

# M-50/55 Series

Fixed Set Point Inline Flow Switch







The M-50/55 Fixed Set Point Flow Switches monitor increasing and decreasing flow. They utilize a single moving part which responds to fluid (liquid or gas) flowing within a system. These switches are suitable for a wide range of applications in industrial, biomedical, and OEM products. These single-pole, dual-throw (SPDT) flow switches operate only when fluid flow is positively established. The M-50/55 Flow Switch features 1/8" port size, M-55 Flow Switches also come in 1/4" size options and has a flow range up to 170 CCM (0.04 GPM) for water and 5,000 SCCM for air.

## Operation

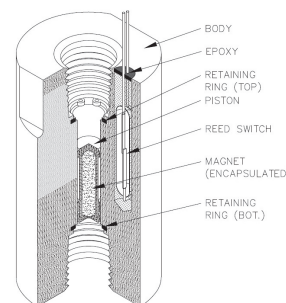
The operating principle is based on a free floating magnetic piston which responds only to the motion of fluids within the line, not to static or system pressures. In the presence of fluid flow, controlled movement of the piston actuates an external hermetically sealed reed switch thus producing the required signal. This signal can be used to actuate audible or visual alarms as well as relays, or other control. Piston travel is short which insures low hysteresis. Additionally, the M-50/55 Flow Switches are built with a spring which resets the piston.

## Applications

- Pure water control for sample stations
- Laser equipment
- Pollution sampling equipment

## Key Features

- Very accurate custom flow settings
- For corrosive and non-corrosive liquids or gases
- Senses increasing or decreasing flow
- Hermetically sealed
- Universal mounting
- Available in acrylic and stainless steel materials of construction
- Extremely high level of accuracy within 10% of the desired set point for fixed set point models, and repeatability of 2% for all models of Malema Flow Switches.
- Female NPT standard on flow switches providing small, compact design.



M-50 in Acrylic



M-50 in 316 Stainless Steel

\* With applications featuring gases, ranges may vary.

# Installation

These flow switches can be mounted horizontally or vertically. 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.

## Certifications



### UL and Canadian UL

UL and Canadian UL Recognized for ordinary locations.  
File E138467



### CE Compliance

As per LVD Directive

## Specifications

Housing	Acrylic	316 Stainless Steel
Piston*	316SS	316SS
Spring	Stainless Steel	
Retaining Rings*	Stainless Steel	
Maximum Operating Pressure (psig)	125	3,000
Burst (psig)	400	5,000
Maximum Operating Temperature	77°C (170°F)	149°C (300°F)
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	
Lead Wires	No 24 to 18 AWG. 18" Length	
Lead Wires Color	SPDT: Green - Common, Yellow - Normally Closed, Orange - Normally Open	
Set Point Accuracy	± 10% maximum	
Hysteresis (Deadband)	± 15% - 30%	
Repeatability	2% maximum	

# Reed Switch Ratings as Recognized by UL

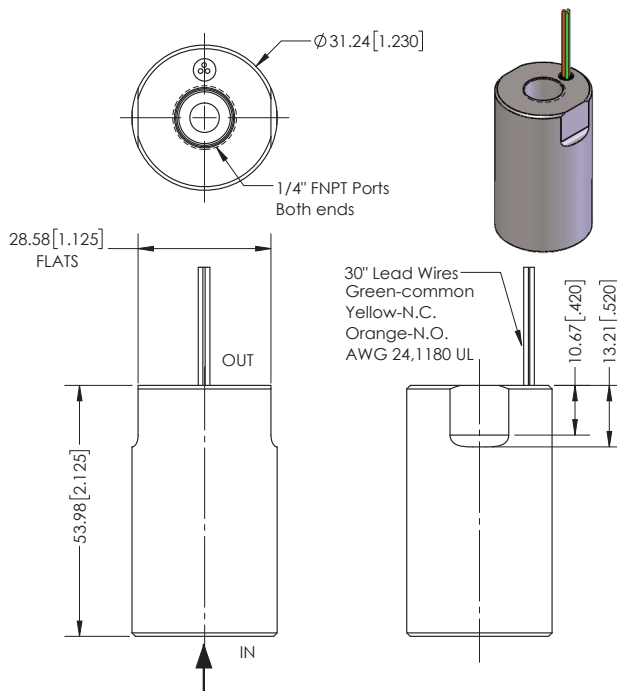
SPDT	120 V ac 10 V dc 24 V dc	0.1 A general purpose 0.25 A resistive 0.1 A resistive
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## Cv at typical set points

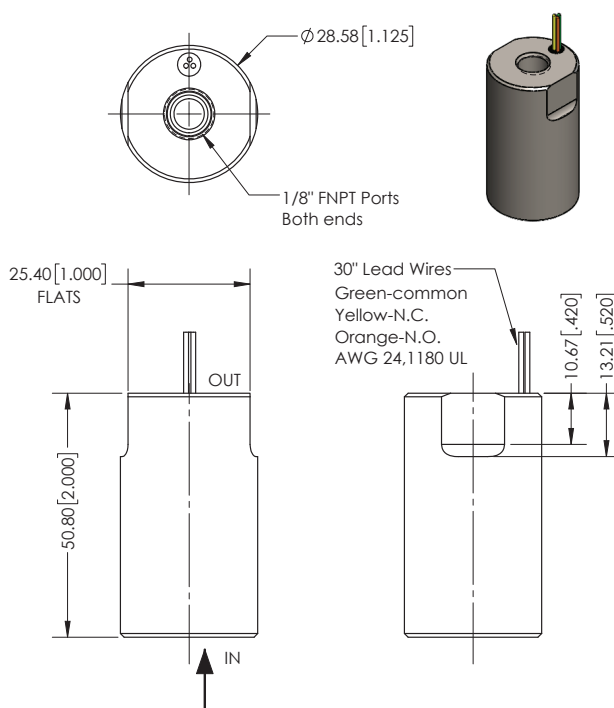
Contact factory for pressure drop and Cv data.

## Dimensional Drawings

Illustrated is the M-50/55 Model with 1/4" ports.



Illustrated is the M-55 Model with 1/8" ports.



## Ordering Information

Standard Part Numbers				
Model	Port Size, Connection type	Set Point (Water)	SS 316 Body	Acrylic Body
M-50	1/8" FNPT	10 ml/min	M-50-S13-12-S001	M-50-P13-12-S001
		25 ml/min	M-50-S13-12-S002	M-50-P13-12-S002
		50 ml/min	M-50-S13-12-S003	M-50-P13-12-S003
		75 ml/min	M-50-S13-12-S004	M-50-P13-12-S004
		100 ml/min	M-50-S13-12-S005	M-50-P13-12-S005
		150 ml/min	M-50-S13-12-S006	M-50-P13-12-S006
	1/4" FNPT	10 ml/min	M-50-S23-12-S001	M-50-P23-12-S001
		25 ml/min	M-50-S23-12-S002	M-50-P23-12-S002
		50 ml/min	M-50-S23-12-S003	M-50-P23-12-S003
		75 ml/min	M-50-S23-12-S004	M-50-P23-12-S004
		100 ml/min	M-50-S23-12-S005	M-50-P23-12-S005
		M-55	1/8" FNPT	200 ml/min
250 ml/min	M-55-S13-12-S002			M-55-S13-12-S002
300 ml/min	M-55-S13-12-S003			M-55-S13-12-S003
500 ml/min	M-55-S13-12-S004			M-55-S13-12-S004
750 ml/min	M-55-S13-12-S005			M-55-S13-12-S005

- 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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