AF22e

UV FLUORESCENCE **SULFUR DIOXIDE ANALYZER**

envea
Elevating standards. For life.

A fully eco-designed, ultraviolet fluorescence based analyzer for measuring SO_2 concentrations in ambient air (EN 14212)

FEATURES AND BENEFITS

- Excellent metrological performances for SO_2 measurements
- Innovative conception of the photomultiplier module for excellent sensitivity and signal stability
- Real-time calibration graph, animated synoptic, auto-diagnostic, control and maintenance data screen displayed while instrument is operating
- Service assistance inside: detects early warning signs, allows predictive maintenance, identifies the needed service and step by step guides for service operations
- Automatic recognition of plugged electronic boards or optional devices: plug & play principle
- Includes embedded communication protocol for all DAS with automatic recognition & configuration
- Local and remote control through digital port (configuration, calibration, test and diagnosis parameters for maintenance support)

e-Series analyzers are fully eco-designed, with consideration to minimise carbon footprint through the whole lifecycle:

- 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
- Modular concept makes the product more robust, and simpler to service



COMPLIANT WITH:
2008/50/EC, EN 14212 (2012), EN 15267,
40 CFR PART 53 SUB B AND SUB C

///CERT
CSA MC250450/00

TÜV Rheinland
N°0000051690

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EQSA-0802-149

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TECHNICAL **SPECIFICATIONS**

Measurement range	0-1 ppm / -0-10 ppm (user selectable or auto-ranging)
Measurement units	ppm, ppb, µg/m³ (user selectable)
Detection limit (LDL)	<0.3 ppb
Zero noise **Span noise**	<0.2 ppb 0.4% of reading (0.3 ppb minimum)
Zero drift	<0.5 ppb / 24h <0.5 ppb / 7 days
Span drift	<0.5% of F.S over 24h <0.5% of F.S over 7 days
Response time	< 60s
Repeatability	0.4% of reading (0.3 ppb minimum)
Linearity	1% (of F.S)
Sample flow-rate	20 L/h
Power supply	100-250 VAC, 50/60Hz 24VDC (option)
Power consumption	230VAC power supply: 70W at start-up, 30W nominal 24 VDC power supply: 70W at start-up, 30W nominal
Connectivity	Ethernet (RJ45 socket), USB Port, serial RS232/ RS485 (optional)
Optional analog output	External opto-isolated I/O interface with: • 4 independent analog inputs • 4 independent analog outputs • 4 remote control inputs • 6 dry contacts outputs
Communication protocols	Modbus (TCP-IP, RTU/Jbus), Mod4, UDP, Baeyrn Gas Inlet/Outlet: External Zero, Span, SV control
Dimensions	483 x 545 x 133 L x D x H (mm)
Data storage	1 year Measured channels (with the selected period), status codes (data, voltage, Analog output, Operating Temperature, etc.)
Chassis	19" rack, 3U
Weight	9.8 kg (20.9 lbs)
Standard operating temperature	5°C to +40°C

PRINCIPLE OF **OPERATION**

The **AF22e** is a criteria pollution monitor based on the ultraviolet fluorescence, which is the standard method for the measurement of SO_2 concentrations in ambient air

This method is based on the fluorescence of SO_2 due to absorption of ultraviolet (UV) energy. A photo-diode measures the ultraviolet radiation generated by the UV lamp. This measurement is used during signal processing in order to compensate for any variation of the UV energy.

Molecules restore a specific fluorescence in the ultraviolet: this fluorescence is visualized by the PhotoMutliplier tube placed near the reaction chamber. The hydrocarbons aromatic 'kicker' conception guarantees the total elimination of hydrocarbon interferences for an extremely accurate measurement.



MAIN **OPTIONS**

- Built-in permeation bench with SO_2 tube (additional pump not required)
- Internal converter for the H_2S monitoring (range 0-1000 ppb)
- External converter module TRS →SO_2 for the measurement of total reduced sulfur TRS compounds (range 0-1000 ppb)
- 24 VDC power supply & enhanced T° range up to +50°C for use without air conditioner
- Pressure and temperature compensation
- Communication protocol for XR® Software
- Internal solenoid valve block for zero air and span gas
- Internal sampling pump
- Built-in web-server for full remote emulation of the analyzer

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AF22e Datasheet

AF22e UV Fluorescence sulfur dioxide analyzer - Specifications subject to change without notice.

ISO 45001:2018
ISO 14001:2015
ISO 9001:2015
CERTIFICATION

www.envea.global