

# Ultrasonic Liquid Flow Controllers

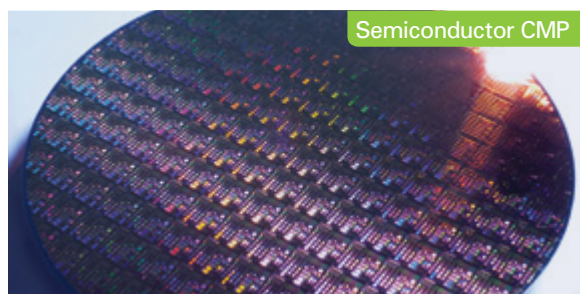


## Advanced Ultrasonic Liquid Flow Controllers

Brooks' LF200 Series liquid flow controllers feature an all-PFA wetted flow path that is chemically inert and solvent-resistant to virtually all chemicals, making the LF200 ideal for controlling flows of high purity and ultra-high purity liquids, deionized (and other highly pure) water, acids, bases and similar fluids. In addition, the flow path is straight, permitting the LF200 liquid flow controller to measure complex dual-phase fluids like CMP slurries without imparting any shear force that could damage the fluid or cause agglomeration. The LF200 liquid flow controller employs a bi-directional, ultrasonic transit-time measurement technique and advanced signal processing algorithms to provide highly accurate flow measurement and control even in the presence of bubbles. Needle valve and pinch valve options are available.

- Chemically inert flow path
- Straight flow path with no bends or sharp turns
- Very compact size
- +/-1% rate accuracy available

Applications include:



# Ultrasonic Liquid Flow Controllers



LF200 Series

The LF200 Series liquid flow controller ultrasonic measurement system features a proprietary sensor design that enables extremely high measurement precision. Even for a very low flow rate, such as 50 ml/min, the LF200 liquid flow controller can control flow to +/-0.5 ml/min. High-speed digital signal processing provides <2 second response time; with field tuning, <1 second response time is possible. The user interface features a high-visibility LCD that provides selectable local indication of flow, temperature, firmware revision or network address. A zero button provides a simple means to re-zero the liquid flow controller when flow is stopped. Several analog I/O options are available.

Type	Model	Valve Type	Full-Scale Capacity	Accuracy	Maximum Pressure (psig)	Input/Output	Power Supply
Liquid Flow Controller	LF200	Needle	50 – 500 ml/min	±1% of SP, 50 – 500 ml/min	60	4 – 20 mA, 0 – 5 Vdc, 0 – 10 Vdc, RS485	24 Vdc, 0.5 A
Liquid Flow Controller	LF205	Pinch	50 – 1000 ml/min	±1% of SP, 50 – 1000 ml/min	45	4 – 20 mA, 0 – 5 Vdc, 0 – 10 Vdc, RS485	24 Vdc, 0.5 A
Liquid Flow Controller	LF210	Needle	150 – 500 ml/min	±3% of SP, 150 – 500 ml/min	60	4 – 20 mA, 0 – 5 Vdc, 0 – 10 Vdc, RS485	24 Vdc, 0.5 A
Liquid Flow Controller	LF215	Pinch	150 – 1000 ml/min	±3% of SP, 150 – 1000 ml/min	45	4 – 20 mA, 0 – 5 Vdc, 0 – 10 Vdc, RS485	24 Vdc, 0.5 A

# Secondary Electronics and Software Tools



Model 0254

Model 0260

Brooks Service Suite

## Model 0254 four-channel power supply, readout and set-point controller

The Brooks 0254 is an innovative, reliable microcomputer-based controller that provides power for up to four Brooks mass flow meters and controllers, and/or pressure devices, all in a new compact design. Additionally, the 0254 can generate flow set-point commands, display flow rate, totalize flow, batch, blend multiple flow streams and more. This fully RoHS-compliant device has a very user-friendly operation and is offered with multiple mounting options such as rack mount, panel mount and table-top mount.

## Brooks Smart Interface Model 0260 controls and monitors up to 30 devices

The Brooks Smart Interface Model 0260 is a Microsoft Windows®-based software application that provides expanded control and monitoring capabilities in laboratory and research environments for Brooks thermal mass flow meters and controllers with an RS485 Smart protocol digital interface. Together with the power supply and RS485 to USB hardware module, this product is a great solution for monitoring and controlling up to 30 mass flow meters/controllers.

Model	Channels	Additional Functions	Control I/O	Power Input	Power Output
0254	4	Totalize and blend RS-232 I/O for remote control	1 – 5 Vdc, 2 – 10 Vdc, 4 – 20 mA	100 – 240 Vac, 50/60 Hz	+/-15 Vdc, 24 Vdc
0260	Up to 30 devices	Display flow, adjust set point, display alarm status, display and change valve override (VOR) status, totalize, batch, blend, log data	RS485 Smart Protocol	85 – 250 Vac, 47 – 63 Hz	24 Vdc, 3.5 A

## Brooks Service Suite

Brooks Instrument provides a variety of software and accessory options to simplify installations and start-up. Brooks software tools ensure mass flow controllers perform at their best. Calibration and control software, available for some models, allow customers to perform calibration checks to verify accuracy and repeatability.

**Brooks Service Suite, Standard:** Provides access to I/O tuning, alarm indication/configuration, diagnostics, selected response tuning, control and monitor.

**Brooks Service Suite, Pro:** Provides access to I/O tuning, alarm indication/configuration, diagnostics, selected response tuning, control and monitor, plus calibration and accuracy reporting capabilities.

# Liquid Mass Flow Controllers and Oval Gear Meters



Flomega™

Oval Gear Meter

## Flomega™ measures and controls very low flows

Flomega™ liquid flow meters and flow controllers use thermal mass flow technology to accurately measure and control liquids, especially very low flows of liquid from 1 to 1000 grams per hour. They are weatherproof and certified for use in hazardous areas.

Type	Model	Full-Scale Capacity	Accuracy	Max. Pressure psig (bar)	Input/Output	Power Supply
Liquid Mass Flow Controller/Meter	5881/91	30 – 100 g/hr	0.5% FS	5800 (400)	0 – 5 Vdc, 4 – 20 mA	15 – 24 Vdc
Liquid Mass Flow Controller/Meter	5882/92	200 – 1000 g/hr	0.5% FS	5800 (400)	0 – 5 Vdc, 4 – 20 mA	15 – 24 Vdc

## Oval gear positive displacement meter for high-viscosity liquids

Brooks' oval gear positive displacement meters are ideal for highly viscous liquids in applications where accuracy and repeatability are critical.

Type	Model	Capacity – Water	Accuracy Rate	Max. Pressure psig (bar)	Temperature	Construction
Oval Gear Meter	BM01/02	2 – 500 lph/ 0.53 – 132 gph	1%	150 (10)	-29 – 66 °C -20 – 150 °F	316 SS, PPS
Oval Gear Meter	BM04/50	60 – 21,000 lph/ 15 – 5500 gph	0.5%	800 (55)	-29 – 120 °C -20 – 248 °F	Aluminum, 316 SS, PPS