Raman Rxn4 analyzer

LNG custody transfer analyzer

Raman Rxn4 analyzer

Benefits at a glance

- Direct *in situ* measurement of process samples
- Up to four measurement points from a single analyzer
- Demonstrated multi-analyzer calibration transfer
- Low cost of ownership
- Easy to install
- No consumables
- Minimal maintenance / analyzer technician time required
- Robust data modeling based on Raman spectroscopy
- OPC, Modbus, and HTTPS outputs
- Intuitive, fully embedded Raman RunTime control software

LNG applications

- Baseload export custody transfer
- Baseload import custody transfer
- Truck loading
- Bunkering

Process enabled

- Fast, non-destructive measurements of multicomponent systems
- Rack-mounted packaging for easy third-party integration

The Raman Rxn4 analyzer is the perfect analyzer for manufacturing and process environments. When combined with our Raman phase-optimized sampling probes, the Raman Rxn4 offers high-resolution performance for *in situ*, real-time process measurement and control.

Ruggedness, versatility, and reliability are distinguishing features of the Raman Rxn4 analyzer. Designed for control room installation, the analyzer supports classified area sampling requirements and is ATEX certifiable.

The Raman Rxn4 analyzer comes with fully embedded, user-friendly Raman RunTime software, which enables real-time, *in situ* process monitoring and control. A Raman spectrum contains features that are ideal for fast qualitative and robust quantitative analyses, often without the need for multivariate techniques.

The Raman Rxn4 analyzer is ideally suited to serve the needs of composition and energy content determination in the liquefied natural gas (LNG) market when coupled with the Rxn-41 probe for cryogenic liquids. The system is capable of *in situ* measurement of LNG and other cryogenic liquids without having to vaporize the sample.

The Raman Rxn4 analyzer offers an alternative to typical process analyzers. The chemical specificity and spectral range of the Raman Rxn4 analyzer allows multiple components to be independently identified. Benefits for Raman-based component analysis include fiber-optic connectivity to remote sampling locations (no sampling loops required), no consumables, and the ability of a single analyzer to measure up to four sample locations. The Raman Rxn4 four channel analyzer has been designed for easy integration into standardized installation packages.

The heart of the Raman Rxn4 analyzer is a unique self-monitoring system, which ensures the validity of each analysis. The analyzer is capable of self-calibration, in extreme environments and utilizes self-diagnostics and spectral correction methods when system calibration is unnecessary. The analyzer's precision is essential for robust chemometric analyses and calibration transfer between analyzers.

Endress+Hauser
People for Process Automation

Implementation - options

- General-purpose, rack-mounted packaging
- Supports classified area sampling requirements (ATEX, CSA, and IECEx certifiable)
- Fiber optic analyzer to sample points
- Direct insertion
- Optimized liquid probes (Rxn-41 probe)

Technical specifications

Laser wavelength	785 nm
Spectral coverage	150-3425 cm^{-1} (λ=785 nm)
Temperature / % relative humidity	5 to 35 °C, operating -15 to 50 °C, storage 20-80% RH, non-condensing
Input voltage	110-240 VAC 50-60 Hz, ± 10%
Power consumption	400 W (max) 250 W (typical start-up) 120 W (typical running)
Warm up time	120 minutes
Unit dimensions (width x height x depth)	483 x 267 x 556 mm
Weight	28.5 kg
Sampling probe compatibility	Rxn-41 probe for cryogenic liquids
Connection interface	OPC, Modbus, or HTTPS (contact Sales for other options)
Installation options	Designed for 19" rack installation
Hazardous area certifications*	ATEX, CSA, IECEx

*The Raman Rxn4 analyzer is designed for installation in a non-hazardous location and is certified for output into hazardous areas.

Endress+Hauser

People for Process Automation