The PFM 13 is a highly sensitive system for continuous, tribo-electric in-situ filter monitoring. Thereby a qualitative monitoring of the exhaust gas is done. Depending on the configuration of the device it can be used as a filter monitoring device as well as a dust measuring device.

Application

The PFM 13 serves the permanent control of dust emissions. Applied as filter monitoring device it is an effective implement to detect and localise damages at filtering precipitators at early stage. Configured as dust measuring device it can be used for continuous monitoring of clean gas contents and dust contents of filtering precipitators.

By the device visible and invisible exhaust plumes can be avoided. The monitoring furthermore enables directed maintenance procedures and serves the avoidance of product losses.

Function

The measurement with the PFM 13 is carried out via the tribo-electric measuring method.

For that matter the measuring gas in the exhaust gas flow is gathered by means of the probe rod. By the passing as well as impinging dust particles a charge exchange takes place between these and the probe rod.

From the discharged current a signal is generated which depends on the mechanical and electrical characteristics of the dust. The dust-proportional signal which is generated by the microcontroller integrated in the device is the degree for the dust content of the exhaust.
The device offers the following highlights:

- Dust measurement and filter monitoring with one compact device.
- Local diagnosis of system state by integrated graphic display.
- No separate power supply necessary (2-wire transmitter).
- No purge air blower required.
- Low operational costs.
- Easy mounting.
- First-class price-performance ratio.

**Technical data**

**Housing:** compact device (integrated graphic display with operating); IP 65; protection class 1.

**Dimensions:** approx. 100 mm x 120 mm x 530/730 mm (w x h x d).

**Weight:** approx. 1.0 kg.

**Probe:** tribo-electric probe consisting of probe rod and probe head; probe rod: electrically isolated from housing, length: 300/500 mm (possible to shorten mechanically); immersion depth: approx. 410/610 mm (dependent on application).

**Display/Operating:** graphic display with touch function at probe head, 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.

**Flow velocity:** min. 3 m/s.

**Measuring range of dust:** 0...100% (qualitative).

**Amplification levels:** 4.

**Operational availability:** immediately after switch-on of power supply.

**Calibration:** by gravimetric comparison measurements (for trend measurement and filter analyses not required).

**Analogue output:** 4...20 mA, 2-wire transmitter, galvanically isolated to device ground, burden max. 150 Ω.

**Digital outputs:** limit value 1 and 2 freely adjustable via menu (solid-state relays, standard: not activated); load capacity: max. 60 Vp, max. 75 mA; forward resistance: max. 10 Ω.

**Process connection:** welding sleeve with Tri-Clamp fastener.

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

**Power supply:** 2-wire transmitter (4...20 mA); min. 15 V DC / max. 30 V DC.

Special models are possible on request.