

Cold gas UV analyser



Cold-dry spectrometer-based gas analyser for measurement of pollutants in flue gas with low concentrations and for process control

APPLICATION

The UV analyser UVA 17 CD can be used for monitoring of e.g. NO, NO₂, SO₂ and O₂ in incineration plants as well as for process measurements in the chemical and pharmaceutical industry.

This analyser is based on a spectrometer and measures all UV absorbing gas components. The applied Xenon flash light is characterised by a 2 to 3 times higher lifetime compared to other light sources.

The oxygen measurement is carried out optionally by a paramagnetic oxygen sensor or an electrochemical cell.

A small PC with 7" colour display and an app-based menu allow an intuitive operation on site as well as remotely.

YOUR BENEFITS AT A GLANCE

- compact design
- long-term stable signal
- user-friendly touch display
- extension of measuring components without additional hardware possible
- remote access

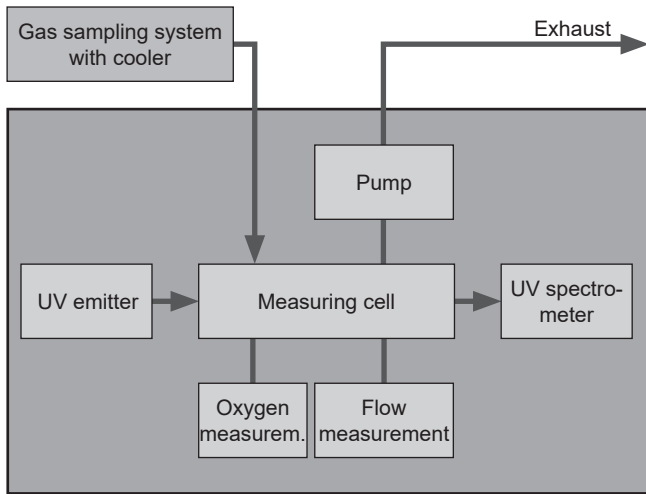
PRECONDITIONS ON SITE

- installation place indoors and dust-free
- protection against wetness
- protection against percussions/vibrations
- appropriate gas sampling and conditioning

LOWEST MEASURING RANGES

Component	Measuring range
NO:	0...50 mg/m ³
NO ₂ :	0...100 mg/m ³
SO ₂ :	0...50 mg/m ³
O ₂ :	0...25 vol. %
<i>Other components (e.g. CH₂O, H₂S, Cl₂) and measuring ranges on request.</i>	

SCHEMATIC DESIGN



FUNCTION

The function of the UV analyser is based on the measurement of an integrated spectrometer in the spectral range of ultraviolet radiation of 180 to 400 nm. Fundamentally, the device is composed of light source, measuring cell and spectrometer which are interconnected via the optical path. The emitted radiation is absorbed partly by the process gas in the measuring cell and detected by a spectrometer afterwards. By using a chemometric model the gas component as well as the concentration can be determined.

Because of the modular design, there is the possibility for application of different spectrometers for adaptation to variable requirements.

TECHNICAL DATA

Housing:	robust housing with compact 19" format, IP40; 483 mm x 133 mm x 350 mm (w x h x d), approx. 12 kg
Measuring methods:	<ul style="list-style-type: none"> • spectrometer 180-400 nm (NO₂, SO₂, NO, CH₂O, H₂S, Cl₂) • electrochemical cell (optional for O₂) • paramagnetic measuring method (optional for O₂)
Number of meas. components:	up to 12 components (dependent on application) and oxygen
Accuracy of spectrometer components:	< 2% of the respective measuring range
Paramagnetic oxygen sensor:	<ul style="list-style-type: none"> • warm-up time: < 1 h (at 20 °C ambient temperature) • zero point drift: < ± 0.1% O₂ / week (possibly higher at first commissioning or after longer storage) • temperature influence: <ul style="list-style-type: none"> - at zero point setting: < ± 0.05% O₂ / °C - at reference point setting: < ± 0.2% of meas. value / °C
Ambient conditions:	5...40 °C (temperature stability max. 5 K/h); humidity: max. 90% (non-condensing)
Optical bench:	<ul style="list-style-type: none"> • path length of measuring cell: adjustable, 730 mm • particle filter: 2 µm
Zero point setting:	automatically with ambient air
Measuring gas conveyance:	via internal pump: <ul style="list-style-type: none"> • flow rate: max. 2.6 l/min • pressure: max. 1 bar • vacuum: max. 350 mbar
Display / Operating:	7" touch display, 800 x 480 Pixel, status messages for failure, maintenance and maintenance request; Language selection: German, English, French, Chinese
Data storage:	data logger function
Interfaces:	RS232 (Modbus)
Inputs/outputs:	<ul style="list-style-type: none"> • 8 analogue outputs, 4...20 mA, potential-free, burden max. 500 Ω • 14 digital inputs (optocoupler), max. 30 V • 16 digital outputs, potential-free, max. 60 V, 500 mA
Remote control:	VNC, remote control via PC
Power supply:	110-250 V AC / 50-60 Hz, 50 W
Other functions:	integrated flow measurement
<i>Special models are possible on request.</i>	

