Continuous, tribo-electric in-situ measurement for qualitative monitoring of exhaust gas

APPLICATION
The PFM 14 serves the permanent control of dust emissions. It can be applied as a filter monitoring device as well as configured as a dust measuring device.

The device consists of a probe with separated operating unit. They are connected via a cable by plug-in connections. Thereby, the operating unit can be mounted from the measuring point up to a distance of 50 m.

YOUR BENEFITS AT A GLANCE
• probe with separated display and operating unit
• local diagnosis of system state by combined operating unit with graphic display
• real-time display with diagram or in text mode with display in % or mg/m³
• no purge air blower required
• low operational costs
• easy mounting

PRECONDITIONS ON SITE
• ambient temperature: -20...+50 °C
• location free of percussion
• homogenous dust and stack gas distribution
• flow velocity of min. 3 m/s
• installation place with run-in/run-out zone of min. 5-fold/2-fold length of duct diameter
• power supply
• processing of measuring signals

INSTALLATION EXAMPLE
TECHNICAL DATA

Housing: tribo-electric probe with separate operating unit (max. cable length 50 m); IP65, protection class 1

Probe: approx. 100 mm x 100 mm x 530/730 mm (w x h x d), weight approx. 2.1 kg; probe rod: electrically isolated from housing, length: 300 mm resp. 500 mm (possible to shorten mechanically); immersion depth: 400 mm resp. 600 mm (dependent on application)

Operating unit: approx. 160 mm x 160 mm x 70 mm (w x h x d), weight approx. 3.0 kg

Display / Operating: operating unit: graphic display (128 x 64 Pixel), 4 operating keys; probe: switches at signal module

Ambient temperature: -20...+50 °C

Relative humidity: no special sensitivity

Dew-point spread: min. +5 K

Measuring gas temperature: max. 280 °C

Measuring range of dust: qualitative: 0...100%; quantitative: 0...10 mg/m³ (0...1000 mg/m³)

Gain levels: 4

Operational availability: after approx. 5...10 min

Calibration: by gravimetric comparison measurements (for trend measurement and filter analysis not required)

Analogue output: 4...20 mA, galvanically isolated to device ground, burden max. 500 Ω

Digital outputs: status signals max. 24 V DC at 0.1 A (for failure, maintenance, maintenance requirement, limit value 1 and 2); load capacity: max. 60 Vp, max. 75 mA; forward resistance: max. 10 Ω

Process connection: 1” welding sleeve with Tri-Clamp fastener

Cable gland / tightening zone: 2x M20 x 1.5 / 9...13 mm

Power supply: 230/110 V AC, 50-60 Hz, 24 V DC, 5 VA

Special models are possible on request.