Flow Set Point Switching – RFS Types

- Combines visual confirmation of flow with dynamic, electronic switch operation
- Easy, adjustable switch point calibration: a local LED signals when set point is reached

RotorFlow Switches build an extra level of reliability and protection into your equipment. By principle of operation, the rotor cannot be deceived into indicating a positive flow situation when no flow actually exists. Once set to a desired actuation point, RotorFlow will switch to a "no-flow" condition should the rotor stop for any reason.

File No. E45168

Typical Applications

Protect expensive electronic equipment from coolant flow failure on...

• Lasers • Medical Equipment • X-Ray and Other High Power Tubes
• Semiconductor Processing Equipment • Robotic Welding Equipment

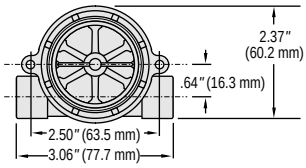
Specifications

Wetted Materials	
Body	Brass, Stainless Steel or Polypropylene (Hydrolytically Stable, Glass Reinforced)
Rotor Pin	Ceramic
Rotor	Nylon Composite, Black; or PPS Composite, Black*
Lens	Polysulfone
O-Ring	Viton® (Alloy Bodies); Buna N (Polypropylene Body)
Low Flow Adaptor	Glass Reinforced Polypropylene
Operating Pressure, Maximum	
Brass or Stainless Steel Body	200 PSIG @ 70°F
Polypropylene Body	100 PSIG @ 70°F, 40 PSI Max. @ 212°F
Operating Temperature, Maximum	
Brass Body	180°F (82.2°C)
Stainless Steel	212°F (100°C)
Polypropylene Body	180°F (82.2°C)
Electronics	150°F (65.5°C) Ambient
Viscosity, Maximum	200 SSU
Input Power	12 VDC, 24 VDC or 110 VAC
Relay Contact Ratings (SPDT)	1 Amp, 24 VDC Resistive; 0.3 Amp, 110 VAC
Repeatability	2% Maximum Deviation
Set Point Accuracy (Factory Set)	±5%
Set Point Differential	15% Maximum
Electrical Termination	20 AWG PVC-Jacketed, 24" Cable. Color Codes: Red = +VAC/VDC, Black = Ground, White = N.O. Contact, Brown = N.C. Contact, Green = Common

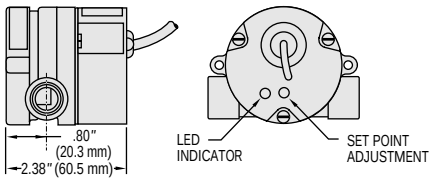
*Standard on Stainless Steel bodies.

Dimensions

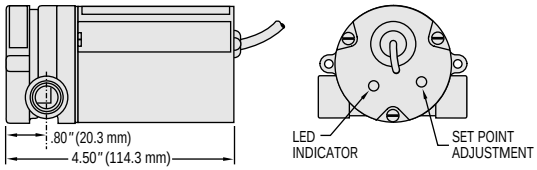
Polypropylene Bodies



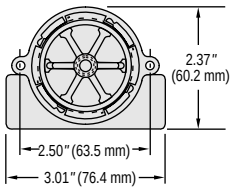
DC Versions



AC Versions



Brass and Stainless Steel Bodies



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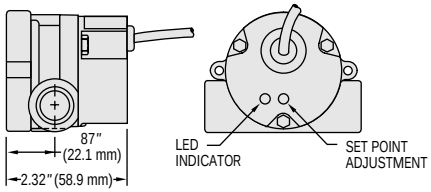

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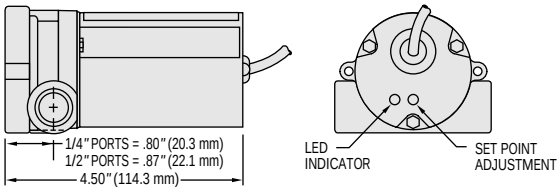
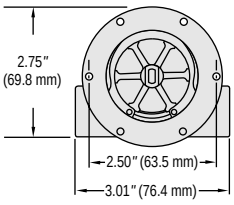


Brass Bodies – 3/4" Port Only



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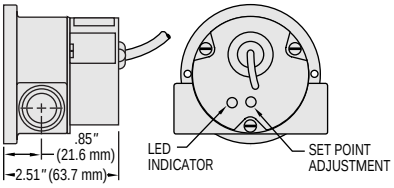

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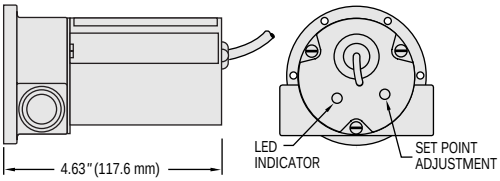


Operating Principle

1. As liquid passes through the RotorFlow body, the magnetic rotor spins at a rate proportional to flow. This causes a series of magnetic fields (the rotor vanes) to excite the Hall Effect sensor, producing a series of voltage pulses.

2. RFS Type switches incorporate state-of-the-art circuitry to compare the frequency of incoming pulses to an adjustable, preset frequency. When the pulse rate meets or exceeds the preset value, the SPDT relay closes. When the pulse rate falls below the preset value, the output relay opens. This unique design eliminates the possibility of a RotorFlow switch from remaining in a "switch actuated" mode, if the rotor jams accidentally.

3. RotorFlow Indicators may be mounted with flow entering either port. Performance is optimized by positioning ports at the top of the unit, in a horizontal plane.

How To Order

Specify Part Number based on desired body material, port size and input power rating.

Body Material	Port Size NPT	Flow Ranges – GPM		Input Power	Part Number
		Low Range*	Standard Range		
Polypropylene	.25"	0.1 to 1.0	0.5 to 5.0	12 VDC	**155424**
				24 VDC	**155425** ⚡
				110 VAC	**155876** ⚡
	.50"	1.5 to 12.0	4.0 to 20.0	12 VDC	**155484**
				24 VDC	**155485** ⚡
				110 VAC	**155886** ⚡
Brass	.25"	0.1 to 1.0	0.5 to 5.0	12 VDC	**156264**
				24 VDC	**156265** ⚡
				110 VAC	**156266** ⚡
	.50"	1.5 to 12.0	4.0 to 20.0	12 VDC	**156267**
				24 VDC	**156268** ⚡
				110 VAC	**156269** ⚡
	.75"	–	6.0 to 30.0	12 VDC	**156270**
				24 VDC	**156271** ⚡
				110 VAC	**156272** ⚡
Stainless Steel	9/16-18**	0.1 to 1.0	0.5 to 5.0	24 VDC	**165073** ⚡
				110 VAC	**165074** ⚡
	.50"	1.5 to 12.0	4.0 to 20.0	24 VDC	**165077** ⚡
				110 VDC	**165078** ⚡

* With use of Low Flow Adapter supplied. See Page L-2 for more information.
** Straight thread with O-ring seal.

⚡ – Stock Items.

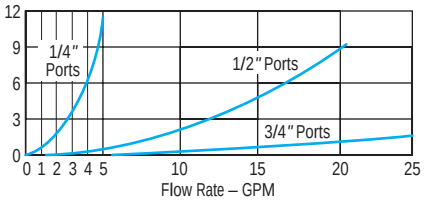
Special Requirements:

GEMS caters to OEM needs with special configurations for potable water and enhanced chemical capabilities. Consult factory for further details.

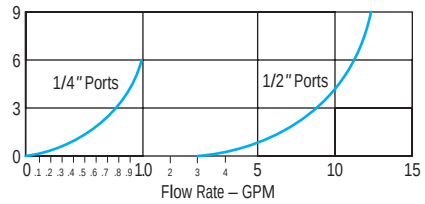
High Resolution Black Rotor
Nylon or PPS composite. Each of the six rotor arms is magnetized.

Pressure Drop-Typical

Standard Flow Range Units

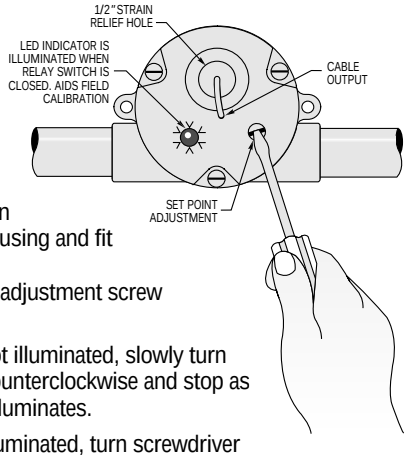


Low Flow Range Units



Switch Set Point Calibration With LED Signal (RFS Type)

With the unit installed in the line and power supplied, complete the following steps to calibrate switch actuation point with proper flow rate. A small flat-blade screwdriver is the only tool required.



1. Adjust liquid flow in the line to the rate at which switch actuation is desired.

2. Insert screwdriver into opening on backside of housing and fit blade into the potentiometer adjustment screw inside.

3. If LED is not illuminated, slowly turn screwdriver counterclockwise and stop as soon as LED illuminates.

4. If LED is illuminated, turn screwdriver clockwise until LED light goes out. Then, slowly turn screwdriver counterclockwise and stop as soon as LED illuminates.