

Applications

The DigitalFlow GM868 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

- Full-featured flowmeter package
- Transducer removable under line pressure
- No moving parts
- No pressure drop
- Wide rangeability with 150 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

DigitalFlow™ GM868

Panametrics General Purpose Gas Ultrasonic Flowmeter

DigitalFlow GM868 is a Panametrics product. Panametrics has joined other GE high-technology sensing businesses under a new name—GE Industrial, Sensing.



GE Sensing

Panametrics Ultrasonic General Purpose Gas Flowmeter

The DigitalFlow GM868 flowmeter uses the patented Correlation Transit-Time™ method of ultrasonic flow measurement to provide accurate, drift-free measurements, without impeding or obstructing the flow.

Wide Range of Pipe Sizes and Flow Conditions

With its broad range of measurement velocities, and its ability to measure flow in any pipe from small to very large, one DigitalFlow GM868 meter does the job of several conventional meters. It handles pipes from 1 to 120 inches in diameter (2.5 cm to 3 m), and velocities from 0.1 to 150 ft/s (0.03 to 46 m/s)—in either direction, in steady or pulsating flow.

For maximum accuracy, use a two-channel meter to measure along two different paths at the same location. A two-channel meter can also measure the flow in two separate pipes or at two different places in the same pipe.

No Pressure Drop, Low Maintenance

Since the DigitalFlow GM868's transducers do not obstruct the flow, they generally do not cause any pressure drop as other types of flowmeters do. The DigitalFlow GM868 has no parts that foul or collect debris, and no moving parts to wear out. As a result, it requires no lubrication, cleaning or other routine maintenance.

Digital and Analog Output Options

The DigitalFlow GM868 flowmeter makes it easy to send the data where it needs to go, through the standard digital output, standard or optional analog outputs or optional alarms. All outputs are conveniently set up and calibrated from the keypad or from a computer using the PanaView program.

GM868 Specifications

Operation and Performance

Fluid Types

All acoustically conductive gases

Pipe Sizes

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

Pipe Materials

All metals. Consult GE for other materials.

Flow Accuracy (Velocity)

±1% to 2% of reading typical

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

Repeatability

±0.2% to 0.5% of reading

Range (Bidirectional)

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

Rangeability (Overall)

150:1

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 volumetric flow, totalized flow, and flow velocity

Electronics

Flow Measurement

Patented Correlation Transit-Time mode

Enclosures

- Standard: Epoxy-coated aluminum weatherproof Type 4X/IP66 Class I, Division 2, Groups A,B,C&D
- Optional: Stainless steel, fiberglass, explosion-proof, flameproof

Dimensions

Standard: Weight 11 lb (5 kg), size (h x w x d) 14.24 in x 11.4 in x 5.12 in (362 mm x 290 mm x 130 mm)

Channels

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

Display

Two independent software-configurable 64 x 128 pixel backlit LCD graphic displays

Keypad

39-key membrane keypad

Power Supplies

- Standard: 100 to 130 VAC, 50/60 Hz or 200 to 265 VAC, 50/60 Hz
- Optional: 12 to 28 VDC, ±5%

Power Consumption

20W maximum

Operating Temperature

-4° to 131°F (-20° to 55°C)

Storage Temperature

-67° to 167°F (-55° to 75°C)

Standard Inputs/Outputs

Two 0/4 to 20 mA isolated outputs, 550 Ω maximum load

Optional Inputs/Outputs

There are six additional slots available for any combination of the following I/O boards:

- Analog outputs: Select up to three additional output boards, each with four isolated 0/4 to 20 mA outputs, 1kΩ maximum load

GM868 Specifications

- Analog inputs: Select up to three boards of one of the following types:
 - Analog input board with two isolated 4 to 20 mA inputs and 24V loop power
 - RTD input board with two isolated, three-wire, RTD inputs; span -100° to 350°C (-148° to 662°F); $100\ \Omega$
- Totalizer/frequency outputs: Select up to three totalizer/frequency output boards, each with four outputs per board, 10 kHz maximum
- Alarm relays: Select up to two boards of one of the following types:
 - General purpose: Relay board with three Form C relays
 - Hermetically sealed: Relay board with three hermetically sealed Form C relays

Digital Interfaces

- Standard: RS232
- Optional: RS485 (multiuser)
- Optional: Modbus® RS485 or TCP protocol
- Optional: Ethernet
- Optional: OPC server
- Optional: Foundation fieldbus

Data Logging

Memory capacity (linear and/or circular type) to log over 43,000 flow data points

Display Functions

- Graphic display shows flow in numerical or graphic format
- Displays logged data and diagnostics

European Compliance

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

Wetted Ultrasonic Flow Transducers

Temperature Ranges

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

Pressure Ranges

- Standard: 0 to 2,700 psig (1 to 187 bar)
- Optional: 3480 psig (240 bar) maximum

Transducer Materials

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

Process Connections

Flanged and compression fittings

Mountings

Flanged flowcell or cold tap

Area Classifications

- Standard: General purpose
- Optional: Weatherproof Type 4X/IP66
- Optional: Explosion-proof Class I, Division 2, ATEX

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

Transducer Cables

One pair of RG62 AU coaxial cables, 1000 ft (330 m)

High-Temperature and High-Pressure Ultrasonic Flow Transducers

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

Pressure and temperature transducers available on request.



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