

**Technical data**

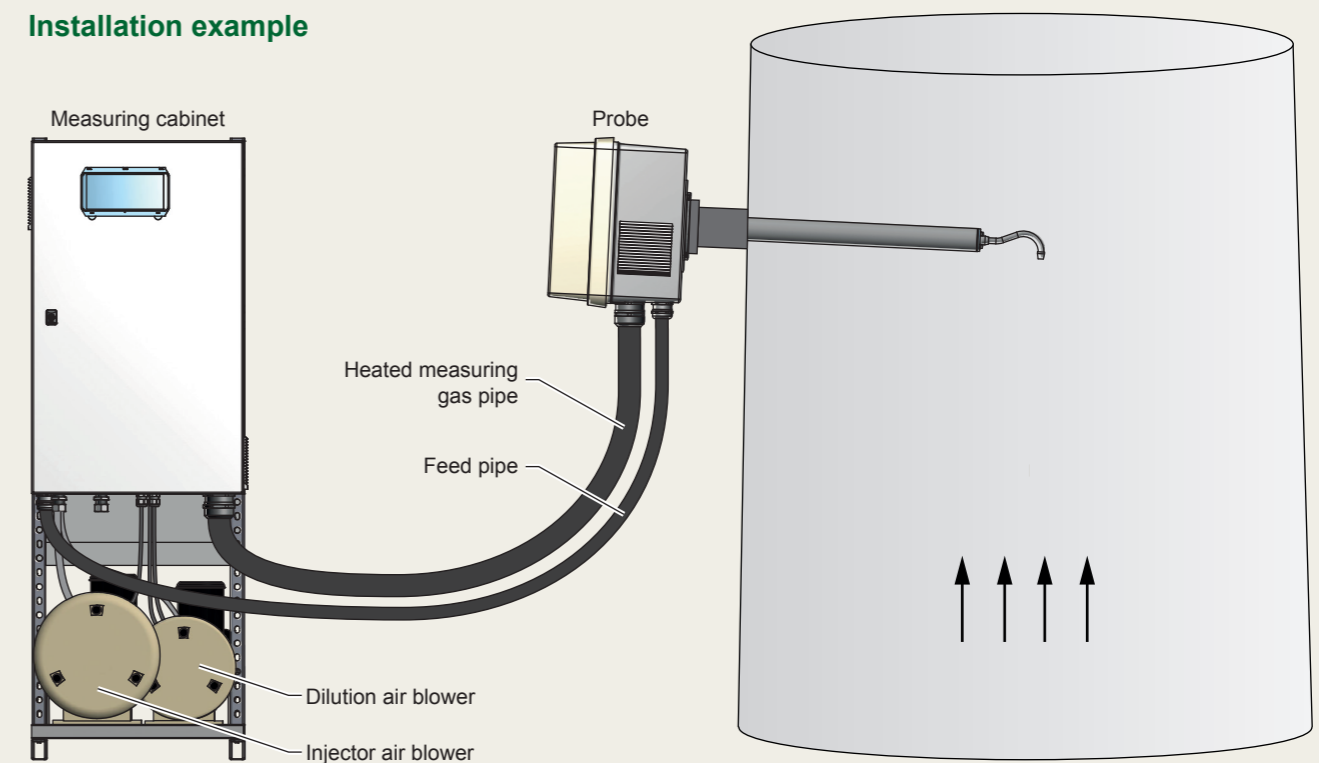
Protection class:	1
Protection degree:	IP 55
Probe:	extractive sampling with GRP weather protection casing, dimensions: approx. 380 mm x 580 mm x 1400 mm (w x h x d), weight: approx. 15 kg; probe tube: approx. 1000 mm, Ø 65 mm
Measuring cabinet and blowers:	combined design by profile rack, dimensions: approx. 600 mm x 1800 mm x 750 mm (w x h x d), weight: approx. 150 kg - measuring cabinet: steel sheet housing incl. heated measuring gas pipe and feed pipe - blowers (injector air, dilution air)
Welding flange:	DN 80 PN 6 (special type with inner tube diameter of 100 mm), adapter gasket, separate or integrated return
Measuring method:	optical dust measurement with laser beam (scattered light), extractive
Measuring range:	dust in operation: 0...15 mg/m ³ (max. 500 mg/m ³)
Calibration:	via gravimetric comparison measurement
Operational availability:	after 5 to 15 min (without preheating)
Display/operating:	4-line LC display, 3 status LEDs, 20 operating keys, maintenance switch, RS232 connection (service / option Modbus)
Media temperature:	max. 180 °C
Exhaust humidity:	rel. humidity: 100%
Pressure against ambience:	-30...+2 hPa
Ambient temperature:	-20...+50 °C
Flow of measuring gas:	6...12 m ³ /h (sucked measuring gas and dilution air)
Power supply:	3L, N, PE, 400 V AC 50 Hz, 4 kVA (max. 5x 4 mm ²)
Analogue outputs:	4x 4...20 mA, galvanically separated with common ground, burden max. 1 kΩ (at option of isokinetic gas sampling: thereof 1x output reserved / not alternatively usable)
Analogue input (optional):	at isokinetic gas sampling used as input for external velocity, 4...20 mA, galvanically separated
Digital outputs:	6x potential-free contact, max. 35 V UC, 0.4 A
Digital input:	external switch contact for switchover of measuring/purging
Clip contacts:	max. 2.5 mm ²
Measuring gas pipe:	approx. 2 m, heated, feed pipe parallel directed
Exhaust gas pipe:	approx. 5 m
Option:	isokinetic gas sampling
<i>Special models are possible on request.</i>	

**PFM 16 ED**
Product Information

The dust concentration measuring device PFM 16 ED is a highly sensitive system. It is used for continuous extractive measurement of dust contents in wet and sticky exhaust gases. Thereby an isokinetic gas sampling is possible.

Highlights of the device

- extractive dust measurement in wet and sticky exhaust gases
- special device consisting of probe, measuring cabinet and blowers
- relatively small required space
- compact device → only 1 welding flange with integrated or separated return flange necessary
- display option in mg/m³ by input of calibration parameters
- isokinetic gas sampling possible
- first-class price-performance ratio

**Installation example**

Function

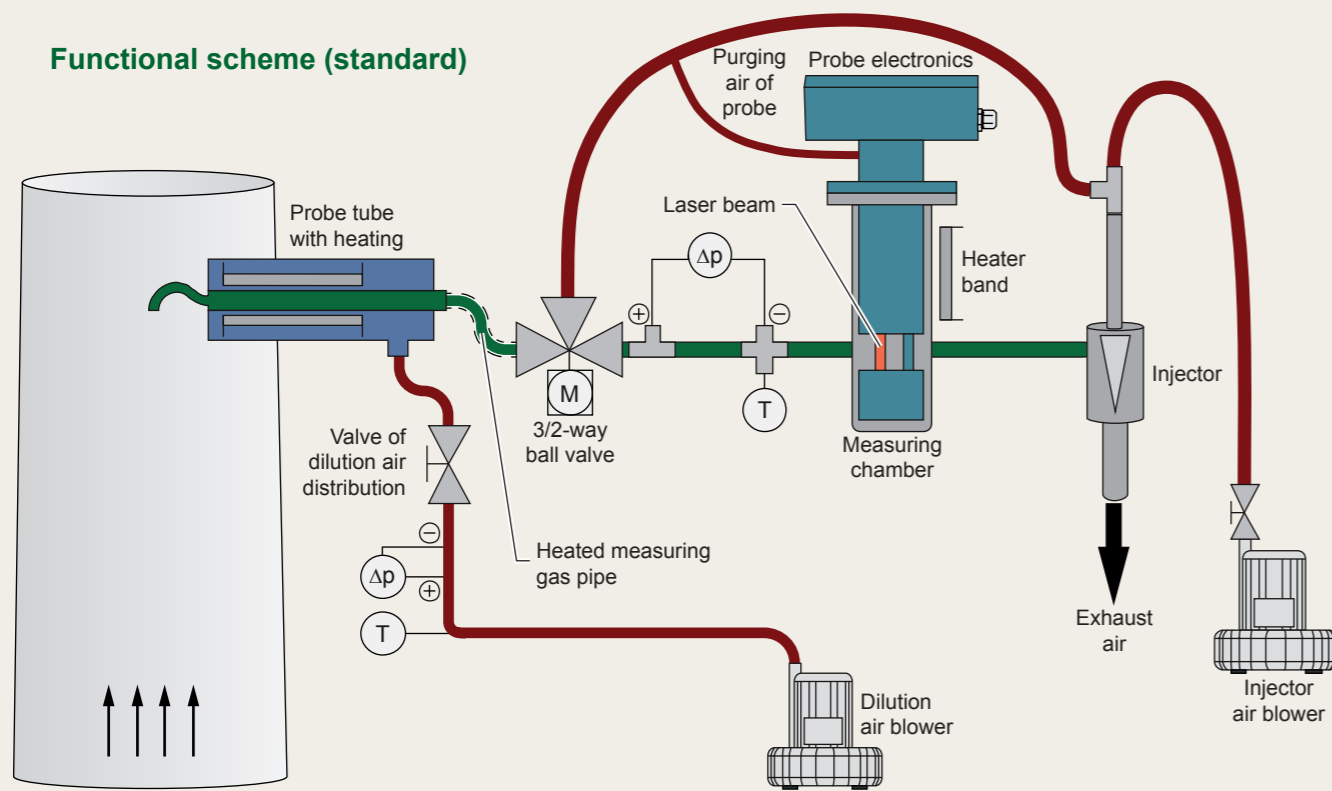
For dust concentration measurement the measuring gas is sampled from the process by a temperature-controlled probe and via a heated measuring gas pipe conveyed to a measuring chamber which contains an optical measuring unit. The sucked off measuring gas is continuously diluted and dried with hot and dust-free ambient air. The active principle of dust measurement is based on the optical scattered light measurement. Therefore a laser lance unit is arranged in a cylindrical measuring chamber and streamed with the conditioned measuring air. In the electronics of the control unit the signal of the optical unit is converted to an equivalent dust signal.

Via the display of the operating unit in the measuring cabinet the current measuring value is displayed. All necessary parameters can be reviewed and set by the menu. The operating is carried out via the keypad.

For diagnostics and cleaning reasons the PFM 16 ED carries out a purging operation autonomously. Thereby a zero and reference point control and a cleaning of the gas paths leading measuring gas is made via the 3/2-way ball valve.

Alternatively, the PFM 16 ED can be operated with compressed-air respectively nitrogen. Optionally, there is the possibility of an isokinetic gas sampling.

Functional scheme (standard)



Isokinetic gas sampling (option)

At application of isokinetic gas sampling by the PFM 16 ED, at the dilution air blower a frequency inverter is provided by which the rotational frequency and thus the volume flow of the dilution air of the device is set automatically.

For the function of isokinetic gas sampling the device offers extended hardware. Via the external 4...20 mA current input, the duct velocity or the differential pressure with the aid of an additional pilot tube probe can be preset to the device.

The PFM 16 ED regulates the volume flow of the dilution air whereby the dilution ratio and therewith the sampled measuring gas volume as well as the respective sampling velocity changes. Thereby the sampling velocity is adjusted to the current duct velocity. Through this the device realises an isokinetic measuring gas sampling. The volume flow in the measuring chamber of the sample probe and in the measuring pot of the optical sensor stays constant.

Functional scheme (option)

