

Electrical Data . . .

Switch Ratings - Max Resistive Load

VA	Volts	Amps AC	Amps DC
10	0-50	.2	.13
	120	.08	N.A.
	100	N.A.	.1
15	0-50	.3	.2
	120	.12	.08
	240	.06	.04
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.

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.

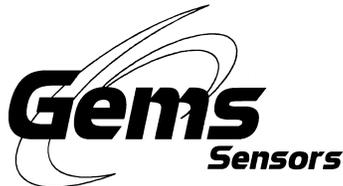
Electrical entries and mounting points may require liquid/vapor sealing if located in an enclosed tank.

Flow switches must not be field repaired.

Physical damaged sustained by the product may render it unserviceable.

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 Plainville, CT
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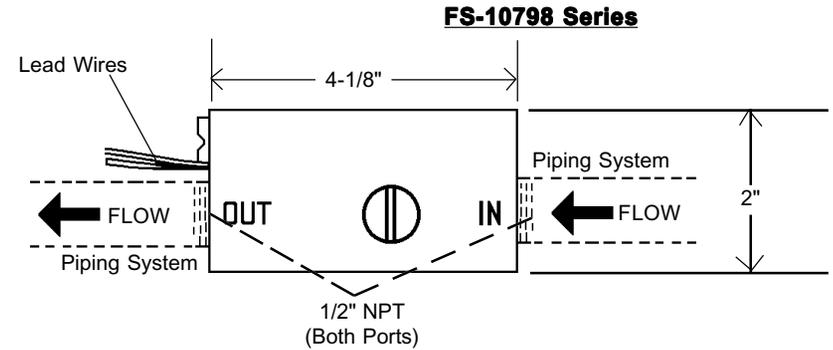
Piston-Type Flow Switches

HPF-920 Series & FS-10798 Series
Instruction Bulletin No. 45520

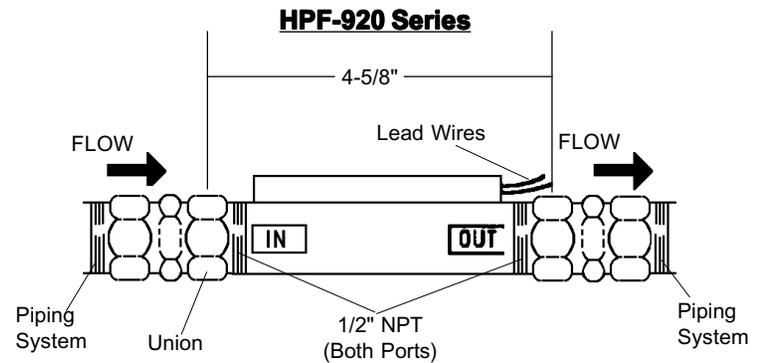
Installation . . .

Install FS-10798 or HPF-920 Series units in piping system using standard pipe fitting procedures. Be sure to keep thread sealing compound out of unit. Install so that flow is in proper direction (marked "IN" and "OUT" on housing). Use of 50 micron filtration is recommended.

Dimensional Data . . .



Unless otherwise specified, units are factory-calibrated in water for in-line installation; in horizontal position, as shown above.



Units are factory-calibrated in water on decreasing flow and are installed in-line, in a horizontal position, as shown above.

Specifications . . .

FS-10798 Units

Materials	Housing	Brass or 316 SS
	Piston (In Brass Housing)	Polysulfone for Water Brass for Oil or Air
	Piston (SS Housing)	316 SS
	Other Wetted Parts	316 SS, Viton, Epoxy
Liquid Flow Adjustable Range - Water		0.5 to 20 GPM
Pressure Ratings	Operating	1000 PSIG
	Proof	2500 PSIG
	Burst	5000 PSIG
Operating Temperatures	With SS or Brass Piston	-20° to +300°F (-29°C to +148.9°C)
	With Polysulfone Piston	-20° to +225°F (-29°C to +107.2°C)
For 5 PSIG Line*		
For 100 PSIG Line		
Repeatability		1% Max. Deviation
Set Point Differential		15% Max.
Set Point Accuracy (Constant Temperature) Factory-Set (Standard)		±10% Max.
Air/Gas Flow Adj. Ranges: (Dep. on Oper. Line Pressure)	For 5 PSIG Line*:	1 to 75 SCFM (Approx.)
	For 100 PSIG Line:	3 to 160 SCFM Approx.
Switch (See Electrical Data, Back Page)		SPDT, 20 VA
Lead Wires		No. 18 AWG, 24" L., Polymeric

*Minimum line pressure for positive actuation.

Note: Temperature changes will slightly affect water or gas flow settings. Oil settings will vary with viscosity.

HPF-920 Units

Materials	Housing and Piston	Brass
	Other Wetted Parts	Stainless Steel, Epoxy
Operating Pressure, Max.		1500 PSIG
Operating Temperature		0°F to +250°F (-17.8°C to +121°C)
Set Point Accuracy		±20% Max.
Set Point Differential		20%, Max.
Switch (See Electrical Data)		SPST, 20 VA
Lead Wires		No. 18 AWG, 24" L., Polymeric

Note

HPF-920 Series units are calibrated standard in water @+70°F, on decreasing flow, in horizontal position. Set point accuracy will change slightly with unit in other calibrated position.

Maintenance . . .

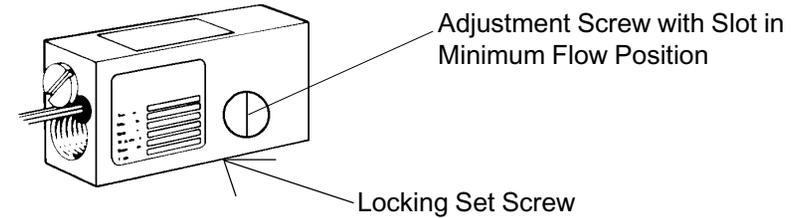
FS-10798: Occasional cleaning when excessive contamination is present in the liquid is the only maintenance normally required. **To disassemble unit for cleaning:** With system shut down and no liquid in piping, remove piston plug from unit. Unit need not be removed from system.

HPF-920: *Disassembly of HPF-920 Series units is not recommended.* If maintenance becomes necessary, contact the Factory for assistance.

Flow Setting Adjustment: FS-10798 Units . . .

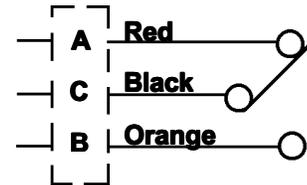
Standard units are normally supplied with adjustment set at minimum flow - adjusting screw slot (and vane within unit) in vertical position, as shown below. Adjust unit on test stand or installed in system. With liquid (or gas) flow at desired rate, adjust unit until switch first actuates (opens or closes, as desired).

Note: Vane is locked at Factory with set screw and must be unlocked prior to any adjustment; then relocked after adjustment has been made.



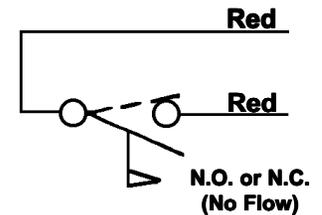
Typical Wiring Diagrams . . .

3-Pin Receptacle



FS-10798 Units

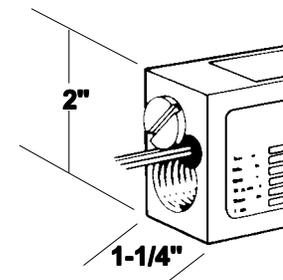
Lead Wires



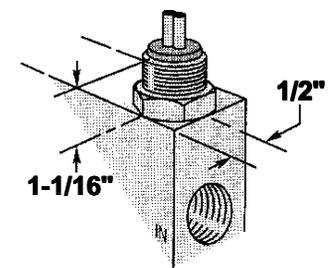
HPF-920 Units

Electrical Connection: FS-10798 Units . . .

Lead Wires, Strain Relief



1/2" NPT Conduit Connector*



* Not available with UL or FM approval