Passionate about Particulate

PCME

PCME VIEW 370

ELECTRODYNAMIC™ INSIDE

Particulate Measurement System

Particulate CEM

- Reliable measurement of particulate emissions (mg/m^3) using unique *ElectroDynamic*™ Probe Electrification technology
- Multilingual display
- ***PLUS*** version permits multichannel networked system for plant wide monitoring of emissions (1 to 16 sensors)
- In-built data recording for either leak location diagnostics or instrument calibration (default setting)
- In-built automatic probe rod self-checks for on-going quality assurance

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2007

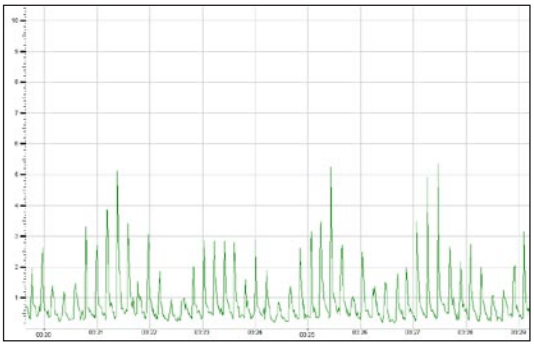
nqa. ISO 9001 Registered UKAS QUALITY MANAGEMENT 015

Certificate No: 9389

System Description

The **PCME VIEW 370** series is designed for emission measurement with high quality where regulatory approvals are not necessary. In-built instrument self-checks determine instrument reliability and confidence of data along with manual verifications. Calibration for mg/m^3 via an Iso-kinetic sample is simplified via data stored in the in-built short term logger. Unlike other dust monitors, the instrument is then internally calibrated with all data, outputs and results calibrated and scaled directly in mg/m^3. The **PCME VIEW 370** "Broken bag mode" facilitates the detection of leaking filter bags from bag filters before broken bags are present. This advanced diagnostic mode enables better operation of bag filters and lower running costs from reducing replacement bags.

Detection of bag leak or broken bag location can be either "on-screen" or on PC (via optional PC software – DustView and Predict). Predictive bag leakage and location of actual leaking bag rows can be identified in single chamber - multi-row bagfilters whereas for multi-chamber bagfilters, the system can be extended to monitor each chamber. Please consult PCME Ltd for bagfilter performance datasheet details.



Bagfilter cleaning pulses clearly visable using in-built pulse logger using PC-ME DUST TOOLS Software

Please note that only one of the following three functions can be active at any given time:

1. Bag leak/broken bag mode – Pulse logger enabled.
2. Process control mode – Short term logger enabled.
3. Emissions reporting – Long term logger enabled (**PCME VIEW 373** only).

The alarm log is always enabled. The operator can quickly switch between modes and switch back again when required.

Bag Leak and Broken Bag Mode (1)

- Dust pulse from each cleaned bag row is displayed in real-time and stored for analysis in the instrument pulse log (single chamber bagfilters).
- Real-time or historical data analysis of bag cleaning cycles can be reviewed and compared for determining:
  - Deterioration of filter media between cleaning cycles.
  - Faulty pulse valve operation.
  - Incorrectly fitted bags (after replacement).

Process Control (2)

Using the instrument's Short Term logger, the operator can:

- Review short-term process trends to determine process upsets.
- Review emission excursion events and compare to process conditions for comparison.
- Data stored is used for direct comparison to Iso-kinetic sample for instrument calibration.

Alarm Data

The inbuilt alarm log stores all defined alarm events. This data can be viewed "on-screen" or downloaded to a PC (using optional DustReporter 2 software). This data enables storage and reporting of:

- Emission alarms (both instant and average).
- Bag leak detection warning alarms.
- Broken bag detection warning alarms.
- Instrument self-check failure alarms (zero, span, comms to sensor, power interrupt).

Emissions Reporting (3) PCME VIEW 373 only

The inclusion of a long term in-built data logger allows for:

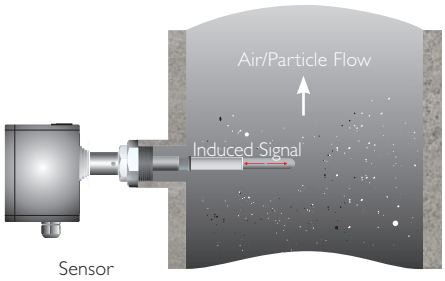
- Reporting of emission averages for environmental compliance (DustReporter 2 PC).
- Long term process trend analysis for process optimisation (software required – option) and reduction of dust emissions.

Principles of Operation

The instrument uses PCME's unique and patented *ElectroDynamic*™ Probe Electrification technology. The sensor electronics measures the current signature created by particles interacting with the grounded sensing rod which protrudes into the stack. The electronics extract a specific frequency band of this signal and electronically filters out the dc current caused by particle collisions. This signal may be correlated to dust concentration by comparison to the results of an iso-kinetic sample for those types of industrial stack applications for which the instrument is designed (see application conditions).

Core features of the *ElectroDynamic*™ Probe Electrification technology are that the signal generated is:

- Unaffected by contamination on the sensor rod (which may cause signal drift issues for other systems).
- Not affected by velocity variations within typical bagfilter velocity ranges (see separate TUV approvals for PCME Ltd technology).
- Reliable and stable in the target applications for the instrument (see Process conditions). Identical PCME technology to this is used in TUV and MCERTS approved instruments.



Technology Comparisons and Benefits

Compared to other types of AC systems, *ElectroDynamic*™ Systems has the following added benefit:

- An optimised frequency spectrum to extend the velocity range over which the system has no cross sensitivity to changing velocity (see TUV approvals).

Compared to DC triboelectric systems and 'induction sensing and protected probe systems', *ElectroDynamic*™ systems have the following added benefits:

- Tolerance to contamination on the rod.
- Stable results and calibrations (protected probes are not necessary in dry applications and therefore drift caused by electrostatic charging effects is avoided).
- Reduced sensitivity to the effects of changing velocity.

product features

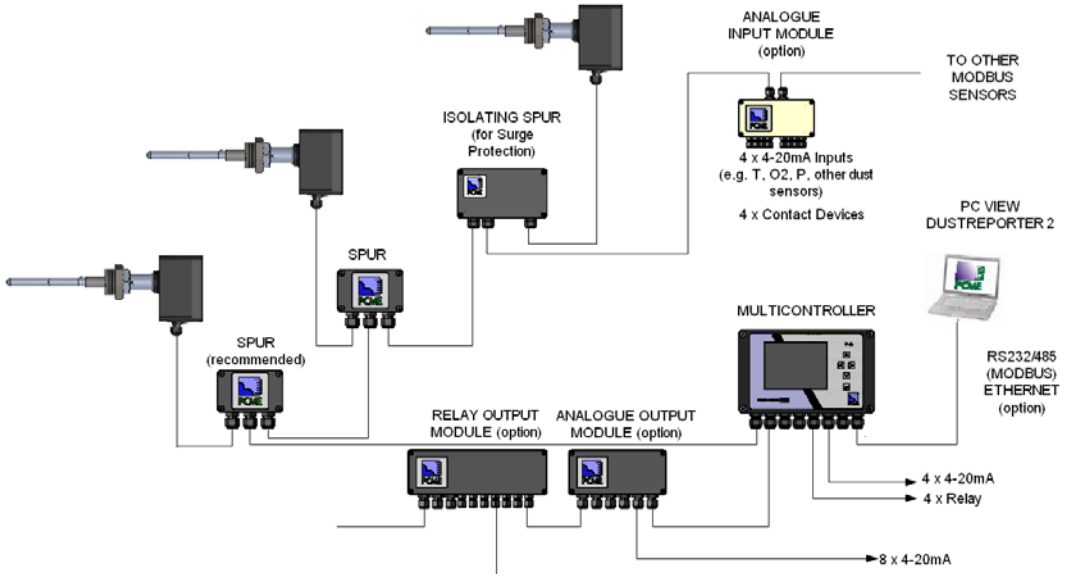
Process and Application Conditions

- Measurement capability from 0-10mg/m^3 to 0–500mg/m^3 (automatic range changes).
- Long term zero drift <0.1mg/m^3.
- Recommended maintenance inspection frequency: 6 months.
- For stack measurement but not suitable for electrostatic precipitators or applications with water droplets.
- For use in bagfilter applications with flow of 8–20m/s with no restrictions.

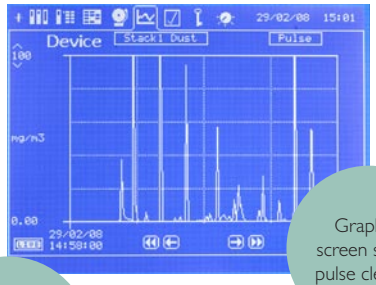
Features

- Expandable up to 16 dust sensors digitally linked to central user interface module (***PLUS*** version).
- Quality Assurance features and screens for analysis of self-check results.
- Alarms (with configurable delay) based on both rolling average data and instantaneous data for reliable plant failure detection and diagnostics.
- Unique graphics display and data logger (for trend analysis).
- In-built datalogger for environmental process control or broken bag mode.
- Automatic zero, span, probe contamination and communication checks.
- Auto-ranging feature (instrument adjusts it's dynamic range to track fast moving dust pulses, typically found after reverse jet baghouses) to ensure good measurement.
- Simple calibration mode after iso-kinetic sample.
- Accepts inputs from analysers for on-bard normalisation (T, Oxygen, P). *
- Secure data and password protection.
- Interlinks to DustReporter 2 reporting and analysis software for on-line control and historical reporting using PC.
- ***PLUS*** version available for expansion for up to 16 sensor system.

*Requires optional Analogue Input Module (AIM) unit.

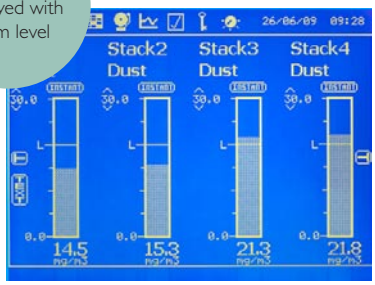


Control Unit Options



Graphics screen shows pulse cleaning

Dust emissions displayed with alarm level



ETHERNET CAPABILITY

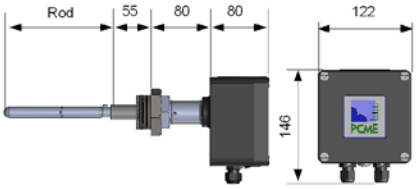
	Standard System	*PLUS* System
Controller Type	Interface module	MultiController
No of Sensor Channels	1	1-16
ICON Driven Multilingual Menus	Emission and Alarm levels Quality Assurance results Calibration screens Review data logs Show graph and bar chart Set up and password Advanced calculations (Mass, normalisation)	Emission and Alarm levels Quality Assurance results Calibration screens Review data logs Show graphs and multi bar charts Set up and password Advanced calculations (Mass, normalisation)
Bagfilter Optimisation Diagnostics	Pulse log review for diagnosing location of leaking bags	Pulse log review for diagnosing location of leaking bags
Emission Data Logs *Long (averages for reporting) *Short (process trends) *Pulse Data Alarms *only allows one data log to be selected at once	**Capacity stated for 1 sensor** 12 months @ 15 minutes (PCME View 373 only) 7 days @ 1 minute 2 hours @ 1 second 500 entries	**Capacity stated for 4 sensors** 12 months @ 15 minutes (PCME View 373 only) 7 days @ 1 minute 2 hours @ 1 second 500 entries
Ethernet Enabled Option	None	Ethernet (Modbus TCP) (optional)
Outputs	1 x RS-485 (Modbus RTU) 1 x 4-20mA (500 ohm) 2 x Relay (2A@250V, user selectable)	1 x RS-485 (Modbus RTU) 4 x 4-20mA (500 ohm) 4 x Relay (2A@250V, user selectable)
Inputs	1 input for plant off indication, bag cleaning reference and multiple calibrations	4 inputs for plant off indication, bag cleaning reference and multiple calibrations
Enclosure Size (mm)	220 W x 123 H x 80 D	263 W x 160 H x 91 D
Power Supply	90 to 260 VAC (50/60Hz), 1A	90 to 260 VAC (50/60Hz), 1A

Note: Additional 4-20mA and Relay output also available from optional accessory components.

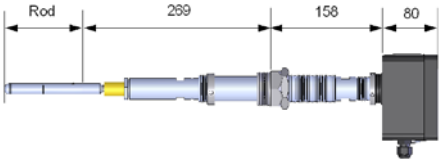
specifications

Dimensions

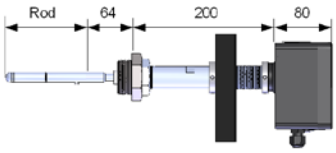
Standard Sensor 0-250°C



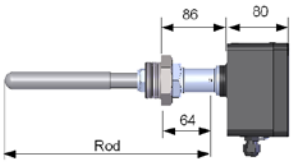
Passive/Active Sensor 0-250°C



Standard Sensor 0-800°C



Insulated Sensor 0-250°C



Enclosure Temperature Rating	-25°C to +55°C
Enclosure Rating	IP65
Enclosure Material	Die-cast aluminum (polyester powder coated)
Connection Required on Duct	1.5" BSP (female) Ensure opening/hole in stack wall is at least 45mm
Power Requirements	24V provided by the control unit
Cable Entries	2 x PG11 gland/conduit entries
Air Purge Requirements	May be required on some applications (consult PCME). Requires optional air purge fitting and external supply of 5-10 litres/min of dry clean, oil free instrument air

Order Codes

PCME VIEW 370	[single channel]
PCME VIEW 370 *PLUS*	[multi channel]

Control Unit Options

CON 370 – A B

A	Controller	*PLUS* version (MultiController) Standard version (Interface Module)	M I
B	Ethernet	None Ethernet fitted (*PLUS* version only)	0 ET

Example: CON 370 [A: M] [B: ET]

Sensor Options

SEN 370 – 1 2 (3 4)

1	Sensor Type	Standard sensor 0-250°C Insulated sensor 0-250°C Passive/active sensor 0-250°C Standard sensor 0-400°C Standard sensor 0-800°C	250S 250I 250P 400S 800S
2	Rod Length	0100-1000mm*	RODxxxx

*limited to 800mm on 400°C, 800°C and passive/active versions

Sensor Accessories

3	Air Purge fitting	None Air purge fitting	0 AP
4	Air Filter/Regulator	None Filter + regulator assembly	0 REG

Example: SEN 370 [1: 250S] [2: ROD0500] [3: AP] [4: REG]

System Options

4-core Cable	Specify length required (10m per sensor included as standard)	CAB4
Spur	Divides cable into 2 branches	SPR
Power Supply/Repeater	Voltage and signal boost for extended cabling runs with multiple sensors	PWR
Analogue Input Module (AIM)	4 x 4-20mA inputs 4 x Digital inputs	AIM
Analogue Output Module (AOM)	8 x 4-20mA (500 Ohm)	AOM
Alarm Output Module (ROM)	8 x Relay (1A @ 250V)	ROM
Isolating Spur	Provides Surge protection	SPR-X

PC Software Options

PC View	View of real time data	PV
Dust Reporter 2	Emission reporting and analysis	DR
Configuration Wizard	Remote setup	CW
Dust Reporter Options	Online Predict Auto Download	O P A-D

About PCME Ltd

As a progressive environmental Company, PCME specialises in particulate measurement for industrial processes. With a worldwide reputation for reliability, innovation and technological excellence, the Company produces equipment for concentration and mass monitoring for regulatory, environmental and process control requirements. A dedicated team of qualified application and sales engineers is always on hand and should be consulted in the selection and usage of the most suitable equipment for any particulate application.

www.pcme.co.uk

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Issue 07/09