

BlueEye™ Ex-D



Gas quality analyzer
Reliable, no moving parts
Fast response time
Low CAPEX, no OPEX

BROCHURE

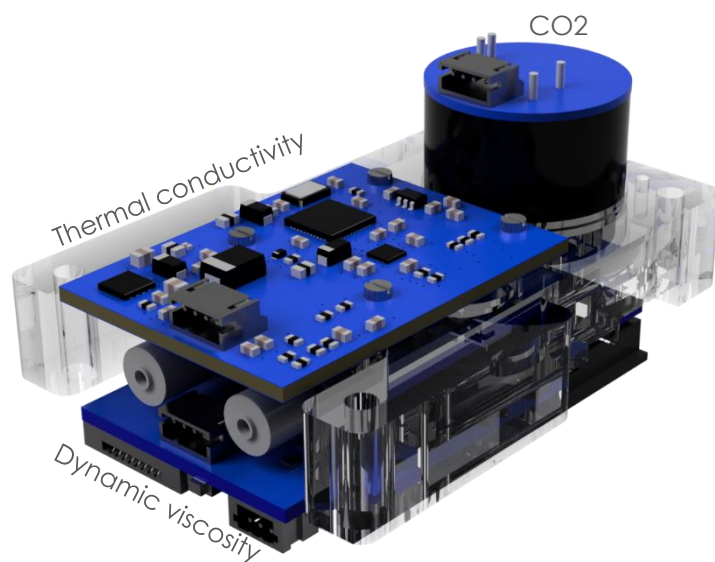


About the BlueEye™ Ex-D

The BlueEye™ Ex-D is a low CAPEX gas analyzer, designed for the continuous measurement of combustible gases. Every second the device accurately measures the combustion properties and calorific content of gas compositions, including gases with high CO₂ and H₂ content.

Gas is flowing at low flow rate (~50 ml/min) in and out of the BlueEye™ Ex-D through Swagelok connectors. Measurement output is interfaced through 4-20 mA current loop and Modbus RTU.

The BlueEye™ Ex-D uses Bright Sensors' patented MEMS gas viscometer technology combined with other MEMS sensors. The analyzer is specifically developed for biomethane injection, hydrogen blending, combustion control, gas grid monitoring and other stationary applications.



Main Features

Measurement output:

- Wobbe Index
- Calorific content (HHV & LHV)
- CO₂ concentration
- Density
- Air Fuel Ratio
- Methane Number

Accuracy:

- Pipeline gas typically <1%
- Other gas compositions on request

Maintenance free & reliable

- No moving parts
- No chemical reactions

Fast & continuous measurement

- 7 second Viscosity
- 1 second Thermal Conductivity and CO₂

Other features:

- Explosion proof certified enclosure
- Built-in flow reducer
- Interface: 4-20mA, Modbus RTU
- Input Power: 12-24VDC
- Plug-and-play installation
- Easy replacement of sensor unit
- CE, UKCA, IECEx in progress
- OILM R140 Class B in progress

BlueEye™ Ex-D Specifications

Measurement	Units	Reference conditions	Calculation method
Wobbe Index (WI)	MJ/m³, kWh/m³ BTU/scf	0/0°C, 15/15°C, 15/15°C, 20/20°C, 25/20°C at 101325 Pa and 60°F at 14.696 psi	ISO 6976:1995 GPA 2172:2009
Higher Heating Value (HHV)			
Lower Heating Value (LHV)			
Density ρ	kg/m³, lbm/scf		
Air Fuel Ratio λ	-	-	Simplified method
Methane Number	-	-	ISO23306 PKI Methane Number
CO2 concentration*	mol%	-	-

Accuracy	≤ 1% of reading
Repeatability	≤ 0.2% of reading**
Dynamics	One measurement every 1s, reaction time T90 < 60s

Gas Composition Range					
Methane	70-100mol%	Higher Alkanes	0-1 mol%	Hydrogen	≤ 20 mol%
Ethane	0-20 mol%	Nitrogen	0-20 mol%	Water (Gaseous)	≤ 0.1 mol%
Propane	0-5 mol%	Carbon Dioxide	0-9 mol% (50 mol%)*	Dust, Liquids	Without
Butane	0-3 mol%	Oxygen	≤ 3 mol%	H2S	≤ 0.01 mol%
Addressable range for HHV		8.38 to 12.875 kWh/m³ (15°C/15°C), 810 to 1245 BTU/scf (60°F/14.696 psi)			
Operating gas temperatures		0 to 50°C, 32 to 122°F			
Operating gas pressures		960 to 1100 mbara, 13.9 to 16 psia			
Flow rate		50 ml/min (+/- 10%), 0.00177 scf/min (+/- 10%)*			

* in combination with CO2 sensor, ** on an unfiltered 1 second cycle measurement, *** flow rate range customizable on request

Electrical and Mechanical Specifications

Interfaces	Modbus RTU (RS485), analog output (4-20mA current loop)
Supply Voltage	12 to 24V, < 2W
Dimensions and Weight	140mm x 135mm x 125mm and 2.6kg, 5.51in x 5.32in x 4.92in and 5.7 lbs
Gas Connections	2 Swagelok 1/4" (Female)
Certifications	IP66, CE, IECEx, ATEX, UL & OIML R140 Class B in progress

Environment Conditions

Operating Temperature	-20°C to 70°C, -4°F to 158°F
Storage Temperature	-40°C to 70°C, -40°F to 158°F
Environment Humidity	0-95 % Relative Humidity, non-condensing
Burst Pressure	< 250 mbarg, < 3.6 psig



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