PARTICULATE EMISSION PROBES

The Best is getting Better!

July 2019

Air **pollution** is a growing **concern** all over the **World**

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Our vision is to **improve** the quality of **people's lives** through **cleaner air** in their **environment**

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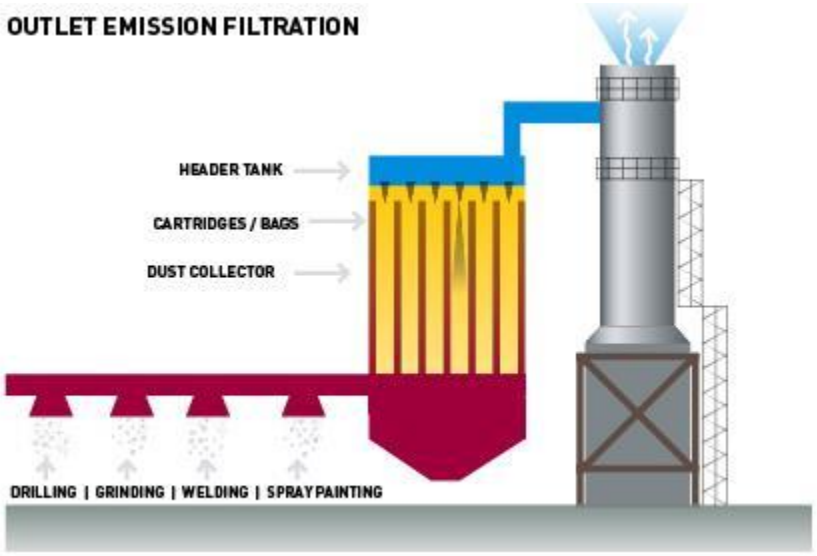
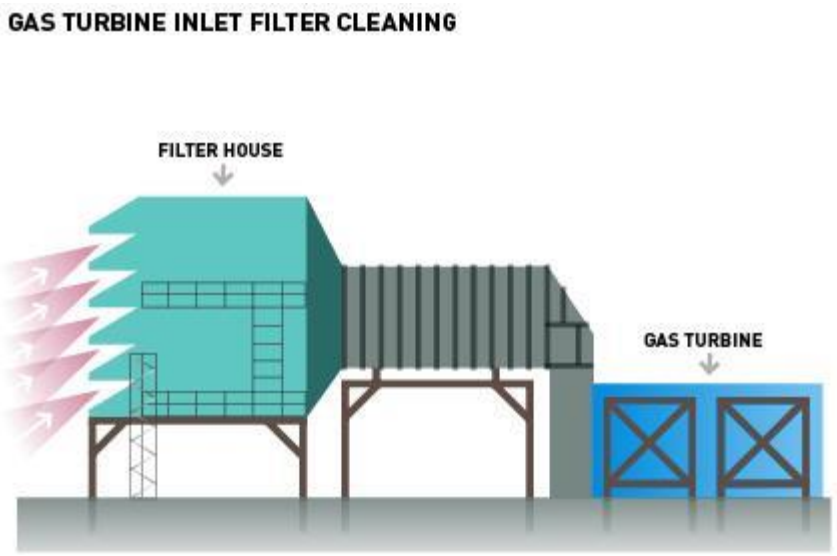
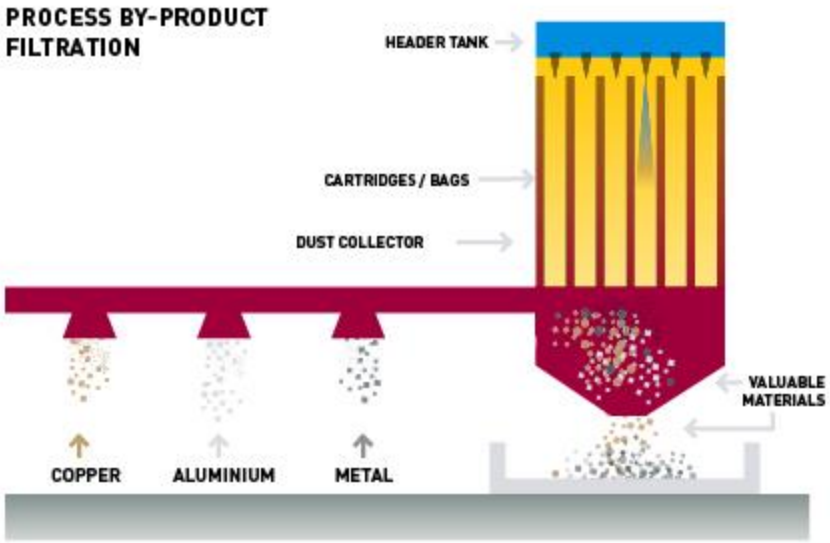
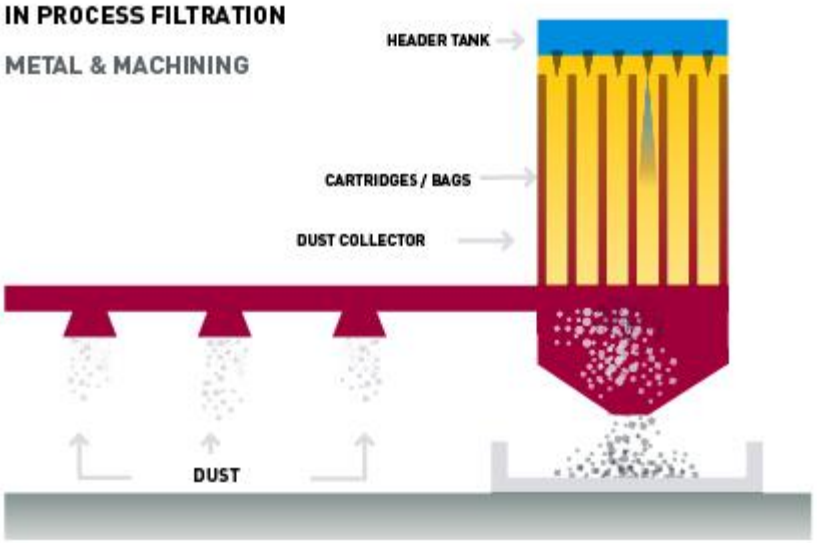
When Are Dust Collectors Necessary?









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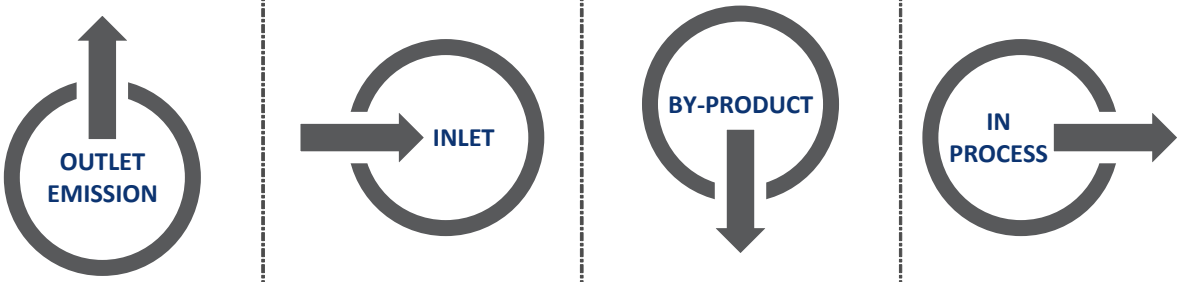
Applications



	OUTLET EMISSION	INLET	BY-PRODUCT	IN PROCESS
Cement & Concrete	■		■	
Chemical & Pharmaceutical		■	■	■
Coal Powerplants	■			
Food & Beverage			■	■
Gas Turbine		■		
Machining & Welding	■			■
Metal	■			■
Mining			■	■
Painting & Sand blasting	■			■
PVC & Fiberglass	■			■
Silo & Bulk material handling			■	■
Wood & Paper	■			■

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Full Range Of Products and Solutions

YOUR ONE STOP SUPPLIER

ADVANCED PULSE JET VALVES

Our pulse jet valves are ready for use in any dust collector design and have the most powerful air pulse to solve your cartridge filter or baghouse cleaning challenges. Various connections are available such as threaded, dresser nut, manifold mounted or flanged ports.

ENCLOSURE FOR (NON-)HAZARDOUS LOCATIONS

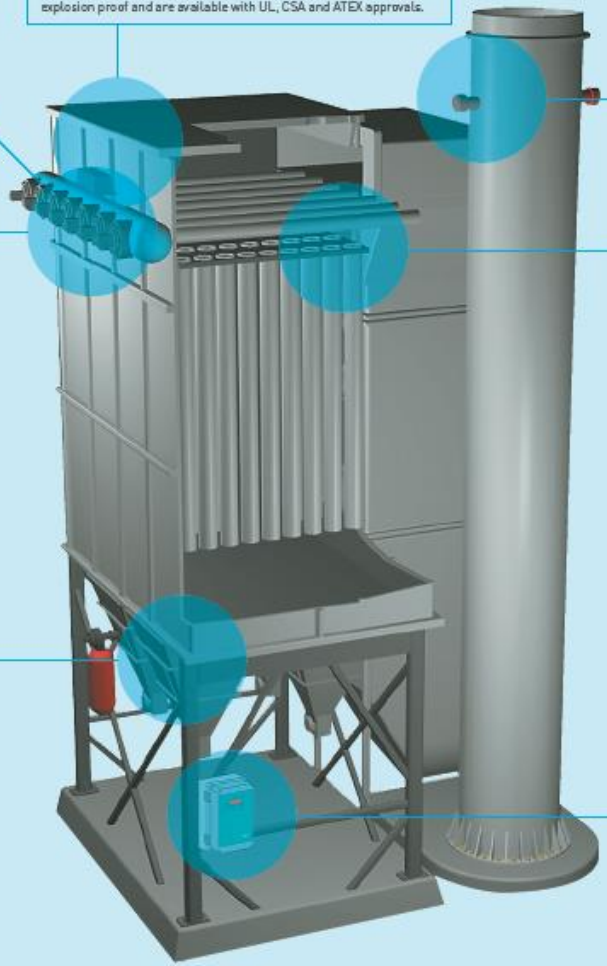
Pentair's enclosures for hazardous locations offer reliable protection for the pilot valves of your filter cleaning system in high-risk environments. The Goyen and Mecair enclosures are dust and gas explosion proof and are available with UL, CSA and ATEX approvals.

NEW!

Particulate Emission Probes

HEADER TANK SYSTEMS

Pentair offers complete and fully certified header tank systems specifically engineered for dust collector filter cleaning. We introduced the Full Immersion system with optimized flow rate for the best cleaning results in the market.



BLOWTUBE NOZZLES

The Goyen and Mecair blowtube nozzles and cartridge cleaning cones ensure effective filter cleaning with reverse pulse jet air. The product ranges offer extensive connectivity options and high efficiency through balancing air flow and minimizing pressure drops through blowtube holes.

PNEUMATIC AIR CANNON

Our Air Cannon is designed to cost-efficiently dislodge dust from hopper walls and silo bottoms with powerful air bursts. Thanks to the special diaphragm valve with an extremely high flow rate and an air accumulator it is more efficient than 'fluidification' and 'vibration' systems.

FILTER CLEANING CONTROLLER

Several decades of filter cleaning expertise have resulted in the most effective filter cleaning controls available today. Our range of controllers can be used for continuous control up to on-demand mode and from standalone systems to systems up to 4800 outputs.

MAIN BENEFITS

- Optimize your filter cleaning design with GOCO
- Unique Certified Header Tank Solutions
- Most Powerful Pulse Jet Valves for superior filter cleaning results
- Lower energy consumption
- Reduced need for compressed air
- Longer filter life, lower dust collector OPEX
- Safest Pilot Enclosures such as UL, CSA & ATEX
- Vast portfolio of original spare parts such as membrane kits

New Range Of Particulate Emission Probes

FFD

Filter Failure Detector

FFA

Filter Failure Alarm

PEM

Particulate Emission Monitor

FFD, FFA & PEM

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Advanced Probe Electrification Technology

Improved AC Coupled Triboelectric technology

After having introduced an innovative AC Coupled Triboelectric technology over 25 years ago, we further improved it

New AC Probe Electrification technology.
The Best getting better!

Using a specific AC signal

The FFD, FFA and PEM, all utilize AC Probe Electrification measurement technology.
The sensor measures the interaction between the particulate in the air stream and the sensing rod to induce a charge signature.
The instrument extracts a specific frequency band and filter out the DC current caused by direct particle collisions.
This technology thus, along with outperforming conventional DC tribo-electric systems by extending the range over which the instrument has minimal cross-sensitivity to changing velocity, remain unaffected by the build-up of particulate on the sensing rod, thereby minimizing also signal drift.

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General Application Guidelines

Temperature Range

STACK from -20ºC to +250ºC (-4ºF to 480ºF)
AMBIENT from -20ºC to +55ºC (-4ºF to 130ºF)

Maintenance

No preventive maintenance needed but annual visual inspection

Duct diameter

MINIMUM 0.5m (1.6 ft)
MAXIMUM 5m (16.4 ft)

Certifications & Approvals

ATEX II 3D
ATEX II 3GD
IECEx
US-EPA MACT compliant

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General Application Guidelines

ROD lengths

MINIMUM 300 mm
MEDIUM 600 mm
MAXIMUM 1000 mm

Calibration

No need for calibration as these are not strictly measurement devices (like i.e. pressure meter). Only the PEM could become as such following a isokinetic test on actual site

Velocity ranges

MINIMUM from 4 m/s (13.1 ft/s)
MAXIMUM below 30 m/s (98.4 ft/s)

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FFD – Filter Failure Detector

- Reliable standalone sensor for broken bag detection
- 24 VDC power
- Unit configuration and set-up inside the sensor head
- Dual alarms: limit and warning set at 50% of limit

- 2x Relay (one per alarm)
- 1x 4-20 mA output (scaled 0-200%)
- Max flue gas temp 200°C (392°F)
- Hazardous area ATEX II 3GD
- Digital averaging of readings
- User selectable delay

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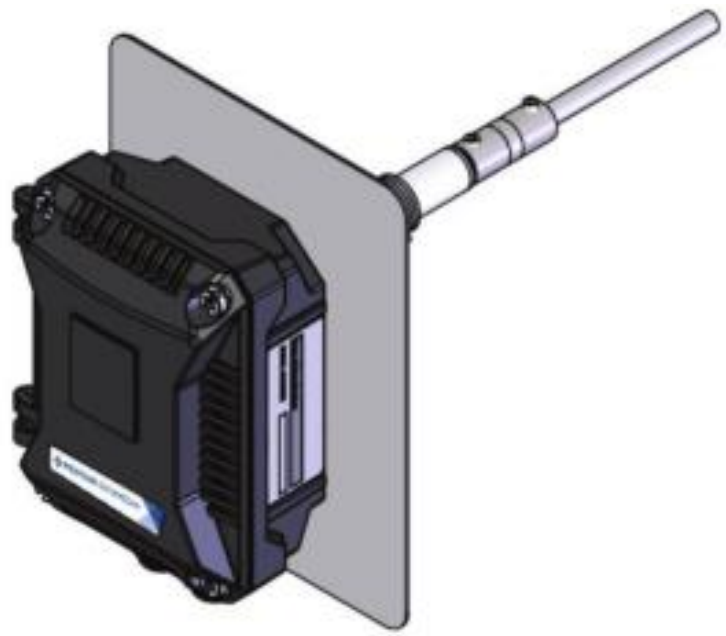
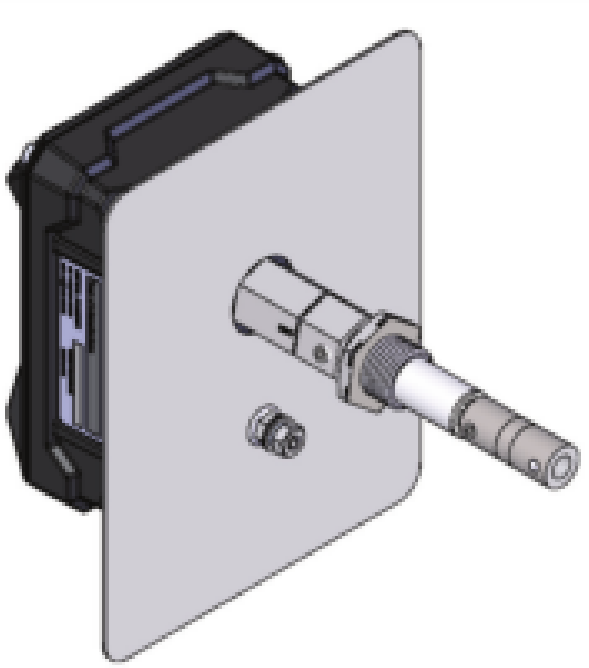
FFD – Filter Failure Detector

Metallic shield allows the sensor to be

rated for 200 °C (392 °F) process temperature





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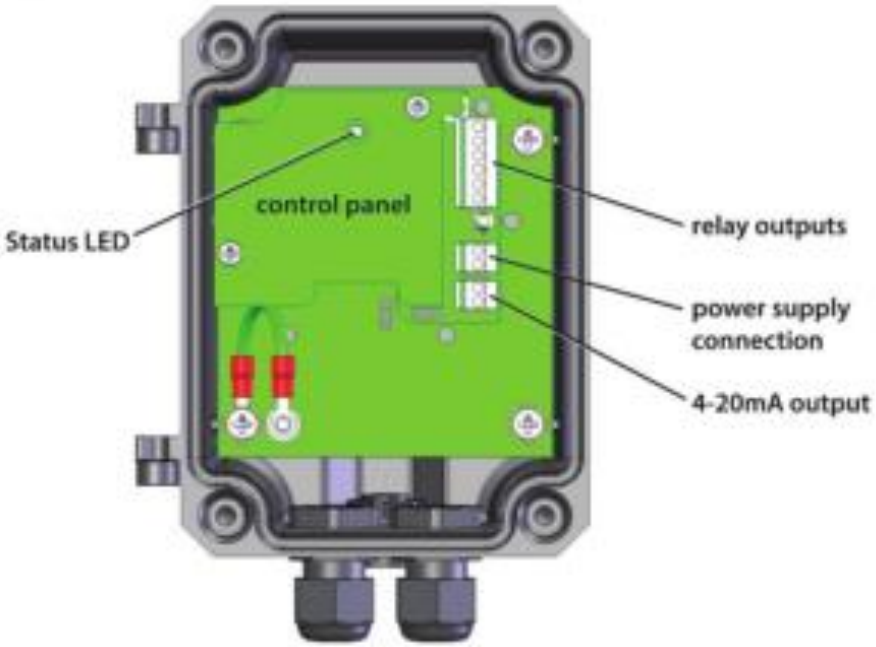
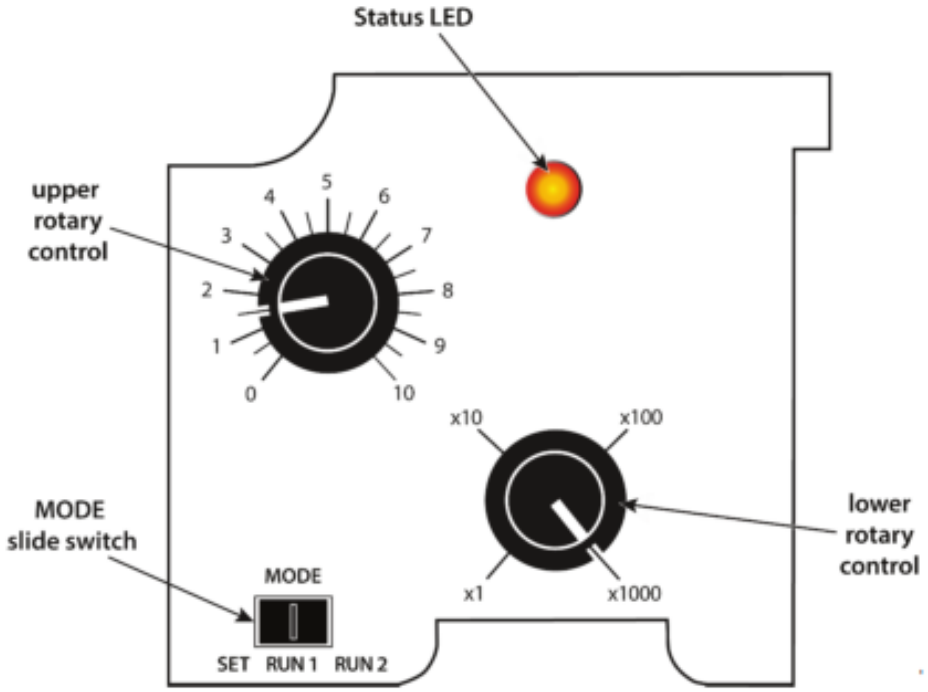
FFD – Filter Failure Detector





Simple, quick set-up direct at the sensor

All I/O from one single location

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FFA – Filter Failure Alarm

- Sensor with separate control unit for broken bag detection
- Configuration and set-up via graphical display on controller
- Hazardous area ATEX II 3GD
- US-EPA MACT compliant
- 110/240 VAC power direct to controller
- Dual alarms (limit and warning) with 2 Relay (one per alarm)
- 1x 4-20 mA output
- Max flue gas temp 240°C (464°F)

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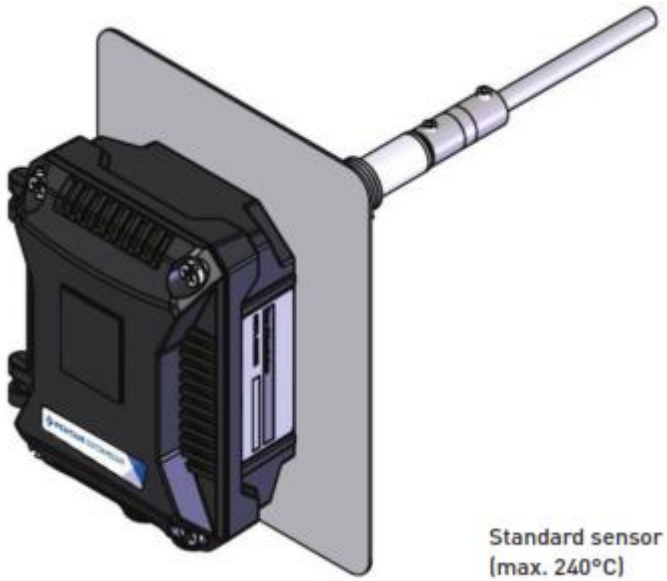
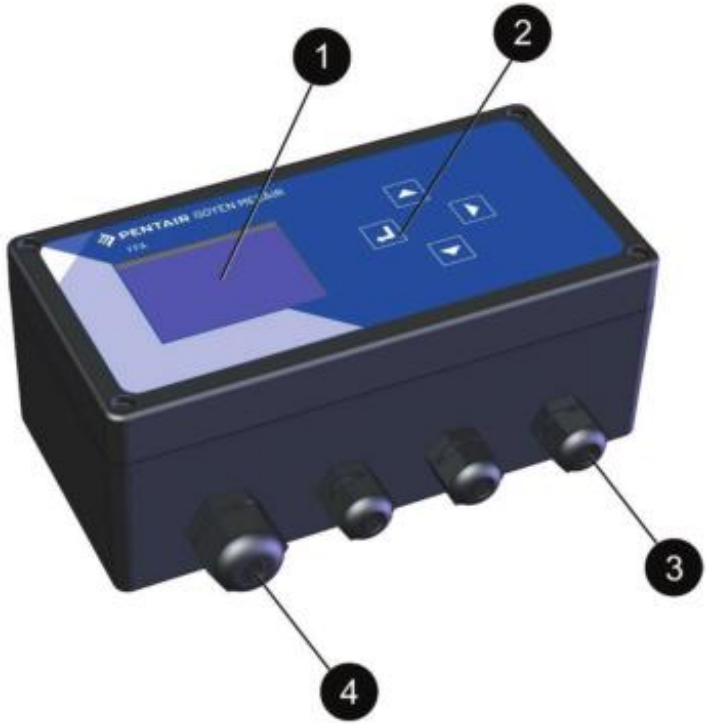
FFA – Filter Failure Alarm

1. Color Display
2. Navigation keys
3. M16 cable glands for signals
4. M20 cable gland for power



Standard sensor
(max. 240°C)



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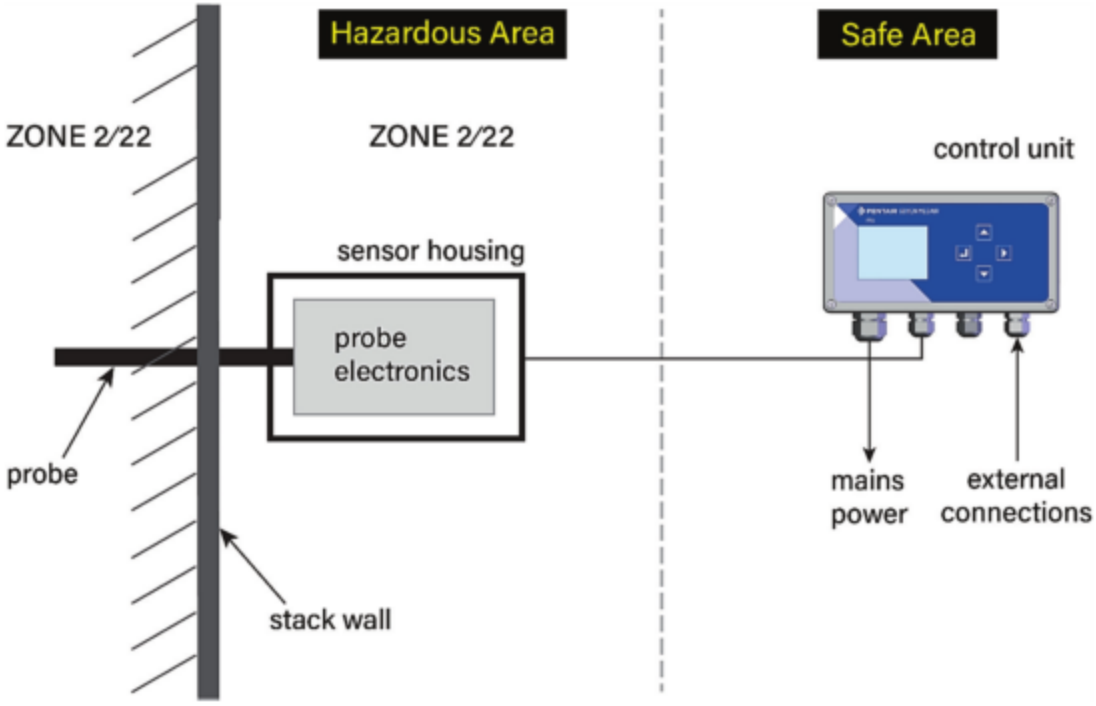
FFA – Filter Failure Alarm

The control unit, installed remotely and conveniently in a safe area, allows an easy control



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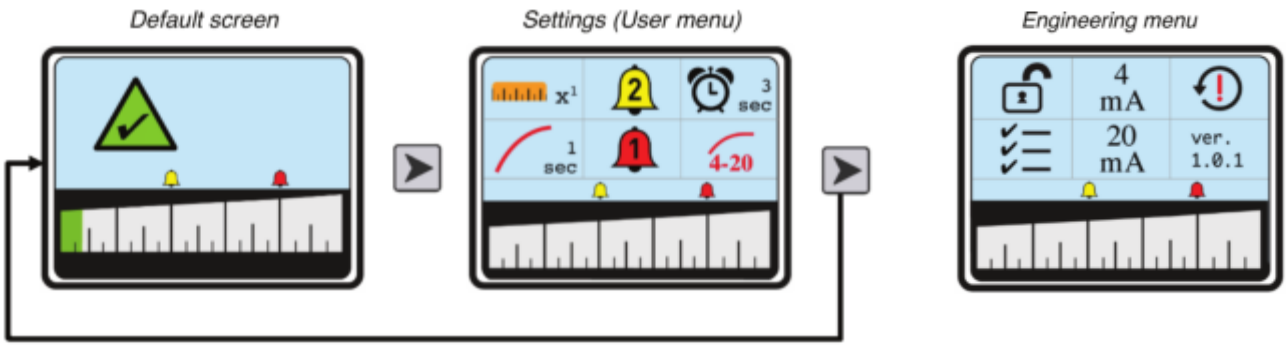
FFA – Filter Failure Alarm

User friendly color display



1) SCALE	3) ALARM 2 (EARLY WARNING)	5) TIMER
		
2) SMOOTHING	**4) ALARM 1 (HIGH ALARM)**	**6) SMOOTHING 4–20 mA**
		

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PEM – Particulate Emission Monitor

- Standalone sensor for filter leak monitoring
- 110/240 VAC power direct to sensor
- Configuration and set-up via internal keypad and display
- Hazardous area ATEX II 3D and IECEx
- US-EPA MACT compliant
- Dual alarms (limit and warning) with 2 Relay (one per alarm)
- RS485 (Modbus) output

- 4-20 mA output
- Max flue gas temp 250°C (482°F)
- Inbuilt QA: manual reference (zero/span) and automatic short-circuit checks (contamination)
- Can be referenced to results of isokinetic / gravimetric testing to give mg/m^3 output

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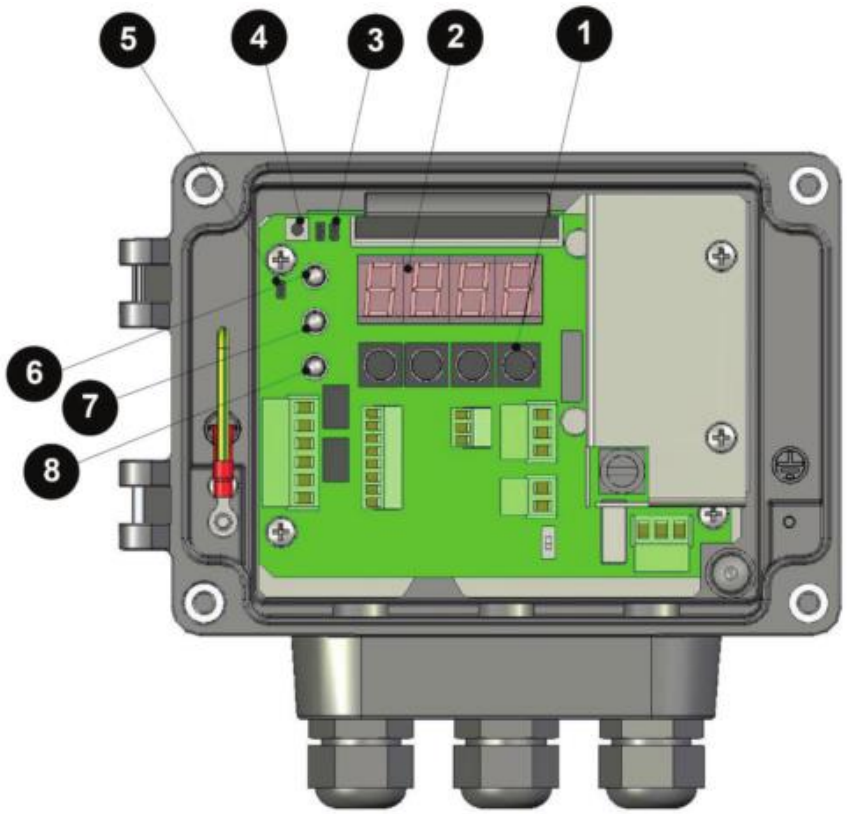
PEM – Particulate Emission Monitor



1. Navigation buttons
2. Four-digit LED display
3. Manu selection (with jumper)
4. Reset button
5. *Not in use*
6. Power / status LED
7. *Not in use*
8. Self-check LED

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THANK YOU

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