Particle monitor BDA 02

In many production and thermal processes the process- or exhaust air also contain dust particles of various sizes. To ensure this dust does not enter the environment unchecked, they are separated or retained using suitable filter systems.

Whilst in e.g. manufacturing powdered milk, plastics, soot and fertilisers this primarily means recovering valuable substances, in steel production, the wood industry, in foundries, crematoriums and in the cement industry as well as plasterboard product, just to name some of the possible applications, the focus is on environmental protection.

Since the separation elements in the filter systems used wear due to more or less frequent backwashing, dust breaches or increasing particle emission often occur. In addition to ensuring operating safety in the interest of the owner, TA Luft even requires the use of certified residual dust monitoring equipment for many applications and air exhaust ducts.

The particle monitor BDA 02 is one version in a series for this scope of application.

- Unit made in Germany
- Robust, low-maintenance technology
- Easyjust installation kit for easy installation
- German / English menu navigation
- Automatic service notification
- Zero point and range monitoring
- Calibratable (mg/Nm^3)
- Visual filter condition diagnosis on site
- 2.5" Graphics display
- Suitability-tested technology according to TA-Luft
- Low operating costs / high energy efficiency (3 W)

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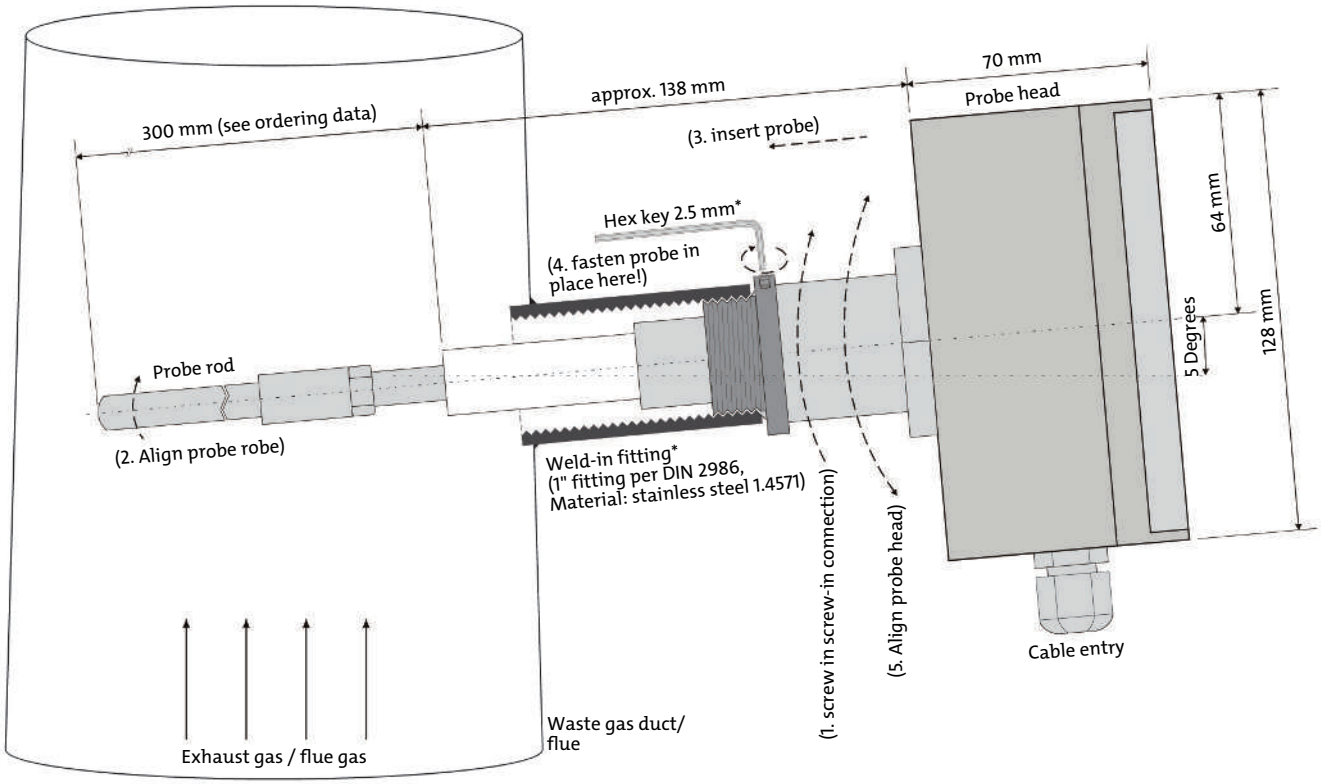
Description

Particle monitors by Bühler are used to monitor filters and separators in normal, moist, non-condensing exhaust gas / processes. They combine progressive signal processing with the proven triboelectric measuring principle. The interaction between particles and the sensor rod result in an electric charge crossing to the sensor rod. This does not require the particles to be in direct contact with the sensor rod. The resulting low current is analysed by the electronics and generates an analogue standard signal proportional to the dust content. The units can be calibrated in mg/m³ through isokinetic reference measurement. This technology is TA Luft approved. The triboelectric measuring process works in flow speeds of 3 m/s and up, and is largely insusceptible to deposits on the sensor rod. Manual amplification adjustment allows the units to be adapted to a variety of systems and applications.

The directly attached control unit features a 2.5" graphics display and the four control keys. The cable inlet along with the Easyjust installation kit are standard components and make installation significantly easier. The menu features two languages - German and English. The graphics display allows for on the monitoring of the filter condition. In addition to the signals for status and limits, the BDA 02 also outputs a signal to notify of service needs.

Installation example

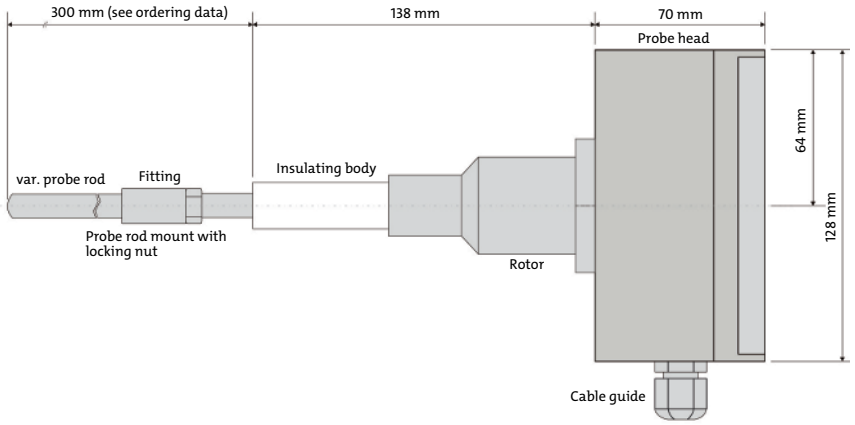


* The fitting is welded to the waste gas flue and the Conversion nipple screwed in tightly. Then insert the BDA 02 all the way and secure in the desired position by socket screw.

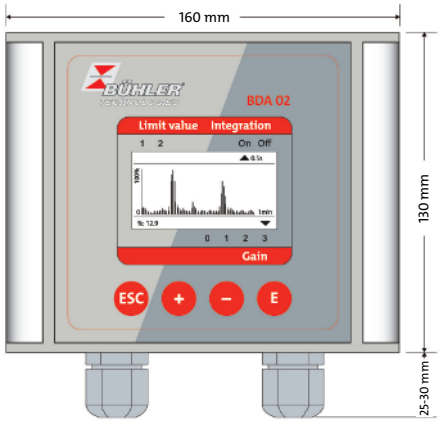
Easyjust installation kit

Dimensions

Side view



Front view



Technical data

Technical Data

Housing:	IP 65 compact unit
Weight:	approx. 2.5 kg
Probe:	triboelectric probe consisting of probe rod and probe head
Probe rod:	insulated from housing, length: variable (mechanically trimmable)
Probe material:	Stainless steel 1.4571 (Isolator PTFE)
Immersion depth:	Varies by application (max. 1000 mm)
Display/Operation:	2.5" graphics display, 4 control keys
Ambient temperature:	-20...+50 °C
Humidity:	not particularly sensitive
Dew point difference:	min. +5 K
Sample gas temperature:	max. 250 °C (higher temperatures on request)
Flow rate:	approx. 3 m/s and up
Dust measuring range:	qualitative: 0...100 %; quantitative: 0...10 mg/m³ (0...1000 mg/m³)
Amplification levels:	arbitrary from 0 to 3
Calibration:	by gravimetric comparison measurements
Analogue output:	4...20 mA, galvanically isolated from equipment earth, max. load impedance 500 Ω
Digital outputs:	3 relays, max. 24 V DC at 0.1 A (for failure, service, required service)
Process connection:	1" Easyjust/Tri Clamp DN32/Flange 3"/Flange DN25 PN6/DN80 PN6/DN50 PN16/DN65 PN40
Cable fitting:	2x M20 x 1.5 / 9...13 mm, 1x dummy plug
Power supply:	230/110 V AC, 50-60 Hz, 24 V DC
Performance test:	Technology suitability-tested to TA Luft

See also

DE020010 Questionnaire [▸ 4]

Project-No.: _____

Questionnaire Filter Monitoring and Dust Measurement

BÜHLER TECHNOLOGIES

Gas Analysis

Company

Company		Name	
Street		Dept.	
ZIP code, city		Phone	
Country		Email	

Person in charge

General process information

Industry
(e. g.: Metal, Chemistry, Food, Energy, etc.)

Industry sector
(e. g.: Casting, Plastics, Powdered milk , coal-fired power plant, etc.)

Process
(e. g.: Drying, Material transport, Material processing, Material recycling, etc.)

Filter type
(e. g.: Bag filter, Cartidge filter, Cyclone, Electrofilter, etc.)

Reason for filter monitoring
(e. g.: Official requirements, active environmental protection, process control, filter monitoring, etc.)

Certificates / Approvals

Ex-Zone ☐ Yes ☐ No

Zone

Technical Data

Duct diameter [L1]: [mm]

Junction length [L2]: [mm]

Insulation thickness [L3]: [mm]

Straight length upstream [L4]: [mm]

Straight length downstream [L5]: [mm]

Velocity exhaust gas [v]: Constant? ☐ Yes ☐ No

from to [m/s]

Amount of exhaust gas [V]: [Nm³/h]

Temp. of exhaust gas [T]: [°C]

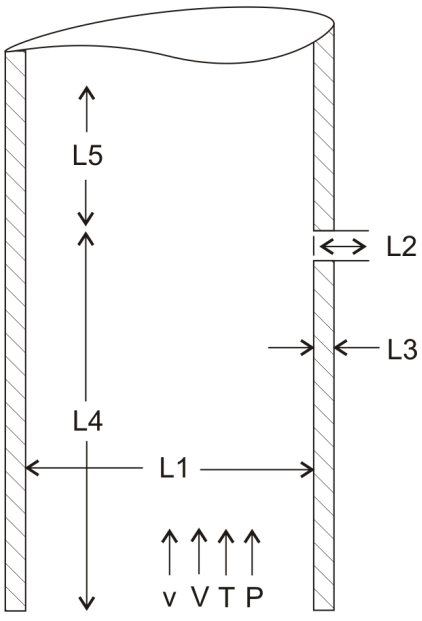
Pressure exhaust gas [P]: [mbar]

Residual dust content: [mg/Nm³]

Material of particles:

Particle size: [µm]

Relative humidity: [%]



Duct direction: ☐ horizontal
☐ vertical

flow direction: ↑ ↓ → ←
☐ ☐ ☐ ☐

Water drops contained? ☐ Yes ☐ No

Corrosive gas? ☐ Yes ☐ No

Which type:

Mains supply: ☐ 110-230 V ☐ 24 V DC

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