

# Optical opacity /dust monitor

Standard system for plants with small to medium dust concentrations.

## Features

- In-situ measuring procedure, continuous measurement
- Semi-conductor source with long service life
- Super-wide band diode (SWBD), which provides more stable measuring results in comparison to devices with conventional LEDs
- Powerful microprocessor technology
- Measured value display on LC display in opacity, extinction or in mg/m<sup>3</sup>
- Automatic function tests with correction of measured values in relation to soiling
- Optics and electronics in a hermetically sealed unit - no smoke gas can enter device
- Easy adjustment without additional equipment
- Low-maintenance thanks to optimal purge air conduction.

## Applications

Plants in which the dust concentration quantity needs to be measured, e.g.:

- Furnace plants with semi-anthracite coal, brown coal, fuel oil and combined heating
- Converter plants, asphalt mixing plants
- Plants for cement manufacture.

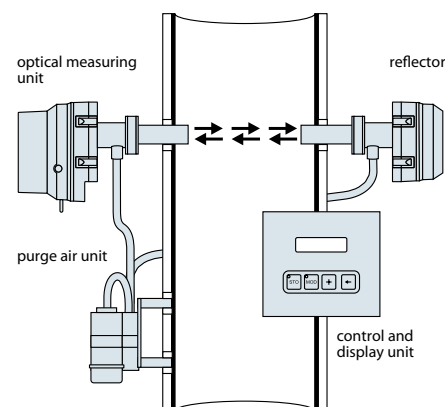
## Approvals

- Suitability-tested by the TÜV Cologne, test report 936/801017
- Itemized in the list of suitable measuring devices for continuous emission measuring.
- MCERTS.



## Measuring principle

The device operates using the double-pass method according to the auto-collimation principle. The light beam traverses the measuring distance twice. The attenuation of the light beam by the dust content in the measuring section is measured and evaluated.



## System components

- Mounting flanges
- Measuring head
- Reflector
- Control and display unit
- Purge air unit.

## Options

- Bus interface, e.g. Modbus or similar
- Automatic quick-closing shutters to protect the measuring head and the reflector in the event of failure of the purge air
- Weather protection covers, for outdoor installation
- Explosion proof design for EEx p, Zone 1 or Zone 2
- With an additional display unit at the measuring location, the control and display unit can be installed in up to 1000 m distance away
- Temperature compensation through additional analog input
- Special model for measuring distances up to 18 m with 2 purge air units
- Filter set for sensitivity and linearity control.

measurements	opacity, extinction	detection limit	0.75% @ extinction 0-0.1
switchable measuring ranges	opacity: 0-20% ... 0-100% extinction: 0-0.1 ... 0-1.6 dust: 0-80 mg/m <sup>3</sup> ... 0-4000 mg/m <sup>3</sup> <sup>1)</sup>	reference point drift	<0.4% of measuring range/month
measuring principle	transmission	zero point drift	<0.4% of measuring range/month
flue gas temperature	above dew point up to 250°C, optional up to 1000°C, depending on application	supply voltage	95-264 VAC, 47-63 Hz, 30 VA
flue gas pressure	-50 up to +20 hPa, optional higher	dimensions (h x w x d)	measuring head 363 x 185 x 398 mm
duct diameter	1 up to 12 m, optional up to 18 m	weight	7 kg
ambient temperature	-20 up to +50°C, optional higher	remarks	<sup>1)</sup> with reference to one meter of path length after gravimetric calibration
protection	IP65, Ex optional	<b>purge air supply</b>	
measuring outputs	2 x 0 / 4-20 mA / 500 Ohm, manual or automatic measuring range switching, optional Modbus RTU, Profibus DP	purge air quantity	approx. 80 m <sup>3</sup> /h
digital outputs	6 programmable relay outputs, permissible load 48 V / 0.5 A	supply voltage	115/230 VAC, 50/60 Hz, 0.37 / 0.43 kW
digital inputs	6 programmable potential free inputs	dimensions (h x w x d) weight	350 x 550 x 500 mm 12 kg
accuracy	<1% of measuring range	protection	IP65