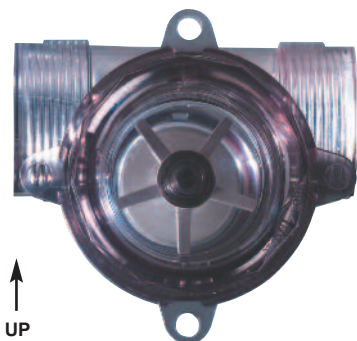


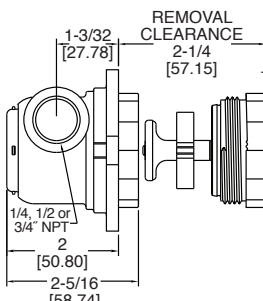


## Series SFI-800 & SFI-801 Sight Flow Indicator

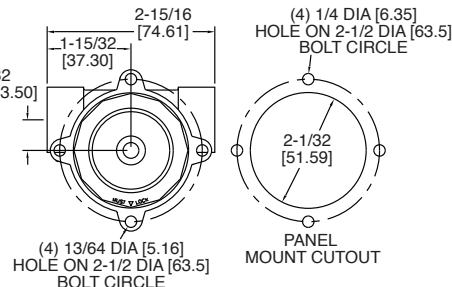
### Specifications - Installation and Operating Instructions



SFI with A-711 Option



SFI Model Only



The **Series SFI-800 Sight Flow Indicator** provides protection for expensive equipment and systems, accommodating fluid temperatures as high as 212°F (100°C) and pressures up to 150 psi (10.34 bar). This sight flow indicator is composed entirely of FDA/NSF-ratable materials. It is exceptionally corrosion-resistant and can handle de-ionized water and many acids, bases and salts. (Consult B. P. Amoco's Extensive "Chemical Guide" for further information on the Udel P1700 Polysulfone resin).

The **Series SFI-801 Sight Flow Indicator** is similar to the SFI-800 except it is made of UV stabilized materials. It can be used in outdoor applications where indication of water flow or control is needed. The materials are not FDA approved.

Three output options are available for the SFI-800 and 801:

The **A-711** is a unique, patent pending sensor that outputs two pulse voltage signals proportional to flow rate. Pulse outputs are a 5 VDC pulse and a pulse of the input supply voltage used, which can be 8 to 28 VDC. This sensor can be used to monitor flow rate and flow totalization.

The **A-712** is a sensor that outputs a linear 1 to 10 VDC signal proportional to flow rate. This sensor can be used to monitor flow rate.

The **A-713** is a flow switch with open collector outputs. One output is active above setpoint and the other output is active below setpoint. The setpoint can be changed by pressing a button at the desired flow rate.

#### SPECIFICATIONS

**Service:** Compatible fluids.

#### Wetted Materials:

Body: SFI-800: Polysulfone, SFI-801: UV Stabilized Polycarbonate;  
Window: SFI-800: Polysulfone, SFI-801: UV Stabilized Polycarbonate;  
Rotor: SFI-800: White Polysulfone, SFI-801: Red UV Stabilized PBT;  
Rotor Pin: 316 SS;  
Thrust Washers: 300 Series SS;  
O-ring: SFI-800: Fluoroelastomer (NSF Grade), SFI-801: Buna-N.

**Temperature Limits:** SFI-800: -20 to 212°F (-28 to 100°C); SFI-801: -20 to 130°F (-28 to 55°C).

**Pressure Limits:** SFI-800: 150 psi (10.34 bar); SFI-801: 125 psi (8.62 bar).

**Viscosity Max:** 200 SSU.

**Weight:** SFI-800: 3.35 oz (95 g); SFI-800-A711: 5.0 oz (142 g).

#### ELECTRICAL SPECIFICATIONS (for A-711 Option Only)

**Temperature Limits:** -20 to 212°F (-28 to 100°C).

**Power Requirements:** 8 to 28 VDC.

**Output Signal:** White lead: 5 VDC. Green lead: 8 to 28 VDC equal to supply voltage. Pulsed output with frequency rate proportional to flow rate.

**Accuracy:** ±5% of F.S.

**Frequency Output Range:** 0 to 100 Hz.

**Electrical Connections:** Black lead - Ground; White lead: 5 VDC out pulse; Green lead: 8 to 28 VDC out pulse; Red lead: 8 to 28 VDC supply.

#### ELECTRICAL SPECIFICATIONS (for A-712 Option Only)

**Temperature Limits:** -20 to 212°F (-28 to 100°C).

**Power Requirements:** 15 to 28 VDC.

**Output Signal:** White lead: 1 to 10 VDC.

**Accuracy:** ±5% of F.S.

**Electrical Termination:** Black lead: Ground; Red lead: 15 to 28 VDC input; White lead: 1 to 10 VDC output.

#### ELECTRICAL SPECIFICATIONS (for A-713 Option Only)

**Temperature Limits:** -20 to 212°F (-28 to 100°C).

**Power Requirements:** 8 to 28 VDC.

**Output Signal:** White lead: Normally open switch; Green lead: Normally closed switch. Both open collector, 100 mA max, 28 VDC max.

**Electrical Connections:** Black lead: Ground; White lead: Normally open; Green Lead: Normally closed; Red lead: 8 to 28 VDC.

## INSTALLATION

1. Select an indoor location (SFI-800 only) that is free from excess vibration, within the specified temperature limits, and away from direct sunlight. (SFI-800 is adversely affected by ultraviolet light.)

**Note: The SFI-801 is rated for indoor or outdoor use and is not affected by ultraviolet light.**

2. When mounting horizontally, make sure the “belly” of the indicator is on the bottom. This will prevent entrapped bubbles from collecting and degrading performance.

3. All Series 800 and 801 units may be panel mounted using the (4) four holes integrated into the body.

4. Use plumbers tape thread sealant. Do not use pipe dope compounds, which can craze and crack the polysulfone housing. Hand tighten system pipe fitting. If additional torque is needed to seal pipe joint, use strap wrench on fitting.

5. If using solvent-based glues like PVC cement, in the piping system, do so with the meter's body removed until glue has cured, then purge the system before reinstalling. Do not solder brass fittings with the body installed, because the heat generated to solder the brass fittings will damage the flowmeter.

6. Incoming flow may be connected to either port. However, for best performance a straight section of pipe with a minimum of 10 times the tube diameter should be used on the inlet side.

## MAINTENANCE

With all mechanical type sensing units, a minimal amount of cleaning is required. However if a 150-micron filter is used, reduced cleaning can be expected.

The Series SFI-800 Dwyer® Sight Flow Indicator utilizes a patent pending sensing design, no magnets are molded inside the impeller, to attract ferrous material. This greatly reduces the necessary maintenance when used in mechanical systems with ferrous residuals. If residuals are found inside the unit, clean with mild detergent. Inspect for impeller wear. If impeller vibration is noticeable, or if the unit produces an oscillation (whirring or buzzing) sound, replace the impeller.

The Series SFI-800 & SFI-801 Sight Flow Indicators are 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.

**CAUTION: Be sure that the window locking mechanism is in the locked position. This would be at the 6 o'clock position, when mounted on the horizontal plane with the belly down.**

## A-711, A-712, or A-713 SENSOR OPTION INSTALLATION

This procedure is for customers who purchased an SFI-800, 801 Sight Flow Indicator and want to add the A-711, A-712, or A-713 Sensor Option.

1. Orient the sight flow indicator with the “belly” down. The sensor “pocket” should be in the 6 o'clock position (as one is facing the unit).

2. Position the A-711, A-712, or A-713 sensor with the wire cable leads at 3 o'clock and the exposed sensor portion at 6 o'clock.

3. Allow the sensor package to rest on the four (4) tabs on the back of the sight flow indicator.

4. Firmly and evenly press the sensor onto the back of the sight flow indicator.

5. The assembly will only go on one way. The sensor is not intended for removal.

6. Follow electrical installation for lead termination.

## ELECTRICAL INSTALLATION (for A-711 Option Only)

1. Connect the RED wire from the sensor to the positive 8 to 28 VDC power supply output.

2. Connect the BLACK wire from the sensor to the negative or ground connection of the power supply output.

3. Connect the WHITE wire to get a 5 VDC digital pulse where the frequency of the pulse is proportional to the flow rate.

4. Connect the GREEN wire to get an 8 to 28 VDC pulse where the frequency of the pulse is proportional to the flow rate. The voltage level will be equal to the supply voltage (on the RED wire) minus approximately 0.7 volts.

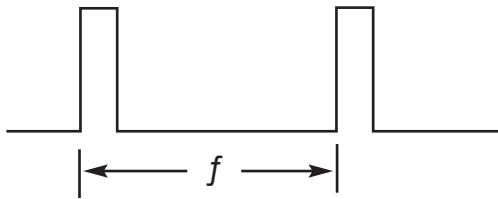
**CAUTION: DO NOT** Connect the white and green leads together. Any unused output connections should remain disconnected.

**OUTPUT SIGNALS (for units with A-711 Option)**

White Wire Connection:

5 Volts

0 Volts



$$\text{GPM} = \frac{\text{Freq (Hz)}}{4.5} \quad \text{for SFI-800-1/2"-A711}$$

$$\text{GPM} = \frac{\text{Freq (Hz)}}{1.7} \quad \text{for SFI-800-3/4"-A711}$$

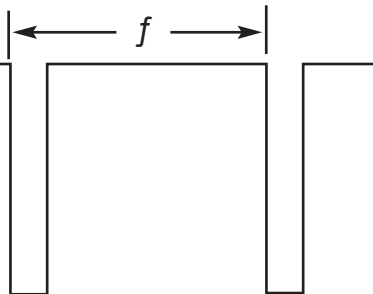
$$\text{GPM} = \frac{\text{Freq (Hz)}}{4.5} \quad \text{for SFI-801-1/2"-A711}$$

$$\text{GPM} = \frac{\text{Freq (Hz)}}{1.7} \quad \text{for SFI-801-3/4"-A711}$$

Green Wire Connection:

8 - 28 Volts

0 Volts



$$\text{GPM} = \frac{\text{Freq (Hz)}}{4.5} \quad \text{for SFI-800-1/2"-A711}$$

$$\text{GPM} = \frac{\text{Freq (Hz)}}{1.7} \quad \text{for SFI-800-3/4"-A711}$$

$$\text{GPM} = \frac{\text{Freq (Hz)}}{4.5} \quad \text{for SFI-801-1/2"-A711}$$

$$\text{GPM} = \frac{\text{Freq (Hz)}}{1.7} \quad \text{for SFI-801-3/4"-A711}$$

**ELECTRICAL INSTALLATION (for A-712 Option Only)**

1. Connect the RED wire from the sensor to the positive 15 to 28 VDC power supply output.

2. Connect the BLACK wire from the sensor to the negative or ground connection of the power supply output.

3. Connect the WHITE wire to receive the 1 to 10 VDC linear output (see equations below).

$$\text{GPM} = \frac{\text{Output Voltage}}{0.50} \quad \text{for SFI-800-1/2"-A712}$$

$$\text{GPM} = \frac{\text{Output Voltage}}{0.25} \quad \text{for SFI-800-3/4"-A712}$$

$$\text{GPM} = \frac{\text{Output Voltage}}{0.49} \quad \text{for SFI-801-1/2"-A712}$$

$$\text{GPM} = \frac{\text{Output Voltage}}{0.27} \quad \text{for SFI-801-3/4"-A712}$$

**ELECTRICAL INSTALLATION (for A-713 Option Only)**

1. Connect the RED wire from the sensor to the positive 8 to 28 VDC power supply output.

2. Connect the BLACK wire from the sensor to the negative or ground connection of the power supply output.

3. Connect the WHITE wire to the load that is energized when flow rate is above setpoint (high flow). Connect other end of load to the positive end of the power source. This wire may be left unconnected.

4. Connect the GREEN wire to the a load that is energized when flow rate is below setpoint (low flow). Connect other end of load to the positive end of the power source. This wire may be left unconnected.

5. Adjust flow rate to desired setpoint and press the push to set button. The setpoint light will flash to indicate setpoint has been changed. The setpoint light will then turn on above setpoint and off below setpoint.

**Example of Wiring Diagram**