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Product information

Dust Concentration Measuring Device PFM 97 ED

Functional description

The PFM 97 ED is an extractive dust concentration measuring device which is based on the triboelectrical measuring effect.
It consists of special sampling probe, triboelectrical measuring cell, gas conditioning (dilution, temperature regulation), injector, two side channel blowers and an electronic evaluation unit.
A representative measuring gas sample is sucked off by means of the injector. In the front part of the probe a defined mixing of clean, tempered dilution air takes place. Afterwards it is possible to measure dust concentrations also with difficult exhaust conditions (wet gas, sticky constituents).

Applications

The PFM 97 ED is used to measure the dust concentration in wet gases. Additionally the application is possible with sticky types of dust.
Applications are to find in e.g.:

- chip board production,
- urea industry,
- insulating material production,
- behind wet scrubber and
- similar applications.

Probe unit with tribocell

The sampling probe and the tribocell form a construction unit. According to the respective measuring task the quantity of dilution air and the measuring gas temperature are adjusted in such a way that water drops are eliminated surely and the measuring signal is only a degree for the solid particles.
The measuring gas flow is sucked with the help of an injector through the tribocell, those takes place flow monitoring by the measurement of the differential pressure over the tribocell. This is designed as spin chamber. To its inner wall two triboprobes are attached. The measuring gas flow occurs tangential the measuring chamber. By this spin movement it is possible to produce high velocities at the triboprobes.

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Frame with evaluation unit

A side channel blower for the operation of the injector and for the production of the dilution air as well as the electronic evaluation unit are installed together on a frame.

Benefit for the user of the PFM 97 ED

The PFM 97 ED offers a set of advantages to the user.
Apart from the possibility of the application under the most diverse, also complicated basic conditions it distinguishes above all through its

- extraordinarily compact design,
- no necessity for a complex gas sampling and
- very small maintenance requirement.

Technical Data

Measuring ranges:	
Dust $_{measured}$:	0 ... 15 (max. 500) mg/m³
Probe unit:	
Dimensions:	500 x 750 x 1000 mm (B x H x D)
Immersion depth:	500 mm
Weight:	appr. 40 kg
Material:	Stainless steel
Degree of protection:	IP 65
Ambient temperature:	-20 ... +50 °C
Gas temperature:	max. 280 °C (higher on request)
Flow measuring air:	8 - 10 m³/h
Flange:	DN 80 PN 6
Frame with evaluation unit:	
Dimensions:	600 x 1700 x 500 mm (B x H x D)
Space requirement:	1100 x 1700 x 1100 mm (B x H x D)
Weight:	appr. 90 kg
Degree of protection:	IP 65
Umgebungstemperatur:	-20 ... 50 °C
Power supply:	400 V, 50 Hz, 3~
Fuse:	16 A
Contacts evaluation unit:	
Current outputs:	5 outputs 4 ... 20 mA, galv. separately with common mass
Resistance:	max. 500 Ohm
Digital contacts:	max. 42 V DC on 2 A
Clamp contacts:	max. 2,5 mm²

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