OpreX™ Analyzers

GD80, GD802G

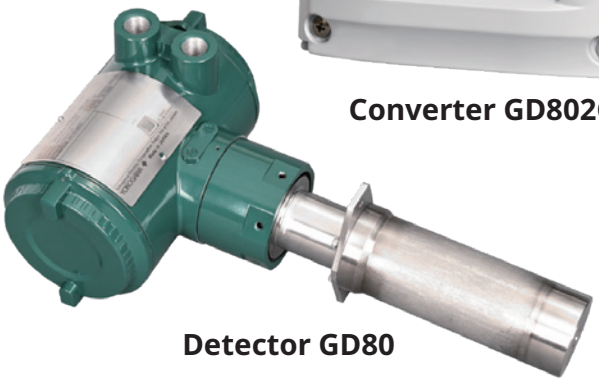
Gas Density Meter

YOKOGAWA
Co-innovating tomorrow™

Rapid, Reliable Gas Density Measurement

- Detecting composition changes for safer operation.

Converter GD802G



Detector GD80

The gas density meter consists of the GD80 detector and the GD802G converter.

Yokogawa's proven sensor technology enables continuous gas density measurement for determining specific gravity, molecular weight, gas concentration, hydrogen purity, and replacement concentration.

Changes in gas composition are detected through variations in gas density, enabling gas concentration to be calculated in known binary gas mixtures.

Fast response, high sensitivity, and proven measurement technology contribute to safe monitoring and stable plant operation.

Proven Performance

- Low-drift measurement
- Long-term stable operation

Gas Composition Monitoring

- Density-based gas concentration measurement
- Ratio control and leak monitoring

Rapid Response

- Approx. 5-second response time (T90)
- Early detection of process change

Intuitive Operation

- Easy-to-use touchscreen interface
- Simple setup and condition monitoring

Bulletin 11T04A01-01EN

Applications Across Industries

Hydrogen Cooling for Turbines

Three Functions in One Device
Simplified Operation, Lower Costs

Cross-Leak Monitoring for Electrolyzers

Early Membrane Degradation Detection
Safe Hydrogen Production

Methanation Process Monitoring

Rapid, Reliable Ratio Estimation
Improved Production Efficiency

Refinery Off-Gas Density Measurement

Tracks Changing Off-Gas Composition
Supporting Stable Combustion

Performance Specifications

The following performance specifications apply when the detector and converter are used in combination with the Yokogawa-specified pressure transmitter, EJX310A Absolute Pressure Transmitter.

Measurement Model	Density Meter					Hydrogen Purity Meter	Replacement Meter		Calorimeter	
Item	Density kg/m^3	Density lb/ft^3 *6	Specific Gravity	Molecular Weight	Concentration vol%	H_2 in Air vol%	H_2 in CO_2 vol%	Air in CO_2 vol%	Calorific Value MJ/m^3 *1	Calorific Value kBTU/ft^3 *1*6
Range	0 to 6 (corrected) 0 to 60 (actual)	0 to 0.4 (corrected) 0 to 4 (actual)	0 to 5	0 to 140	0 to 100	85 to 100*2	0 to 100		0 to 133	0 to 3.5
Minimum Range	0.1	0.01	0.1	4	Equivalent to 0.100 kg/m^3 density	—	—		Equivalent to 0.100 kg/m^3 density	
90% Response Time*3	Approx. 5 s					Approx. 5 s*7	Approx. 5 s*7		Approx. 5 s	
Linearity	±1%FS	±1%FS	±1%FS	±1%FS	±1	±1	±1		±1%FS	
Repeatability	±0.001 or ±0.5%FS*4	±0.0001 or ±0.5%FS*4	±0.001 or ±0.5%FS*4	±0.02 or ±0.5%FS*4	±0.5 or concentration equivalent to ±0.001 kg/m^3 density*4	±0.5	±0.5		±0.5% FS or calorific value equivalent to 0.001 kg/m^3 density*4	
Zero / Span Drift*5	±0.003/month	±0.002/month	±0.003/month	±0.07/month	Equivalent to ±0.003 kg/m^3 density/month	±0.5/month	±0.5/month		Equivalent to ±0.003 kg/m^3 density/month	

*1: Contact Yokogawa when measuring calorific value.
*2: Configurable from 0 to 100 vol% (default: 85 to 100 vol%).
*3: Time required for the reading to reach 90% of its final value after the indicated value begins to change (at a gas flow rate of 0.6 L/min).
*4: Whichever is greater.
*5: Provided that the detector, converter, and pressure transmitter are not affected by ambient temperature.
*6: Unit conversion from kg/m^3 to lb/ft^3 and from MJ/m^3 to kBTU/ft^3 is supported by the GD802G.
*7: When switching from the zero point CO_2 to the span point H_2

(Refer to the general specification (GS 11T04A01-01EN) for details)

OpreX™ Through the comprehensive OpreX portfolio of products, services, and solutions, Yokogawa enables operational excellence across the enterprise.

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