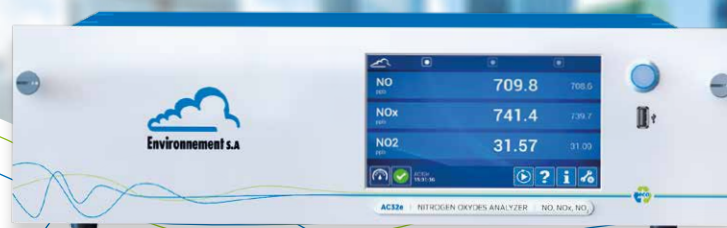




Chemiluminescent Nitrogen Oxides Analyzer AC32e



ESA Connect™



Adopt the no-screen version of the analyzer and avoid the pollution related to the screen manufacturing and recycling cycle: The analyzer is connected with your device (computer, smartphone or tablet)

E-SERIES ADVANTAGES:

- > **Environmental friendly:**
 - Sustainable eco-design
 - Low carbon footprint
 - Over 95% of the analyzer can be recycled
 - Ultra low power consumption
 - No use of heavy metals (eg. Mercury)
- > **Long lifespan, excellent accuracy**
- > **Reliable electronics**
- > **Economic, Easy and reduced maintenance**
- > **Common electronic boards: optimized spare parts stock**
- > **Service Assistant inside**
- > **Interactivity: connected instruments**

COMPLIANCE WITH:

ISO 7996, EN 14211 (2012), EN 15267 (2009), 40 CFR PART 53 SUB B and SUB C


TÜV Rheinland
QAL 1 Certified
Certificate N°
0000053805



U.S. ENVIRONMENTAL
PROTECTION AGENCY
ongoing

SPECIFIC FEATURES:

- Superior metrological performances for NO, NO₂ and NO_x measurements in the range 0-1 ppm or 0-10 ppm
- Innovative conception of the PM module for excellent sensitivity and signal stability
- Simultaneous multi-screen remote access via Wifi or Lan using the dedicated application ESA Connect™ for control, diagnostics, software update...
- ESA Connect™ application for iOS and Android available for free download
- Real-time calibration graph, animated synoptic, auto-diagnostic, control and maintenance data screens can be displayed while the instrument is operating
- Service assistant inside: detects early signs of trouble, allows predictive maintenance, identifies the service needed and guides the service operations step by step: increased productivity on site, reduced downtime, more efficiency, less training
- Includes embedded Communication Protocol for XR® Management Software with automatic recognition and configuration
- Ultra low power consumption, means 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 and play principle
- SmartStatusLight™ power button on the front panel indicating if the instrument is ready to use or not (ON/OFF, Alarm, Maintenance required...)

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...



SPECIFICATIONS:

- Measurement Range: **0-1 ppm or 0-10 ppm**, user selectable and programmable
- Detection limit(2σ): **<0.2 ppb**
- Noise: **<0.1 ppb**
- Zero drift: **<1 ppb/24h**
- Span drift: **<1 ppb /7 days**
- Response time: automatic and/or programmable (min 40 sec)
- Linearity: **1%**
- Repeatability: **1%**
- Sample flow-rate: **0.66 l/min** (l/min with dryer)
- Chambre pressure: 200 hPa absolute
- NO_x converter: Molybdenum, regulated at 340°C
- Ozone scrubber: heated catalytic
- P.M temperature: controlled at 0°C
- Reaction chamber temperature: 60°C
- External sampling pump
- Data storage: 1 year (1 minute data)
- Ethernet network connection (RJ45), 3 x USB ports, 2 dry contacts outputs included
- Integrated web-server with full remote emulation of the analyzer
- Dimensions (mm, LxWxH): 483x545x133
- Chassis: 19" rack, 3U
- Weight: 10 kg (22 lbs) without external pump
- Operating temperature: 0-40°C
- Power supply: 115 V, 60 Hz - 230 V, 50 Hz
- Power consumption: 160 VA (average) 250 VA (peak)

MAIN OPTIONS:

- 7" TFT colour touch screen
- WiFi module (in standard with the no-screen version)
- Serial interface (via USB port)
- NO₂ permeation bench and filter valve block for calibration control
- NH₃ module
- External opto-isolated I/O interface with:
 - 4 independent analog inputs
 - 4 independent analog outputs
 - 4 remote control inputs
 - 6 dry contacts outputs
- 24 V DC Power supply for on-board applications

PRINCIPLE OF OPERATION:

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

The AC32e utilizes the principle of chemiluminescence for automatically analyzing the NO - NO_x and NO₂ concentration within a gaseous sample. The reaction between NO and O₃ (ozone) emits light. This reaction is the basis for the CLD in which the photons produced are detected by a photo multiplier tube (PMT).

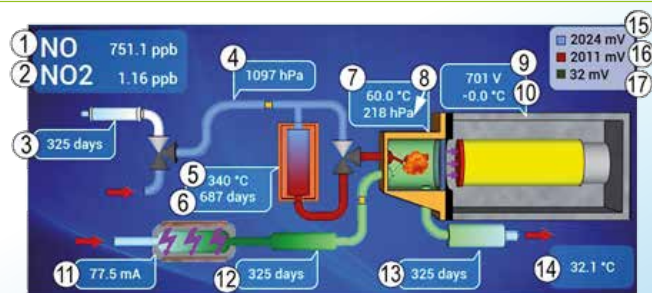


The CLD output voltage is proportional to NO concentration. The light-producing reaction is very rapid so a very rapid response instrument is suitable for good measurements.

The new AC32e analyzer combines 30 years of experience with its predecessors (AC32M, AC31M & AC30M), with the innovative features of the e-Series design. The outcome is a state-of-the-art instrument with reduced and easier maintenance and enhanced metrological capacities.

Engineered with breakthrough technologies, the e-Series achieve a previously unreachable level of autonomy: it also integrates self diagnosis and a high level of self-operation. Each analyzer is self monitored continuously for performance and fault control: it detects early signs of trouble, identifies the service needed and even guides the service operations!

AC32e Operating Principle



NO_x cycle: The sample passes through the converter oven which reduces NO₂ to NO, then it is mixed with ozone in the reaction chamber.

The measured signal by the photomultiplier tube, minus by the black signal, is proportional to the NO and NO₂ molecule sum (reduced to NO in the converter) contained in the sample.

(1) NO measurement, (2) NO₂ measurement, (3) zero filter autonomy, (4) sample pressure, (5) NO_x converter oven temperature, (6) NO_x converter oven autonomy, (7) reaction chamber temperature, (8) internal pressure of reaction chamber, (9) high voltage of photomultiplier tube, (10) photomultiplier tube temperature, (11) ozone generator intensity, (12) ozone purifier autonomy, (13) ozone destructor (ozone scrubber) autonomy, (14) internal analyzer temperature, (15) photomultiplier tube signal for NO cycle, (16) photomultiplier tube signal for NO_x cycle, (17) photomultiplier tube signal for zero-reference cycle (black signal).

Distributed by:

The e-Series of analyzers has been fully eco-designed, with a special consideration to the environmental impacts of the product during its whole lifecycle. 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

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