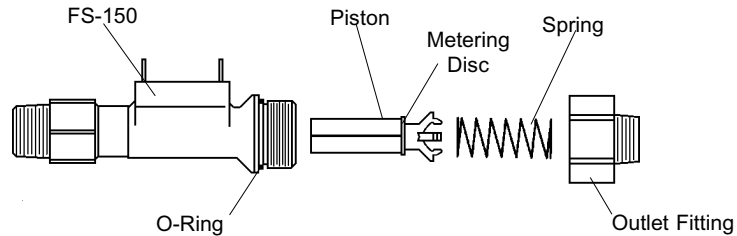


Maintenance . . .

Any foreign particle accumulation is easily cleared by removing the outlet fitting and piston/spring assembly and then cleaning the bore.

Caution: During this cleaning operation, take care not to dislodge the metering disc or damage the spring.

During reassembly, remember to clean the O-Ring of any debris that may have accumulated. Reinstall piston first, then spring, then outlet port (hand-tight, **only**). 150 Micron filtration is suggested.



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.

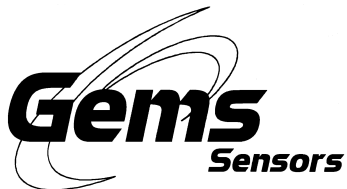
Flow switches have been designed to resist shock and vibration; however, shock and vibration should be minimized.

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.



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In-Line Flow Switches

FS-150 Series

Instruction Bulletin No. 133690

FS-150 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 horizontal position.

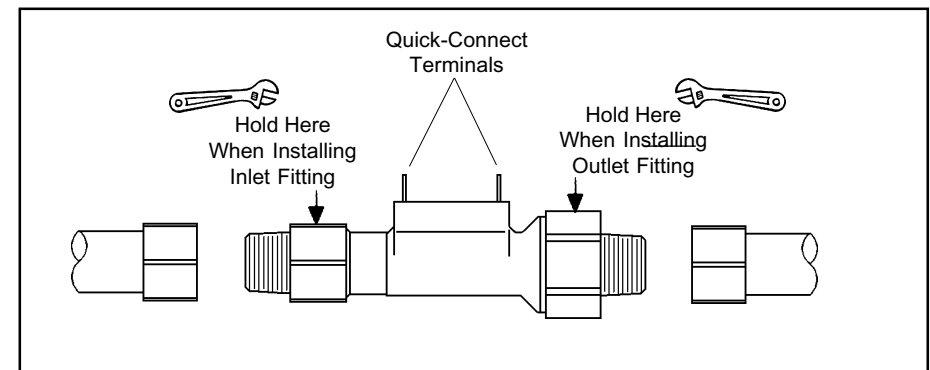
- Installation -

- WARNING -

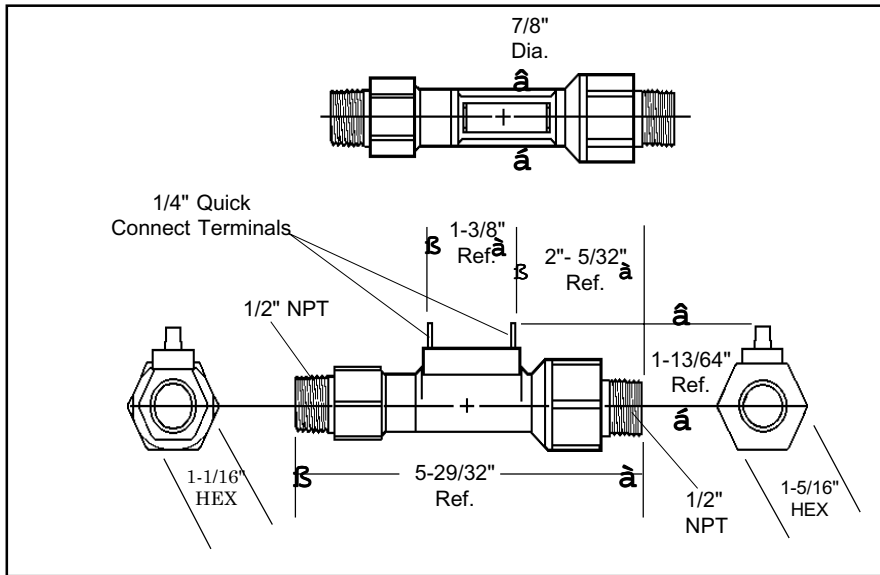
The FS-150 is a plastic, NPT-threaded instrument. Over-tightening will result in port breakage!

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. **Always hold the FS-150 by the wrench flats adjacent to the port being connected during installation, to insure sealing of NPT and prevent port breakage. (See Diagram Below)**

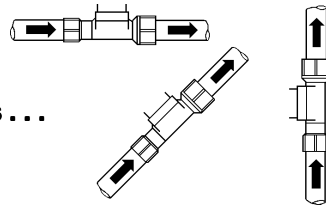
The outlet port on the FS-150 is threaded hand-tight to the body and sealed via an O-Ring. **Improper installation to a process can result in torquing of the union and cracking.** Install fittings or adapters onto flow switch using strap wrenches. One to two turns past hand-tight is adequate. After installing unit, electrical connection is made to 1/4" quick-connect terminals with crimp-type receptacle, supplied by customer.



Dimensional Data . . .



Various Mounting Attitudes . . .

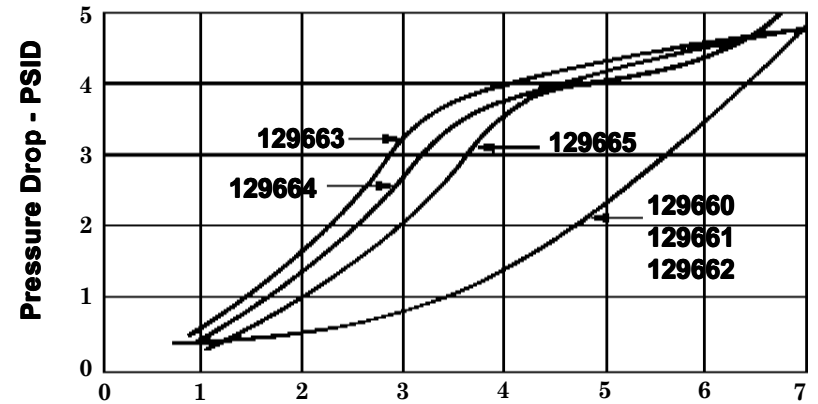


Specifications . . .

Wetted Materials	
Housing	Polypropylene, Hydrolytically Stable*
Piston	Ryton® - R4, 316 Stainless Steel
O-Ring	Viton®
Spring	316 Stainless Steel
Operating Pressure, Max.	200 PSIG @ +70°F to 150°F (+21.1°C to 65.5°C) 150 PSIG @ +150°F to 212°F (+65.5°C to +100°C)
Operating Temperature	0°F to 212°F (-17.8°C to +100°C)
Set Point Accuracy	±15%
Set Point Differential	20%, Maximum
Switch, See "Switch Ratings"	SPST, 20 VA
Inlet/Outlet Ports	1/2" NPT Male
Electrical Termination	1/4" Male Quick Connect Terminals (2)

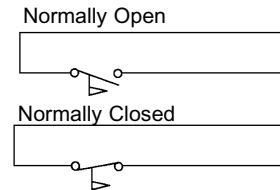
* Hydrolytically stable, glass-reinforced, polypropylene is UL-recognized to UL746B at a relative temperature index of 65°C

Typical Pressure Drop . . .



Tests Conducted with Units in a Horizontal Position (Terminals Up) with water at +70°F

Wiring Diagrams . . .



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.