Air Quality
Monitoring Systems

# UV Flourescence Sulfur Dioxide Analyzer – AF22e

DTN partners with ENVEA to provide organizations worldwide with the best technologies and systems and help different authorities and institutions, both public and private, to monitor air quality and achieve their goals and objectives.

## 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, kerbside measurement campaigns and monitoring studies.
- Laboratory and field studies on $SO_2$/$H_2S$/TRS effects.

## Features

- Superior metrological performances for $SO_2$ measurements with selectable display in ppb or µg/m3
- Innovative optimized conception of the optical 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 need service and guides service operations step by step for increased productivity on site, reduced dowtime, more efficiency, less training
- Ultra low power consumption: An environmentally-friendly and cost-saving analyzer
- Breaktrough mechanical design for power saving as well as thermal insulation and reliability
- Automatic recognition of plugged electronic boards or optional devices: Plug and play principle
- Local and remote control through digital port (configuration, calibration, test and diagnosis parameters for maintenance support)
- Includes emedded Communication Protocol for XR® Software with automatic recognition and configuration
- Optional: 24V power supply and enhanced temperature range for mobile AQMS laboratories or solar powered air quality monitoring stations

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 ( EN 14212 ). 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 PM tube placed near the reaction chamber. The hydrocarbons aromatic 'kicker' conception guarantees the total elimination of hydrocarbon interferences for an extremely accurate measurement.


## Options

- Wi-Fi module (in standard with the no- screen version)
- RS232 or RS485 Serial interface (via USB port)
- 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 to $SO_2$ for the measurement of total reduced sulfur compounds (range 0-1000ppb)
- 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.

## Tech specs

| | |
|---|---|
| Measurement range | 0-1 ppm / 0-10 ppm (user selectable or auto-ranging) |
| Detection limit (2σ) | <0.4 ppb |
| Noise | <0.2 ppb |
| Zero drift | <1 ppb / 24h |
| Span drift | <0.5% / 24h |
| Response time | 20-120 sec (programmable) |
| Linearity | 1% (of full scale) |
| Sample flow-rate | 20 L/h |
| Data storage | 1 year |
| Display | 7" TFT colour touch screen |
| Communication | Ethernet network connection (RJ45), 3x USB ports, 2 dry contacts outputs included |
| Dimensions | 483 x 545 x 133 mm (L x D x H) |
| Chassis | 19" rack, 3U |
| Weight | 9.8 kg (20.9 lbs) |
| Standard operating temperature | 0°C to +35°C |
| Power supply | 115 V, 60 Hz / 230 V, 50 Hz / 24 V optional |
| Power consumption | 30 Wh (up to 41 Wh without A/C) |
| Pressure and temperature compensation | |
| Internal solenoid valve block for zero air and span gas | |
| Internal sampling pump | |
| Built-in web server for full remote emulation of the analyzer | |

**Compliance with:**
2008/50/EC, EN 14212 (2012), EN 15267, 40 CFR. PART 53 SUB B and SUB C.

TÜVRheinland®
QAL 1 Certificated
N°0000051690

U.S. EPA Approved
EQSA-0802-149



www.dtn.com