Veriflo’s FS190 is a non-attitude sensitive, excess flow shut-off valve designed to operate with a wide range of inlet pressures. The capability of operating from 10 to 3500 psig allows it to be used either between a high pressure source at the inlet to the pressure regulator, or in the low pressure delivery line to a process. In both applications, this control valve will automatically shut off the delivery of gas if the flow exceeds a preset limit.

The functional components of the FS190 are incorporated within the body style of a 1/4 inch Quantum valve. An actuating knob has been designed to manually operate the valve and clearly indicate the relative operating position — either “Open (Reset)” or “Auto (Shut Off).” A pneumatic actuator may be substituted for the knob, which makes it possible to reset the valve by sending a pressure signal from a remote source.

The FS190 is offered with six different pressure/flow limits: A, B, C, D, E, and F (see flow curve). The nominal differential pressure created at the flow limit is 5 psig for limit values A, B, C, and D. For limit values E and F, the differential pressure is 12 psig. The differential pressure that is created is not affected by mounting orientation (non-attitude-sensitive).

### materials of construction

**Wetted**

- **Body**: “VeriClean,” Veriflo’s custom high purity type 316L Stainless Steel
- **Compression member**: 316L Stainless Steel
- **Seat**: PCTFE (formerly Kel-F81®)
- **Diaphragm**: Elgiloy® or equivalent
- **Spring**: Hastelloy C-22®
- **Poppet**: 316L Stainless Steel
- **Orifice**: 316L Stainless Steel

**Non-wetted**

- **Knob (Red)**: Anodized Aluminum
- **Stem**: 416 stainless steel (lubricated)
- **Cap**: 316L stainless steel

### operating conditions

- **Supply Pressure**: 10 psig to 3,500 psig (.7 barg to 241 barg)
- **Differential Pressure**: 5 psig or 12 psig (.3 barg or .8 barg)
- **Flow Limit Settings**: 6 available
- **Temperature**: -10°F to 150°F (-23°C to 66°C)

### functional performance

- **Design Leak Rate**:
  - Outboard: 2 x 10⁻⁹ cc/sec. He
  - Inboard: 2 x 10⁻¹⁰ cc/sec. He

### standard configurations

- 1/4” NPT female, 1/4” face seals or 1/4 tube stubs

### internal volume

- 1.86 cc (including face seal fittings)

### surface finishes

- **Standard Ra**: .38 to .5 micrometer or less
- **Optional Ra**: 10 micro in (.25 micrometer) or less

### approximate weight

- 12.5 oz (.32 kg)
FS 190

Dimensional Drawings

Flow Curve

Ordering Information

Basic Series

FS190 S A FSFM AOP

Material

S = 316L Stainless Steel

Flow Limit Setting

Nominal Flow Limit At
1000 psig inlet 30 psig inlet
A = 4.8 SLPM 0.4 SLPM
B = 9.1 SLPM 1.7 SLPM
C = 21.8 SLPM 3.9 SLPM
D = 39.5 SLPM 9.0 SLPM
E = 72.3 SLPM 14.4 SLPM
F = 120.6 SLPM 22.5 SLPM

Options

AOP = Air Operated
TH = Hastelloy C-22® Trim internals*
3.70 = FLV 120 Replacement
3.46 = FLV 110 Replacement

Connection (Inlet & Outlet)

P = 1/4" NPTF
FSMM = 1/4" FS Male In - Male Out
FSFF = 1/4" FS Female In - Female Out
FSFM = 1/4" FS Female In - Male Out
FSMF = 1/4" FS Male In - Female Out
TS = 1/4" Welded Tube Stubs

* Includes: Hastelloy C-22® Compression member, poppet, spring and orifice.

Elgiloy® is a registered trademark of Elgiloy Company.
Hastelloy C-22® is a registered trademark of Haynes International, Inc.
Kel-F® is a registered trademark of 3M Company.

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