

Important Points!

Product must be maintained and installed in strict accordance with the National Electrical Code and GEMS product catalog and instruction bulletin. Failure to observe this warning could result in serious injuries or damages.

An appropriate explosion-proof enclosure or intrinsically safe interface device must be used for hazardous area applications involving such things as (*but not limited to*) ignitable mixtures, combustible dust and flammable materials.

Pressure and temperature limitations shown on individual catalog pages and drawings for the specified flow switches must not be exceeded. These pressures and temperatures take into consideration possible system surge pressures/temperatures and their frequencies.

Selection of materials for compatibility with the media is critical to the life and operation of GEMS flow switches. Take care in the proper selection of materials of construction; particularly wetted materials.

Life expectancy of switch contacts varies with applications. Contact GEMS if life cycle testing is required.

Ambient temperature changes do affect switch set points, since the specific gravity of a liquid can vary with temperature.

Flow switches have been designed to resist shock and vibration; however, shock and vibration should be minimized.

Liquid media containing particulate and/or debris should be filtered to ensure proper operation of GEMS products.

Electrical entries and mounting points may require liquid/vapor sealing if located in an enclosed tank.

Flow switches must not be field repaired.

Physical damage sustained by the product may render it unserviceable.



In-Line Flow Switches

FS-3 Series

Instruction Bulletin No. 169175

FS-3 Series Flow Switches operate reliably in any mounted attitude **for which they are calibrated. Other attitudes will slightly alter actuation settings. Unless otherwise specified**, units are calibrated in the vertical inlet port down position.

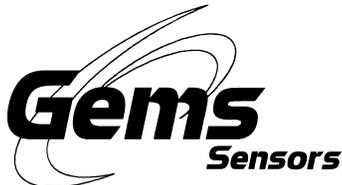
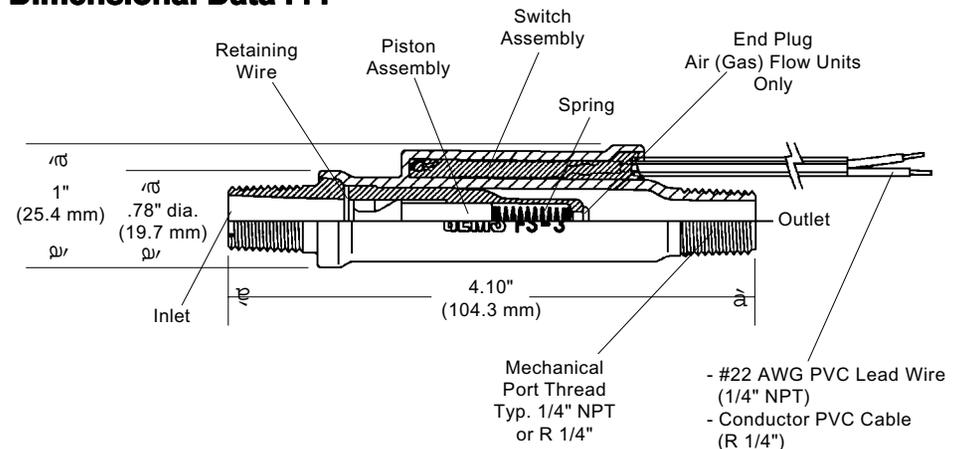
Installation . . .

- Warning -

The FS-3 is a plastic, taper-threaded instrument. Over-tightening will result in port breakage!

All plastic NPT threads should be installed using a suitable thread sealant. (Teflon tape or Permatex "No More Leaks"). Sealant must be kept out of unit during installation. **Improper installation to a process can result in cracking.** Install fittings or adapters onto flow switch using strap wrenches. One to two turns past hand-tight is adequate.

Dimensional Data . . .



Gems Sensors Inc.
One Cowles Road
Plainville, CT
06062.1198

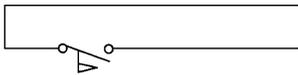
tel 860.747.3000
fax 860.747.4244

Specifications . . .

Wetted Materials (FDA or NSF-Compliant)	
Housing and Barbs	Noryl [®]
Piston	Noryl [®] and Epoxy
Spring and Stop Pin	316 Stainless Steel
Pressure Rating	150 PSI @ 70°F 50 PSI @ 212°F
Operating Temperature	212°F (100°C), Max.
Required Filtration	50 Micron or Better
Switch, See "Switch Ratings"	SPST, N.O. Pilot Duty 20 VA, 120-240 VAC or VDC
Electrical Termination	No. 22 AWG, 18" L., PVC Lead Wires (1/4"NPT)
	No. 22 AWG, 18" L., PVC 2-Conductor Cable (R 1/4")

Wiring Diagram . . .

Normally Open



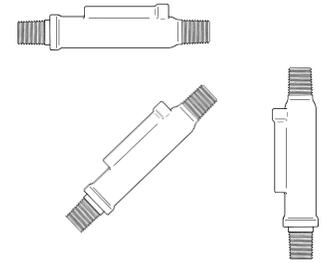
Switch Ratings Max. Resistive Load

VA	Volts	Amps AC	Amps DC
20	0-30	.4	.3
	120	.17	.13
	240	.08	.06



This product is suitable for Class I and Class II applications only, per the requirements of standard EN60730 and any additional specific requirements for a particular application or medium being sensed. Class I compliance of metal bodied units requires a ground connection between the metal body and the earthing system of the installation. Class I compliance of plastic bodied units in contact with a conductive medium requires that the medium be effectively earthed so as to provide an earthed barrier between the unit and accessible areas. For Class III compliance, a supply at safety extra-low voltage (SELV) must be provided. Please consult the Factory for compliance information on specific part numbers.

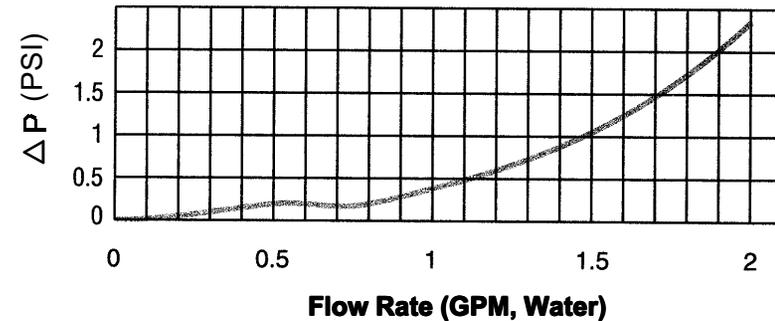
FS-3 Flow Switches Can Be Mounted In Various Attitudes. . .



Note: Flow settings are based on a vertical position (inlet port down), using water at +70°F on increasing flow. Some variation in set point actuation will occur in other mounting orientations.

Pressure Drop Data

Typical ΔP vs Flow Rate



There are four standard air flow models of the FS-3. Set point will vary with line pressure, as shown in the graph below.

FS-3 AIR FLOW PERFORMANCE, APPLICATION LINE PRESSURE VS. SET POINT

