

LGR-ICOS™ GLA351-N2OCM

N₂O & CO analyzer – EP QC Rackmount



Highly sensitive, accurate and stable analyzer for reliable measurement of N₂O and CO.

Measurement made easy

LGR-ICOS™ GLA351-N2OCM N₂O & CO – Enhanced performance quantum cascade rackmount analyzer

Features and benefits

- Simultaneous measurements of N₂O and CO
- Highest stability, precision and low drift
- Measurement rates selectable up to 10 Hz
- Installed and operational in minutes
- Batch operation via syringe injection option
- Insensitive to cross-interferences
- Extremely high dynamic range
- Unsurpassed reliability
- Real-time diagnostics

Overview

The ABB LGR-ICOS gas analyzers build on the heritage and extensive track record of Los Gatos Research analyzers, using patented Off-Axis Integrated Cavity Output Spectroscopy (OA-ICOS) technology, the latest evolution in tunable diode laser absorption spectroscopy (TDLAS).

Since CO is an excellent tracer of anthropogenic emissions, simultaneous measurements of CO and N₂O can allow scientists to correlate the sources of N₂O emissions. The GLA351-N2OCM enhanced performance quantum cascade (EP QC) rackmount analyzer also simultaneously measures water vapor mole fraction. As a result, the analyzer reports N₂O and CO on a dry mole basis. It accurately corrects for water vapor dilution and absorption line broadening effects without the need for sample drying or empirical corrections.

The GLA351-N2OCM analyzer is designed for many demanding applications including trace-gas air quality monitoring, eddy correlation flux measurements, chamber flux measurements or combustion diagnostics.

... Overview

ABB's enhanced performance (EP) OA-ICOS analyzers incorporate proprietary internal thermal control for ultra-stable

Ordering information

- LGR-ICOS™ GLA351-N2OCM N₂O & CO analyzer – EP QC rackmount

measurements with unsurpassed precision, accuracy and drift. Moreover, only ABB's analyzers provide reliable guaranteed measurements at mole fractions more than 20 times ambient levels.

ABB's patented OA-ICOS technology, a fourth-generation cavity enhanced absorption technique, has many advantages over older conventional and delicate cavity ringdown spectroscopy and direct absorption techniques. OA-ICOS analyzers are simpler, easier to operate and more rugged. They exhibit negligible zero and span drift and a significantly reduced need for regular calibration with expensive reference gases. As a result, ABB analyzers provide higher performance and reliability with minimal operational cost.

The GLA351-N2OCM has an internal computer that can store data practically indefinitely (for applications requiring unattended longer term operation), and send real-time recordings to a data logger through its analog and digital (RS232) outputs. The analyzer includes control and analysis software.

Accessories

MIU-16	Multiport Inlet Unit Automated control of up to 16 inlet ports
MIU-8	Multiport Inlet Unit Automated control of up to 8 inlet ports
ACC-DP3H	3-head Diaphragm External Pump
ACC-DP4H	4-head Diaphragm External Pump ~2.5x pumping speed of ACC-DP3H Fast flow option only
ACC-DS10	Dry Scroll External Pump ~9x pumping speed of ACC-DP3H Fast flow option only
ACC-DS35	Dry Scroll External Pump ~25x pumping speed of ACC-DP3H For 10Hz response time Fast flow option only
OPT-DATALOG	Digital Data Logging Capability Multi-channel data logging option records and synchronizes serial (RS-232) outputs from multiple ABB analyzers and other devices (GPS, anemometers)

Specifications

Precision (1 σ , 1 sec / 10 sec / 100 sec):

N₂O: 0.1 ppb / 0.04 ppb / 0.02 ppb [<500 ppb]
CO: 0.2 ppb / 0.06 ppb / 0.03 ppb [<500 ppb]
H₂O: 50 ppm / 20 ppm / 10 ppm

Maximum Drift (15 min. average, at STP, over 24 hrs):

N₂O: <1 ppb
CO: <1 ppb
 $> 10x$ improvement achieved with periodic referencing

Linear measurement ranges (meets all specifications):

N₂O: Up to 4 ppm
CO: Up to 4 ppm
H₂O: Up to 30 000 ppm

Operational ranges:

N₂O: Up to 40 ppm
CO: Up to 40 ppm
H₂O: $<99\%$ RH, non-condensing

Measurement rate:

0.01 – 1 Hz (user selectable)
Up to 10 Hz with fast flow option

Flow response time:

<12 seconds (1/e)
Up to 10 Hz with fast flow option

Sampling conditions:

Operating temperature: 0 – 45 °C
Ambient humidity: $<99\%$ relative humidity non-condensing

Data outputs:

WiFi, Ethernet, USB, Serial (RS-232)

Power requirements:

110/240 VAC, 50/60 Hz
300 watts (steady state)
max 420 watts with ACC-DP3H
max 550 watts with ACC-DP4H

Dimensions:

50 cm (19.5 in.) H x 48 cm (19 in.) W x 86 cm (34 in.) D

Weight:

68 kg (88 pounds)