

M-60 Series

Fixed Set Point Flow Switches





The Malema M-60 Fixed Set Point Flow Switch with inline flow monitors increasing and decreasing flow. Extreme accuracy is a highlight of M-60 Flow Switches models. When triggered, the models will be within 10% of the desired set point, all while offering repeatability of 2%. They utilize a single moving part which responds to fluid (liquid or gas) flowing within a system.

With single-pole, dual-throw (SPDT) configuration and models available in acrylic and stainless steel, these flow switches are suitable for a wide range of applications used in semiconductor, industrial, biomedical, and OEM products. The M-60 is available standard with 1/4" FNPT connections.

The M-60 Flow Switches offer a water flow range of 10 to 1,600 CCM and air flow range of 300 to 55,000 SCCM*.

Operation

The operating principle is based on a magnetic piston which responds only to the motion of fluids within the line, not to static or system pressures. In the presence of fluid flow, controlled movement of the piston actuates an external hermetically sealed reed switch. This switch can be used to actuate audible or visual alarms, as well as relays, or other controls.

Malema M-60 Fixed Set Point Flow Switch models offer a custom set point calibration option that can be programmed at our Malema facility before shipping. Standard pre-calibrated set point ranges on Malema Flow Switches are also available for immediate use and distribution.

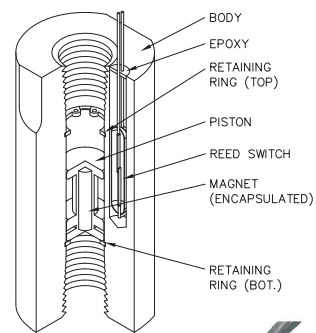
* with applications featuring gases, ranges may vary.

Applications

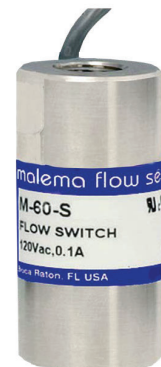
- Sample flow monitoring
- Alarm actuation
- Purge flows
- Loss of flow protection
- Semiconductor etch tools
- Laser cooling equipment

Features

- For corrosive and non-corrosive liquids or gases
- Very accurate custom flow settings
- Senses increasing or decreasing flow
- Hermetically sealed
- Universal mounting available
- Available in Acrylic and Stainless Steel Models
- High Repeatability of 2%
- Extreme Accuracy within 10% of Set Point
- Single-Pole, Dual-Throw (SPDT) Configuration



M-60 in Acrylic



M-60 in 316 Stainless Steel

Specifications

Set Point Accuracy	± 10% maximum
Repeatability	2%
Hysteresis	± 15 - 30%
Body Material	<ul style="list-style-type: none"> • 316 Stainless Steel • Acrylic * Other materials available on request.
Piston Material	316 Stainless Steel
Orifice Plate or	316 Stainless Steel
Retaining Ring	Stainless Steel
Spring	Stainless Steel
Port Sizes	1/4" FNPT
Reed Switch Data (Electrical Ratings) Reed Switch	3 Watts SPDT (Hermetically Sealed) UL Recognized. File E47258. Operating Temperature -40°C to 125°C
Switching Voltage	170 VDC
Breakdown Voltage	200 VDC
DC Resistive	3 Watts
AC Resistive	3VA
Switching Current	0.25 A 0.5 A

Pressure and Temperature Rating

Body Material	Max. Pressure (psi)	Max. Temperature °C/ °F	Wetted Parts
316SS	3000	149/300	316SS
Acrylic	125	77/170	Acrylic, 316SS

*Piston with epoxy can only be subjected to maximum temperature of 90°C.

Cv at typical set points

Contact factory for pressure drop and Cv data.

Certifications



UL and Canadian UL

UL and Canadian UL Recognized for ordinary locations.

File E138467



CE Compliance

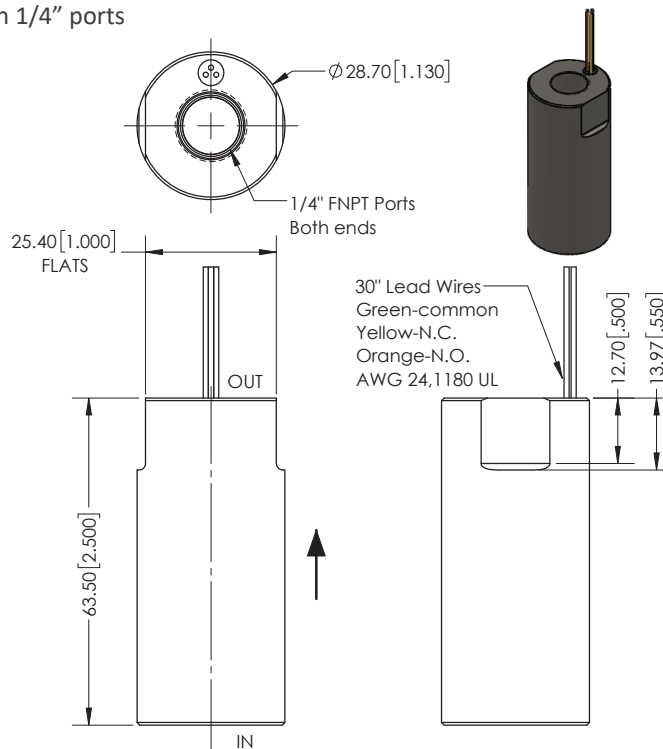
As per LVD Directive

Electrical

SPDT	120 V ac 10 V dc 24 V dc	0.1 A general purpose 0.25 A resistive 0.1 A resistive
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Dimensional Drawings

Illustrated is the M-60 with 1/4" ports



Installation

For proper operation fluid flow must follow inlet port and out the outlet port. Switch may be universally mounted in any orientation. It is recommended to have adequate filtration in the system prior to operating the device. The device functioning may get adversely affected in presence of large particles interfering with the travel of the piston

Ordering Information

Standard Part Numbers				
Model	Port Size, Connection type	Set Point (Water)	SS 316 Body	Acrylic Body
M-60	1/4" FNPT	50 ml/min	M-60-S23-12-S001	M-60-P23-12-S001
		100 ml/min	M-60-S23-12-S002	M-60-P23-12-S002
		250 ml/min	M-60-S23-12-S003	M-60-P23-12-S003
		500 ml/min	M-60-S23-12-S004	M-60-P23-12-S004
		750 ml/min	M-60-S23-12-S005	M-60-P23-12-S005
		1000 ml/min	M-60-S23-12-S006	M-60-P23-12-S006
		1500 ml/min	M-60-S23-12-S007	M-60-P23-12-S007

Note: • Flow switches are calibrated using water @ +70°F on increasing flow.

- Material compatibility choices are solely the responsibility of the end user.
- Specifications are subject to change without notice.
- **For flow switches with custom set points for liquid as well as for gas flow applications, please contact the factory with the application information as needed in the Malema flow application questionnaire.**



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Where Innovation Flows

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