

Hedland® Flow Transmitters

For Liquids / Air and Other Compressed Gases

- Full line of multi-functional remote flow indicators and transmitters
- Operate as part of a totally integrated electronic process control/data acquisition system
- Transmitter provides visual indication and electronic interface
- Provides 3 factory-calibrated proportional analog outputs: 4-20 mA, 0-5 Vdc and 0-10 Vdc
- Exceeds US and meets European standards for conducted and radiated emissions
- Available from 1/4" to 1-1/2" sizes in Aluminum, Brass and Stainless
- Installs in any position
- Easy to Read Linear Scale
- No Flow Straighteners or Special Piping Requirements
- Insensitive to Shock and Vibration
- Special Scales Available



SPECIFICATIONS:

MATERIALS:

2024 - T351 Anodized aluminum body, piston and cone

C360 Brass body, piston and cone

T303 Stainless body, 2024 - T351 Anodized aluminum piston and cone (Petroleum-based meters)

T303 Stainless body, C360 Brass piston and cone (Water meters)

T316 Stainless body, piston and cone

PETROLEUM (Oil) COMMON PARTS:

Spider Plate: T316 SS

Spring: T302 SS

Fasteners: T303 SS

Pressure Seals: Viton®

Guard: Polycarbonate

Retaining Ring: SAE 1070/1090 Carbon Steel

Retaining Spring: SAE 1070/1090 Carbon Steel

Indicator and Internal Magnet: PPS / Ceramic

Guard Seal: Urethane cellular foam

Scale Support: 6063 - T6 Aluminum

PHOSPHATE ESTER (PE) COMMON PARTS:

Spider Plate: T316 SS

Spring: T302 SS

Fasteners: T303 SS

Pressure Seals: EPR

Guard: Polycarbonate

Retaining Ring: SAE 1070/1090 Carbon Steel

Retaining Spring: SAE 1070/1090 Carbon Steel

Indicator and Internal Magnet: PPS / Ceramic

Guard Seal: Urethane cellular foam

Scale Support: 6063 - T6 Aluminum

WATER-BASED (WBF), WATER, AIR COMMON PARTS:

Spider Plate: T316 SS

Spring: T302 SS

Fasteners: T303 SS

Pressure Seals: Viton®

Guard: Polycarbonate

Retaining Ring: T316 SS

Retaining Spring: T316 SS

Indicator and Internal Magnet: PPS / Ceramic

Guard Seal: Urethane cellular foam

Scale Support: 6063 - T6 Aluminum

API OIL / AIR / CAUSTIC and CORROSIVE LIQUIDS and GASES:

Spider Plate: T316 SS

Spring: T316 SS

Fasteners: T316 SS

Pressure Seals: Viton®

Guard: Polycarbonate

Retaining Ring: T316 SS

Retaining Spring: T316 SS

Indicator and Internal Magnet: PPS / Ceramic

Guard Seal: Urethane cellular foam

Scale Support: 6063 - T6 Aluminum

THREADS: SAE J1926/1, NPTF ANSI B2.2, BSPP ISO1179

TEMPERATURE RANGE: -20 to 240°F (-29 to 116°C)

PRESSURE RATING:

Aluminum / Brass Operating:

Liquids - 3,500 psi/241 bar max. with a 3:1 safety factor.

Gases - 1,000 psi/69 bar max. with a 10:1 safety factor.

Fatigue Rating: per NFPA T2.6.1R1-1991, (for details see page 7)

Stainless Steel Operating:

Liquids - 6,000 psi/414 bar max. with a 3:1 safety factor.

Gases - 1,500 psi/103 bar max. with a 10:1 safety factor.

Fatigue Rating: per NFPA T2.6.1R1-1991, (for details see page 7)

ACCURACY: ± 2% of full scale reading

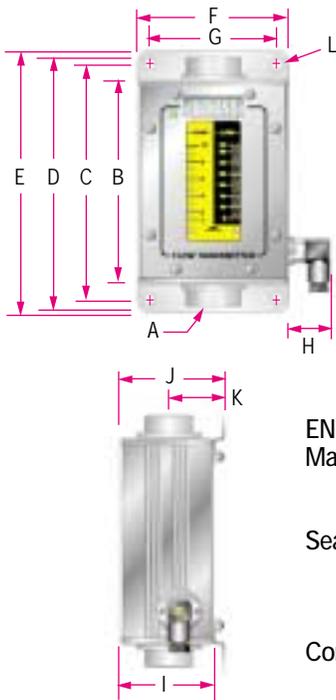
REPEATABILITY: ± 1%

PRESSURE DROP REFERENCE TABLE:

	FLUID TYPE							
	Oil	PE	WBF	Water	API Oil	Caustic & Corrosive Liquids	Air/Caustic & Corrosive Gases	Air
50% / 100% Pressure Drop	p. 10	p. 16	p. 22	p. 28	p. 32	p. 32	p. 34	p. 36
Pressure Drop Chart	p. 51	p. 52	p. 53	p. 54	p. 55	p. 54	p. 55	p. 56

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DIMENSIONS:

A	B	C	D	E	F	G	H	I	J	K	L
NOMINAL PORT SIZE	LENGTH in (mm)	LENGTH in (mm)	LENGTH in (mm)	LENGTH in (mm)	WIDTH in (mm)	WIDTH in (mm)	LENGTH in (mm)	DEPTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	HOLE DIA. in (mm)
1/4 (SAE 6)	5.41 (138)	6.41 (163)	6.58 (167)	7.11 (181)	3.93 (100)	3.23 (82)	1.08 (27)	2.38 (61)	2.94 (75)	1.70 (43)	.28 (7)
1/2 (SAE10)	5.41 (138)	6.41 (163)	6.58 (167)	7.11 (181)	3.93 (100)	3.23 (82)	1.08 (27)	2.38 (61)	2.94 (75)	1.70 (43)	.28 (7)
3/4 (SAE 12)	6.04 (154)	7.04 (179)	7.19 (183)	7.74 (197)	4.30 (109)	3.60 (92)	1.08 (27)	2.77 (70)	3.33 (85)	1.90 (48)	.28 (7)
1 (SAE 16)	6.04 (154)	7.04 (179)	7.19 (183)	7.74 (197)	4.30 (109)	3.60 (92)	1.08 (27)	2.77 (70)	3.33 (85)	1.90 (48)	.28 (7)
1-1/4 (SAE 20)	10.65 (271)	11.65 (296)	12.18 (310)	12.35 (314)	5.54 (141)	4.84 (123)	1.08 (27)	4.90 (102)	4.56 (116)	2.40 (61)	.28 (7)
1-1/2 (SAE 24)	10.65 (271)	11.65 (296)	12.18 (310)	12.35 (314)	5.54 (141)	4.84 (123)	1.08 (27)	4.90 (102)	4.56 (116)	2.40 (61)	.28 (7)

ENCLOSURE:

- Material:** Anodized aluminum with polycarbonate lens/cover (nylon lens/cover with Phosphate Ester).
Seals: Urethane cellular foam gasket between enclosure and lens/cover. Viton O-rings between enclosure and flow meter body.
Connection: 4-pin water-tight connection (standard). Other connections are available – consult factory for details.
Fasteners: T303 SS
Rating: NEMA 12 & 13 (IP65)
Approvals: CE Certification – Heavy Industrial (optional)
 EMC Emissions to EN 50081-2
 EMC Immunity to EN 50082-2

ELECTRONIC SPECIFICATIONS:

Power Requirement:	7-28 Vdc @ 4-20 mA (0.6W max.)
Circuit Protection:	Reverse polarity & current limit
Repeatability:	±0.05%
Non-linearity:	±0.05%
Sensitivity:	Infinite
Response Time:	0.1 seconds
Temperature Drift:	0.05% of span per °C maximum
Analog Outputs:	4-20 mA into 1000 ohms maximum 0-5 Vdc into 10K ohms minimum 0-10 Vdc into 10K ohms minimum
Controls:	OFFSET (4 mA) and SPAN (20 mA, 5 V and 10 V) factory calibrated
User Connections:	15-foot pig-tail (standard)
Transmission Distance:	4-20 mA limited by cable resistance 0-5 Vdc 1000-foot maximum 0-10 Vdc 1000-foot maximum

ELECTRICAL CIRCUITRY:

All Hedland flow sensors (1/4 to 1-1/2 inch series) are designed to convert fluid flow rate to proportional analog output signals of 4-20 mA, 0-5 Vdc, and 0-10 Vdc. The sensor is "loop powered" and inherently isolated, it operates on 4-20 mA current. A DC power source must be used to provide the necessary excitation to the product (see figure 1 & 2). The three (3) standard field selectable outputs (see figure 1) are designed to interface with virtually all analog process control devices. The flow sensor is supplied with 15 feet of shielded 4-wire #22 AWG type PVC jacketed cable, color coded as follows: Optional 25 ft., 50 ft., 75 ft. and 100 ft. cables are available – consult factory for details.

Figure 1

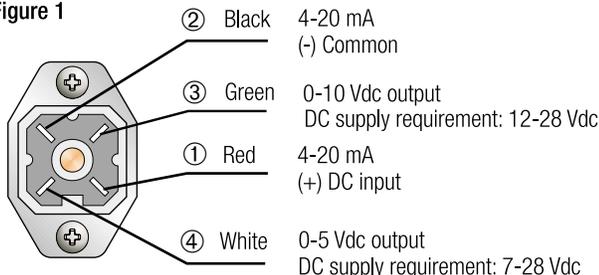


Figure 2 Load Limitations 4-20 mA Output Only

