

FLUID FLOW SWITCH

Model Q-1

0.12 to 8.0 GPM

Detects and Signals Flow Change

- Superior Long Term Performance
- Continuous Adjustment While Operating
- 6 Interchangeable orifices plus 2:1 continuous switch adj. each orifice.
- Line Pressure to 300 psig
- Temperature 180°F Continuous
- Calibrated Independent of Line Pressure and Temperature
- Maintains Calibration Limits when Subjected to Reasonable Line Hydraulic Hammer or Surge Pulses
- SPDT 15 amp switching capacity model or Dry Circuit Computer/PLC Interface model
- Intrinsically Safe Relay Allows Model Q-1 to be used in Hazardous Areas. (see page 46)
- Maintenance and checkout is a snap for your present personnel using an uncomplicated standard test meter.

Typical Working Fluids

- Alcohols
- Contaminated Ground Water
- Filtered Sewage Water
- Glycols
- Oils
- Pure Water
- Seawater
- Soap Solutions
- Tap Water

Typical Uses:

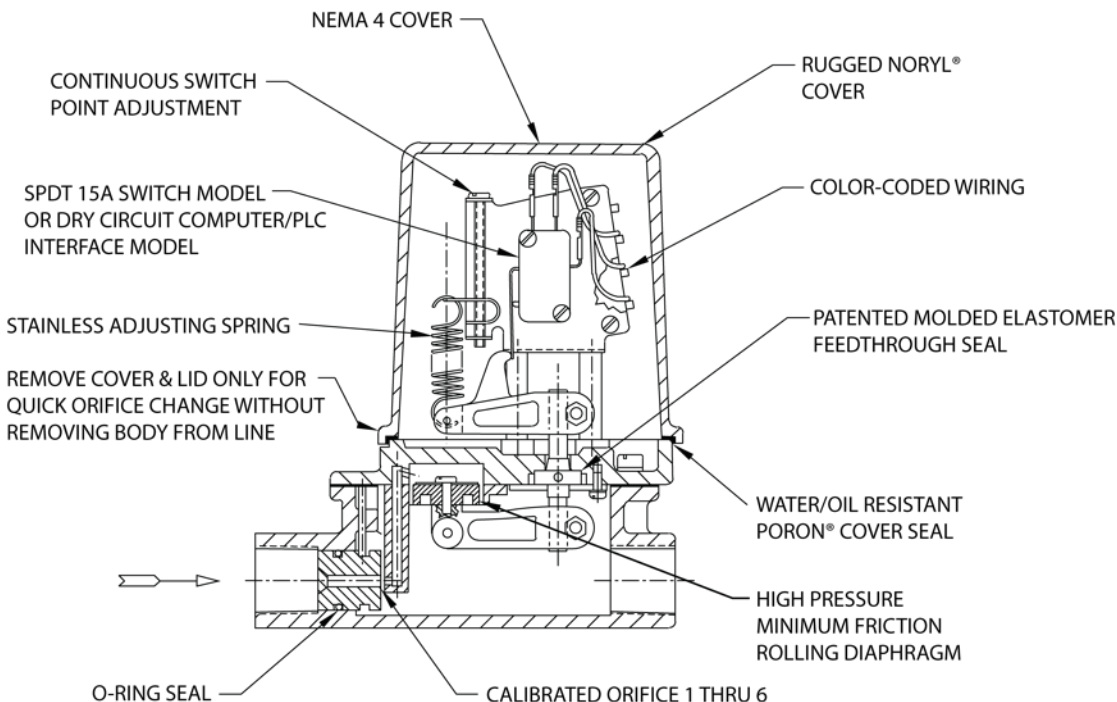
Monitoring flow of coolant water and fluids supplied to:

- Air Condition Systems
- Brakes and Clutches
- Computer Systems
- Diffusion Vacuum Pumps
- Diodes, SCRs, Triacs, etc.
- Electro Magnets
- High Power Transistors
- Marine and Stationary Engines
- Oil Supplied to Large Bearing and Gear Systems
- Plastic Molding Equipment
- RF and Radar Transmitter
- Spot welders
- Transformers
- Vacuum Systems

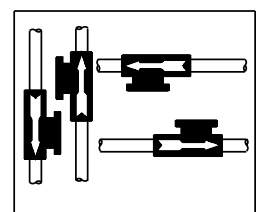
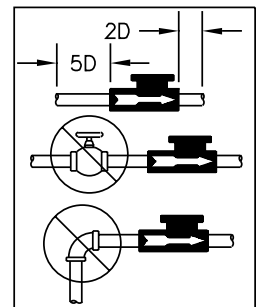
In Chemical Processing

- Fluid Blending Systems
- Heat Transfer Fluids
- Liquid Scrubbers
- Liquid Transfer
- Monitor Filter Clogging
- On/Off Control of Chemical Feed Pumps
- Starting Back-up Pumps
- Water Treatment

Non-Magnetic



TURBULENT FLOW REDUCTION



MOUNT IN ANY POSITION



Limited Warranty Page 7

541 Kinetic Drive, Oxnard, CA 93030
 Tel: (805) 988-6800 Fax: (805) 988-6804
 Email: harwil@harwil.com

Specifications:

Flow Range - Water Calibrated @ 70°F

Model Q-1

Orifice #	Continuous Switch Point Adjustment Range GPM	Note
1	0.12 to 0.25	
2	0.25 to 0.50	
3	0.50 to 1.0	Maximum recommended flow rate for each orifice is 4x upper-end of adj. range.
4	1.0 to 2.0	
5	2.0 to 4.0	
6	4.0 to 8.0	

Hysteresis (% Flow Change to Activate/Deactivate Switch)

- ≈ 5% at upper end of flow range
- ≈ 25% at lower end of flow range

Differential pressure drops across unit (Normal Operating Conditions)

- ≈ 1.0 psig at lower end of flow range
- ≈ 5.0 psig at upper end of flow range

Working Line Pressure

300 psig max. @ 180°F Max
(Proof tested to 1200 psig @ 180°F)

Materials

Brass body Noryl®, stainless steel, and plastic hardware.
Working fluid “sees” red brass, 316 stainless steel, phosphor bronze, Noryl® (PPO), PVC, and EPDM elastomer seal.
(Hypalon® and Viton® elastomer seals are available on special order.)

Electrical Switch Characteristics

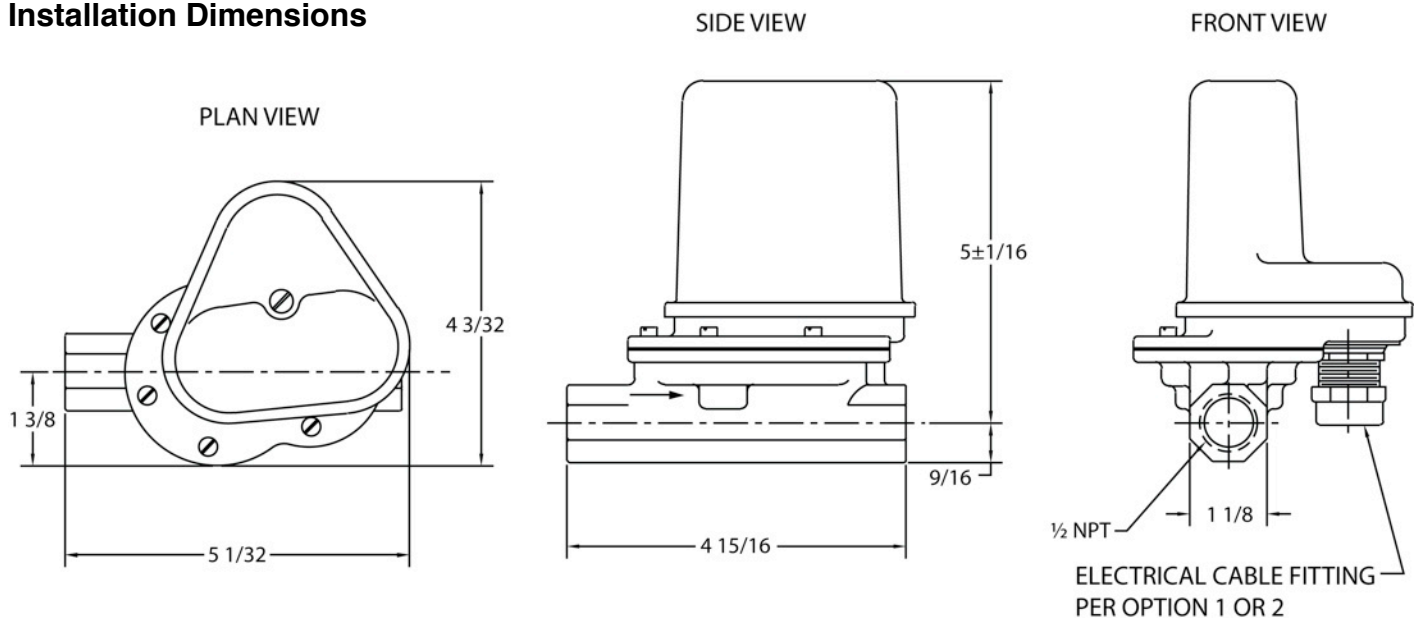
SPDT
15 amp, 1/2 hp @ 125 or 250 VAC
1/2 amp @ 125 VDC, 1/4 amp @ 250 VDC
5 amp @ 125 VAC (tungsten lamp load)
UL and CSA Listed
10,000,000 Operations Median

Model Q-1 can also be fitted with a SPDT Gold Cross Bar Switch for computer/PLC interface.

Maximum Continuous Temperature: 180°F (may be extended to 200°F for short periods.)

Weight: 3.5 lb.

Installation Dimensions



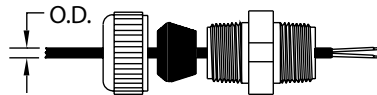
Input Power Cable Interface Options

Option No. 1

Sample Part #

Q - 1 / 3 / A

Basic Model # Orifice # Grommet Size



Grommet Size	Cable OD	Grommet Size	Cable OD
A	0.25"	B	0.37"
AA	0.30"	C	0.50"

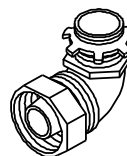
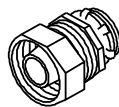
Option No. 2

Sample Part #

Q - 1 / 6 / F

Basic Model # Orifice # 1/2" Flexible
Coduit Fitting

1/2" STRAIGHT F



1/2" 90°
F90°

- Installation drawing and a numbered parts list is supplied with each unit.
- Current Price Information is Listed on Separate Sheet.
- Special One Day Delivery Available.