

### Particulate Monitoring Systems by PCME

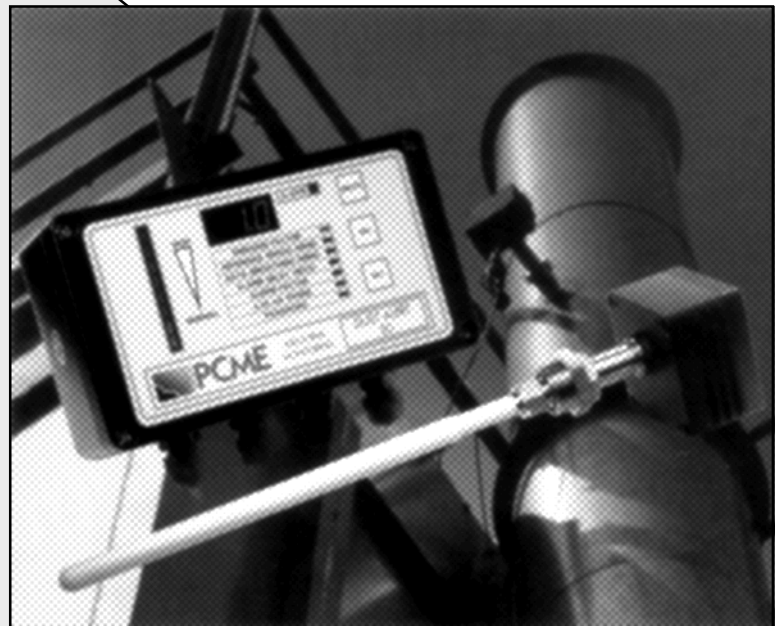
### Intelligent Filter Performance Monitor for Dust Arrestment Plant

DUSTALERT 50

DUST

EMISSIONS

MONITOR



- Provides trends in dust emissions and monitors filter performance
- Unique 'Quick-set' for baghouses, dryers or cyclone applications
- Capable of working in dry, humid and wet applications
- Not the same as simpler (non a.c.) triboelectric systems
- Unique TriboACE measurement principle combined with innovative microprocessor-based operation
- Can be used with 'PREDICT' broken bag detection software (optional)

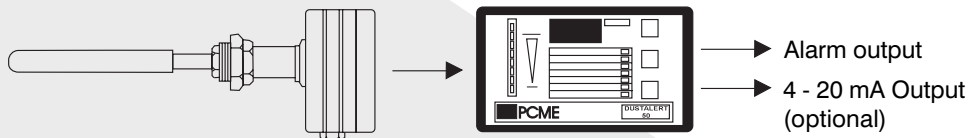
# Dustalert 50 Data Sheet

The Dustalert 50 intelligent filter performance monitor continuously monitors and displays the relative emissions from the baghouses and other arrestment plant.

The Dustalert 50 has many features which enable it to be specifically tailored to each customer's arrestment plant, taking into account different filter cleaning mechanisms and different processes. The microprocessor-based sensor and receiver respond to any small change in the arrestment plant and can follow trends in output, or potential filter failure prior to absolute failure, by giving a scalable 4-20mA output (optional) and adjustable alarm output.

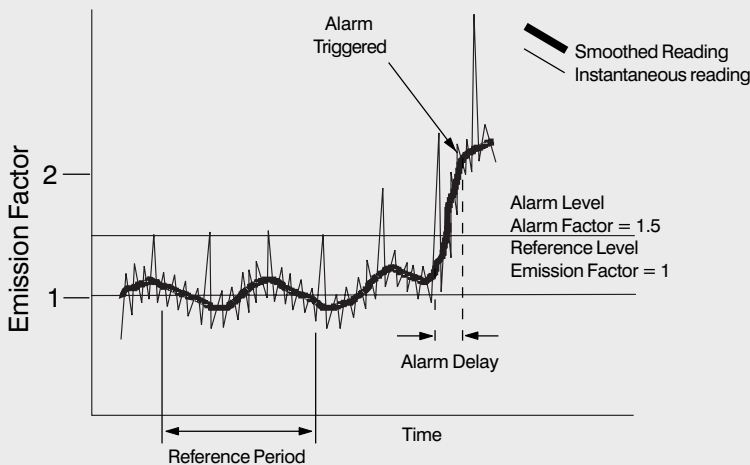
The sensing probe is connected by a standard multi-core cable to the control unit where the user interface is by a clear and simple touch pad control. All instrument parameters can be viewed on a digital display and the relative dust level is continuously displayed by a scalable bargraph as well as the digital display.

The microprocessor technology within the Dustalert 50 ensures reliable and flexible operation with internal electronic fault conditions quickly brought to the attention of the user.



**Dustalert 50 - Single Channel**

A reference emission level is set within the instrument over a representative time period (for example, over a number of filter cleaning cycles) when the plant is known to be operating efficiently. Emission values received from the intelligent probe are processed and compared with the stored reference figure to produce an emission factor. The instrument incorporates a variable time constant analysis filter for smoothing of instantaneous data to allow observation of trends in filter performance. An alarm is initiated if the emission factor exceeds the selected alarm factor and an alarm delay period is chosen to prevent false alarms caused by filter cleaning cycles.

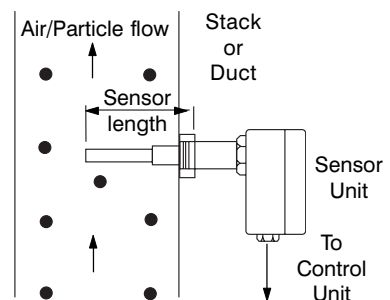


## FILTER MONITORING FEATURES

- Reference period is selectable to suit application
- Data may be smoothed for instantaneous monitoring or trend analysis
- Comprehensive alarm features satisfy process and environmental requirements

The Dustalert 50 utilises the TriboACE measurement principle. When the sensing probe is installed in the duct or stack, particles in the air stream interact with it induce charge movement in the probe. Distributions in the particle stream result in an a.c. response which is specifically measured to create a signal directly proportional to the concentration of particles. This relationship has been validated by independent laboratories.

Unlike d.c. Triboelectric systems, the measurement principle relies mainly on induction which occurs when particles pass the probe. This has the added advantage that the instrument is not affected by particle buildup on the probe or changes in velocity. The TriboACE measurement system also enables the use of insulated probes especially needed for very humid and wet applications; it also permits measurement at extremely low dust concentrations surpassing performance of other Triboelectric systems.



# Dustalert 50 Data Sheet

- Virtually maintenance-free even in aggressive environments
- Unaffected by dust accumulation on sensor
- Extremely sensitive - detects dust concentrations from below 0.02 mg/m<sup>3</sup> to over 1000 mg/m<sup>3</sup>
- Can be installed in ducts with diameters from 50mm to over 6 meters
- Detects particles as small as 0.1 um (e.g. galvanizing fume)
- Intelligent probe's digital communication eliminates interference caused by plant noise
- 4-20mA output proportional to dust emission level
- Base unit and sensor self-testing ensures reliable operation and valid results
- Password protection prevents unauthorised access
- Easy identification of alarms using error message display
- Alarms can be initiated by even small increases in concentration
- Simple installation and easy set-up procedure using microprocessor keypad - Features 'Quick-set'

## TriboACE Advantages

- Unique measurement principle (patented)
- Not the same as simpler Triboelectric systems (non a.c.)
- Unaffected by dust build up on sensor
- Unique insulated probe provides reliable operation in humid and wet applications (optional)
- Unaffected by velocity changes in baghouses
- Has proven lower detection level of 0.02mg/m<sup>3</sup>
- 'Quick-set' for baghouses, cyclones and dryers

The Dustalert 50 is designed for use in any process which has arrestment plant fitted, for example, bag, ceramic and cartridge filters or cyclones where indicative monitoring is required. Typical examples include:

- Animal feed compounding
- Cement manufacture
- Chemical processing
- Ferrous metals industry
- Galvanising
- Non-ferrous metals industry
- Pharmaceutical manufacturing
- Roadstone/mineral drying
- Rubber compounding
- Timber processing
- Tobacco processing

Emission/fault relay	Volt free contact (single pole changeover) rated 3A, 230 Vac
Alarm factor setting	1.1 to 100 selectable in steps of 0.1
Alarm delay settings	0, 3, 10, 30, 60, 300, 600 seconds
Data smoothing settings	0, 0.1, 0.3, 1, 3, 5, 10, 30, 60 minutes
Reference period settings	0, 0.1, 0.3, 1, 3, 5, 10, 30, 60 minutes
Relative dust emissions	Scalable 4-20mA isolated (max 500ohm) - (optional)

Enclosure rating	IP65
Enclosure size (approx)	222 x 125 x 81mm
Enclosure weight	1.8kgs
Enclosure material	Die-cast aluminium (epoxy coated)
Power supply	115/230 Vac, 50/60Hz plus or minus 10%, 20 VA
Fuse rating	100 mA
Display type	LED and bargraph display
Ambient temperature range	-25 C to +55 C

# Dustalert 50 Data Sheet

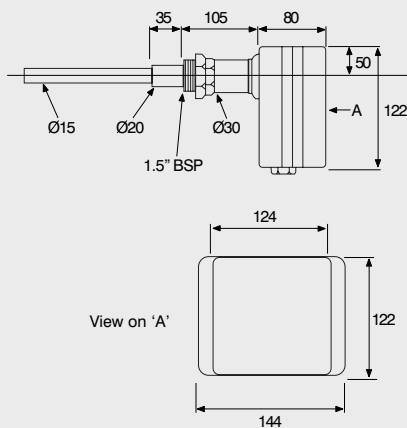
## Sensors & Cables

Sensor types Standard temperature High temperature	Process Temperature -25 C to +250 C -25 C to +750 C Over 750 C consult factory
Sensor lengths	100,200,300,400,500,600,800,1000mm. Other lengths up to 6000mm available
Cross stack probes	Up to 6000mm available on application
Connection required on duct	1.5" BSP (female)
Enclosure weight	1.8kg

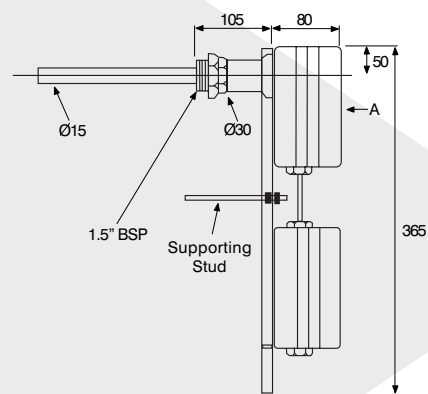
Enclosure temperature	-25 C to +55 C
Enclosure rating	IP65
Sensor rod material Standard Special	316 stainless steel Fully insulated sensor
Air purge option Airline connection Air consumption Air pressure	.25" BSP Upt to 0.5 litres/sec 4 barg min, 10 barg max
Sensor enclosure material	Die-cast aluminium (epoxy coated)
Cable from sensor	8-core screened
Cable length	10m standard 300m max

## Physical Dimensions

### Standard Temperature Sensor

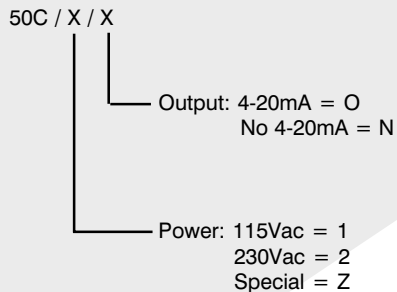


### High Temperature Sensor

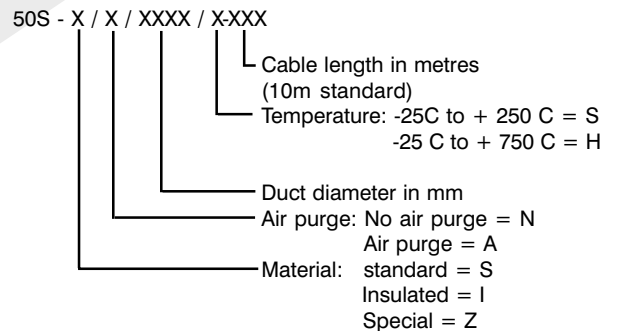


## Mounting Details

### CONTROL UNIT



### SENSOR UNIT AND CABLE (Per Sensor)



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CONTROL  
TECHNOLOGY**

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