

## Dust concentration measuring device



Continuous, optical extractive measurement of dust contents in wet and sticky exhaust gases

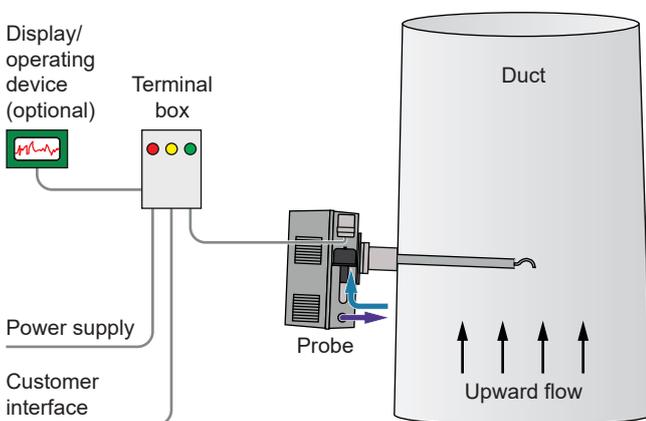
### APPLICATION

The measuring gas is sampled by a temperature-controlled probe, conveyed to a measuring cell and continuously diluted and dried with hot and dust-free ambient air. The dust measurement is based on optical scattered light measurement. Thereby the device is streamed with the measuring air and the dust content is measured by the optical sensor. In the electronics of the device the measuring signal is converted to an equivalent dust signal.

### YOUR BENEFITS AT A GLANCE

- relatively small required space
- compact device → only 1 sample flange with integrated or separated return fitting necessary
- display option in  $\text{mg}/\text{m}^3$  by input of calibration parameters
- integrated isokinetic gas sampling
- visualisation and operating via PC software or optional display/operating device

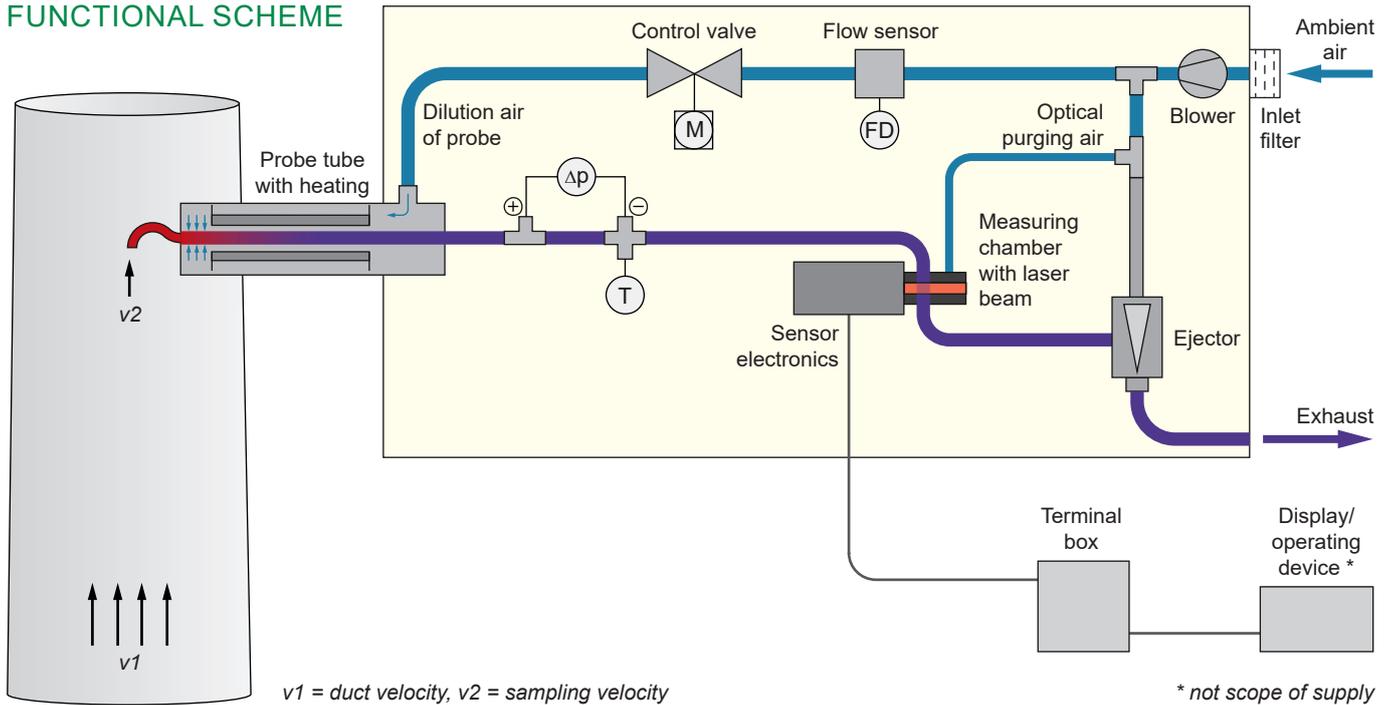
### INSTALLATION EXAMPLE



### PRECONDITIONS ON SITE

- ambient temperature:  $-20\dots+50\text{ }^{\circ}\text{C}$
- relative humidity (ambient air): max. 90% (non-condensing)
- location free of percussion
- installation place with run-in/run-out zone of min. 5-fold/2-fold length of duct diameter
- flow measuring device (optional to measure actual duct flow for setting of isokinetics)

FUNCTIONAL SCHEME



TECHNICAL DATA

Probe:	extractive sampling with GRP weather protection casing, IP55; approx. 440 x 640 x 1,340 mm (w x h x d), 35 kg immersion depth: max. 1,000 mm; cable length to terminal box: max. 2 m
Terminal box:	steel sheet housing, IP65; approx. 300 x 400 x 210 mm (w x h x d), 13 kg
Display / Operating:	via PC software or optional display/operating device
Media temperature:	max. 180 °C
Exhaust humidity:	rel. humidity 100%
Flow of measuring gas:	2.5...4.0 m³/h (sucked measuring gas and dilution air)
Pressure on ambience:	-30...+2 hPa
Measuring range:	dust (in operation) 0...7.5 mg/m³ (max. 250 mg/m³)
Operational availability:	after 5 to 15 min (without preheating)
Control function:	zero and reference point check; zero point/pollution correction
Calibration:	via gravimetric comparison measurement
Analogue output:	4...20 mA, galvanically isolated with common ground, burden max. 500 Ω
Analogue input:	4...20 mA, galvanically isolated, for external velocity of isokinetic gas sampling
Digital outputs:	2 x potential-free contact, max. 35 V UC, 0.4 A (for failure and maintenance)
Digital input:	optional, external switch contact for switch-over between measuring gas and ambient air
Interfaces:	Modbus VDI (RS485), Modbus Display (RS485), USB connection for PC software
Process connection:	flange DN 80 PN 6, special design: tube Ø 100 mm
Clip contacts:	max. 2.5 mm²
Power supply:	110V/AC or 230VAC 50/60Hz (automatic detection), 1 kVA
Optional:	<ul style="list-style-type: none"> <li>display/operating device</li> <li>probe length with immersion depth of 1,500 mm</li> </ul>
<i>Special models are possible on request.</i>	