



PARTICULATE MONITORING SYSTEMS

TÜV APPROVED

Continuous particulate emissions monitoring comprising probe, combined control unit/microprocessor-based dataloggers and PC based software

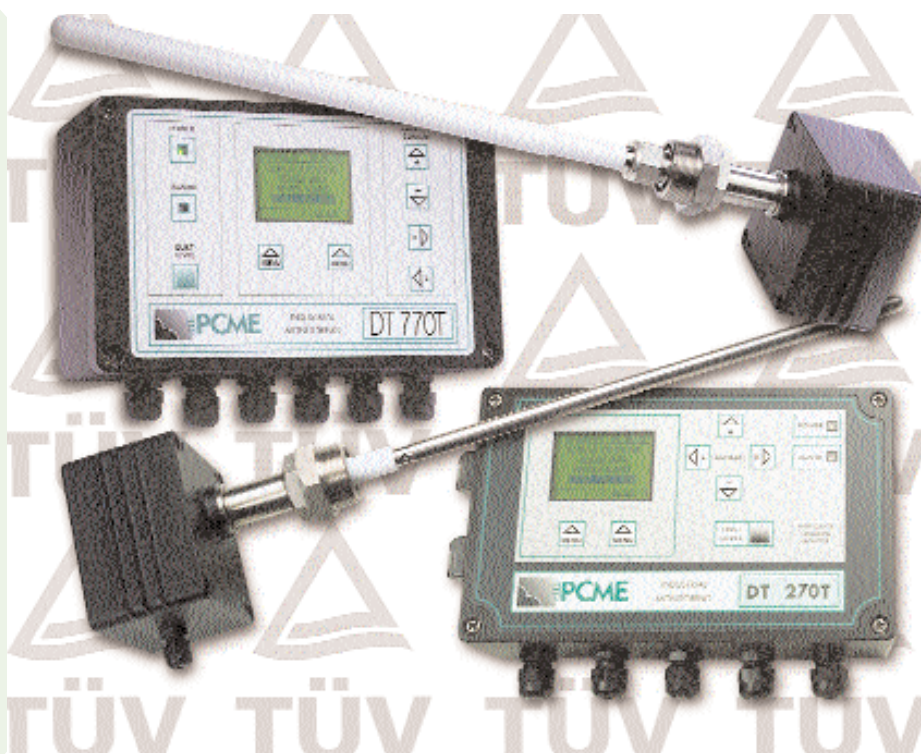
DT770T & DT270T

DUST

EMISSIONS

MONITORING

SYSTEMS



- Instruments approved to German TÜV BImSchV 17, 13, 27 and TA-Luft standards (complies with IPPC)
- Enhanced measurement through unique Electrodynamic technology
- Up to 4 channels of dust monitoring via expansion module and up to 255 channels capability
- Windows based software for analysis and full reporting facility

Principles of Operation

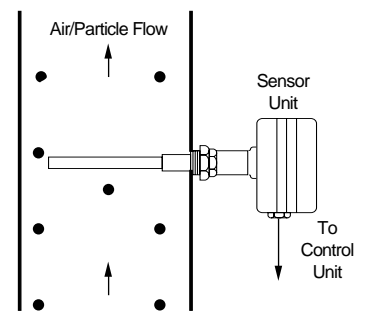
The DT770T & DT270T utilise PCME's unique Electrodynamic measurement principle. When the sensing probe is installed in the duct or stack, particles in the air stream interact with the sensing rod and a charge induction affect is analysed from the probe. Distributions in the particle stream result in a frequency charge induction response, which is directly proportional to the concentration of particulate. The instrument's output is an analysis of this frequency response.

PCME's Electrodynamic technique enables the use of fully insulated probes, essential for use in high humidity gas streams as well as applications with high conductive dust loadings. Very Low Dust concentrations can also be measured due to this unique measurement principle.

*The performance of the DT770T and DT270T has been validated through the German TÜV approval process for non-condensing emission applications. It complies with the requirements of BImSchV 17 (Incineration/hazardous process) BImSchV 13 (Power/Combustion process) BImSchV 27 (Arrestment plant emissions) and TA-Luft. Both the DT770T and DT270T come with zero and span checks as well as a probe short circuit check (paramount to any probe based dust monitor) to ensure reliability of the system and to comply with the above BImSchV approvals.

The instruments are approved for measurement in ranges as low as 0-15mg/m³ reflecting the high reproducibility and quality of measurement determined from the TUV field tests.

*Refer to TÜV certificate for details of complete range covered by approval. N.B. PCME's frequency induction technique and insulated probes are covered by world-wide Patents.



Instrument Modes of Operation

Environmental Mode

- Calculates and records average emissions in mg/m³ for up to 24 hours using 30 second averages.
- Activates audible and visual instrument alarms and alarm relays for both instantaneous and average emission limits, instrument fault conditions and self-check failure.
- †Data averaging is user selectable from 1 minute to 8 hour averages. (up to 600 days of 1 hour averages can be stored.)
- †Stored data can be downloaded to a PC for Environmental reporting, process control analysis and filter performance monitoring.
- †Downloaded data can be configured to produce tailored reports for Environmental compliance with graphical representation of emissions over selectable time periods.

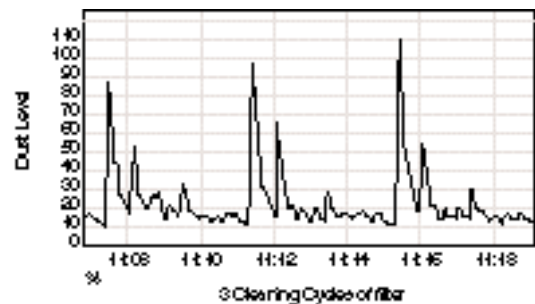
Process Control Mode

- 30 second averages can be viewed both graphically and numerically for process trend analysis.
- 30 second averages can be downloaded for analysis on PC via DustReporter software (option).
- Hourly emissions can be graphically viewed to determine filter performance (up to last 24 hours).

Broken Bag Mode

- Graphical display of filter cleaning cycles showing pulses from fabric filter during reverse jet cleaning.
- Bag row identification enabling faulty rows to be highlighted.
- Remote broken bag diagnostics (option with 'PREDICT' software).
- Allows anticipation of possible filter failure enabling predictive maintenance scheduling.

Typical Baghouse Cleaning Cycle

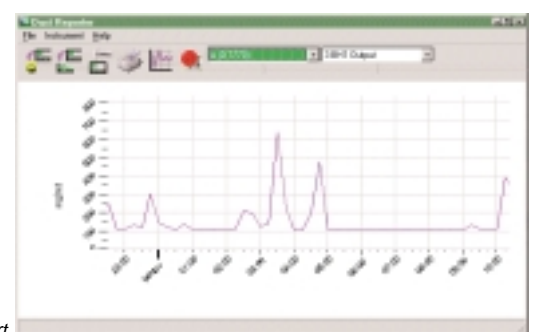


Instrument Features

- Environmental, process control and broken bag modes
- Unique graphical display showing trends and numerical data
- Automatic zero and span check
- Patented probe short circuit check
- Error code diagnostics
- Simple onboard calibration of instrument display and outputs
- System expandable to 4 sensors per control unit and up to 255 sensors by daisychain of control units
- Settings, calibration and data password protected
- Dust concentration can be normalised to oxygen (optional extra)
- †Full environmental reporting and analysis (via software)
- †Graphical representation of long-term emissions

Windows Based DustReporter Software

- Dust data displayed in real time for individual or multiple sensors (Optional on-line software)
- Zoom scaling permits both instantaneous and long term trend analysis
- †Easy access to historical data and maintenance logs
- †Archiving feature assists effective management of data older than 4 years
- †Preconfigured environmental reports
- †Maintains history of dust and instrument alarms and corrective actions
- †Normalised concentration and mass emission reports (option)
- †Process control trending and instantaneous dust levels graphically displayed in real-time and historically



Single channel report

† Denotes features available on the DT770T only

Electrodynamic Features for Enhanced Measurement

Dynatrack	Instrument automatically adjusts it's dynamic range to track fast moving dust pulses (typically found after reverse jet cleaning baghouses) to ensure good measurement
AGC	The instrument automatically adjusts its gain control to suit varying dust loading applications (no need for user to adjust gain controls or potentiometers)
AZC	Automatic Zero Compensation eliminates drift due to frequency driven signal processing

Instrument Memory Capacity (Per Dust Channel)

24 hour memory	Rolling 24 hours at 30 second store rate
Broken Bag	Displays one complete cleaning cycle
†Average memory	16000 data points (e.g. 600 days @ 1 hour store rate)
†Storage and averaging of long-term memory	Adjustable over range of 1 minute to 8 hours

Instrument Functions

Monitoring units	mg/m ³ , g/m ³ , units or user defined
Calibration mode	Computes calibration factors associated with isokinetic sampling
Review memory	Graphics or listing display of stored data 24hr and †longterm averages
Channel name	10 letter name (eg kiln stack) to identify stack
Access security	2 password levels protect unauthorised entry and instrument calibration
Data security	Data stored in non-volatile memory
Broken bag mode	Displays bag cleaning cycle in progress

Instrument Inputs/Outputs

Type	Name	Specification	Function
Output (per channel)	Dust emissions	4-20mA isolated (max 250Ω)	Scalable over full range of emissions
Output	Serial O/P	RS-232	Download of emissions data to PC (optional on-line)
Output	Relay 1	Single pole make rated 2A, 230V	Emission Alarm 1/Instrument Alarms
Output (per channel)	Relay 2	Single pole make rated 2A, 230V	Emission Alarm 2
Input	Digital 1	Digital (contact closure)	Plant running signal
Input (per channel)	Digital 2	Digital (contact closure)	Bag cleaning reference pulse
Input (per channel)	Analogue	4-20mA	Oxygen compensation (option)

Control /Expansion Unit

	Control Module	Expansion Module
Enclosure rating	IP65	IP65
Enclosure size (mm)	160w x 90d x 260 l	160w x 90d x 360 l
Enclosure weight	3kg	4.5kg
Enclosure material	Die-cast aluminium (epoxy-coated)	Die-cast aluminium (epoxy-coated)
Power supply (switchable)	110Vac or 230Vac 50Hz/60Hz 10VA	110Vac or 230Vac 50Hz/60Hz
Fuse rating	250mA	250mA
Display type	Backlit LCD providing numerical and graphical display	N/A
Temperature range (electronics)	-25°C to +55°C	-25°C to +55°C
No. of dust channels	1	Up to an additional 3

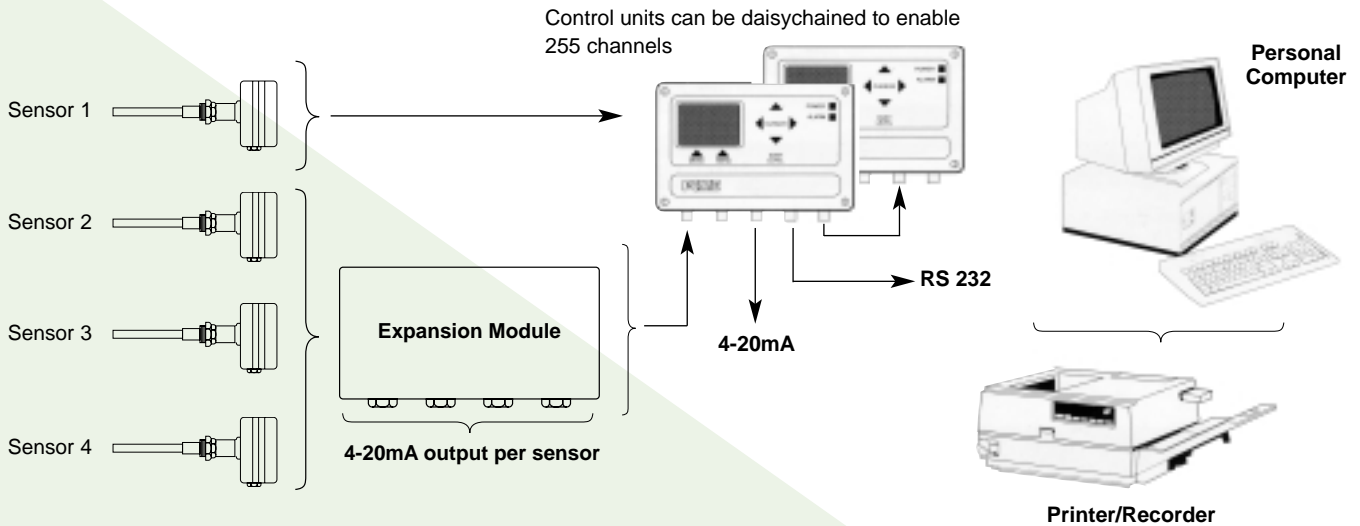
Instrument Specifications

Resolution	<0.01mg/m ³
Response time	<10 seconds for 95% change (user selectable)
Self checks	Automatic zero, span and probe short-circuit checks

Sensors & Cables

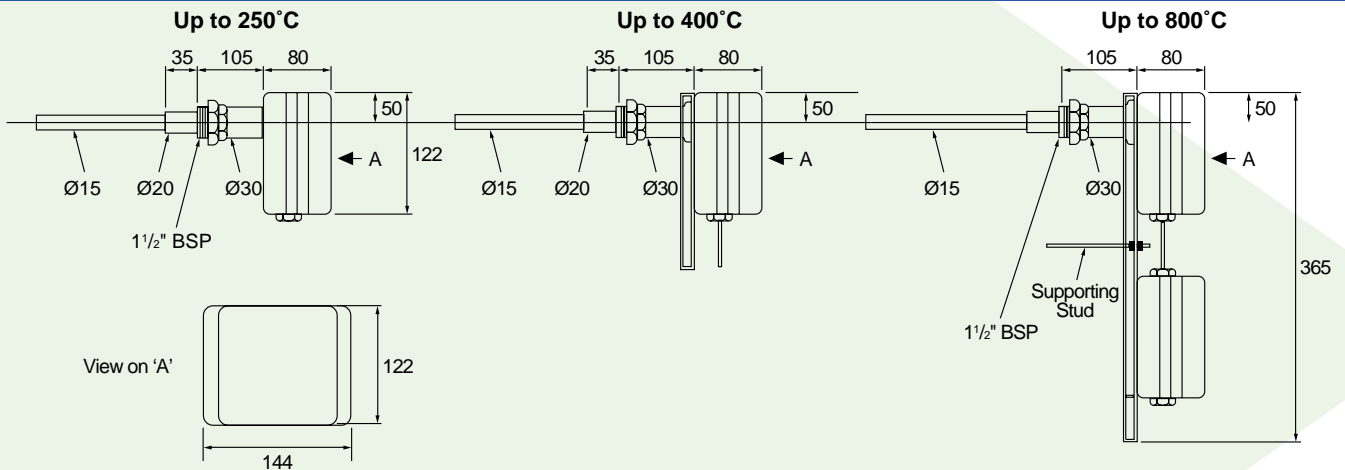
Sensor Types	S I	316 Stainless Steel Totally Insulated Sensor (PTFE or Ceramic)	Stack Diameter (mm)	Standard Probes for up to 3m Cross Stack Probes for up to 6m diameter stacks.
Temperature Range (flue gas)	250 400 800	Up to 250°C (standard) Up to 400°C (optional) Up to 800°C (optional) Over 800°C consult factory	Enclosure Weight	1.8kg
No Air Purge (standard)	N	¼" BSP@0.5 litre/min	Enclosure Temperature Rating	-25°C to +70°C
Air Purge (optional)	AP		Enclosure Rating	IP65
Stack/Duct Connection		1½" BSP (female) NPT option	Sensor Enclosure Material	Die-cast Aluminium (epoxy-coated)
			Cable from Sensor to control unit	8-core Screened
			Cable from Sensor to control unit	10m Standard: 300m max

System Layout

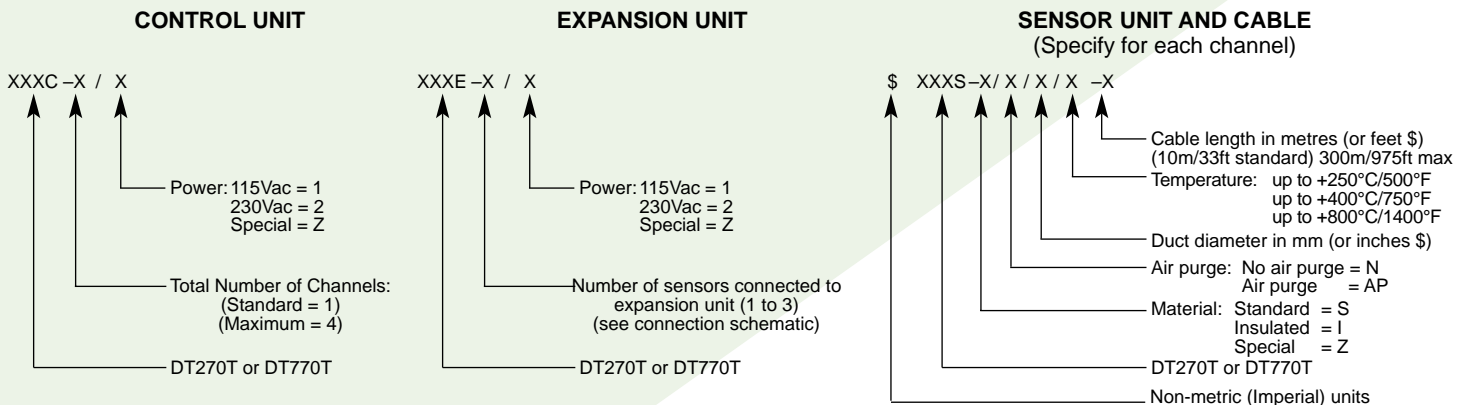


For connection details, refer to Installation and User Manual

Physical Dimensions



Product Ordering Codes



About PCME

PCME is a world leader in particulate measurement. The company produces equipment for emissions monitoring, process control and solids flow monitoring. 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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