

# EMS WATCHDOG 800 LED OPACITY/DUST MONITOR



***ENVIRONMENTAL MONITOR SERVICE***

**Quality Manufacturing, Integrity and Dependable Service by Design**



Environmental Monitor Service, Inc. Phone: 800-864-2814 ext. 15

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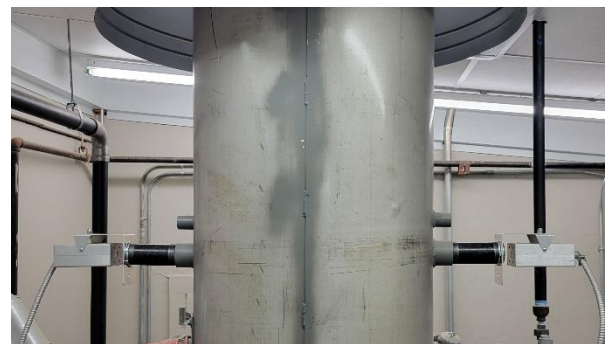
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*The EMS WatchDog 800 is a purpose-built Opacity Monitor utilizing modulated green LED technology. Boasting a microprocessor board and a bright LED display, monitoring opacity in real time has never been easier. Reliable and cost-effective, this monitor offers a seamless solution for monitoring, displaying, and transmitting opacity data. Its compact design and straightforward installation make it the ideal choice for a wide range of applications.*

## ***Typical Applications***

- ✓ Boilers
- ✓ Crematoriums
- ✓ Combustion Furnaces
- ✓ Commercial Exhaust Systems
- ✓ Fan Control
- ✓ Bag Houses
- ✓ Duct Fire Alarm



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## *System and Measurement Principle*

The EMS800 system consists of a green LED light source mounted on one side of the stack or duct and a detector mounted on the other. The LSEM (Light Source Electronic Modulation) measurement beam is projected across the stack to the detector. The output of the detector is analyzed and displayed on the user interface.



## *KEY FEATURES*

- Custom Microprocessor board with bright LED user interface and 4-20 mA output
- Modulated Green LED Source with 10 year warranty
- Push button automatic zero, span and linearity calibration
- Built-in alignment viewing window
- Easily mounts to standard pipe nipple with included brackets
- NEMA 4X enclosure with 24VDC power supply
- Built-in ND filter holder for linearity checks



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<b>EMS800 System:</b>	<b>Environmental Monitor Service, Inc.</b>
<b>Sensor Electronic Processor Enclosure</b>	<b>NEMA 4X, Size, 10H x 6W x 5D inch (25.4 x 15.3 x 12.7 cm)</b>
<b>EMS provided 24Vdc Supply</b>	<b>Input: 90-240 VAC, 50/60 Hz, 0.55 amp +10%;</b>
<b>LED Display</b>	<b>1x1.75" Viewing area, Blue Backlight</b>
<b>Approvals</b>	<b>CE, UL, cUL</b>
<b>Measurement Ranges</b>	<b>-100 to 100% Opacity</b>
<b>Display resolution</b>	<b>1% Opacity</b>
<b>4-20mA Outputs</b>	<b>One (1), 500 ohms max, Fixed F.S. 0-100%</b>
<b>Relay Contacts</b>	<b>One 2 amp 125Vac relay for alarm, Field programmable NO/NC.</b>
<b>Alarm Reset, Range</b>	<b>Automatic reset 1-70%</b>
<b>Clear Path Calibration</b>	<b>Push button Digital Auto Linearity, Z/S, Gain, and LED current.</b>
<b>Environment</b>	<b>Operational temperature 0 to 52°C (32 to 125°F), Storage temperature -20 to 60°C (-4 to 140°F), Relative Humidity (RH) 5% to 95% (non-condensing)</b>

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<b>EMS800 Sensors:</b>	<b>Environmental Monitor Service, Inc.</b>
<b>Enclosure</b>	<b>NEMA 12 Aluminum</b>
<b>Sensors overall dimensions</b>	<b>2.5" x 4.1"x 6.0" (63.5x104x152.4)</b>
<b>Path Length</b>	<b>18" to 8 Ft (45.7 to 243 cm)</b>
<b>Optical System</b>	<b>Single Pass</b>
<b>Transmitter/Receiver weight</b>	<b>1.25 Lbs (0.41kg)</b>
<b>Modulated LED Source</b>	<b>Green LED (10 years)</b>
<b>Ambient Temperature Limits</b>	<b>From +4 to +52° C (+40 to + 125° F)</b>
<b>Process Gas</b>	<b>Up to 750° F (400° C), standard (higher available-contact factory)</b>
<b>Mounting</b>	<b>Brackets included</b>
<b>Ambient Light Immunity</b>	<b>Solid-state electronic LED modulation</b>
<b>Connections</b>	<b>1 pair twisted shielded cable, 18-22 AWG</b>

<b>EMS800 Design and Performance:</b>	<b>Environmental Monitor Service, Inc.</b>
<b>Peak and Mean Spectral Response</b>	<b>Photopic; 520 nm, less than 50% of peak response +/- 20nm</b>
<b>Angle of View</b>	<b>&lt; 5.0 ° from optical axis</b>
<b>Angle of Projection</b>	<b>&lt; 5.0 ° from optical axis</b>
<b>Accuracy</b>	<b>+/- 3.0 opacity</b>
<b>Response time</b>	<b>Instantaneous</b>
<b>Calibration</b>	<b>Push button Calibration for Zero and Span</b>

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