



High Purity Coriolis Flow Meter

CPFM 8800

All-PFA* wetted Coriolis flow meter designed for measuring liquids in high-purity applications



- Fluid measurement performance is independent of fluid properties; eliminating the need to calibrate on different fluids
- Accuracy unaffected by flow regime (e.g., laminar or turbulent flow) or variations in flow velocity profile
- Sensors operate and measure in two-phase flow conditions with gas volumetric void fractions in excess of 30%

Description

The CPFM Series 8800 is a family of advanced flow meters based on the Coriolis principle fabricated exclusively from PFA* (Perfluoroalkoxy) polymeric material.

Series 8800 flow meters are comprised of two assemblies: one containing the sensor, the other containing the supporting electronics.

Series 8800 sensors are specially designed for measuring liquids in high-purity semiconductor, bio-pharmaceutical and other applications that require all PFA-wetted* surfaces and provide a Mass Flow Rate, Total Mass and Temperature.

*Model 8808-1 and 8808-2 are also available in PEEK wetted parts.

Measurement Principle

Fluid flows into the sensor consisting of two flow sensitive elements which are vibrated relative to one another - similar to the tines of a tuning fork. Fluid interacts with the sensor dynamically in such a way that the sensor's response is immune to the fluid's chemical and physical properties flow regime, or variations in flow velocity profile. Fluid mass flow rate and fluid density are independently determined by measuring the relative motion and frequency of the flow-sensitive elements.

Applications

- Highly corrosive chemicals
- CMP slurries or solutions containing solid contents and/or bubbles
- Pure water or ultra high purity chemicals
- Fluids with varying density or viscosity

Measurement Specifications

| | |
|---------------------------|--|
| Accuracy | $\pm 1\%$ of rate (flow rates between 100-10% of MRV) $\pm 1\%$ of rate \pm Z.O.S (flow rates below 10% of MRV) |
| Temperature | Ambient: 0-50 °C Fluid: 15-80 °C |
| Operating Pressure | 80 PSIG (Max.) |

| Model | Measurement Range (g/min) | | Zero Offset Stability (Z.O.S) (g/min) |
|--------------|----------------------------------|---------------------------|--|
| | Minimum Range Value | Maximum Range Value (MRV) | |
| 8803-1 | 12 | 1,500* | 0.36 |
| 8803-2 | 15 | 4,000* | 0.45 |
| 8804-1 | 30 | 2,000* | 2 |
| 8804-2 | 60 | 5,000* | 10 |
| 8806-1 | 100 | 5,000* | 12 |
| 8806-2 | 200 | 8,500* | 15 |
| 8808-1*** | 300 | 13,200* | 15 |
| 8808-2*** | 750 | 24,000* | 20 |

* Pressure drop at MRV = 10 psi on water (25°C, 1cP)

** Accuracy is determined gravimetrically by comparing indicated and actual integrated flow rate for a minimum 200 gram batch (or larger) of water at 25°C. Reference ISO4185.

*** These sizes are also available in PEEK wetted parts.

Electrical Specifications

| | |
|------------------------------------|--|
| Supply Voltage | 24VDC \pm 10% |
| Power Consumption | Max 6 W |
| Programming | Operator Parameter configuration through USB interface with a PC |
| Output Interfaces | 4-20 mA Current Loop, Digital I/O |
| Analog Output Module | 4-20 mA ; 500 Ohms max load |
| Digital Input/Output Module | Configurable as Frequency or Digital I/O |
| Frequency Output | 0 to 10 KHz proportional to flow rate |

Physical Specifications

| | |
|-------------------------------|---|
| Process Connections | 3/8" tube connection ** |
| Wetted Material | Mold Version: Daikin 211 SH (Similar to PFA 440) |
| | CNC Machined Version: Daikin 231 SH (Similar to PFA 450) |
| | Model 8808-1 and 8808-2 are also available in PEEK wetted parts |
| Sensor Dimensions | L(130mm) x W(56mm) x H(181mm) |
| Transmitter Dimensions | L(106mm) x W(36mm) x H(173mm) |
| Weight | Sensor: 0.86 Kg ; transmitter: 0.65 Kg |
| Cable Length | Standard 3 m; Maximum up to 30m (cable length between sensor and electronics assemblies) |

** Consult the factory for other types of process connection requirements.

NOTE: Specifications subject to change without notice

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