FLOWX3 F3.80 Oval Gear Flow Sensor

The oval gear flow sensors F3.80 has been designed following the main industrial application requirements: high mechanical resistance and reliable performances.
These sensors are suitable to measure a wide range of liquid viscosities with a very high accuracy and repeatability.
The sensors can be fixed to flexible or rigid pipes via ¼" GAS threaded process connections. The construction materials, ECTFE (Halar®) or PP or Stainless steel, provide high strength and chemical resistance.

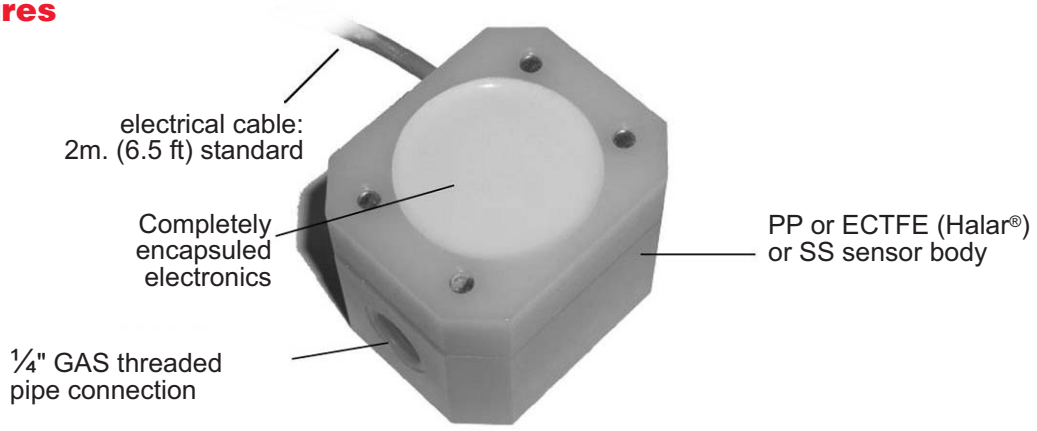
Main Features

- Compact dimensions.
- Easy installation.
- High chemical resistance.
- High viscosity fluids measurement.
- Low pressure loss.

Applications

- Chemical industry
- Laboratory plants
- Dosing systems
- Pulsating flows measurement
- High viscosity and not conductive fluid measurement
- Oil measurement

Technical Features



Operating Principle

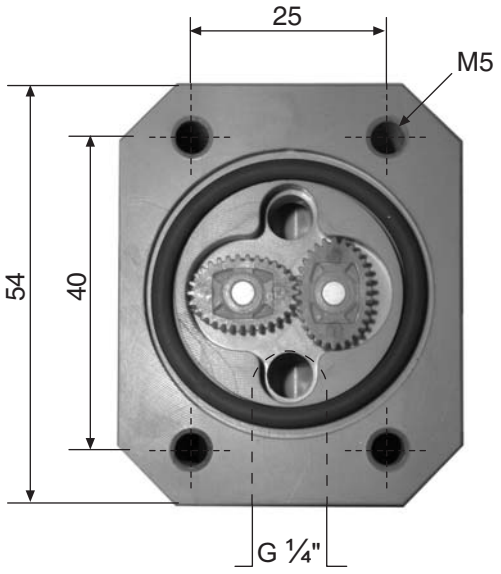
The sensor body contains two oval gears set into rotation by a flowing fluid. The two gears are meshed at 90° to define a fixed fluid volume pumped out every rotation.

Two permanent magnets are positioned into each gear and a Hall effect sensor detects the magnetic field generating a square wave signal output with frequency proportional to the number of fluid volumes pumped out.

Connections to FlowX3 Instruments

FLOWX3 Sensor	FLOW X3 Instruments					
	F9.00.L	F9.02.L	F9.03	F9.20	F9.50.L	F9.51.L
F3.81.H		■	■		■	■
F3.82.H		■	■		■	■

Dimensions



Installation Guidelines

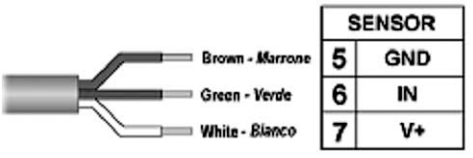
■ The sensor can be installed in any position, both horizontally or vertically, although horizontal flow is preferred. A non horizontal installation may cause a greater error in the lower part of the measurement range.

■ Install the sensor with the arrow pointing the direction of the flow.

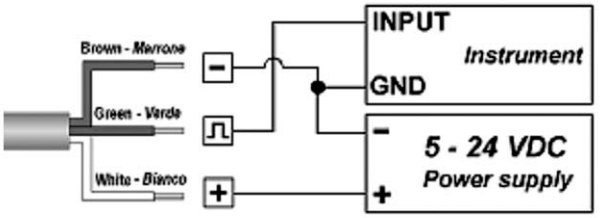
■ Always maximize distance between sensor and pump. Do not install the sensor immediately downstream of valves, elbows or any kind of obstacles: 150 mm of straight pipe are suggested before and after the sensor.

Wiring

F3.8X.H Oval Gear Sensor Connection to FLOWX3 Instruments



F3.8X.H Oval Gear Sensor Connection to Other Brand Instruments



Technical Data

General

■ Flow Rate Range:
- F3.81.H: 10 to 100 l/h (0.044 up to 0.44 gpm)
- F3.81.H: 25 to 150 l/h (0.11 up to 0.66 gpm).

■ Linearity: 1 % of full scale.

■ Repeatability: < 0,3% of full scale.

■ Working Temperature: -10°C to 60°C (14°F to 140°F).

■ Max. Fluid Viscosity : 1000 cP (mPas).

■ Working Pressure:
- PP body:
  6 bar (87 psi) @ 25°C (77°F)
  3 bar (44 psi) @ 60°C (140°F)
- ECTFE body:
  8 bar (116 psi) @ 25°C (77°F)
  5 bar (73 psi) @ 60°C (140°F)
- SS body:
  8 bar (116 psi) @ 60°C (140°F).

■ Enclosure: IP65.

■ Wetted Materials:
- PP version:
  Sensor Body: PP
  O-ring: FPM
  Gear: ECTFE (Halar)
  Shaft: zircone
- ECTFE version:
  Sensor Body: ECTFE (Halar)
  O-ring: FPM
  Gear: ECTFE (Halar)
  Shaft: zircone
- Stainless Steel:
  Sensor Body: SS AISI 316L
  O-ring: FPM
  Gear: ECTFE (Halar)
  Shaft: Stainless Steel.

■ Connections: ¼" GAS female.

■ Cable length: 2 m (6.5 ft) standard.

Standards & Approvals

■ Manufactured under ISO 9001 (Quality).

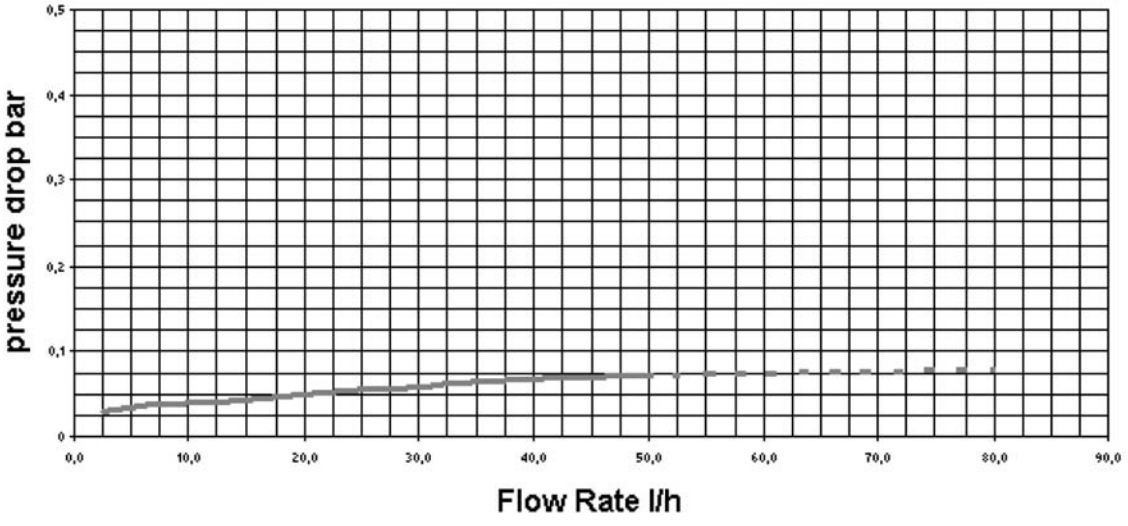
■ Manufactured under ISO 14001 (Environmental Management).

■ CE.

Specific for F3.81.H

■ Supply voltage: 5 to 24 VDC ±10%, regulated
■ Supply current: < 15 mA @ 24 VDC
■ Output signal: square wave Cmos (NPN / PNP)
■ K-factor = 5950 Pulses/Liter (22521 Pulses/U.S. Gallon)

Pressure drop

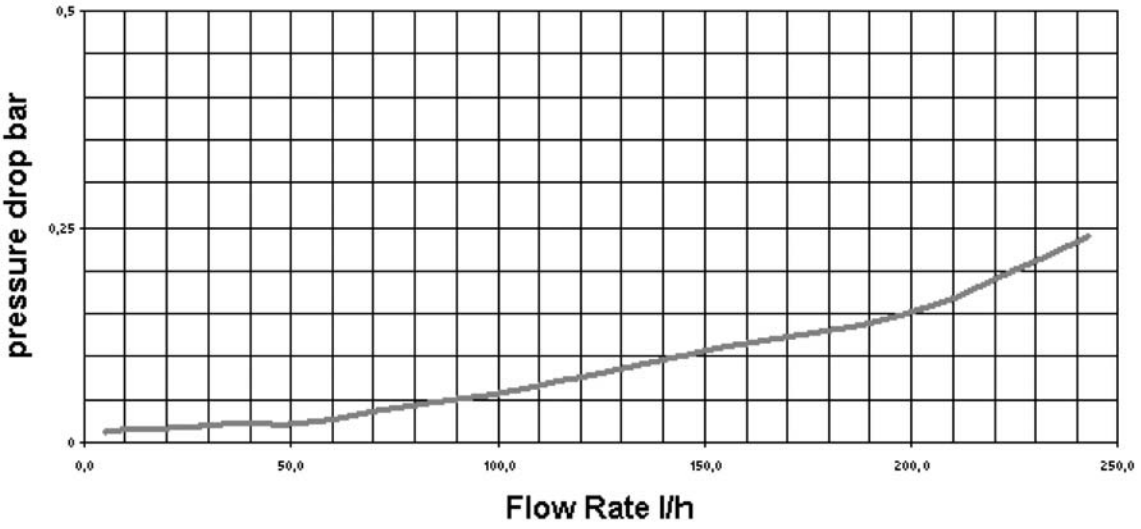


Technical Data

Specific for F3.82.H

- Supply voltage: 5 to 24 VDC ±10%, regulated
- Supply current: < 15 mA @ 24 VDC
- Output signal: square wave Cmos (NPN / PNP)
- K-factor = 3400 Pulses/Liter (12869 Pulses/U.S. Gallon)

Pressure drop



Ordering Data

FLOWX3 F3.8X.H.0X

Part No.	Material	Flow Rate Range
F3.81.H.01	PP / ECTFE gears	10 to 100 l/h (0.044 to 0.44 gpm)
F3.81.H.02	ECTFE / ECTFE gears	10 to 100 l/h (0.044 to 0.44 gpm)
F3.81.H.03	SS AISI 316L / ECTFE gears	10 to 100 l/h (0.044 to 0.44 gpm)
F3.82.H.01	PP / ECTFE gears	25 to 150 l/h (0.11 to 0.66 gpm)
F3.82.H.02	ECTFE / ECTFE gears	25 to 150 l/h (0.11 to 0.66 gpm)
F3.82.H.03	SS AISI 316L / ECTFE gears	25 to 150 l/h (0.11 to 0.66 gpm)