



## FWE 200

### Measurement of Dust Concentration in wet Gases

#### Applications

Measurement of dust concentrations for example:

- in saturated gas downstream of desulfurization plants
- downstream of wet scrubbing plants, e.g. in waste incinerators
- in wet exhaust gas from industrial processes.

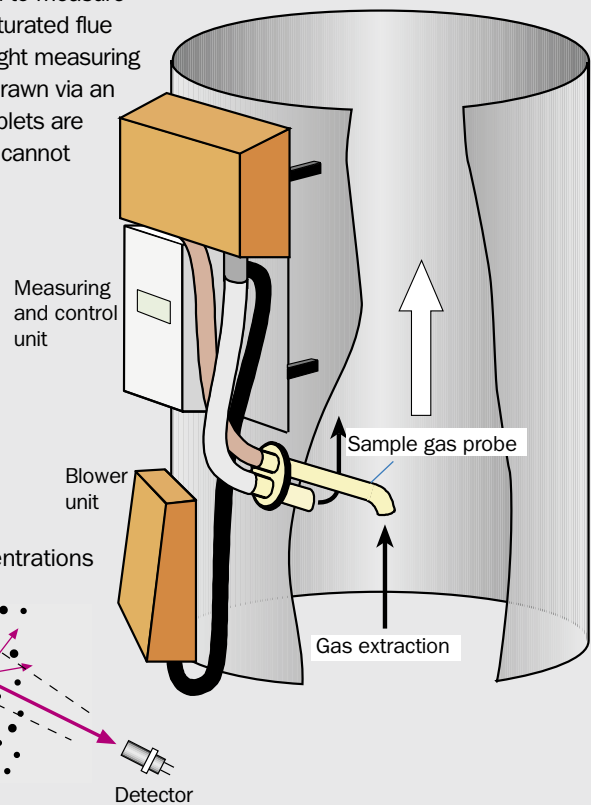
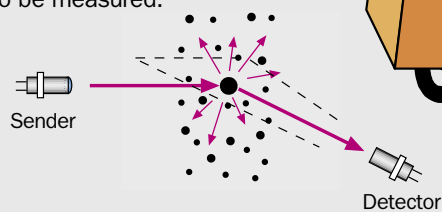
The FWE 200 is designed to measure dust concentrations in saturated flue gas using the scattered-light measuring principle. The gas is withdrawn via an extraction probe. Any droplets are vaporized and, therefore, cannot falsify the result of the measurement.

#### Key Features

- Dust measurement in wet gases
- Compact system design
- Robust construction
- Easy to install and low maintenance
- Only one probe for gas sampling and return

#### Scattered-Light Principle

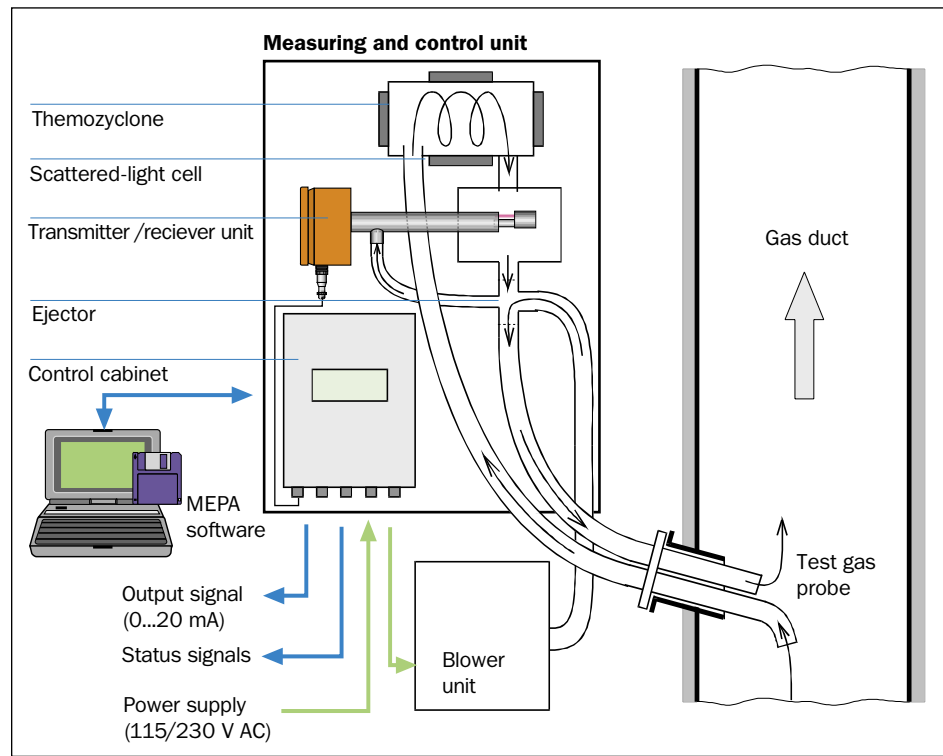
Scattered-light enables even minimal dust concentrations to be measured.



## Operating Principle

A partial flow of gas is extracted from the flue gas duct via a probe and superheated in a thermocyclone before it is supplied to a scattered-light cell. The FWE 200 then uses the transmitter/receiver unit to measure the scattered-light intensity in the test cell as a measure of the dust concentration. Following this, the test gas is fed to the sample-gas probe via an ejector and returned to the duct.

The sample gas is forwarded via the ejector by means of a blower unit that also supplies the transmitter/receiver unit with purge air for keeping the optical boundary surfaces clean.



Technical Data	FWE 200
<b>Measurement</b>	
Measured quantity	Scattered-light intensity, proportional to the dust concentration
Measurement range	0 ... 5 mg/m <sup>3</sup> bis 0 ... 200 mg/m <sup>3</sup>
Accuracy	< 2 % of full scale
<b>Plant data</b>	
Gas temperature	max. 120 °C (248 °F) for PVFD probes; optional 200 °C (392°F) for hasteloy probes
Gas humidity	max. 10 g water per m <sup>3</sup> (content by mass 1 %, no water vapor content)
Internal duct pressure	± 60 hPa (8 in WC)
Gas velocity	4 to 20 m/s (13 to 65.5 ft/sec)
Ambient temperature	-20 ... +50 °C (-4 ... 120 °F)
<b>Device data</b>	
Protection class	IP 54, electronic housing IP 65
For outdoor installation	weatherproof cover required for blower unit
Dimensions, weight	
■ Meas. and control cell	H x W x D: 830 x 730 x 400 mm <sup>3</sup> (32.3 x 28.7 x 15.7 in <sup>3</sup> ); approx. 65 kg (143 lb)
■ Sample gas (blank)	nominal length 600 mm (23.6 in), optional 1200 mm (47.2 in); max. 15 kg (33 lb)
■ Blower unit	H x W x D: 550 x 550 x 270 mm <sup>3</sup> (21.7 x 21.7 x 10.6 in <sup>3</sup> ); 14 kg (31 lb)
<b>Interfaces and signals</b>	
Analog output	0/2/4 ... 20 mA
Relay outputs	one for malfunction, warning, maintenance, limit value; load 48 V DC, 0.5 A
Binary input	for maintenance switch
Interfaces	RS 232 for parameterization and service
Power supply	115/230 V AC, 50/60 Hz; power consumption 2.5 kW

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