

# Type F3.80

## Oval Gear Flow Sensors



The Type F3.80 Oval Gear Flow Sensors are positive displacement flow meters suitable for high viscosity fluids up to 1,000 cP. Accuracy and repeatability is high.

Inside is a transducer and two oval gears oriented at 90 degrees to each other with embedded permanent magnets. A square wave output signal is generated with frequency proportional to rate of rotor rotation and flow velocity. This pulse output is normally fed to a FlowX3 flow monitor/transmitter or batch controller. It can also be fed to other brand instruments or PLC's.

	PP Version	ECTFE Version	SS Version
<b>Sensor Body:</b>	PP	ECTFE	316L SS
<b>Oval Gears:</b>	ECTFE	ECTFE	ECTFE
<b>Shaft:</b>	Zirconium	Zirconium	316L SS
<b>O-Ring:</b>	Viton®	Viton®	Viton®
<b>Connections:</b>	Inline 1/4" BSP female threaded		

### Flow Ranges:

F3.81.H Model: 10 to 100 l/h (0.044 to 0.44 gpm)

F3.82.H Model: 25 to 150 l/h (0.11 to 0.66 gpm)

### ■ Features

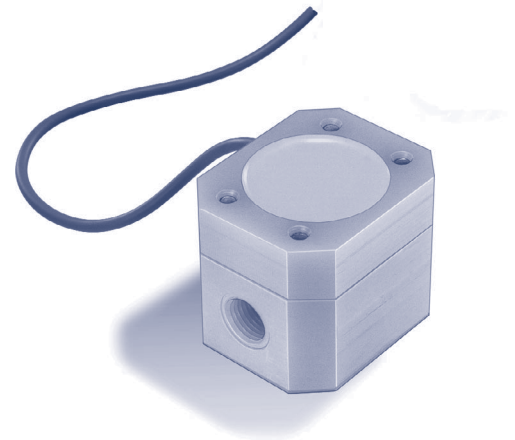
- High Accuracy and Repeatability
- Excellent choice for low flows of high viscosity fluids
- Suitable for pulsating flows

### ■ Connectable FlowX3 Instruments

Instrument Mounting	FlowX3 Instruments*
Panel or Wall	F9.01, F9.02, F9.03, F9.50, F9.51

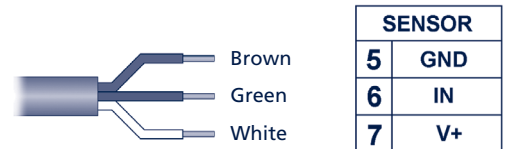
\* Supply voltage is normally fed from FlowX3 instruments.

Special versions with 4 to 20 mA output or alarm output available on request.

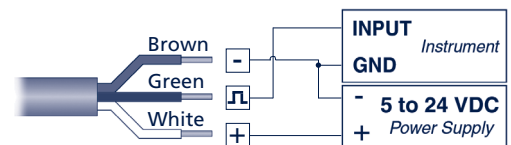


### ■ Wiring

#### F3.80 Sensor Connection to FlowX3 Instruments



#### F3.80 Sensor Connection to Other Brand Instruments



# Type F3.80

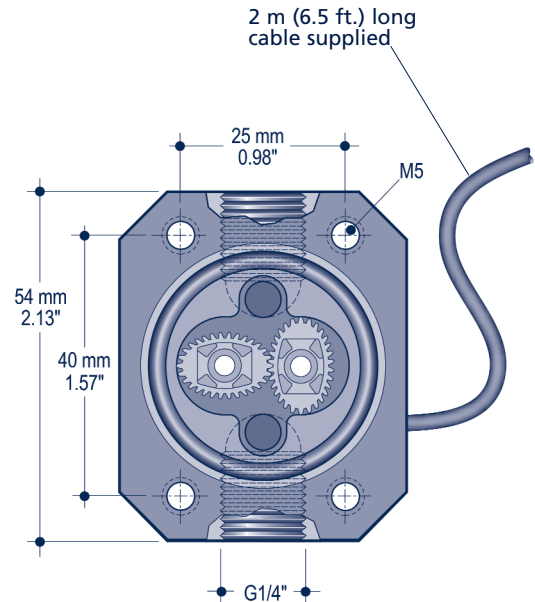
## Oval Gear Flow Sensors



### ■ Technical

<b>Supply Voltage*:</b>	5 to 24 VDC regulated
<b>Supply Current:</b>	< 15 mA @ 24 VDC
<b>Output Signal:</b>	Square wave (pulse)
<b>Electrical Class:</b>	NEMA 4, 4X (IP65)
<b>Accuracy:</b>	± 1% of reading value
<b>Repeatability:</b>	< ± 0.3% of reading value
<b>Max. Fluid Viscosity:</b>	1,000 centipoise
<b>Maximum % Solids:</b>	Clean services only, no solids recommended
<b>Working Temperature:</b>	-10 to 60°C (14 to 140°F)
<b>Maximum Working Pressure:</b>	
PP Body:	6 bar (87 psi) @ 25°C (77°F) 3 bar (43 psi) @ 60°C (140°F)
ECTFE Body:	8 bar (116 psi) @ 25°C (77°F) 5 bar (72 psi) @ 60°C (140°F)
SS Body:	8 bar (116 psi) @ 60°C (140°F)
<b>Cable:</b>	22 AWG, 3 conductors
<b>Max. Cable Length:</b>	Max. 300 m (984 ft.) recommended without signal conditioning

\* Supply voltage is normally fed from FlowX3 instruments.



### ■ Installation Guidelines

- The sensor can be installed in any position, horizontally or vertically, although horizontal is preferred. A non horizontal installation may cause a greater error in the lower flow measurement range.
- Install the sensor with the arrow pointing in the flow direction.
- Maximize the distance between sensor and pump. Do not install the sensor immediately downstream of valves, elbows or any obstacles. 15 cm (6") of straight pipe is suggested before and after the sensor.

### ■ Item Numbers

Electrical Class	Materials			Flow Rate		Item No.
	Body	Gears	O-Ring	l/hr	USGPM	
NEMA 4, 4X (IP65)	PP	ECTFE	Viton®	10 – 100	0.044 – 0.44	F3.81.H.01
				25 – 150	0.11 – 0.66	F3.82.H.01
	ECTFE	ECTFE	Viton®	10 – 100	0.044 – 0.44	F3.81.H.02
				25 – 150	0.11 – 0.66	F3.82.H.02
	316L SS	ECTFE	Viton®	10 – 100	0.044 – 0.44	F3.81.H.03
				25 – 150	0.11 – 0.66	F3.82.H.03