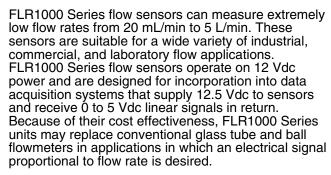
LOW FLOW TURBINE METERS

For Liquid and Gas Applications

FLR1000 Series



- **▶** PPS or Brass Construction
- ✓ 1% Accuracy for Liquids
- ✓ Up to 0.2% Repeatability
- ✓ 0 to 5V Analog Output
- Available With or Without Display



The FLR1000 Series uses a Pelton-type turbine wheel to determine the flow rate of the gas. The rotation rate of the turbine wheel is linear over a wide dynamic range. The electro-optical system consists of a diode emitting energy in the infrared spectrum. Light energy is alternatively reflected and absorbed from "spokes" deposited on the small turbine wheel. This reflected light energy is detected by a photodiode. Thus, as the turbine wheel rotates in response to gas flow rate, electrical pulses are generated. Processing circuitry provides a DC voltage output proportional to the flow rate. For example, output signal is 1.0 Vdc at 20% of rated flow, 2.5 Vdc at 50% of rated flow, 4.0 Vdc at 80% of rated flow, and 5.0 Vdc at 100% of rated flow. Sensors can handle 20% above their rated flow without being damaged.

For liquid flow metering with integrated rate display, the FLR1000ST-D Series has been setting the pace. Their advanced Pelton-turbine design provides high turndown ratios, fast response, and repeatable accuracy. A 0 to 5 Vdc analog output is standard. Featuring a 3½-digit display of flow rate in engineering units, these flowmeters are perfect for any laboratory or test facility. For higher-pressure applications or where metal may be required, the FLR1000ST Series is the solution, see page F-89 for complete details.





Specifications (FLR1000 Series)

Accuracy: ±1% FS (liquids), ±3% (gases)
Display: 3½-digit LCD, 22 mm (%") H

Output Signal: 0 to 5 Vdc, adjustable ±20% (typical) Power Requirement: 11.5 to 15 Vdc regulated,

30 mA (typical)

Standard Sensor Material: 40% glass filled polyphenelene sulfide, glass window, stainless steel bearing support; sapphire shaft and bearing; FKM rubber O-rings standard

Pressure Rating: 40 psi at 20°C (68°F) for gas, 100 psi for liquid, 500 psi for brass units using liquid services **Temperature Rating:** 0 to 50°C

(32 to 122°F)

Temperature Sensitivity: ±0.2%/°C

Linearity: ±3% FS

Repeatability: ±0.5% FS from 50 to 100% of rated maximum flow for gas;

±0.2% FS for liquid **Cable Assembly:** 0.9 m (3')

cable length

Dimensions:

Display: 76 x 44 x 89 mm

(3 x 1.75 x 3.5")

Non-Display: 60 x 42 x 37 mm

(2.35 x 1.65 x 1.25")

Pressure Sensitivity: ±0.07%/mm Hg (using air at 1 to 3 atm)

Mounting: Holes for #4 screw

provided



Options

Order Suffix	Description	Compatible Units
-BR	Brass body	Liquid: FLR1007-1013
-P	Pulse output	Liquid: FLR1007-1013
-BR-D	Brass body and display	Gas: FLR1001-1006, FLR1201 Liquid: FLR1007-1013
-BR-P	Brass body and pulse output	Liquid: FLR1007-1013

To Order				
Model No. (No Display)	Model No. (Display)	Gas Flow Range	Maximum Pressure Drop (inches water)	Acetal Tube Fitting (inch)
FLR1001	FLR1001-D	20 to 100 mL/min	20	1/8
FLR1002	FLR1002-D	40 to 200 mL/min	8	1/8
FLR1003	FLR1003-D	100 to 500 mL/min	2	1/8
FLR1004	FLR1004-D	200 to 1000 mL/min	2	1/8
FLR1005	FLR1005-D	0.4 to 2.0 L/min	2	1/4
FLR1006	FLR1006-D	1.0 to 5.0 L/min	2	1/4
FLR1201	FLR1201-D	2.0 to 10.0 L/min	3	1/4
FLR1202	FLR1202-D	4.0 to 20.0 L/min	3	3/8
FLR1203	FLR1203-D	10 to 50 L/min	3	3/8
FLR1204	FLR1204-D	20 to 100 L/min	3	1/2
FLR1205	FLR1205-D	40 to 200 L/min	5	1/2
FLR1206	FLR1206-D	100 to 500 L/min	20	1/2
Model No. (No Display)	Model No. (Display)	Liquid Flow Range	Maximum Pressure Drop (psi)	Acetal Tube Fitting (inch)
FLR1007	FLR1007-D	13 to 100 mL/min	10	1/8
FLR1008	FLR1008-D	20 to 200 mL/min	10	1/4
FLR1009	FLR1009-D	50 to 500 mL/min	10	1/4
FLR1010	FLR1010-D	100 to 1000 mL/min	6	1/4
FLR1011	FLR1011-D	0.2 to 2.0 L/min	6	1/4
FLR1012	FLR1012-D	0.5 to 5.0 L/min	6	3/8
FLR1013	FLR1013-D	1 to 10 L/min	10	3/8

Accessories

Model No.	Description		
FLR1000-PW	115 Vac power supply		
FLR1000-230PW	230 V power supply with European connector		
FLR1000-C35	Replacement 0.9 m (3') cable		

For a 4-point NIST calibration for air, add suffix "-NISTAIR" to model number for additional cost.

For a 4-point NIST calibration for water add suffix "-NISTWATER" to model number, for additional cost, (FLR1007 calibrations are 3-points). Comes complete with 0.9 m (3') cable and operator's manual.

Ordering Examples: FLR1012, liquid flow sensor, 0.5 to 5.0 L/min range.

FLR1006-D, gas flow sensor with display, 1.0 to 5.0 L/min range.