



## 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 ( $\text{mg}/\text{Nm}^3$ )

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)

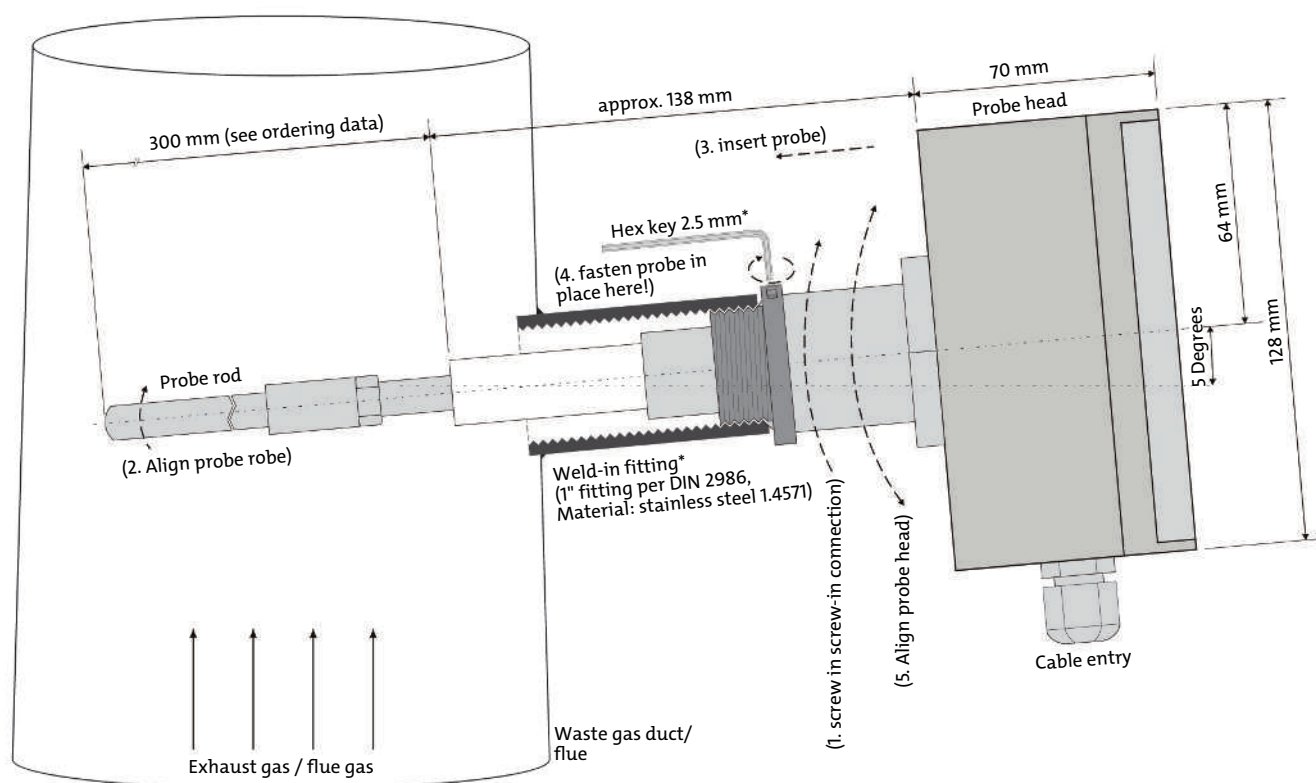


## Description

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  $\text{mg}/\text{m}^3$  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 insensitive 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



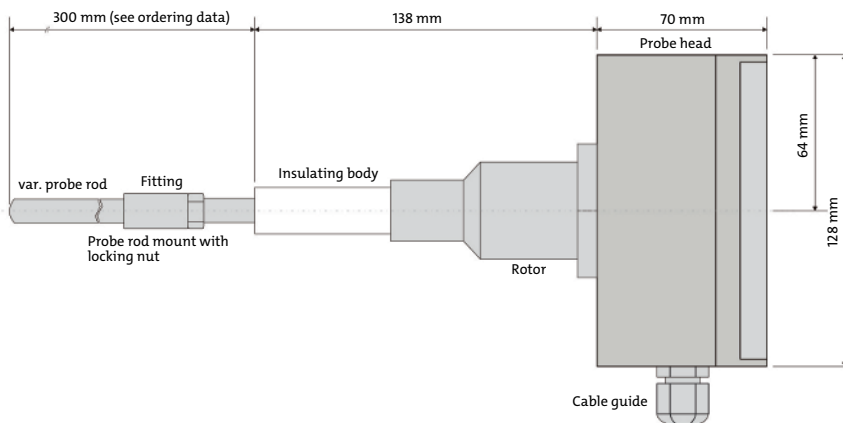
\* The fitting is welded to the waste gas flue and the Conversion nipple screwed in tightly. Then insert the BDA 02 all the way and secure in the desired position by socket screw.



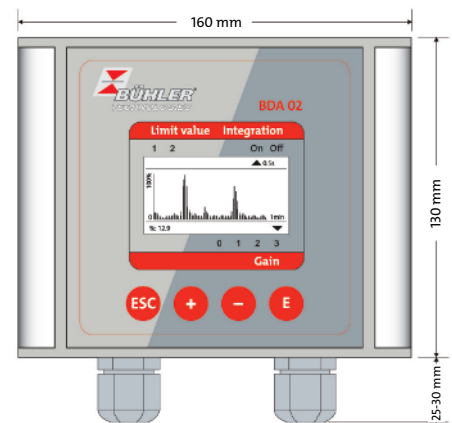
Easyjust installation kit

## 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/m <sup>3</sup> (0...1000 mg/m <sup>3</sup> )
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 installation kit serial / flange DN25 PN6 optional
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

Gas Analysis

Company		Person in charge	
Company	<input type="text"/>	Name	<input type="text"/>
Street	<input type="text"/>	Dept.	<input type="text"/>
ZIP code, city	<input type="text"/>	Phone	<input type="text"/>
Country	<input type="text"/>	Email	<input type="text"/>

## 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, Cartridge 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]:  [Nm<sup>3</sup>/h]

Temp. of exhaust gas [T]:  [°C]

Pressure exhaust gas [P]:  [mbar]

Residual dust content:  [mg/Nm<sup>3</sup>]

Material of particles:

Particle size:  [µm]

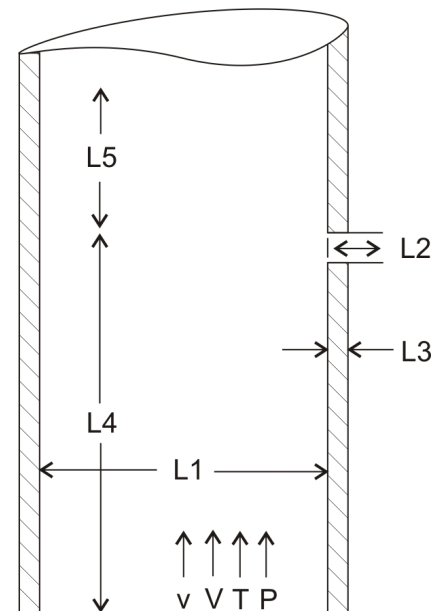
Relative humidity:  [%]

Water drops contained?  Yes  No

Corrosive gas?  Yes  No

Which type:

Mains supply:  110-230 V  24 V DC



Duct direction:  horizontal  
 vertical

flow direction:  ↑  ↓  →  ←

