

 **GOYEN** EMP7

PARTICULATE EMISSION MONITOR

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WHAT IT DOES

- Continuously monitors for filter media leakage.
- EMP7 is a simple self contained 2-wire, particulate monitor with 4–20 mA output designed to feed a PLC, display device such as AUD1 or Connect Network via Connect Access Card or Numeric Display, AUD1.
- Continuously monitors particulate flow, primarily emissions from process plants.
- Indicates condition and efficiency of cleaning system.
- Maintains absolute calibration.
- Models available for mg/m³ (gr/ft³) or mg/s (gr/s) following calibration to Iso-kinetic sample.
- Self Test Diagnostics including Statistical History, Run Time, Power Up and Optional Remote Diagnostics Reporting.

PRODUCT DESCRIPTION

The EMP7 utilises ISE technology. Each particle travelling through the process develops an electrical charge. As the particle passes or impacts with the sensing element, a current is induced which is processed in EMP7 by a method called Impulse Signature Extraction ("Ise").

ISE technology extracts the basic characteristics (the 'signature') of the impulsive signals induced by individual particles in the gas stream. Since these characteristics are related to such things as the particle velocity, EMP7 is able to compute velocity as a parameter, and therefore to calculate the emission level as either mass flow rate or mass density as required. In addition, although ISE technology

processes the entire signal from the sensing element, its algorithm effectively negates the potentially erroneous effects of the DC component of the signal, so ISE technology shares all the advantages of existing AC Triboelectric technology.

Made a reality by recent advances in low power digital signal processing, ISE technology is as significant a step forward now as the introduction of AC Triboelectric technology was in 1992.

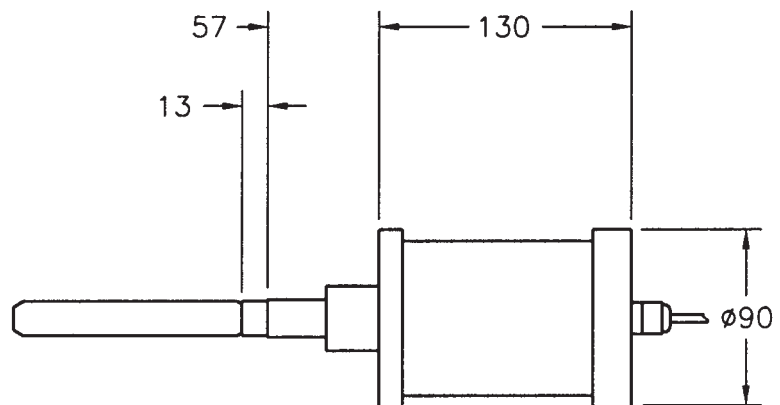
OPERATIONAL RANGE

- Suitable for a wide range of dust collection and materials handling operations and gas cleaning plants
- Dust concentrations from 0.01 mg/m³ (4×10^{-6} gr/ft³).
- Accurate for most particle and particle characteristics.
- Insertion temperatures from -20°C over 650°C (-4°F to over 1200°F) with additional hardware

- For duct sizes from 50 mm (2") to outlets over 10 m (33 ft).
- Suitable for most stack material, e.g. steel, brick etc.

BENEFITS

- Detects all particles regardless of composition.
- Very sensitive due to ISE Technology Monitoring
- No range switching or other adjustments.
- Calibration is constant.
- Extremely wide range of concentration and mass flow.
- Tolerates extremely high leakage of signal due to insulator bridging.
- Seamless interface into industrial controls systems, such as PLC.



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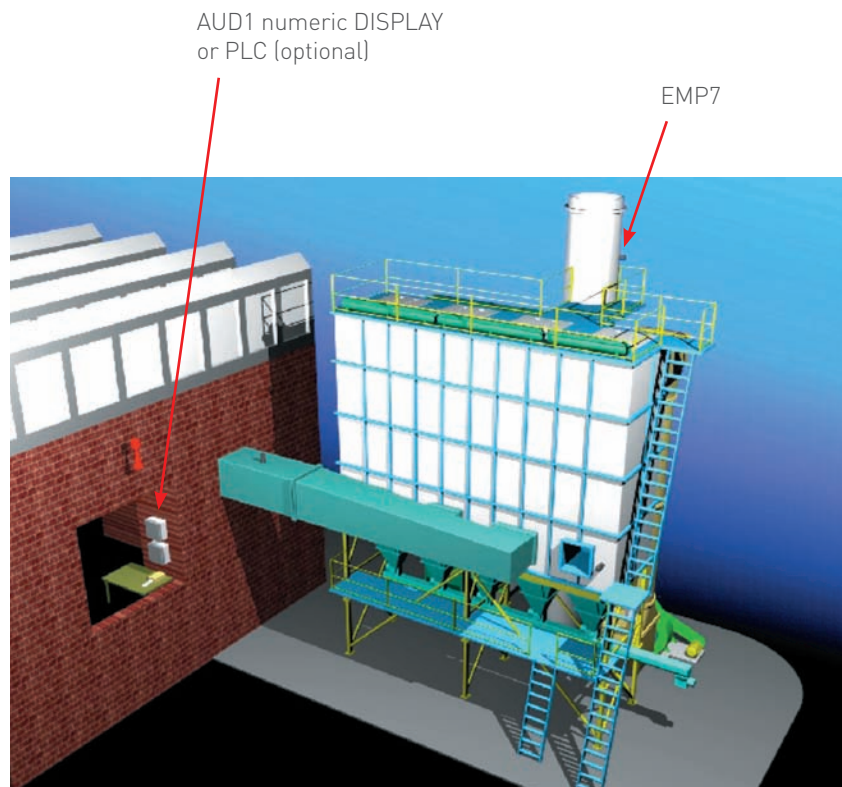
PARTICULATE EMISSION MONITOR

TECHNICAL SPECIFICATION

| FUNCTIONS | |
|--|---|
| Monitoring Units Calibrated | mg/m ³ (gr/ft ³) user defined automatic or mg/s (gr/s) |
| Monitoring Units Diagnostics | Statistical history, run time diagnostics, power-up diagnostics and optional reporting |
| OUTPUTS | |
| Emission Specification | 4–20 mA |
| Emission Function | Log (concentration/mass flow) |
| INSTRUMENT SPECIFICATION | |
| Enclosure Rating | IP66/NEMA 4 |
| Enclosure Size | ø88 × 125 mm high (ø3.5" × 5") not including sensor length |
| Power Supply | 10–32V DC |
| Insertion Temp Range | –20°C to 200°C (–4°F to 392°F), see supplier for higher temperature options |
| Connection required on duct | 1" BSPT socket |
| Sensing Element Material | 316 Stainless steel (5 mmOD × 300 mm (standard cable length) 3/16" × 12") |
| Sensing Element Options | Solid rod, tubular, teflon coated, multiple supports, cable type, other lengths available |
| Air Purge Requirements | Connection: 1/8" gas thread on side of unit |
| Air Pressure | 400 kPa (60 psi) max |
| Air Consumption: | 1.7–17 m ³ /hr (1–10 cfm) pulsed |
| Electrical Specification between Sensing Head and Electrical Input | 2 core screened data cable: max 5000m (16,400 ft) |
| Resolution: | 0.001 mg/m ³ (0.4 × 10 ⁻⁷ gr/ft ³) |
| Range Stability: | ±1% 4–20 mA signal |

FEATURES

- Extremely wide, adjustment free range (0.01 mg/m³ to 1 kg/m³ or 4 × 10⁻⁶ gr/ft³ to 400 gr/ft³).
- Simple 4–20 mA, 2-wire output connection.
- Output is true mass density (mg/m³) (gr/ft³) or true mass flow rate (mg/s) (gr/s) depending on model selected.
- Full internal electrical isolation to prevent potential corruption due to ground potential differences.
- Resolution of 0.001mg/m³ (4 × 10⁻⁷ gr/ft³).
- Logarithmic output for wide range displays, but also easily converted to linear.





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