



BBD5
Broken Bag Detector

What it Does

- Continuously monitors for filter media leakage.
- Indicates relative condition of bags.
- Acts as a preventative maintenance tool.

Product Description

The BBD5 utilises AC Coupled Triboelectric technology. As particles travel through the process they develop a charge. This charge is transferred as the particle passes or impacts the sensing element. The resulting current is amplified, filtered, rectified and further filtered looking only at the AC component, giving a linear representation of the concentration or mass flow rate of the particles in the gas stream.

The reason for measuring the AC component is that, compared to the DC component, the electronics are more sensitive. The AC signal is substantially less affected by influences such as amplifier noise and process parameters, which includes the build-up of process dust on the sensing rod.

The BBD5 remote sensing head totally filters out any 50Hz or 60Hz frequencies related to mains supply. The amplified signal is then sent via data cable to the control unit for further processing and display.

Operational Range

- Suitable for a wide range of dust collection and stack emissions.
- Applicable for all types of outlet stack geometrical arrangements.

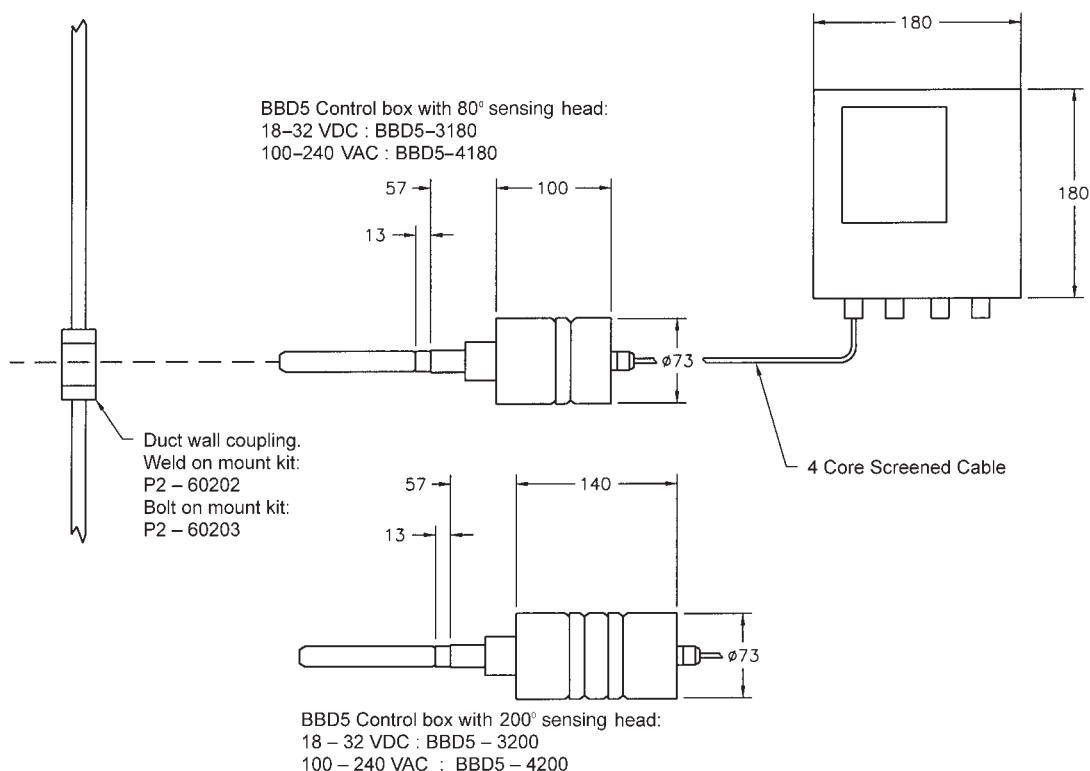
- Insertion temperatures up to 800°C or 2000°C (1760°F or 3920°F), higher if required.
- Applicable to most particulate types.
- For duct sizes from 50mm (2") to outlets over 10m (33ft).
- Dust concentrations from 0.01mg/m³ (4x10-6gr/ft³).
- Suitable for most stack material eg. steel, brick etc.
- Optional intrinsically safe barrier.

Benefits

- Detects most particles regardless of composition.
- Very sensitive due to AC coupled technology.
- Can monitor extremely small particles eg. galvanising fume (≈0.1µm).
- Can be used over a wide range of particulate densities.
- Can assist in dramatically reducing plant down time through filter failures.

Features

- Proven AC Triboelectric technology.
- Relay time delay feature.
- Sensitivity adjustment.
- Air purge port.
- Potted construction for reliability and operational stability.
- Simple Installation.
- Alarm level adjustment



Modes of Operation

The BBD5 indicates instantaneous levels of particulate emissions stream. The instrument is usually in an uncalibrated indicative mode in which levels are displayed in a relative scale (0-100%).

The BBD5 also has 2 relay modes – Normal and Failsafe.

Normal

- The alarm relay is de-energised when the BBD5 is powered up.

Failsafe

- The alarm relay is energised when the BBD5 is powered up.
- The alarm relay is de-energised when the BBD5 is in the alarm state.
- Is used so that both power failure and high emissions are alarmed.

Technical Specification

Functions

| | |
|-------------------|---|
| Bar graph: | Visual indication of emission density |
| Alarm Time Delay: | 0-18 seconds in 2 second steps to prevent false alarms due to pulsing |
| Sensitivity : | Adjustable sensitivity (10 position switch) |

Outputs

| | |
|---------------|------------------------------|
| Name | Alarm Relay |
| Specification | 8A Resistive 1A Inductive |
| Function | Emission Alarm |

Control Unit

| | |
|---------------------|--|
| Enclosure Rating: | IP66/Nema 4 |
| Enclosure Size: | 180mm wide x 180mm high x 90mm deep (7 ¹ / ₈ " x 7 ¹ / ₈ " x 3 ¹ / ₂ ") |
| Enclosure Material: | Plastic Composite |
| Power Supply: | 100-240VAC or 18-32VDC |
| Bargraph Display: | 20 step LED |
| Temperature Range: | -200C to 600C (-40F to 1400F) |
| Active Head: | One |

Sensing Head

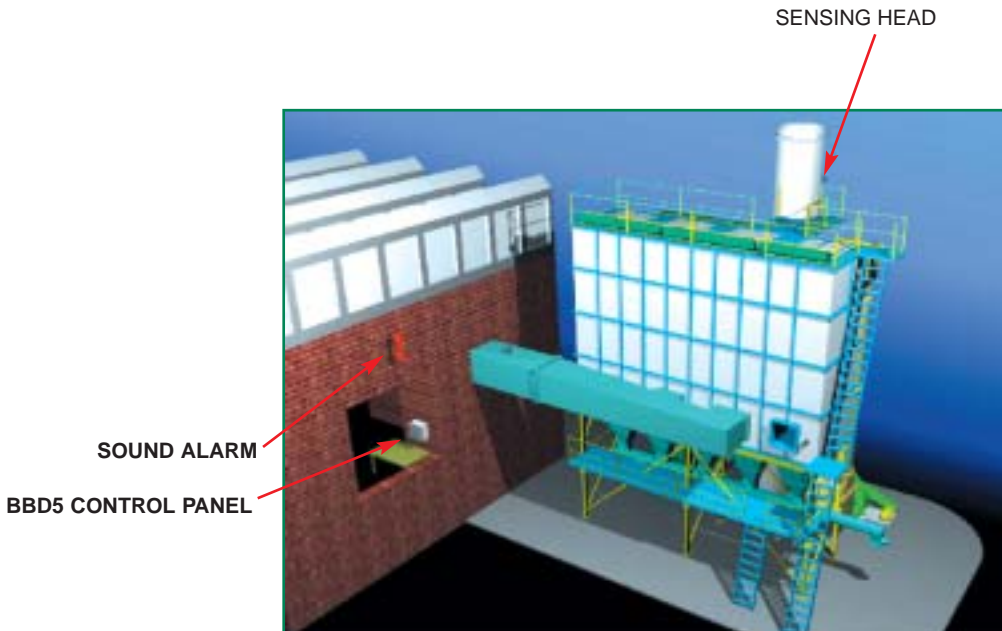
| | |
|------------------------------|---|
| Insertion Temp Range: | P2-45210: -200C to 800C (-40F to 1760F) P2-45220: -200C to 2000C (-40F to 3920F) |
| Connection required on duct: | 1" BSPT socket |
| Enclosure | |
| Temperature Range: | -200C to 600C (-40F to 1400F) |
| Enclosure Rating: | IP66/NEMA4 |
| Enclosure Material: | Aluminium |
| Sensing Element Material: | 316 Stainless Steel |
| Sensing Element Options: | Solid rod, tubular, teflon coated, multiple supports, cable type, different lengths available |

Air Purge Requirements:

| | |
|------------------|--|
| Connection: | 1/8" gas thread on side of unit |
| Air Pressure: | 400kPa (60psi) max |
| Air Consumption: | 1.7 -17m ³ /hr (1-10cfm) pulsed |

Electrical Specification between Sensing Head and Control Unit:

4 core screened data cables: Beldon 9534 (or equivalent) max 200m (660ft)





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