

High Pressure Liquid or Gas Turbine Flowmeter Series 1" to 3"

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The **INVALCO 1" - 3" High Pressure Liquid or Gas Turbine Flow Meter** is a unique one-piece cartridge design which enables replacement of turbine meter internals with minimal downtime. The rotor assembly rotates on ball bearings and is supported by a fixed shaft design. The meter was designed to operate within pressures from vacuum to 15000 psi. Replacement cartridges are fully calibrated and are ready for installation with no special tools required. By simply removing the union seal and the slide in cartridge retainer, the internals slide out of the body.

INVALCO's ball bearing cartridges utilize sealed pre-lubricated bearings that will provide excellent resistance to impurities in the gas increasing the service life of the bearings.



Features and Benefits

- One Piece Cartridge Design allows easy field exchange of calibrated internals from female side of body. No special tools required.
- 4340 Body 100ksi minimum yield construction with longitudinal and transverse impact requirements at -20°F, standard.
- WECO® 1502 ended nut, segments and seals are standard.
- Field replaceable calibrated internals. » Patented Design.

Options

- Extended temperature range from -40°F to 250°F available.
- Other temperatures available (Consult factory for details).

Specifications

Linearity

±1.0%

Repeatability

±0.25%

Maximum Overrange

125% of flow range for intermittent periods

Frequency Output

100 to 1100 Hz

Voltage Output

Approximately 100 mV A100 Hz to 1.5 V (RVS) @ 1,000 Hz

Pressure Drop

0.5 to 0.75 psi at 100% of full range.

Pressure Rating - PSI (kPa) (602,1002,1502)

1" - 3" 1502 Ended TFM15,000(103,000)

Installation

Vertical or horizontal (any direction)

Materials of Construction

Body: 4340 100ksi yield -20°F

Rotor: CD4MCu

Rotor Shaft: 316 Stainless Steel

Bearing: 316SS shielded 440SS balls and races

Supports: 316SS

Cartridge retainer: 8620 for improved wear.

Temperature Range

-20°F through 250°F

Specifications (continued)

Pickup Coil (Order Separately)

DC Resistance: 975Ω

Inductance: 400 mH

Mating Connector: 10SL-4S or Wire Leads

Preamplifier Magnetic Pickup (Order Separately)

Housing: Stainless steel

Power Requirements

Supply voltage: +4.5 to 28Vdc

Current: ≤ 5mA @ 12 Vdc

Output Signal

Square wave

0 to supply voltage, 5 Hz to 12 kHz

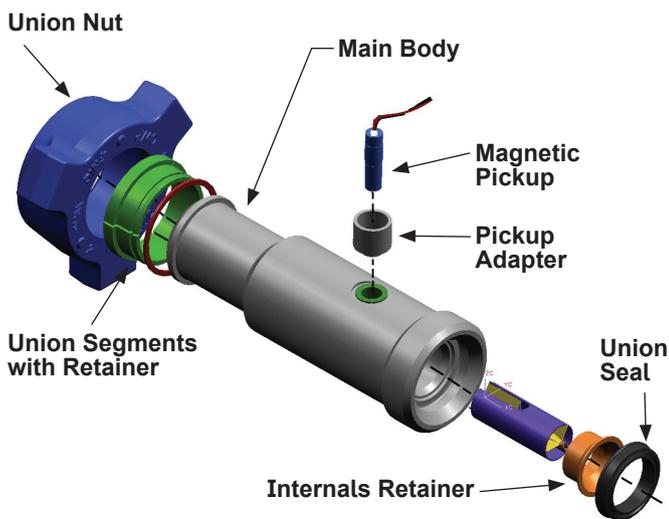
30% to 70% Duty cycle

NPN with 10Kw pull-up to supply voltage

Mating Connector

10SL-3P or Wire Leads

Typical Applications



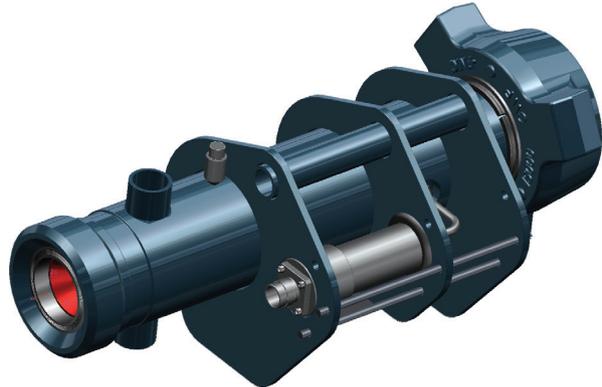
Typical Union Ends

1" uses 2" union ends

1-1/2" uses 2" union ends

2" uses 2" union ends

3" uses 3" union ends



Gas Capacity Table

Size - Inches	Linear Gas Flow Range			Nominal K-Factor	
	ACFM	ACFH	AM3H	P/ACF	P/M3
1"	1.1 - 22.0	66.0 - 1320	1.9 - 37.4	6200	221429
1-1/2"	3.0 - 80.0	180 - 3600	5.0 - 102.0	2500	89286
2"	4.5 - 90.0	270 - 5400	7.6 - 152.9	1500	53571

Liquid Capacity Table

Size - Inches	Flow Range		Nominal K-Factor		
	Gallons Per Minute	Liters Per Minute	P/GAL	P/L	P/BBL
1"	4.5 - 90	180 - 3,600	953	252	40,026
1-1/2"	13 - 260	270 - 5,400	341	90	14,332
2"	20 - 400	75.7 - 1,514	185	49	7,770

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.