

Chemiluminescent Nitrogen Oxides Analyzer

AIR QUALITY MONITORING SYSTEMS



SPECIFIC FEATURES:

- Excellent metrological performances for NO, NO₂ and NO_x measurements in the range 0-1 ppm
- 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 environment-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 diagnostic parameters for maintenance support)



Adopt the no-screen version and avoid the pollution related to the screen manufacturing and recycling cycle. The analyzer is connected with your device (computer, tablet or smart-phone). Simultaneous multi-screen remote access via Wifi or Lan using the dedicated application ESA Connect™ for control, diagnostics, software update,...

MAIN APPLICATIONS:

- Continuous indoor and outdoor air quality monitoring
- Stationary and mobile AQMS laboratories
- Industrial fence-line monitoring
- Continuous emissions monitoring (CEM) by dilution
- Background (urban or suburban), Rural, Traffic, Kerbside measurement campaigns and monitoring studies
- Laboratory and field studies on pollution effects

COMPLIANCE WITH:

ISO 7996, EN 14211 (2012), EN 15267 (2009),
40 cfr part 53 & part 58



Chemiluminescent NO, NO₂ & NO_x analyzer **AC32e**

PRINCIPLE OF OPERATION:

The **AC32e** is a continuous ambient air-quality analyzer based on the chemiluminescence principle, a standard method for the measurement of NO and NO₂ concentrations (EN 14211).

The chemiluminescence principle is used for an automatic analysis of the NO, NO_x and NO₂ concentrations within a gaseous sample. The reaction between NO and O₃ (ozone), which is the basis for the CLD (chemiluminescence detector), emits photons (light) that are detected by a cooled photomultiplier tube (PMT).



TECHNICAL SPECIFICATIONS

Measurement Range	0-1 ppm (user selectable & programmable)
Detection limit (2σ)	<0.2 ppb
Noise	<0.1 ppb
Zero drift	<0.5 ppb / 24h
Span drift	<0.5 % of F.S. / 24h
Response time	min. 40 s
Linearity	1% (of F.S.)
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 kg without external pump (4.5 kg)
Operating temperature	0-40°C
Power supply	100-250 V, 50/60 Hz
Power consumption	160 VA (average) 250 VA (peak)
Chamber pressure	200 hPa
NO _x converter	Molybdenum (regulated at 340°C)
Ozone scrubber	Heated catalytic
P.M temperature	controlled at 0°C
Reaction chamber temperature	60°C
Filter valve block for calibration control (zero & span)	
Integrated web-server with full remote emulation of the analyzer	

MAIN OPTIONS:

- 7" TFT color touch screen
- WiFi module (in standard with the no-screen version)
- RS232 or RS485 serial interface (via USB port)
- External module for NH₃ measurement (0-1000 ppb)
- Built-in permeation bench with NO₂ 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



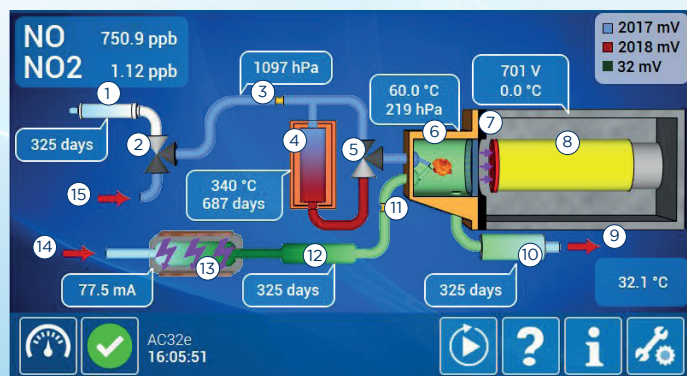
E-SERIES ADVANTAGES:

- > 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
- > 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 related in the e-Series brochure

AC32e Operating Principle - NO cycle



- (1) Zero filter
- (2) zero SV
- (3) sample restrictor
- (4) NO_x converter oven
- (5) NO_x cycle SV
- (6) reaction chamber
- (7) optical filter
- (8) photomultiplier enclosure
- (9) external vacuum pump
- (10) O₃ scrubber
- (11) O₃ restrictor
- (12) O₃ purifier
- (13) O₃ generator
- (14) air inlet
- (15) sample inlet

