

ROSEMOUNT™ QX1400 CONTINUOUS GAS ANALYZER

Bringing hybrid laser-paramagnetic measurement into hazardous areas

Discover the Rosemount™ QX1400 Continuous Gas Analyzer, the ultimate Hazardous Area solution for continuous, multi-component gas analysis. Combining laser and paramagnetic measurement technologies inside a certified flameproof enclosure, this hybrid design offers superior accuracy, reliability, and versatility

Flexibility for Hazardous Areas

The QX1400 Flameproof (Ex d) enclosure allows the analyzer to be installed directly at the point of measurement in classified areas, avoiding costly shelters and long sample transport lines. One versatile platform can be configured for multiple applications, including Natural Gas Quality, Continuous Emissions Monitoring Systems (CEMS), Carbon Capture and Clean Fuels, and other process monitoring and quality applications – measuring up to five components simultaneously in real time.

Full Analyzer Control from Anywhere – the QX Web Application

In a hazardous area, reaching the analyzer is rarely quick or convenient. Every QX1400 is therefore supplied with the QX Web Application as standard – a full-function, web-based remote interface giving your team secure and remote control of the analyzer.

Monitor: Configurable dashboard widgets and live trend charts, with measurement health status and analyser diagnostics always in view.
Configure: Set preferences for gas measurements and communications (I/O).
Calibrate: Intuitive interface to set up calibrations, valve controls and streams, and schedules for remote, automated calibration.
Diagnose: Continuous health monitoring with NAMUR alarms, laser and measurement diagnostics, and downloadable service packs for remote fault diagnosis.



QX1400 Continuous Gas Analyzer, wall-mounted flameproof enclosure shown with optional local display.

Pin-point Selectivity
Laser-based measurement excels in complex gas streams – rejecting interference from background sample stream components.

Innovative Hybrid Technology
Combines laser and paramagnetic measurement methodologies for increased accuracy and reliability, helping you to meet regulatory and pipeline specifications.

Robust Design & Low Consumables
Low maintenance requirements and reduced lifetime costs due to no moving parts and no regular maintenance, minimizing analyzer downtime at remote sites.

For more information, visit Emerson.com
or contact your local Emerson Sales Representative

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Specifications

Analyzer Specifications	
Applications	Natural Gas Quality, Continuous Emissions Monitoring (CEMS), Gas Purity, CCUS, Clean Fuels
Measurement Technique	IR absorption spectroscopy and O_2 paramagnetic detection
Gases Measured	H_2O, NO, NO_2 , CO, CO_2 , SO_2 , O_2 (Other gases on Consult Factory basis)
Area Certification	Europe: ATEX II 2G Ex d IIB H2 T4 R.O.W: IECEx Ex db IIB+H2 T4 Gb North America: Class 1, Division 2, Groups B, C,D, T4 (certification pending)
Repeatability	≤ 0.5 %
Typical Linearity	≤ 1 %
Limit of Detection	See Measurement Performance, below
Typical respnse time (T_{90})	≤ 5s

(1) At gas flow of 1.5 l/min (averaging filtering = 0)

Measurement Performance – Cold/Dry Emissions Monitoring (CEMS)			
Component Name	**Symbol**	**Ranges[1]**	
		Min. available range	**Max available range**
Nitric oxide	NO	0–10 ppm (0.15 ppm)	0–2,200 ppm (1.25 ppm)
Nitrogen dioxide	NO_2	0–10 ppm (0.08 ppm)	0–500 ppm (0.25 ppm)
Carbon monoxide	CO	0–10 ppm (0.05 ppm)	0–4,500 ppm (2.5 ppm)
Carbon dioxide	CO_2	0–1.5 % (0.005% ppm)	0–100 % (0.05%)
Sulphur dioxide	SO_2	0–45 ppm (0.15 ppm)	0–1,100 ppm (0.8 ppm)
Oxygen	O_2	0 - 5% (0.025%)	0 - 25% (0.025%)

Measurement Performance – Cold/Dry Natural Gas Quality Monitoring			
Component Name	**Symbol**	**Ranges[1,2]**	
		Min. available range	**Max available range**
Water	H_2O	0–100 to 0-300 ppm (0.5 ppm)	0–500 to 0-1,400 ppm (2.5 ppm)
Carbon dioxide	CO_2	0–1,000 to 0-5,000 ppm (5 ppm)	0–5 to 0-20 % (0.025 %)

(2) Limit of detection (LOD) for ranges shown in () and corresponds to 2σ. Not all ranges/gases available on a single analyzer. Other gases/ranges available on request. Exact specification dependent on configuration. (2) The performance for natural gas quality applications assumes a typical background gas composition of methane balance with ethane up to 20 %, CO_2 up to 20 %, propane (C_3H_8) up to 10 %, butane (C_4H_{10}) up to 5 %, and H_2O up to 0.14 %. Not all ranges are available on a single analyzer; exact specification is dependent on configuration. Other gases and ranges are available on request.

For more information, visit
Emerson.com/RosemountQX1400

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