ABOUT MCMILLAN

McMillan Company is a privately-held manufacturing corporation based in Georgetown, Texas. The company was founded in 1988 and has positioned itself as one of the leaders in liquid and gas flow measurement and control technology.

Through the use of multiple sensing technologies, such as thermal mass and microturbine, liquid and gas flow rates can be precisely and repeatably measured. Liquid flow ranges as low as 0.05-0.50 mLpm are available, with ranges up to 10 Lpm. Gas flow ranges as low as 0.0-20.0 sccm are available, with ranges up to 500 Lpm.

Some products are available with integrated control valves to regulate flow rate. Such Flo-Controllers incorporate a flow sensor, valve, and smart electronics to receive control signals from the user and make the necessary adjustments to the flow rate automatically. Even with changes in supply pressure, the unit can adjust very quickly to restore the desired flow.

McMillan provides solutions to many markets on the OEM level. We welcome OEM applications, and we will work closely with our customers to develop a product specifically for their specific application. Generous discounts are available to quantity users.

OTHER PRODUCTS AVAILABLE

For customers with high-purity requirements, especially industries manufacturing and supporting microelectronic devices, make sure to request our UHP Short Form Catalog.

McMillan

Flow Products for Laboratory and OEM Applications

SHORT FORM CATALOG

McMillan Company
P.O. Box 1340
Georgetown, Texas 78627

Toll-Free: 800.861.0231 (U.S.A. only)
Direct: 512.863.0231
Fax: 512.863.0671

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MICROTURBINE SERIES FOR GASES

Products: 100, S-110, S-113

The Model 100 Flo-Sensor was developed as an inexpensive alternative to rotameters in analytical equipment. It provides an electronic output proportional to flow rate, and works best with constant flow applications where variations are infrequent.

The Model S-110 and S-113 Flo-Meters incorporate a digital display in addition to the electronic output for direct flow rate monitoring. The 3½ digit display provides feedback in engineering units.

Accuracy:	±3.0 % F.S.
Repeatability:	±0.2 % F.S.
0-5 VDC Output Available:	☑
4-20 mA Output Available:	☐
Pulse Output Available:	☐
Body Material Options:	Ryton®, Brass
O-Ring Options:	Viton®, EPDM
Highest Pressure Rating:	40 psig
Minimum Flow Range:	20-100 mLpm
Maximum Flow Range:	100-500 sLpm*
Available Power Options:	12 VDC, 24VDC

* Some Models

THERMAL MASS SERIES FOR GASES

Products: 50, 80, 209

The Model 50 Series Mass Flo-Sensors provide inexpensive flow measurement with high precision. Models without displays are much smaller than similar products on the market and are priced attractively to OEM customers.

Model 80 Mass Flo-Controllers are also very compact and are available with or without integrated displays. Metal fittings are standard and flow rates can be controlled up to 10 Lpm. McMillan MFC's are a very good value and offer comparable performance to much more expensive units on the market.

For higher flow OEM applications, the Model 209 provides lowest cost flow measurement for flow ranges at or above 0-20 sLpm. Integrated 4-20 mA output is available.

Accuracy:	±1.0 % F.S.*
Repeatability:	±0.5 % F.S.
0-5 VDC Output Available:	☑
4-20 mA Output Available:	☑
Pulse Output Available:	☐
Body Material Options:	Anodized Aluminum, Stainless Steel
O-Ring Options:	Viton®, None
Highest Pressure Rating:	500 psig*
Minimum Flow Range:	0-20 sccm
Maximum Flow Range:	1-500 sLpm
Available Power Options:	12 VDC, 24VDC

* Some Models

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MICROTURBINE SERIES FOR LIQUIDS

Products: 101, 102, 104, 106, 107, 108, S-111, S-112, 400

Microturbine liquid Flo-Sensors from McMillan represent high performance at a great value. Flow rates as low as 13 mLpm can be measured at costs comparable to rotameters.

The Model 101, 102, 104 & 107 Flo-Sensors provide analog outputs proportional to flow rate. Ryton®, brass, or stainless steel may be chosen for body material.

The Model 106 & 108 Flo-Sensors are specifically designed for corrosive applications and are constructed from PTFE.

The S-111, S-112, & S-114 Flo-Meters incorporate a digital LCD display in addition to analog output.

If flow control is required, the Model 400 Flo-Controller is available standalone (for OEM applications) or with the optional Model 470 Control Module, which incorporates a display and setpoint functions.

Accuracy:	±0.5 % F.S.*
Repeatability:	±0.2 % F.S.
0-5 VDC Output Available:	☑
4-20 mA Output Available:	☑*
Pulse Output Available:	☑*
Body Material Options:	Ryton®, Brass, Stainless Steel, PTFE
O-Ring Options:	Viton®, EPDM, Kal-Rez®
Highest Pressure Rating:	500 psig*
Minimum Flow Range:	13-100 mLpm
Maximum Flow Range:	1-10 Lpm*
Available Power Options:	12 VDC, 24VDC

* Some Models

THERMAL MASS SERIES FOR LIQUIDS

Product: 109

The Model 109 provides precise flow measurement down to 50 microliters per minute (0.05 mLpm).

Units are available with 0-5 VDC, 0-10 VDC, or 4-20 mA outputs. A calibration certificate is included with each unit. Power is supplied using the included power adapter.

Accuracy:	±1.0 % F.S.
Repeatability:	±0.05 % F.S.
0-5 VDC Output Available:	☑
4-20 mA Output Available:	☑
Pulse Output Available:	☐
Body Material Options:	Stainless Steel
O-Ring Options:	Viton®
Highest Pressure Rating:	500 psig
Minimum Flow Range:	0.05-0.50 mLpm
Maximum Flow Range:	1-10 mLpm
Available Power Options:	12 VDC, 24VDC

* Some Models

LIQUID PRODUCTS

Email: sales@mcmflow.com Website: www.mcmflow.com

FLOW SWITCHES FOR LIQUIDS

Products: 501

McMillan 501 Flo-Switches combine the same reliable performance as our liquid Flo-Sensors with an integrated solid-state relay output for switching capability.

Switches can be configured normally open (NO) or normally closed (NC). Special OEM pricing for quantities is available.

Accuracy:	±1.0 % F.S.
Repeatability:	±0.2 % F.S.
0-5 VDC Output Available:	☐
4-20 mA Output Available:	☐
Pulse Output Available:	☐
Body Material Options:	Ryton®, Stainless Steel
O-Ring Options:	Viton®, EPDM
Highest Pressure Rating:	500 psig*
Minimum Flow Range:	13-100 mLpm
Maximum Flow Range:	1-10 Lpm
Available Power Options:	12 VDC, 24VDC

* Some Models

DISPLAYS

Products: 210R, 220, 250, 251

The Model 210R is a panel-mountable 3½ digit display. It may be powered with any 5-30 VDC power source and accepts 0-5VDC inputs. It can be configured to read in engineering units.

The Model 220 Ratemeter/Totalizer accepts pulse inputs and is powered by an internal lithium battery. It will display realtime flow rate and also incorporates an 8-digit totalizer. Both rate and total flow can be configured to display in engineering units.

The Model 250 & 251 Multi-Function Displays provide realtime flow rate, total flow, and alarm functions. They also allow linearization of signal for increased accuracy for critical applications.

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VITON & KAL-REZ – Registered trademarks of DuPont Dow Elastomers, LLC

Bulletin SFC-STN002

SENSING TECHNOLOGIES

THERMAL MASS

Using the principle of heat transfer between two coils, often called "hot wire" design, McMillan's patented technology allows use with gases or very low-flow liquids.

Two coils are wound externally on a sensing tube. Flow passes through the tube and the first coil, which is electrically charged to a certain temperature. As flow passes through, it is heated very slightly and heat is transferred downstream to the second coil. Advanced electronics regulate the temperature of the second coil. The more heat that is transferred from the first coil, the lower the flow rate, and the less current required to maintain the temperature of the second coil. By monitoring the current output to the second coil, the flow rate can be determined. McMillan's patented circuitry virtually eliminates zero drift, a problem commonly found with thermal mass flow sensors.

MICROTURBINE

McMillan's patented design allows for measurement of gas or liquid very accurately and repeatably. A small Pelton-type turbine wheel is suspended in the flow path on a miniature sapphire shaft and bearings. The speed of the wheel is sensed optically using an infrared beam. Wheel speed is converted to an electronic output. By adjusting the intensity and frequency of the light source, the technology is compatible with virtually all media. Microturbine flow products can be manufactured using various materials to allow compatibility with a variety of gases and liquids.