

# DigitalFlow™ XGM868i

## Panometrics Gas Flow Ultrasonic Transmitter

### Applications

The DigitalFlow XGM868i gas flow transmitter is a complete ultrasonic flow metering system for measurement of most gases including:

- Hydrocarbon gases
- Vent gases
- Biogases
- Digester gases
- Fuel gases
- Waste gases
- Incinerator air flow
- Vapor recovery
- Stack gases
- Other gases



### Features

- Economical flow measurement in a compact transmitter
- No moving parts
- No pressure drop
- Wide rangeability with 1500 to 1 turndown ratio
- Non-obstructive flow measurement
- Tolerance to dirty streams
- Low maintenance
- Suitable for high temperatures
- Two-path measurement available for maximum accuracy



The DigitalFlow XGM868i gas ultrasonic flow transmitter is designed to measure the flow rate of virtually any gas. The DigitalFlow XGM868i flow transmitter offers a unique combination of rangeability, ease of installation, low maintenance and accuracy in a low-cost transmitter. The state-of-the-art XGM868i shares the many advantages offered by the other products in the GE line of innovative ultrasonic flowmeters. The all-digital XGM868i creates no pressure drop; has no moving parts or parts that foul or collect debris; seldom requires maintenance; and provides reliable, drift-free operation.

The flow rate can be displayed locally or transmitted to a remote system via an analog or digital communications link.

## Compact Housing

All of the DigitalFlow XGM868i's electronic components are housed in a compact transmitter package that can be installed right at the flow measurement point. This greatly simplifies wiring of the transducers and results in trouble-free operation.

## Dual-Channel Model

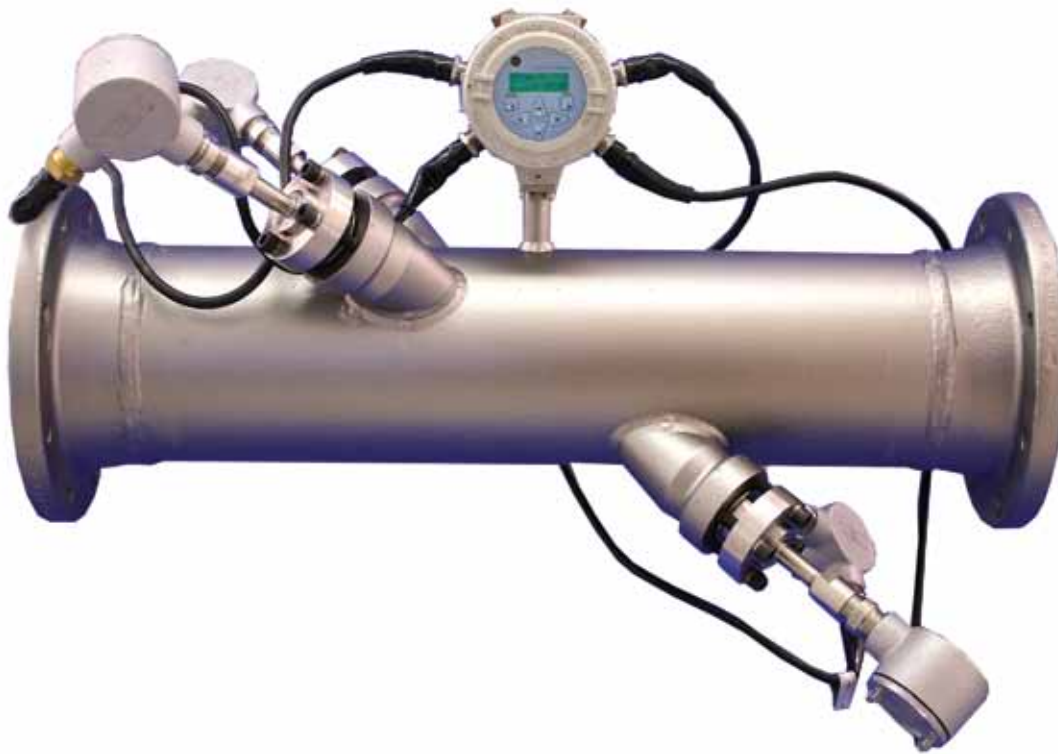
In addition to the standard single-channel model, an optional two-channel model provides enhanced accuracy when measuring two paths on a single pipe. It can also be used to measure a single path on two pipes.

## Low Operational Costs

Because the DigitalFlow XGM868i installation produces no flow obstruction, the energy-robbing pressure drops and high maintenance requirements characteristic of other flowmeters are eliminated. The special sealed metal transducers supplied with a DigitalFlow XGM868i system are immune to the erosion and stress caused by thermal expansion cycles.

## Works Under Wide Range of Flow Conditions

Unlike limited conventional flowmeters, the DigitalFlow XGM868i transmitter can be used over a wide range of flow rates with any gas at pressures up to 3,480 psig (240 bar). Turndown ratio is 1500 to 1.



# XGM868i Specifications

## Operation and Performance

### Fluid Types

Acoustically conductive gases

### Pipe Sizes

2 to 120 in. NB (50 to 3,000 mm) and larger

### Pipe Materials

All metals. Consult GE for other materials.

### Flow Accuracy (Velocity)

+/-1.5% Typical two path meter

+/-2.0% Typical one path meter

*Accuracy depends on pipe size and whether measurement is one-path or two-path. Accuracy to  $\pm 0.5\%$  of reading may be achievable with process calibration.*

### Repeatability

$\pm 0.2\%$  to  $0.5\%$  of reading

### Range (Bidirectional)

-150 ft/s to 150 ft/s (-46 m/s to 46 m/s)

### Rangeability (Overall)

1500:1

*Specifications assume a fully developed flow profile (typically 20 diameters upstream and 10 diameters downstream of straight pipe run) and flow velocity greater than 3 ft/s (1 m/s).*

### Measurement Parameters

Mass flow, standard and actual flow, totalized flow, and flow velocity

## Electronics

### Flow Measurement

Transit time

### Enclosures

- Standard: Epoxy-coated aluminum Type 4X/IP66 Class I, Division 1, Groups B,C&D  
Flameproof ISseP 02ATEX008  
II 2 GD EEx d IIC T5 IP66 T95°C
- Optional: Stainless steel

### Dimensions (h x d)

Standard: Size 8.2 in x 6.6 in (208 mm x 168 mm), weight 10 lb (4.5 kg)

### Channels

- Standard: One channel
- Optional: Two channels (for two pipes or two-path averaging)

### Display

Optional: 2 line x 16 character backlit LCD display, configurable to display up to four measurement parameters in sequence

### Keypad

Built-in six-button keypad for full functionality operation

### Power Supplies

- Standard: 90-260 VAC
- Optional: 12 to 28 VDC,  $\pm 5\%$

### Power Consumption

20 W maximum

### Operating Temperature

-40°F to 140°F (-40°C to 60°C)

### Storage Temperature

-67°F to 167°F (-55°C to 75°C)

### Standard Inputs/Outputs

Two 0/4 to 20 mA isolated outputs, 600  $\Omega$  maximum load  
Namur NE043 compliant

### Optional Inputs/Outputs

All analog and digital I/O are available in specific combinations. Consult GE for available option cards.

- Two additional 0/4 to 20 mA isolated outputs, 1000  $\Omega$  maximum load
- Two 4 to 20 mA isolated inputs, 24 VDC loop power
- Two or four isolated, three-wire RTD (temperature) inputs, -148°F to 662°F (-100°C to 350°C), 100  $\Omega$  platinum
- Two or four pulse or frequency outputs, optically isolated, 3 A maximum, 100 VDC maximum, 1 W maximum, from DC to 10 KHz maximum
- Alarm relays:
  - Two or four Form C relays;  
120 VAC, 28 VDC maximum, 5 A maximum;  
DC 30 W maximum, AC 60 VA maximum

### Digital Interfaces

- Standard: RS232
- Optional: RS485 (multiuser)
- Optional: Modbus<sup>®</sup> RS485 or TCP protocol
- Optional: Ethernet
- Optional: OPC server
- Optional: Foundation Fieldbus<sup>®</sup>

## Data Logging

- Standard: None
- Optional: Memory capacity (linear and/or circular type) to log over 150,000 flow data points

## European Compliance

System complies with EMC Directive 89/336/EEC, 73/23/EEC LVD (Installation Category II, Pollution Degree 2) and transducers comply with PED 97/23/EC for DN<25

## Wetted Ultrasonic Flow Transducers

### Temperature Range

- Standard: -58°F to 302°F (-50°C to 150°C)
- Optional (overall): -310°F to 842°F (-190°C to 450°C)

### Pressure Range

- Standard: 0 psig to 2700 psig (1 bar to 187 bar)
- Optional: 3480 psig (240 bar) maximum

### Materials

- Standard: Titanium
- Optional: Monel® or Hastelloy® alloys

### Process Connections

Flanged and compression fittings

## Mountings

Flowcell or cold tap

## Area Classifications

- Standard: General purpose
- Optional: Weatherproof Type 4X/IP66
- Optional: Explosion-proof Class I, Division 1, Groups B,C,&D
- Optional: Flameproof ⓂII 2 GD EEx d IIC T6

*Transducers and flowcells for specific applications are available. Consult GE for details.*

## Transducer Cables

- Standard: One pair of coaxial cables, type RG62 AU, or as specified for transducer type
- Optional: Lengths up to 1000 ft (330 m) maximum

## High-Temperature and High-Pressure Ultrasonic Flow Transducers

Bundle Waveguide Technology™ (BWT) System transducer and holder (see BWT System specifications) are available.



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