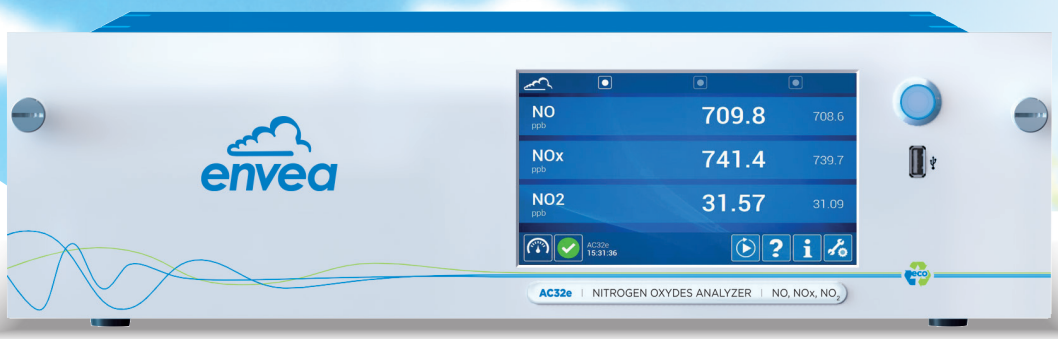
e SERIES AIR QUALITY MONITORING SYSTEMS

envea
KNOWLEDGE IN ACTION

expertise
energy saving
evolution
eco-friendly
elegant
eco-conception
efficiency
engineered
easier
economic
essential

Criteria Pollutants Analyzers
Outstanding features, amazing innovations!

A responsible investment for the best metrological performances



Unique Sustainable Ecodesign

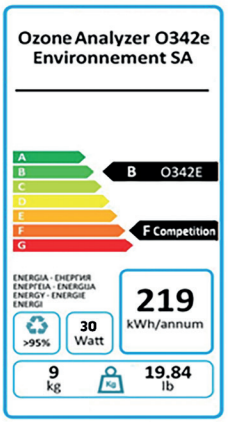
The *e-Series* of analyzers has been designed with a special consideration to the environmental impacts of the product during its whole lifecycle.

- The measurement modules of the e-Series are fitted in closed cell expanded polypropylene foam (EPP*) that has outstanding cushioning properties, high strength-to-weight ratio and efficient thermal and electrical insulation. Components such as tubes, cables, circuit boards or fans are tightly held into various channels and cavities that are moulded into the EPP chassis. This simplifies the assembly process and also provide easier access for service and maintenance, or for recycling the product at its end-of-life.

- Heavily polluting components have been fully eliminated within the *e-Series*. As an example, the O342e is the 1st ozone analyzer on the market which **does not use Mercury lamp as excitation source.**

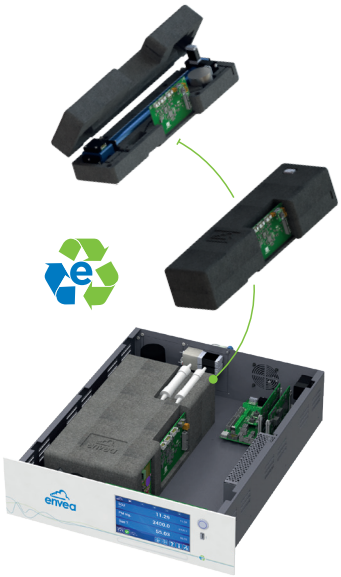
- The *e-Series* is fully compliant with Ecodesign and ROHS directives. As the lifetime energy use and environmental aspects have been taken into account during the conception and design phases, **over 95% of each analyzer can be recycled.**

- The analyzers are very compact, lightweight and have a **low carbon footprint: up to 82% less than other criteria pollution monitor on the market.**



*EPP is 100% recyclable and does not support microbial growth. Manufacturing EPP requires no Volatile Organic Compounds, chlorofluorocarbon or other compounds that are recognized as most harmful to the environment.

The exclusive “inside the box” foam modular concept makes the product more robust, power saving, quieter in operation, simpler to service and eco-friendly.



Power saving

Sustainable Eco Design

Recyclability

EPP foam concept

Screen saving

ROHS compliant

Eco-friendly

Low Carbon footprint

Lightweight

Join our vision to reduce pollution, limit the waste and protect the environment

Typically, air quality monitors equipped with individual screens, are installed in mobile or fixed monitoring stations with generally a computer for data acquisition and processing software such as the **XR®** from ENVEA. Excepting some quality control or maintenance operations the analyzer display is on standby mode for over 99% of its lifetime.
Consequently, the screen display is more a matter of usage pattern than a real need.

Adopt the ‘NO-SCREEN’ concept

› The electrical consumption of the analyzer is further reduced and the additional pollution related to the screen manufacturing and recycling cycle is avoided.

Smart feature: the front panel StatusLight™ power button (color changing) for immediate display of the monitor status (On/OFF, Alarm, Maintenance required...)

Smart, connected instruments

The complete range of ***e-Series*** integrates an embedded web server featuring intuitive navigation by pictograms and offering quick and easy access to the analyzer. Secured (various level of passwords), modern, simple, fast and accessible through any browser, the ESA Connect™ user interface allows remote, simultaneous multichannel viewing and control of the monitor from any PC, tablet or smartphone.

› User-friendly design interface: one click to perform zero, span or calibrations using gas cylinders

Efficient
Easy to operate

› Automatic recognition of plugged electronic boards or optional devices: *plug and play* principle. Automatic download of updated drivers when connected to internet

› Optional: new generation 7" LCD color touch screen

The ESA Connect™ interface gives a user-friendly multilevel access to the instrument set-up, as well as the status and maintenance parameters. Real-time animated synoptics, auto-diagnostic, control and maintenance data screens can be displayed while the instrument is operating.

Trends data display, view memorized measures over periods of time, instantly receive alarms based on measurements, or remotely control a test sequence.

The analyzer connects to your device

The display is already in your pocket.

The on-board wireless secured high-speed Wi-Fi connection allows the easiest remote access to full operation of the analyzer, without cables and without need of being in front of the instrument. For example, while being behind the analyzer, on the roof of the monitoring station... the operator can quickly and automatically find and interact with nearby analyzers directly from his smartphone, tablet or computer.

Use the smartphone's internet connection to easily forward information (contact the support center, send graphics...)

› Download the app & keep your equipment updated

› Access the services available in the cloud

app.envea.global

ENVEA Connect™

Free App
iOS & Android

Service Assistant Inside

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!**

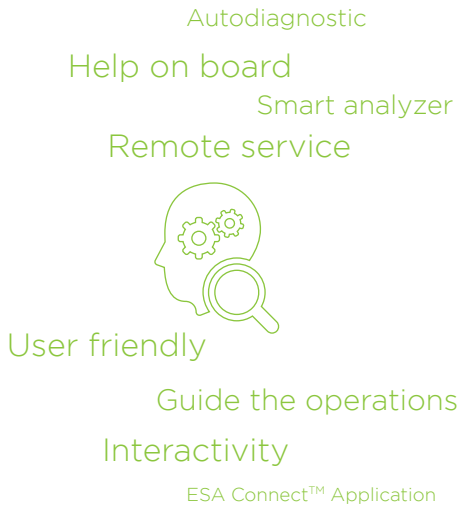
› Anticipates failures: each analyzer records the states of health parameters for immediate expert advice on site or remotely

› When on-site maintenance is required, the analyzer displays information about the damaged components, what parts are needed and how to accomplish the repair step by step!

Benefits: Saves time on site for Technical Engineers,
Reduces equipment downtime,
Less training and more efficiency...

› While used with XR® iseo software, the e-Series analyzers are automatically recognized: the complete configuration is pushed by the monitor to the DAS and the central server.

Time saving: no need to enter "manually" all the parameters
Secured: eliminates configuration errors
Eliminates discrepancies: the configuration is up to date and automatically updated
Traceability: all the events and measurements are lifetime traced by the software



Operational Cost Reduction

The analyzer performs a continuous survey of its internal parameters to alert before the failure occurs. An engineer can analyze the situation remotely, scheddule maintenance operations and avoid data loss and potential serious dammages.

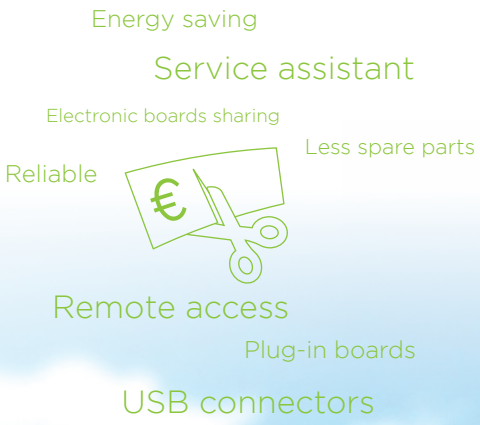
Minimizes on-site expensive expertise needs

› The analyzers share a similar design and many common components and electronic boards: the stock of spare parts is perfectly optimized

› All electronic components are connected by USB, allowing reliable operation and fast & easy replacement

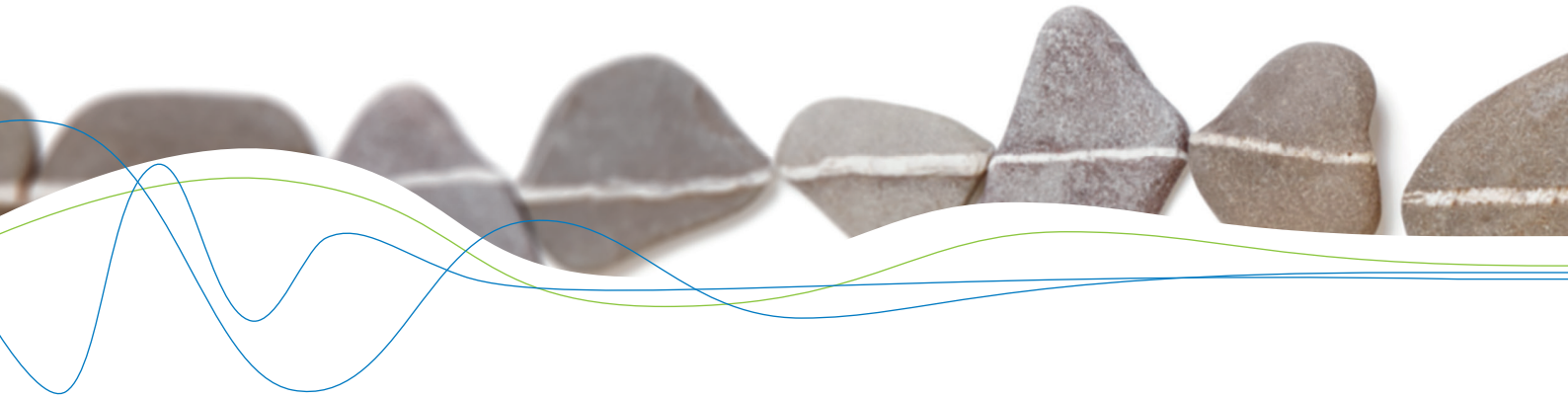
› **Highly reduced power consumption:** less than 80% compared to other analyzer on the market

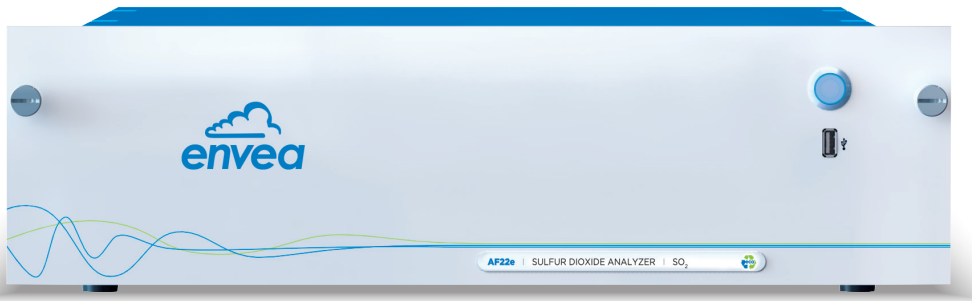
Save 20.000 KWh over 10 years for each monitor



It simply makes your life easier

All you need is in your hand





Standalone, in a Mobile Laboratory,
Fixed Shelter,
Micro-monitoring Station

Trustworthy communication
(password protected)
ENVEA Connect™

Direct, local access (integrated Wi-Fi)
Remote access (LAN connections)

- **Display**
  - animated synoptics
  - measurements in real time
  - status of the device
  - alarm
  - notification
    - repair / maintenance required
      - diagnostic
      - guide step by step
      - automatic recognition of optional devices and spares
      - automatic drivers' download
    - timelaps to maintenance
    - filter changing
- **Commands**
  - automatic / programmable response time
  - zero / zero ref
  - span / span check
  - programmable span / zero
  - data download
  - software upgrade
  - system backup
  - setup
  - customization
- **State of health reports**
  - e-mail

UV photometry Ozone analyzer O342e

Technical specifications

The O342e combines patented optical technology with decades of expertise to ensure you get the best ozone monitoring results available on the market, quickly, ecologically and reliably!

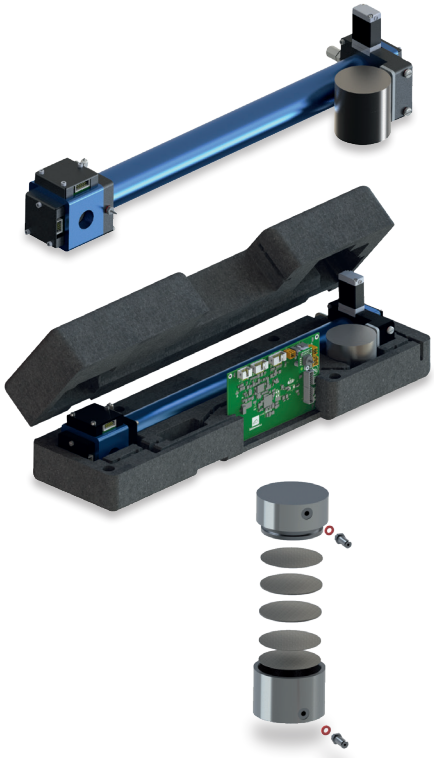
Applied to ozone measurement, the UV Direct Absorption (UV-DA) technique, based on the UV photometry principle, consists in measuring the UV light absorption by ozone molecules. The ozone concentration is deduced by applying a ratio between two different UV signals. One of the signals is determined when the air sampling passes through a new **high quality ozone scrubber** used as a catalytic converter, in order to eliminate completely the ozone molecule. The other signal passes directly through the measurement cell. Both signals are detected by a photodiode, offering accurate and stable signal detection. Finally, a ratio between the two detected signals, with a performance of pressure and temperature compensations, gives the ozone measurement.

The O342e represents a decisive technological evolution as it implements in premiere LED based UV photometric technique (Patented).

The innovative LED component replaces the Mercury lamp traditionally used as a spectroscopic source for ozone monitoring. Besides eliminating Mercury, which is heavily polluting, the LED based analyzer offers durability and excellent stability of the measurement.

Advantages of the technology:

- Best metrological performances
- Extremely stable and repeatable measurement
- Long lifespan, excellent accuracy
- Very low power consumption
- Reliable electronics
- Easy and reduced maintenance
- Economic



Unsoldered, refillable ozone scrubber

O342e SYNOPTIC

Parameter measured	O_3
Range	0-10 ppm
Typical Lower detectable Limit (LDL)	0.2 ppb
I/O included	1 x Ethernet & 3 x USB ports
Communication protocol	ENVEA / Modbus TCP / Bayern Hessen
Optional equipments	• Internal O_3 generator • Analog 4 x inputs & 4 x outputs / 4 remote control inputs / 6 dry contact outputs • Wi-Fi • RS232/RS422 converter via USB port • 7" TFT LCD color touch-screen • 24 VDC Power supply
Dimensions	483mm x 545mm x 133 mm, 3U
Weight	9 kg
Power consumption	23 Wh

Compliance with:
EN 14625, EN 15267, ISO 13964,
40 CFR PART 53 SUB B & SUB C

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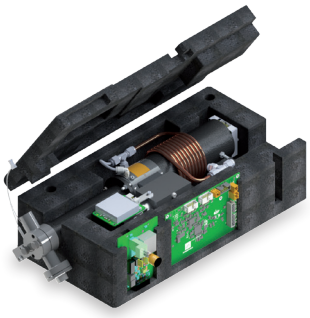
UV Fluorescent SO_2 analyzer AF22e

The UV Fluorescence Technique consists in detecting the fluorescent radiation emitted by SO_2 molecules after reaching a temporary electronic state. A photodiode 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.

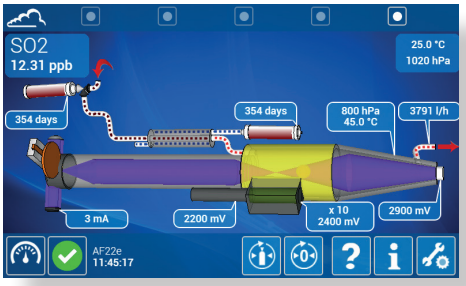
1. Absorption - Excitation: $SO_2 + h\nu \Rightarrow SO_2^* (h\nu \text{ at } \lambda = 214 \text{ nm})$
2. Return to fundamental State : $SO_2^* \Rightarrow SO_2 + h\nu' (h\nu' \text{ at } \lambda = 350 \text{ nm})$



The AF22e analyzer benefits from all the remarkable features of the *e-Series* as well as absolutely new and specific developments:

- Innovative optical design with in line UV source, PM assembly and UV detector for excellent sensitivity and signal stability
- Unique heating system of the measurement chamber, easy to install or replace, for superior metrological performances
- Optimized fluidic design for simplified operation & maintenance
- Creative electronic architecture for better reliability and operation cost reduction
- Original mechanical design for weight & power saving as well as thermal insulation & reliability
- Special architecture means that no additional pump is necessary in case of permeation bench option

AF22e SYNOPTIC



Parameter measured	SO_2
Range	0-10 ppm
Typical Lower detectable Limit (LDL)	<0.4 ppb
I/O included	1 x Ethernet & 3 x USB ports
Communication protocol	ENVEA / Modbus TCP / Bayern Hessen
Optional equipments	• SO_2 permeation bench • Analog 4 x inputs & 4 x outputs / 4 remote control inputs / 6 dry contact outputs • Wi-Fi • RS232/RS422 converter via USB port • 7" TFT LCD color touch-screen • 24 VDC Power supply
Dimensions	483mm x 545mm x 133 mm, 3U
Weight	9.5 kg
Power consumption	30 Wh

Compliance with:
EN 14212, EN 15267, ISO 10498, 40 CFR PART 53 SUB B & SUB C

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Non dispersive Infra Red CO/CO_2 analyzer **CO12e**

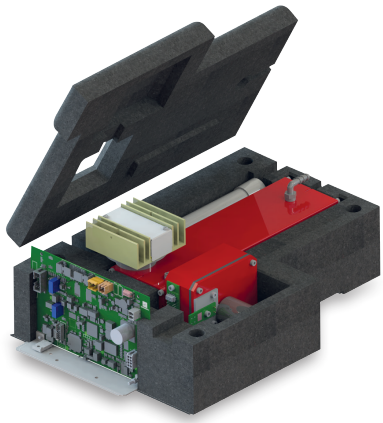
The CO sample concentration is determined by measuring the quantity of infrared light the sample gas absorbs as it flows through a multi-reflection chamber. As absorption spectrum is not continuous, a gas filter, “correlation wheel”, is used in conjunction with the optical filter, it allows highly selective sample gas measurement by eliminating gas interference with a very-close CO absorption spectra.

CO12e combines state-of-the-art components and powerful design technology for reduced and easy maintenance:

- New correlation wheel equipped with a chopper for synchronous detection
- Immunity to wheel speed variations
- Acquisition synchronized to rotation for better repeatability
- Signal demodulated using chopper, eliminating all low frequency noises related to the power supply, voltage drifts, etc.

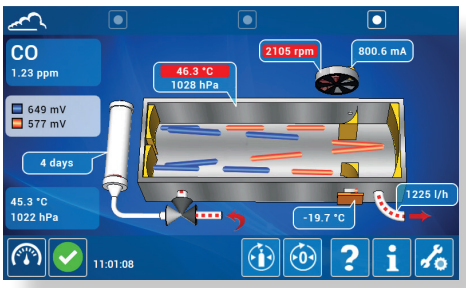
Optional: CO_2 measurement cell (0-2000ppm) within the same analyzer

- Excellent reliability thanks to the constant flow managed by hardware
- Direct view of the dust level on the sample filter without opening the analyzer: maintenance optimization
- Easy access for maintenance and cleaning of the Zero filter, IR Source and optical mirrors
- Measurement frequency: every 100 ms
- Reduced consumption of span gas: the analyzer will immediately detect minor drift and perform smart calibration



Great accuracy: the measuring module and correlation wheel are set in the enclosed foam box for stable temperature and no interference from external conditions

CO12e SYNOPTIC



Parameter measured	CO
Range	0-300 ppm
Typical Lower detectable Limit (LDL)	0.03 ppm
I/O included	1 x Ethernet & 3 x USB ports
Communication protocol	ENVEA / Modbus TCP / Bayern Hessen
Optional equipments	• CO_2 monitoring module (option) • Analog 4 x inputs & 4 x outputs / 4 remote control inputs / 6 dry contact outputs • Wi-Fi • RS232/RS422 converter via USB port • 7” TFT LCD color touch-screen • 24 VDC Power supply
Dimensions	483mm x 545mm x 133 mm, 3U
Weight	7.1 kg
Power consumption	22 Wh

Compliance with:
EN 14626, EN 15267, ISO 4224,
40 CFR PART 53 SUB B & SUB C

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APPROVAL

Chemiluminescent NO-NOx & NO_2 analyzer **AC32e**

The AC32e utilizes the principle of chemiluminescence for automatically analyzing the NO - NOx and NO_2 concentration within a gaseous sample. The reaction between NO and O_3 (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.

New design of PM detector, with special insulation material (patent pending) avoiding risk of condensation:

- Dual stage Peltier cooler for better efficiency & reliability
- Optimized heat dissipater
- Energy saving design
- Easy maintenance / longer lifetime

New, very compact ozone generator maintenance-free:

- No metal part in contact with O_3 (use of a dual dielectric glass tube): eliminates corrosion risk
- Integrates an ozone cleanser with visual control for maintenance: avoiding the risk of Ammonium salt creation

Exclusive refillable catalytic ozone scrubber offering long lifetime and low maintenance:

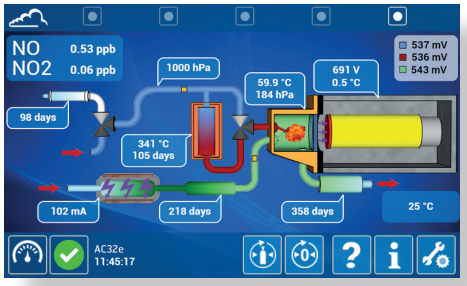
- Energy-saving Catalytic scrubber

User refillable scrubber
with min 2 years lifetime

Simple and optimized principle of operation without pre-reaction chamber:

- Very low ozone consumption
- Advanced lifetime of ozone generator

AC32e SYNOPTIC



Parameter measured	NO-NOx & NO_2
Range	0-20 ppm
Typical Lower detectable Limit (LDL)	<0.2 ppb
I/O included	1 x Ethernet & 3 x USB ports
Communication protocol	ENVEA / Modbus TCP / Bayern Hessen
Optional equipments	• NO_2 permeation bench • Analog 4 x inputs & 4 x outputs / 4 remote control inputs / 6 dry contact outputs • Wi-Fi • RS232/RS422 converter via USB port • 7" TFT LCD color touch-screen • 24 VDC Power supply
Dimensions	483mm x 545mm x 133 mm, 3U
Weight	12 kg (without the external pump)
Power consumption	36 Wh

Compliance with:
EN 14211, EN 15267, ISO 7996,
40 CFR PART 53 SUB B & SUB C

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A wide Sales and service network worldwide

ENVEA's service capability extends throughout the world and has proven to provide efficient, responsive services to our global customer base. We know the importance to our customers of having instruments serviced at their sites to reduce downtime and increase instrument availability. The World-wide service partners and distributors have teams of service engineers who are regularly trained by ENVEA to provide on-site support.

The Group offers industry leading expertise to customers and partners through a comprehensive range of technical support services, training packages and a 'knowhow transfer' approach in a spirit of professional partnership. Our commitment is to provide expertise, technical advice and support to help you meet your specific pollution monitoring challenges, from your initial inquiry and product selection through the product life-cycle providing support services and tailored maintenance programs.

Our Support Services Team brings the experience of a wide range of industrial sectors and process applications, thus ensuring that our systems are set-up, operated and maintained to maximise performance and functionality for their intended purpose. Our range of Technical Services also enable Environment Agency regulated processes that are subject to the Operator Monitoring Assessment (OMA) scheme to maintain or improve their scoring through having formal and service maintenance contracts to ensure that calibration and maintenance is carried out at the correct time. Our global service packages also help to ensure requirements are met with regard to maintaining their monitoring systems at a high level of data availability.

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