

NUFLO™

Gas Turbine Flowmeters

Accurate Gas Flow Measurement

The NuFlo™ Gas Turbine Flowmeter introduces a new concept in accurate gas flow measurement. It features a transducer that utilizes a lightweight, low inertia rotor to sense gas velocity. It offers an output frequency that has a linear relationship to gas velocity over a wide flow range.

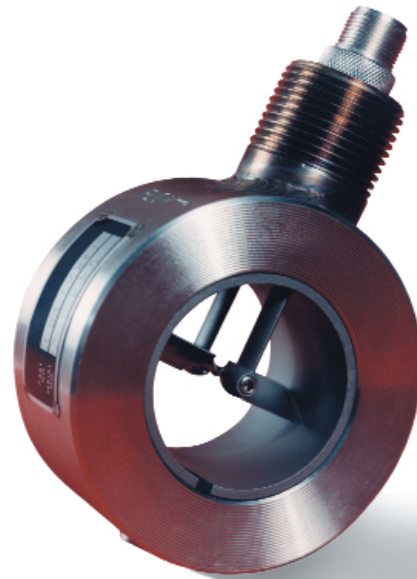
The meter tracks the flow rate continuously, offers little resistance to flow and has a unique cartridge design that allows removal of all internal parts as one assembly.

The meter exhibits little sensitivity to gas density above two atmospheres pressure. The low inertia of the rotor and vee bearings allows overranging of the meter to twice its rated capacity without damage for intermittent flow variations.

Designed for maximum life, carbide rotor shaft and bearings require no lubrication. The cartridge assembly makes replacement and inspection of parts easy. The meter is designed for installation between two flanges. The digital pulse output generated by the Gas Turbine Flowmeter can be fed to companion readout devices capable of providing direct measurement of flow rate and accumulated throughput. These measurements can be automatically pressure-and/or temperature-compensated to obtain volumetric measurements in standard units.

Specifications

- Size: 2-in. (50.8 mm)
- Flow Range: 10:1 to 15:1 (see graph)
- End Connections: Flowmeter installs between two raised face flanges
- Working Pressure: 0 to 2220 psig (15,306 kPa)
- Test Pressure: 3330 psig (22,960 kPa)
- Nominal Calibration Factor
 - Low Range: 325 p/ACF (16600 p/m³)
 - Standard Range: 125 p/ACF (4415 p/m³)
 - High Range: 70 p/ACF (2472 p/m³)
- Output Frequency: 5 to 320 Hz over rated range
- Output Voltage: 30 mV peak to peak at 5 Hz, 900 mV peak to peak at 320 Hz
- Pressure Drop: Less than 1-in. (24.5 mm) water column at maximum rated flow
- Linearity: +/- 2% of reading
- Repeatability: +/- 0.5% of reading
- Temperature: 0° to 225°F (-18° to 107°C)
- Pickup Connector: Mates with AN3106A-10SL-4P
- Conduit Connection: 1-in. (25.4 mm)
- Pressure Tap: 1/8-in. NPT (3.2 mm)
- Compliances: CSA Certified Hazardous locations Class I, Group A, B, C, D, Div. 1
- Body materials comply with recommendations of NACE MR01-75



Features

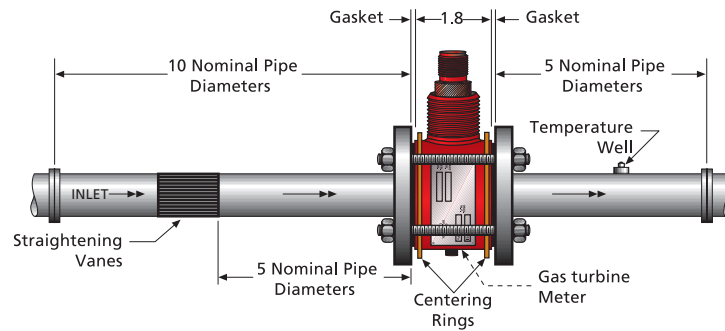
- Single gas turbine flowmeter handles wide range of flow rates
- Rugged carbide bearing design eliminates need for lubrication and withstands difficult service conditions
- Low inertia rotor design provides quick response to flow rate changes
- Two-bladed rotor offers large unobstructed flow area
- Electrical output signal adapts readily to a variety of readout devices
- Easily serviced – low cost precalibrated replacement turbine cartridge available

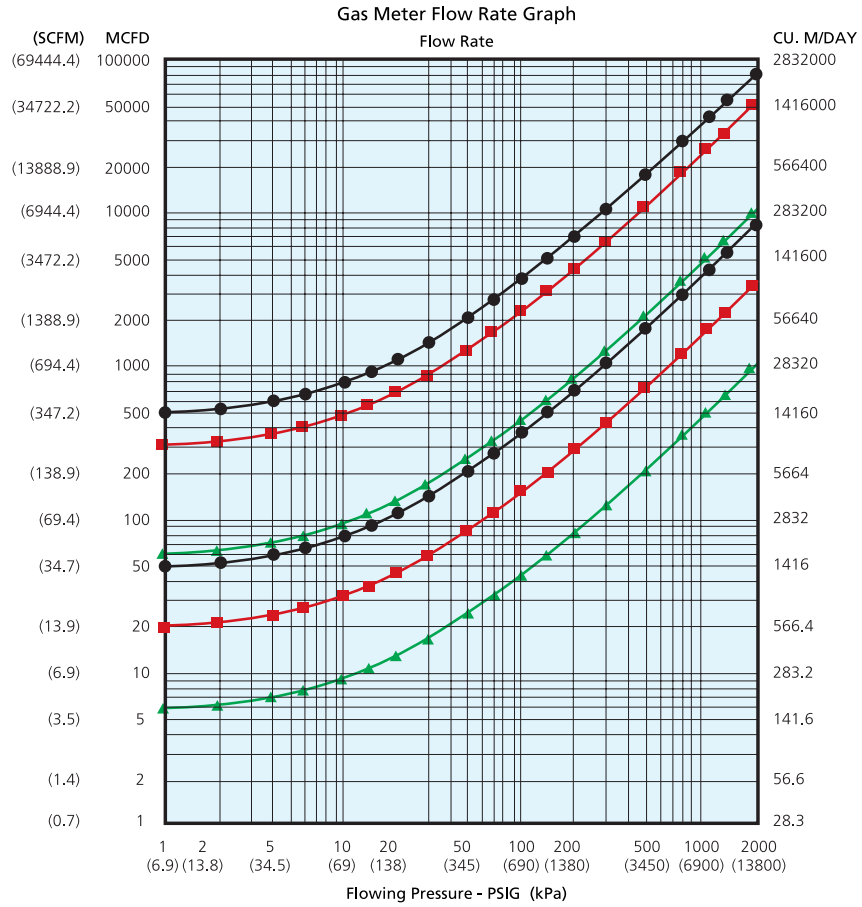
Materials of Construction

- Body and Cartridge: Grade 316L stainless steel
- Bearing Mounts: Grade 304 stainless steel
- Bearings: Tungsten Carbide
- Rotor: Grade 455 stainless steel
- Rotor Shaft: Tungsten Carbide
- Pickup Extender: Grade 430 stainless steel

- Set Screws: Grade 304 stainless steel
- Pressure Port Plug: Grade 304 stainless steel
- Flow Straightener
 - Tube Bundle (optional): Grade 321 stainless steel, carbon steel, or Grade 316 stainless steel
- Gas Turbine Flowmeter
 - Size: 2-in. (50.8mm)
 - Rotor: Two Bladed
 - Bearings: Tungsten Carbide, vee type
- Accessories (optional)
 - Through bolts and centering rings (specify flange rating)
 - Stainless steel tube bundle, Grade 321
 - Upstream flow section, 2-in. (50.8mm) standard weight pipe with flange one end (specify rating), other end beveled for welding, carbon steel, with Grade 321 stainless steel tube bundle
 - Mating connector for pickup

Installation Diagram





- High Range
- Standard Range
- ▲ Low Range

Flow rates are at standard conditions of 14.73 psia and 60°F and are based on 100% methane gas @ 0.6 s.g.

To determine the capacity for other gases use:

$$Q(g) = Q(0.6) \sqrt{\frac{0.6}{G}}$$

where:
 Q(0.6) = flow rate on graph
 G = Sp. Gr. of other gas
 Q(g) = flow rate for other gas

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