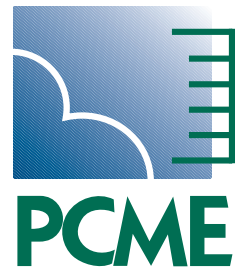


Passionate about Particulate



PCME Stack 710

OPACITY

INSIDE

Opacity

Measurement

System

PS-1 US EPA
compliant CEM



- Meets or exceeds US EPA requirements for 40CFR60 Sections 13, 17 and App. B PS-1
- Outstanding reliability with no continuously moving parts
- Unique measurement technology incorporating “no drift” zero check
- Automatic in-situ zero and span checking with built-in calibration audit



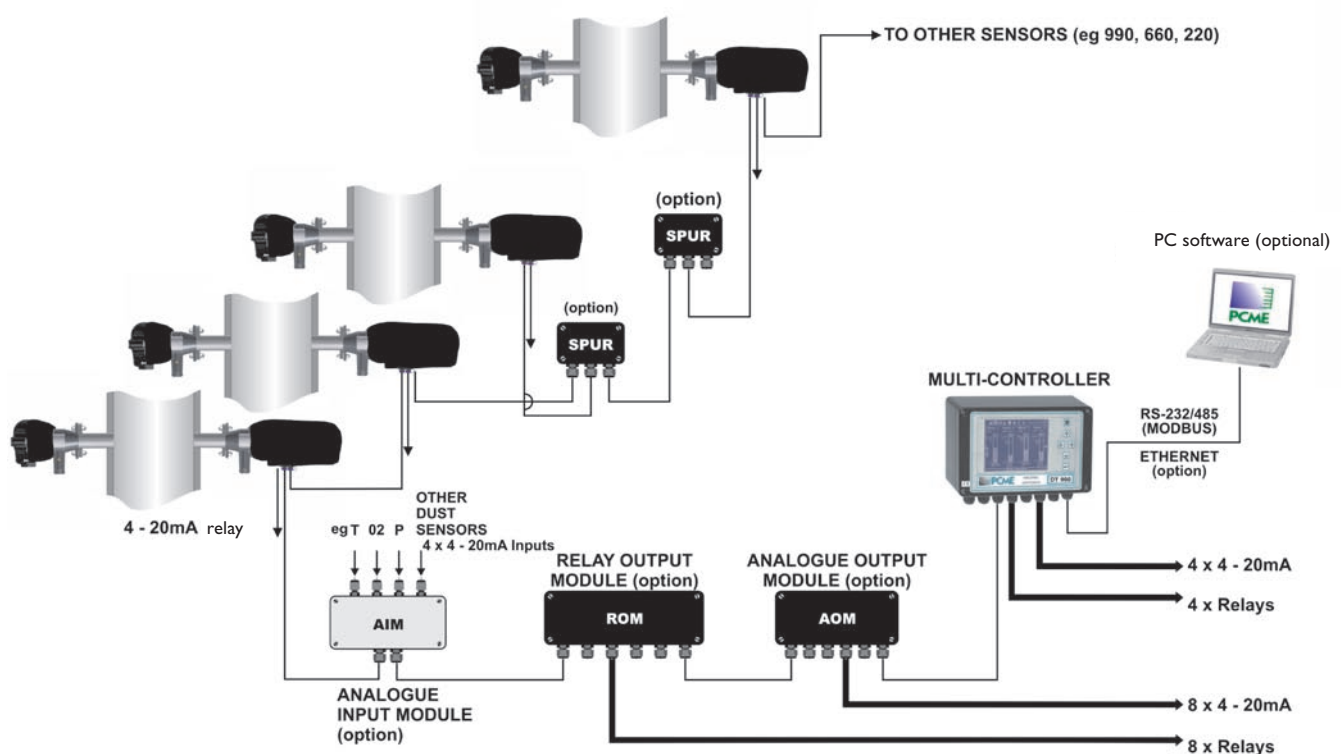
Certificate No: 9389

System Description

The **PCME Stack 710** Opacity monitor meets or exceeds US EPA PS-I requirements for Opacity monitoring from combustion stacks providing class leading performance in a compact, lightweight and easy to use instrument. As part of the PCME Ltd family of products, the **PCME Stack 710** supports the functionality of being connected to an Interface module or Multi-controller (for multi sensor user interface, Ethernet communication, graphs, historical data screens with graphs and trending as well as data logging for emission reporting, redundancy and data analysis functions). In addition, the instrument can be included as part of a PCME Ltd dust monitoring network including Particulate monitors, Filter performance and Leak monitors to form an unrivalled plant wide dust monitoring system.

Designed for Compliance Monitoring

- Meets or exceeds US EPA requirements for 40CFR60 Sections 13, 17 and App. B PS-I
- Meets or exceeds US EPA requirements for proposed 40CFR60 App. F Procedure 3
- Meets or exceeds ASTM Standard D6216



Advanced Features & Benefits

- Outstanding reliability - no continuously moving parts
- Low maintenance - simple access to optics if required
- High accuracy and repeatability - designed to meet or exceed US EPA PS-I monitoring applications
- Unique measurement technology - unique "no drift" zero check
- Automatic in-situ zero and span checking - built-in calibration audit
- Range of instrument outputs - Opacity, extinction, or dust density
- User friendly - an icon-driven integral control panel for set-up, control and diagnostics or via MultiController/Interface Module
- Advanced user features/benefits - separate and remote advanced digital Interface module or Multi-controller/logger/graphical user interface with Modbus, 485, 232, Ethernet capability
- Easily integrated into plant control system - 4-20mA and Modbus RS485 as standard
- Integral air purges - prevents dust and corrosive gases from contaminating the optical system (separate blower system required)
- Suitable for path lengths from 1m to 10m (factory set) - varying Opacity levels
- Low level measurement through advanced LED design - Opacity 0 - 10% to 0 - 100%
- New compact design - simplifies installation and reduces air purge requirements

The **PCME Stack 710** uses a homogeneous advanced LED light source to reduce the effect of misalignment on the measured opacity. Together with a "Flood LED", it achieves the highest levels of stability and accuracy. The "no moving parts" optical system gives an instrument with exceptional reliability and proven low measurement capability beyond most standard Opacity monitors.

* key features are covered by UK & US patents

specifications

Advanced Features and Benefits

Easy Auditing

Periodic performance verification could not be simpler. The built-in audit jig accepts standard optical filters, and the zero alignment can be confirmed without removing the instrument from the stack.

Icon driven set-up

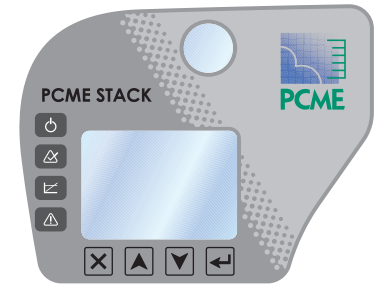
The instrument can be set-up and configured via the integral control panel. Using an icon driven menu system assists a language-free and intuitive user interface.

Dust Density

Dust density monitors must be calibrated by comparison with an Isokinetic sample test, as in PS-I I.

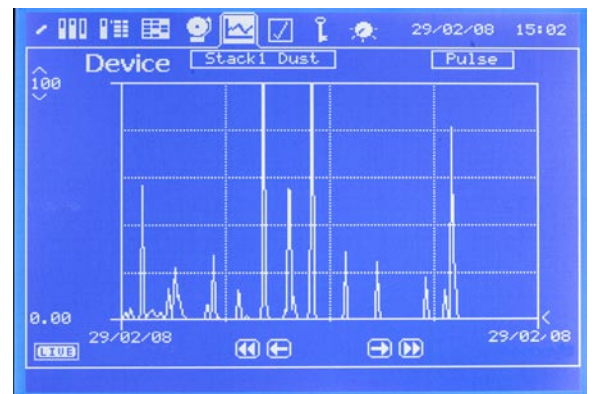
Automatic self-checks

The **PCME Stack 710** has fully automatic zero and drift compensation system. An automatic span check mechanism confirms the instrument calibration at user-defined intervals.



Control Unit Features

- Displays instantaneous and average emissions (baragraph, text and on line graph)
- Customisable 'channel grouping' screen for displaying related data e.g. dust, velocity, O₂
- Icon and multilingual user interface
- Monitors data from external sensors for normalisation and centralised analysis e.g. velocity, O₂, Temp etc.
- Status screen for concise display of alarm conditions
- Controls up to 32 PCME sensors provided suitable power supplied (MultiController option only)
- Dual alarm levels with alarm delays
- Full on instrument review of three simultaneous memories (Long Term, Short Term and Pulse)
- Alarm log for instrument and emission alarms
- Windows compatible software to download to PC for reporting (option)
- Multiple calibration factors
- Large back-lit graphical display (320 x 240 pixels) for easy interpretation of graphical data
- Multi-channel bargraph shows emissions relative to alarms
- Permits easy comparison between emission sources
- Password protected



Screen showing rapping pulses

Optical Specifications

Measuring	Specification
Technique	Double pass transmissometry
Operating Wavelength	525 +/- 20nm
Light Source	Pulsed High Intensity LED
Range	Opacity 0 - 10% to 0 - 100% Optical Density 0 - 0.1 to 0 - 3.0
Accuracy	+/- 2% Opacity
Drift (long term)	<0.3% opacity/month
Thermal Stability	<0.3% opacity/22°C ambient change
Angle of projection	<2°
Angle of View	<2°
Response Time	≤10s to 95%
Averaging	Selectable from 10s to 24hr (1s increment)
Pathlength	1 to 10m (must be specified at time of ordering)
Calibration	Automatic zero and upscale check (Selectable period 1 to 24hr in 1hr increments)
Zero Correction	Automatic correction for zero drift
Fail Safe Shutter	Optional assembly

Instrument Specifications

	Transceiver/Retro-reflector Sensor	Interface Module (optional) Single Channel	MultiController (optional) Multi-Channel
Number of Channels		1	1-32
Display	128 x 64 pixel reflective backlit LCD	Backlit LCD providing graphical and text display	Backlit LCD providing graphical and text display
User Screens	Set-up/results	Set-up/Trends/Memory/ Alarm Log/Bargraph	Set-up/Trends/Memory/ Alarm Log/ Multiple Bargraph/System Overview
Keypad	4 keys for data input	Menu driven 5 keypad	Menu driven 5 keypad
Indicators	Power, System OK, Alarm, Calibration	Power, system status, alarms plus graphical back lit display	Power, system status, alarms plus graphical back lit display
Enclosure	Cast Aluminium, epoxy paint coated	Cast Aluminium, epoxy paint coated	Cast Aluminium, epoxy paint coated
Operating temperature	-20 to +55°C (-4 to +131°F)	-20 to +55°C (-4 to +131°F)	-20 to +55°C (-4 to +131°F)
Maximum Flue gas Temperature	600°C/1000°F	n/a	n/a
Maximum Flange Temperature	200°C/400°F	n/a	n/a
Compliance	EN 61010-2	EN 61010-2	EN 61010-2
EMC	EN50 081 & EN50 082	EN50 081 & EN50 082	EN50 081 & EN50 082
Sealing	IP65/NEMA4X	IP65	IP65
Modbus Interface	RS485, Opacity, Optical Density and Status information available	1 x RS232/485 Modbus	1 x RS232/485 Modbus, Ethernet ready
Outputs	Isolated 4 to 20mA Configurable as Opacity, Optical Density 3 x Relay: System OK Calibration Alarm	1 x Isolated 4 to 20mA Configurable as Opacity, Optical Density 2 x Relay RS232/485 (Modbus)	4 x Isolated 4 to 20mA Configurable as Opacity, Optical Density 4 x Relay RS232/485 (Modbus)
Relay Rating	1A @ 24Vdc	1A @ 30Vdc	1A @ 30Vdc
Electrical: Power Supply Current Consumption	24Vdc nominal (18 to 30Vdc) 0.3A nominal (3A start-up)	90 – 260 VAC (50/60 Hz) 0.25A	90 – 260 VAC (50/60 Hz) 0.25A
Dimensions (HxWxD): Transceiver Retro-reflector	191 x 201 x 413mm 191 x 201 x 237mm	123 x 220 x 80mm	160 x 260 x 90mm
Weight: Transceiver Retro-reflector	6kg 3kg	1.6kg	3.0kg
Stack Connection	1 1/2" 150 lb ANSI	n/a	n/a
Air Purge Blower	Required for correct operation. Consult PCME	n/a	n/a
Calibration Filters	Optional	n/a	n/a

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.



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