

# PTFE LIQUID FLOW SENSORS

## FPR1501 Series



- ✓ Provides Highly Linear 0 to 5 Vdc Output Signal and Buffered Linear Pulse Output Signal for Totalizing
- ✓ Micro-Liquid Flow Rates as Low as 15 mL/min Can be Measured with High Precision
- ✓ Usable with a Variety of Low-Viscosity Liquids, Including Many Corrosive Liquids



FPR1501 shown actual size.

FPR1501 Series flow sensors can measure extremely low flow rates from 15 mL/min. They are suitable for a wide variety of industrial, commercial, and laboratory flow applications.

Because the FPR1501 flow sensors have only PTFE and sapphire wetted surfaces, it is anticipated that they will replace conventional glass tube and ball flowmeters in many applications in which an electrical signal proportional to flow rate is desirable, even in very corrosive applications in which the liquid is low in viscosity (i.e., less than 10 centistokes).

Models use a Pelton-type turbine wheel to determine the flow rate of the liquid. The rotation rate of the turbine wheel is linear over a large dynamic range. The electro-optical system consists of a diode emitting energy in the infrared spectrum. Light energy is interrupted and passed from 8 small holes in the small turbine wheel. This reflected light energy is detected by a photodiode. Thus, as the turbine wheel rotates in response to the liquid flow rate, electrical pulses are generated.

Processing circuitry provides a DC voltage output and buffered square-wave output pulses that are proportional to the flow rate.

### SPECIFICATIONS

**Output Signal:** 0 to 5 Vdc, adjustable  $\pm 20\%$  (typical) and pulse output from 0 to 300/500 pps (typical) @ 7.5 Vdc peak pulse height-linear  
**Power Requirements:** 12 to 15 Vdc regulated, 50 mA  
**Standard Sensor Material:** PTFE, sapphire, Perfluoroelastomer gasket; PFA compression tube fittings  
**Pressure Rating:** 4 bar (60 psig) maximum

### Temperature Rating:

0 to 70°C (32 to 158°F)

**Temperature Sensitivity:**  $\pm 0.2\%/^{\circ}\text{C}$

**Accuracy:**  $\pm 3\%$  FS

**Repeatability:**  $\pm 0.2\%$  FS from 20 to 100% of rated maximum flow

**Dimensions:** 55.6 x 48.0 x 58.9 mm (2.19 x 1.89 x 2.32") not including fittings

**Applicable Liquids:** Many low-viscosity (<10 centistokes) liquids; check compatibility with wetted materials; specify liquid when ordering

### To Order

Model No.	Max $\Delta P$	Range	Tube
FPR1501	10 psi	15 to 100 mL/min	1/8"
FPR1502	10 psi	25 to 200 mL/min	1/4"
FPR1503	10 psi	50 to 500 mL/min	1/4"
FPR1504	6 psi	100 to 1000 mL/min	1/4"
FPR1505	10 psi	0.2 to 2.0 L/min	1/4"
FPR1506	10 psi	0.5 to 5.0 L/min	3/8"

### Accessories

Model No.	Description
FPR1500-PW	Power supply, 115 Vac to 12 Vdc
FPR1500-230PW	Power supply, 230 Vac to 12 Vdc and European plug
DPF51	Analog input panel meter

Comes complete with 0.9 m (3') long cable with pigtailed and operator's manual.

**Ordering Examples:** FPR1506, flow sensor with 0.5 to 5.0 L/min range.

FPR1501, flow sensor, FPR1500-PW, power supply.