FGM 160 FIELD COMPUTER

THE HEART OF OUR MEASUREMENT SOLUTIONS

PRODUCT INFORMATION

The FGM 160 Field Computer is the core of Fluenta's measurement solutions, delivering precise, reliable performance across varying flow conditions.

Certified for Zone 1 hazardous areas (Ex de [ia] II C T6), it offers multiple data outputs, including up to six 4-20 mA analogue channels, RS 422/485 serial communication via Modbus, and options for HART, pulse, frequency, or Foundation Fieldbus signals.

Built to withstand extreme conditions with IP66 ingress protection, the FGM 160 can be configured for specific gas compositions and works with various transducers to provide accurate mass-flow data.

FGM 160 OPERATING PRINCIPLE

The FGM 160 Field Computer uses ultrasonic time-of-flight technology, the industry standard for flare gas measurement.

It calculates flow velocity by measuring the transit time of ultrasonic sound waves through the gas. This method ensures accurate readings, even as gas compositions, temperatures, or flow speeds change.

Fluenta's technology is validated by leading laboratories, including CEESI, VSL, and IPT, ensuring reliable performance in complex industrial environments.

Suitable Applications

- Flare and vent gas measurement
- Leak detection and loss calculation
- Biogas and digester gas monitoring
- Emissions control compliance

Advantages

- **Wide Velocity Range:** measures from 0.03 to 120 m/s | 0.1 to 394 ft/s.
- **High Accuracy:** up to ±0.75% with multi-point calibration.
- **Fast Response:** 4000:1 turn-down ratio for wide rangeability.
- **Low maintenance:** no routine servicing required.
- **Hazardous Area Certified:** safe for Zone 1 operations.

CEESI ipt VSL

KEY FEATURES AND CAPABILITIES

Wide Range of Flow Conditions

Measures flow from 0.03 to 120 m/s (0.1 to 394 ft/s) in pipe diameters from 6” to 72”. Consistent accuracy is maintained across both low and high-flow conditions without signal loss.

Built for Flare Gas Environments

- Intrinsically safe, with electronics housed in an Ex-d flame-proof enclosure and Ex-e connection housing, ensuring safe operation in Zone 1 hazardous areas.
- Space-efficient design allows mounting on Fluenta frames or custom setups. A clear display provides key flow metrics for easy monitoring.

Installation and Maintenance

- Configured to fit specific applications, supporting various gas compositions, transducer setups, and custom DSP waveforms to enhance precision. Supports k-Factor and transducer offset calculations.
- Low maintenance, with no moving parts, minimizing wear and ensuring long-term reliability with reduced servicing needs.

PRODUCT SPECIFICATIONS

Power Input and Consumption	24 VDC (20 – 32 VDC), 13W max
Instrument Cable	Standard twisted pair, RFOU (i) 2-3 x 2 x 0.75 mm^2
Electrical Classification	Flame-proof (Ex de [ia] IIC T6), Integrated Intrinsically Safe Barriers
Output	3 x 4-20 mA analogue output channels with selectable parameters; RS 422/485 serial port (Modbus protocol). Optional Outputs: additional 3 x 4-20 mA channels, HART, Pulse/frequency signal, Foundation Fieldbus
Input Signals	Signal from transducers via Fluenta instrument cables
Ingressive Protection	IP 66
Pipe Size	6” to 72”. Larger pipe diameters can be accomodated.
Dimensions	460 x 280 x 250 mm (H x W x D)
Weight	17 Kg
Operational Temperature	40°C to +85°C (electronics) | -40°C to +60°C (ambient temp)
Operational Pressure	0.8 to 10 barA (11.6 to 145 psiA)
Design Pressure	20 barA (290 psiA)
Flow Velocity Range	0.03 to 120 m/s (0.1 to 394 ft/s)
Turndown Ratio	4000:1 with repeatability better than 1%
Accuracy At 95% (Fully Developed Flow)	±2.5 to 5% of measured value Qv. ±0.75% with multi-point calibration
Measurement Parameters	Standard and actual volume flow, gas velocity, mass flow, totalised standard volume flow, totalised mass flow, molecular weight, standard and actual density, pressure, temperature, speed of sound
Certification	IECEx, ATEX, NRTL (CSA), TR-CU, INMETRO

For detailed addresses and worldwide presence, visit Fluenta.com

Scan for more information on the FGM 160.