

# Dust concentration monitor for wet gases

**Sensitive system for continuous extractive dust concentration measurement in accordance with the scattered light principle.**

### Features

- Compact design
- Very low maintenance requirement
- In-situ measuring method with continuous measurement
- High sensitivity
- No laborious device adjustment.

### Applications

The D-R 820 F is used for measuring dust concentration in wet gases.

Potential applications e.g.:

- Measurements in saturated gas downstream of desulfurization plants
- Downstream of wet cleaning plants
- Waste incineration plants
- Technological processes.



### Measuring principle

A defined partial current is withdrawn from the exhaust gas current. This partial current is continuously heated and diluted with clean, heated air directly in the sampling probe. This immediately lowers the relative moisture and aerosols get evaporated in the heated probe. The partial current is optically measured in the measuring

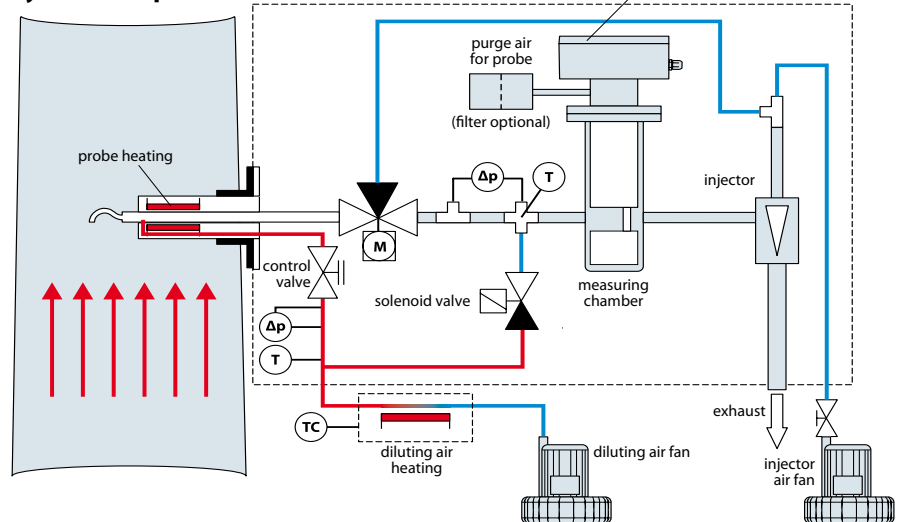
chamber.

The signal is corrected by the measured dilution ratio and is thus a measure of the dust content of the exhaust gas.

The system comprises a special sampling probe, the laser dust monitor, a gas conditioning unit (dilution, tempering), an injector, two fans and an electronic evaluation unit.

The sampling probe and the measuring chamber form an assembly. The electronic evaluation unit and one blower for operating the injector and one for generating the diluting air are mounted together on a rack frame.

### System components



Measuring range		Rack frame with control unit	
dust in operation	0 ... 15 (max. 100) mg/m <sup>3</sup> higher on request	dimensions	600 x 1750 x 550 mm (W x H x D)
exhaust gas moisture limit value	absolute moisture ≤40%, 250 g/m <sup>3</sup> , relative moisture = 100%	space requirements	1100 x 1750 x 1100 mm (W x H x D)
<b>Probe unit</b>		weight	approx. 90 kg
dimensions including probe length	600 x 1050 x 1500 mm (W x H x D), 1000 mm	protection class	IP55
weight	approx. 40 kg	ambient temperature	-20 ... 50°C
probe material	stainless steel, Hastelloy as option	power supply	230/400 V, 50 Hz, 3x16 A, 3 L, N, PE others optional
protection class	IP65	<b>Connections on control unit</b>	
ambient temperature	-20 ... 50°C	current outputs	4x 4 ... 20 mA, galvanically isolated with common ground
measuring gas temperature	max. 280°C (higher on request)	load	max. 1 kOhm
measuring air flow rate	8–10 m <sup>3</sup> /h	digital contacts	6x max. 35 V 0.4 A
flange	DN 80 PN 6 special version tube Ø100 mm	digital input	optional via switching contact to externally change between measuring/purging
		terminal contacts	max. 2.5 mm <sup>2</sup>