

# M-61 Series

PFA Molded Fixed Set Point Flow Switch  
with Right Angle Flow



Where Innovation Flows



Comprised of an all PFA molded body with a PTFE encapsulated magnetic piston, the M-61 Flow Switch is used in many high purity applications in addition to handling caustic and corrosive fluids. The M-61 Flow Switch monitors increasing or decreasing fluid flow in right angle flow path and the magnetized piston actuates a hermetically sealed reed switch in response to fluid flows. Extreme accuracy is a highlight of the Malema M-61 Fixed Set Point Flow Switch. When triggered, the M-61 will be within 10% of the desired set point, all while offering repeatability of 5%. With port size options of 1/4" and 3/8" and flow rates of 300 to 55,000 SCCM for air, and 20 to 7,600 CCM for water, the M-61 Flow Switch is suitable for a wide range of applications in semiconductor, industrial and biomedical industries. With configurations available for single-pole, single-throw (SPST) or single-pole, dual-throw (SPDT), the M-61 Flow Switch allows for flexibility with different outputs for both the high and low set point. Additionally, the M-61 Fixed Set Point Flow Switches can have their own customized set points calibrated at the factory before shipping.

## Operating Principle

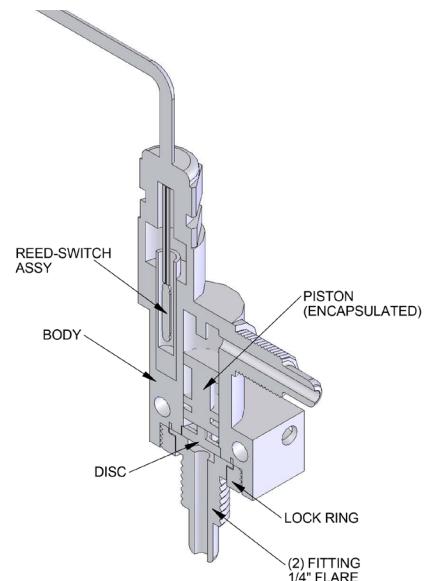
The magnetic piston moves in response to fluids within the flow path and actuates an external hermetically sealed magnetic reed switch. This switch contact can be used to actuate external devices such as audible/visual alarms, relays, and other controls.

## Applications

- Semiconductor process equipments
- Welding systems
- Vacuum systems
- Laser cooling systems
- Water treatment
- Chillers

## Features

- Extremely high level of accuracy within 10% of the desired set point, and repeatability of 5%
- Available in 1/4" and 3/8" port sizes
- Configurations available for single-pole, single-throw (SPST) or single-pole, dual-throw (SPDT)
- PFA constructed for corrosive and non-corrosive liquids or gases
- Senses increasing or decreasing flow
- M-61 Fixed Set Point Flow Switches can have their own customized set points calibrated at the factory before shipping.



- Custom flow settings
- Ideally suited for high purity applications
- Low maintenance



## Measurement Specifications

Calibration Range*	Air : 300 to 55,000 SCCM Water : 20 to 7,600 CCM
Set Point Accuracy	± 10%* maximum
Repeatability	± 5%*
Hysteresis	15% - 30%
Maximum Operating Pressure	60 Psig
Maximum Operating Temperature	40°C (104°F)
Port Sizes	1/4" Flare 3/8" Flare

\*May not apply to the lower set point ranges.

## Material Specifications

Body	PFA
Wetted Parts	PTFE

## Cv at Typical Set Points

	Water CCM	Air SCCM	Cv
M-61	850	30,000	0.43
	1,595	55,000	0.54

## Electrical Specifications

Reed Switch Data	Electical Ratings	10 Watts SPST or 3 Watts SPDT (Hermetically Sealed) UL Recognized. File E47258
	Switch Voltage	200 VDC ( 170 VDC for SPDT )
	Breakdown Voltage	250 VDC ( 200 VDC for SPDT )
	DC Resistive	10 VA (3 VA for SPDT )
	AC Resistive	10 Watts (3 Watts for SPDT )
	Switching Current	0.5 A ( 0.25 A for SPDT )
	Carrying Current	1.2 A ( 0.5 A for SPDT )
Lead Wires	No 24 to 18 AWG. 18" length, Polymeric UL Recognized ( Belden cable or special shielded cable is available )	
Lead Wires Color	SPST: 2 blue wires	
	SPDT: 3 wires Green - Common Yellow - Normally Closed Orange - Normally Open	

NOTE: Please consult us for any special requirements such as fluid connections, calibration range, temperature, accuracy, hysteresis and pressure limits.

## Reed Switch Ratings as Recognized by UL

SPST	120 Vac 24 Vdc	0.1 A general purpose 0.25 A resistive
SPDT	120 Vac 10 Vdc	0.1 A general purpose 0.25 A resistive

## Certifications

### UL and Canadian UL

UL and Canadian UL recognized for ordinary locations. File E 138467.

### CE Compliance

As per LVD directive.

## Installation

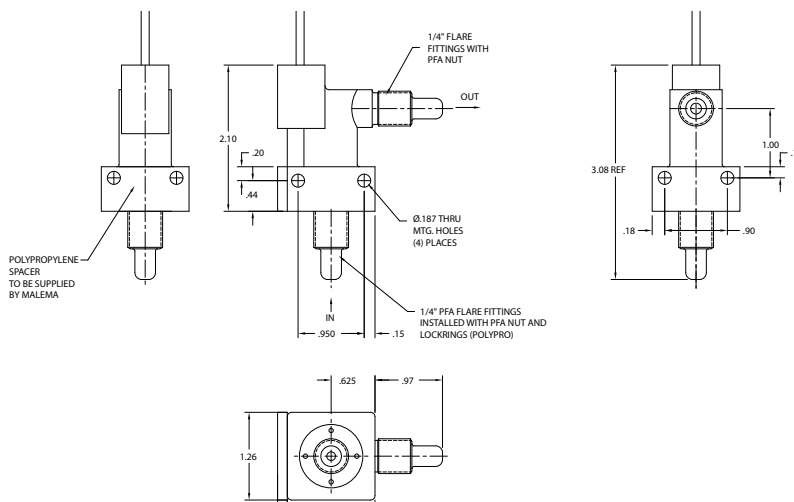
Please use the product in the orientation it was calibrated (as indicated by reading the label). Universal units can be mounted horizontally or vertically. Please advise mounting orientation while ordering, so that the factory can calibrate in the required orientation as calibration does change slightly when changing orientation. Adequate filtration and sealing procedures should be used when mounting in flow lines.

## Fixed Flow Setting Information

This model is an fixed flow switch. The flow set point is fixed at the factory and is NOT field adjustable. Proper calibration of the set point requires additional information. Typical application details required before purchasing the product are:

- Calibration set point
- Increasing or decreasing flow
- Fluid type (i.e. liquid or gas)
- Density or specific gravity
- Viscosity
- System pressure and temperature
- Flow direction (i.e. upward or downward)
- Mounting orientation (i.e. horizontal or vertical)

## Dimensional Drawing



## Ordering Information

Model Ordering Code					Option
M-61					
	-				
Body Material	F				PFA
Connection Size	2				1/4" Flare**
	3				3/8" Flare**
Switch	1				SPST N.O.
	2				SPST N.C.
	3				SPDT
	-				
Mounting	0				Standard (Vertical)
	1				Universal mounting
Piston	1				PTFE encapsulated
	-				
			XXX		Unique PN Identifier

NOTE: Specifications are subject to change without notice.

\*\* Also available in Pillar



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