AC32e

Chemiluminescence Nitrogen Oxides Analyzer

AIR QUALITY MONITORING SYSTEMS

eco label: Follow the green line

SPECIFIC FEATURES:

- Excellent metrological performances for NO, NO_2 and NOx measurements with selectable display in ppb or µg/m³
- Innovative conception of the PM module for excellent sensitivity and signal stability
- Real-time calibration graph, animated synoptic, auto-diagnostic, control and maintenance data screens can be displayed while the instrument is operating
- Service assistance inside: detects early signs of trouble, allows predictive maintenance, identifies the needed service and guides service operations step by step: increased productivity on site, reduced downtime, more efficiency, less training
- Includes embedded Communication Protocol for XR® Software with automatic recognition & configuration
- Ultra low power consumption: an environmentally-friendly and cost-saving analyzer
- Breakthrough mechanical design for weight and power saving as well as thermal insulation & reliability
- Automatic recognition of plugged electronic boards or optional devices: plug & play principle
- Local and remote control through digital port (configuration, calibration, test and diagnosis parameters for maintenance support)
- Optional: 24V power supply and enhanced temperature range for mobile AQMS laboratories or solar powered air quality monitoring stations

Adopt the no-screen version and avoid the pollution related to the screen manufacturing and recycling cycle. The analyzer is connected with your device.

MAIN APPLICATIONS:

- Continuous indoor and outdoor air quality monitoring
- Stationary and mobile AQMS laboratories
- Leakage detection in industrial applications
- Continuous emissions monitoring (CEM) by dilution
- Background, rural, urban or sub-urban, industrial, traffic, roadside studies
- Laboratory and field studies on pollution effects

COMPLIANCE WITH:

ISO 7996, EN 14212, EN 15267 (2009), 40 CFR PART 53 & PART 58

TÜV Rheinland®
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N°0000053805

U.S. EPA APPROVED
RFNA-0118-249

Chemiluminescence NO, NO_2 & NOx analyzer **AC32e**

PRINCIPLE OF OPERATION:

The **AC32e** is a criteria pollution monitor based on the chemiluminescence, the standard method for the measurement of the concentration of nitrogen dioxide and nitrogen monoxide in ambient air (EN 14211).

The chemiluminescence method for gas analysis of oxides of nitrogen relies on the measurement of light produced by the gas-phase titration of nitric oxide and ozone. This light is measured using a photomultiplier tube (PM). To measure total oxides of nitrogen (NOx), the sample passes over a heated catalyst to reduce all oxides of nitrogen to NO. The instrument performs the automatic switching of the catalyst in and out of the sample path so that the resulting signals are compared to indirectly measure NO_2.

TECHNICAL SPECIFICATIONS

Measurement Range	0-1 ppm / 0-10 ppm (user selectable or auto-ranging)
Detection limit (2σ)	<0.1 ppb (or HA*: 20 ppt on request)
Noise	<0.05 ppb (or HA*: 10 ppt on request)
Zero drift	<0.4 ppb / 24h (or HA*: 100 ppt on request)
Span drift	<1 ppb / 24h
Response time	< 20 s
Linearity	1% (of Full Scale)
Precision	<0.5% of reading
Repeatability	1%
Sample flow-rate	0.66 l/min (1 l/min with sample dryer)
Memory Capacity	1 year (15 minutes average)
Output connectivity	Ethernet (RJ45 socket, UDP protocol, Modbus TCP), USB port, External zero/ span SV control
Dimensions L x W x H (mm)	483 x 545 x 133
Chassis	19'' rack, 3U
Weight	10.3 kg without external pump (4.6 kg)
Standard operating temperature	5°C to +40°C
Power supply	100-250 V, 50/60 Hz
Power consumption 220 V (or optional 24V power supply)	160 W/h (72 W/h with optional 24V PS)
Chamber pressure	200 hPa
NOx converter	Molybdenum (regulated at 340°C)
Ozone scrubber	Heated catalytic
P.M temperature	Controlled at 0°C
Reaction chamber temperature	60°C
External pump assembly	
Filter valve block for calibration control (zero & span)	
Built-in web-server with full remote emulation of the analyzer	
Pressure and temperature compensation	

*HA: AC32e High Accuracy

MAIN OPTIONS:

- RS232 or RS485 serial interface (via USB port)
- External module for NH_3 measurement (0-1000 ppb)
- Built-in permeation bench with NO_2 tube
- Sample dryer
- External opto-isolated I/O interface with:
  - 4 independent analog inputs
  - 4 independent analog outputs
  - 4 remote control inputs
  - 6 dry contacts outputs
- 24V power supply & enhanced T° range up to +50°C for use without air conditioner

E-SERIES ADVANTAGES:

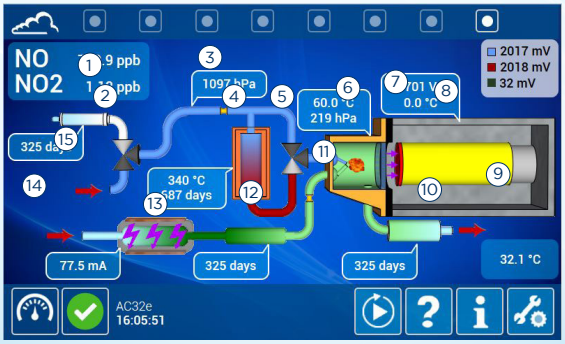
› Environmental friendly:
- Low carbon footprint
- Over 95% of the analyzer can be recycled
- Ultra low power consumption

› Economic, Easy and reduced maintenance
› Service Assistant inside
› 7'' TFT colour touch screen
› Interactivity: connected instruments
› SmartStatusLight™ power button for status of operation (ON/OFF, Alarm, Maintenance required...)
› Common electronic boards: optimized spare parts stock

The e-Series of analyzers has been fully eco-designed, with a special consideration to the environmental impacts of the product during its whole life-cycle. The exclusive «inside the box» foam modular concept makes the product more robust, power saving, simpler to service and eco-friendly.

Detailed information on the e-Series brochure

AC32e Operating Principle - NO cycle



(1) Zero filter
(2) Zero SV
(3) Sample restrictor
(4) NOx converter oven
(5) NOx cycle SV
(6) Reaction chamber
(7) Optical filter
(8) Photomultiplier enclosure
(9) External vacuum pump
(10) O_3 scrubber
(11) O_3 restrictor
(12) O_3 purifier
(13) O_3 generator
(14) Air inlet
(15) Sample inlet

AC32e_EN_03.2025 - The ENVEA Group has a policy of continuous improvement of its products and we reserve the right to update or modify specifications without notice.

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CERTIFICATION

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