Dust concentration measuring device

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

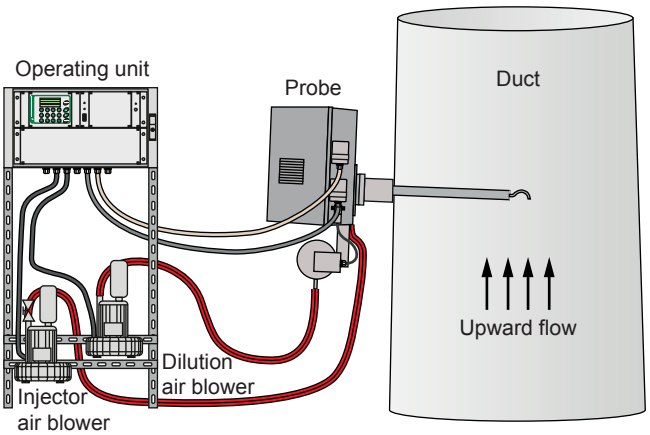
APPLICATION

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.

For dust measurement, based on optical scattered light measurement, a laser lance unit in the measuring cell is streamed with the conditioned measuring air.

In the electronics of the operating unit the signal of the optical unit is converted to an equivalent dust signal.

INSTALLATION EXAMPLE



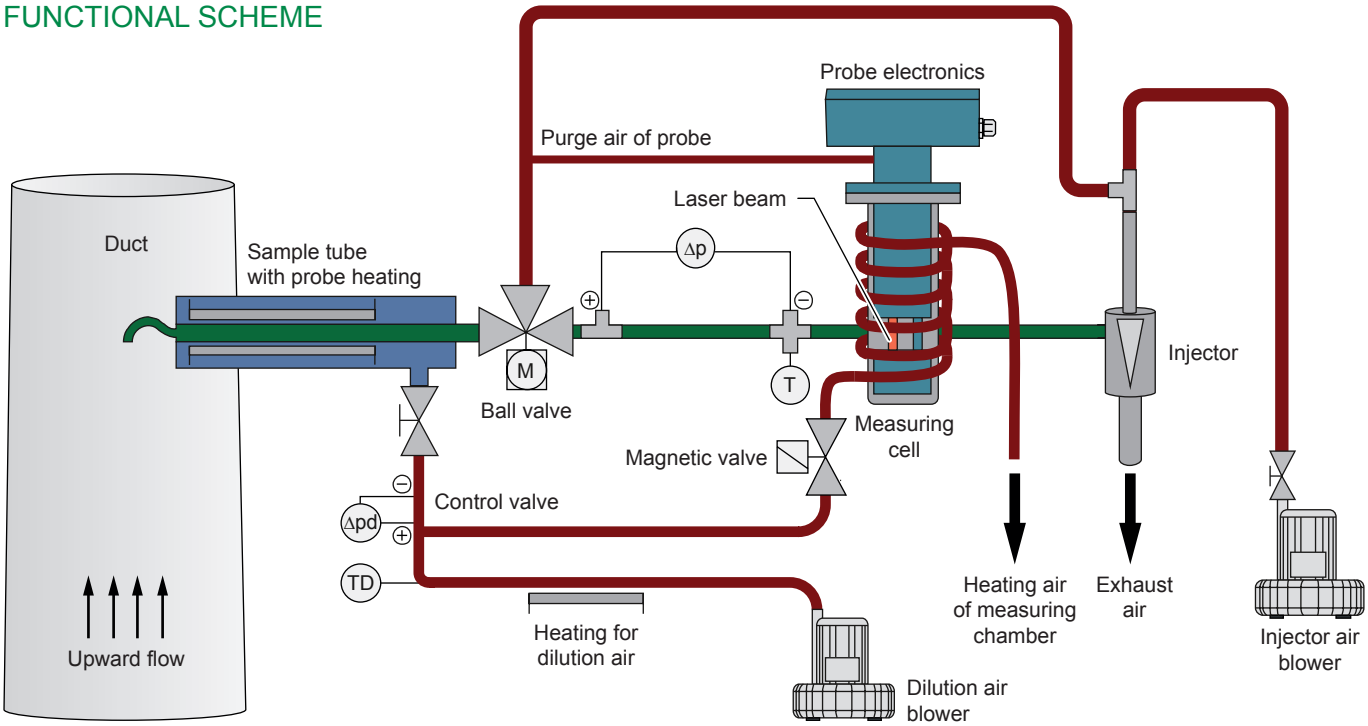
YOUR BENEFITS AT A GLANCE

- relatively small required space
- compact device → only 1 sample fitting with integrated or separated return fitting necessary
- display option in mg/m³ by input of calibration parameters
- isokinetic gas sampling possible

PRECONDITIONS ON SITE

- ambient temperature: -20...+50 °C
- relative humidity: 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

FUNCTIONAL SCHEME



TECHNICAL DATA

Probe:	extractive sampling with GRP weather protection casing, IP55; approx. 610 mm x 1050 mm x 1500 mm (w x h x d), approx. 65 kg; immersion depth: max. 1000 mm; probe cable length max. 25 m
Operating unit:	steel sheet housing on profile rack (incl. blowers), IP65; approx. 600 mm x 1760 mm x 670 mm (w x h x d), approx. 90 kg; cable length max. 25 m
Display / Operating:	4-line LC display with operating keys, key switch and RS232 interface
Media temperature:	max. 180 °C
Exhaust humidity:	rel. humidity: 100%
Flow of measuring gas:	6...12 m³/h (sucked measuring gas and dilution air)
Pressure on ambience:	-30...+2 hPa
Measuring range:	dust i. o.: 0...15 mg/m³ (max. 500 mg/m³)
Operational availability:	after 5 to 15 min (without preheating)
Calibration:	via gravimetric comparison measurement
Analogue outputs:	4x 4...20 mA, galvanically separated with common ground, burden max. 1 kΩ
Digital outputs:	6x potential-free contact, max. 35 V UC, 0.4 A (for failure, maintenance, maintenance request, limit value 1 and 2, measuring range)
Digital input:	optional, external switch contact for switchover of measuring/purging
Process connection:	flange DN 80 PN 6, special design: tube Ø 100 mm
Clip contacts:	max. 2.5 mm²
Power supply:	3L, N, PE, 400 V AC 50 Hz, 4 kVA (max. 5x 4 mm²)
Special models are possible on request.	

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