Dust concentration measuring device

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Continuous, tribo-electric extractive measurement of dust contents in wet and sticky exhaust gases

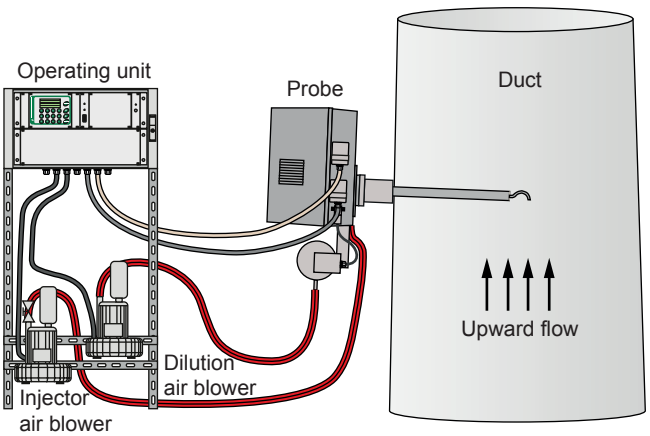
APPLICATION

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. Inside the measuring cell the diluted measuring gas is gathered by means of tribo-electric probes. The dust-proportional signal is converted by the microcontroller integrated in the device to determine the dust content of the exhaust.

YOUR BENEFITS AT A GLANCE

- special device consisting of probe and operating unit
- 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

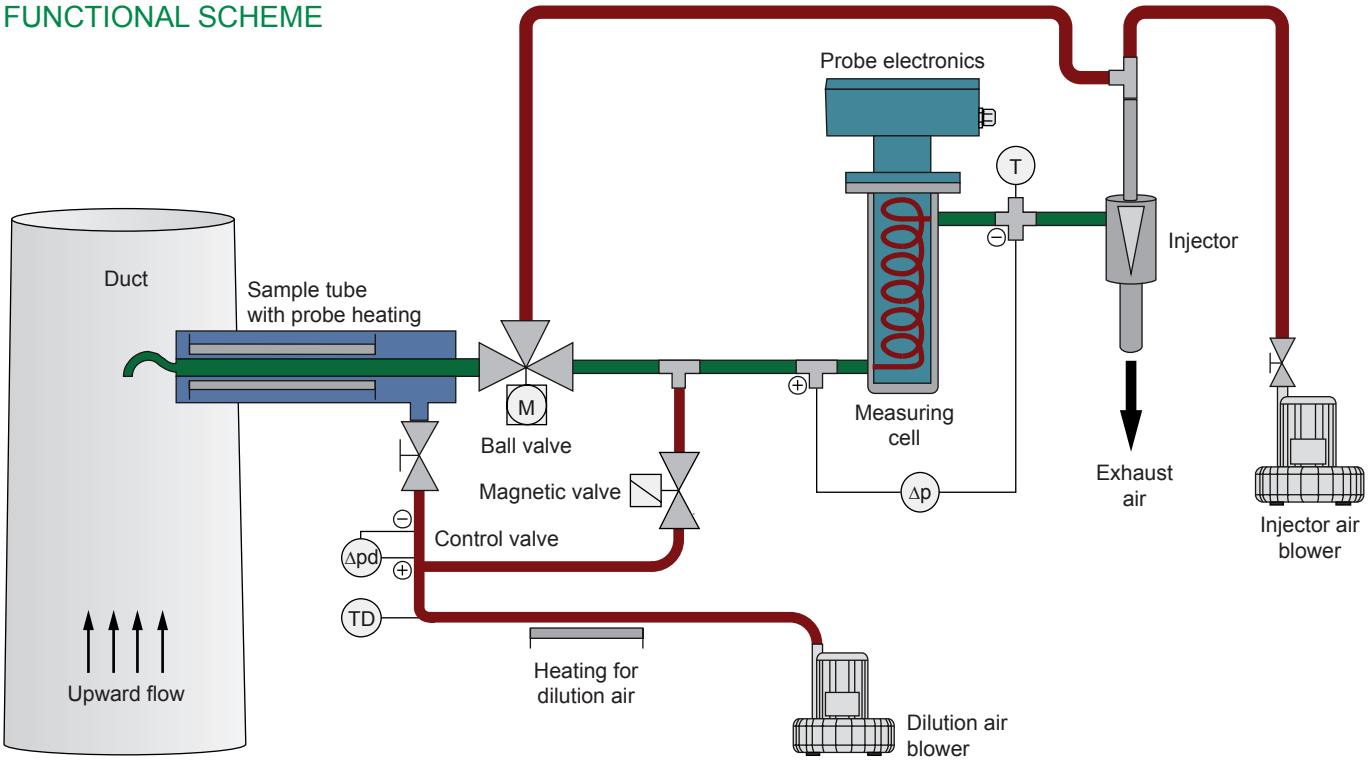
INSTALLATION EXAMPLE



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. 45 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. 280 °C (higher temperatures on request)
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)
Accuracy:	± 2%
Calibration:	by 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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