GREYSTONE
ENERGY SYSTEMS INC

PARTICULATE MATTER DUCT SENSOR

PMDT Series

The PMDT Particulate Matter Sensor uses an optical sensor based on laser scattering principles and features innovative contamination-resistance technology to perform highly accurate and reliable PM measurements. With a continuous-operation lifetime of more than 8 years, the sensor will provide long-term reliability and high-resolution particle size binning for the detection of environmental dust and other particles.

The sensor is housed within an IP65 Polycarbonate enclosure to monitor PM levels in a duct. The sensor achieves excellent performance characteristics, including high accuracy and low power consumption to ensure stable long-term operation. The PMDT features both 4-20 mA and voltage outputs (0-5 / 0-10 Vdc) for simple integration into any building automation system to assure good indoor air quality. The device is also available with an RS-485 MS/TP network connection including either Modbus or BACnet® protocol.

PRODUCT HIGHLIGHTS

- Laser scatter method sensor
- Detection of environmental dusts and other particles
- Transparent cover for LCD viewing
- Four selectable PM particle size detection ranges
- Highly accurate and reliable PM measurements
- Network communication available (BACnet® or Modbus)

ENGINEERING SPEC'S

- Shall be IP65 (NEMA 4X) with a UL94-V0 rated enclosure
- External mounting tabs must be slotted & tapered away from enclosure to ease field installation
- Enclosure shall be complete with neoprene gasket for duct to enclosure seal
- Enclosure shall be complete with threaded (1/2 NPT and/or M16) conduit connection
- Cover must be hinged and securely attached in the open position
- Cover must contain security screw as extra protection from opening
- Product shall be CE approved

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SPECIFICATIONS

DESCRIPTION	ENGINEERING SPEC
SENSOR	Laser scatter method
PARTICLE SIZE	PM1.0, PM2.5, PM4.0 or PM10 (selectable)
MASS CONENTRATION RANGE	0 – 1000 ug/m3
RESOLUTION	1ug/m3
ACCURACY	±10ug/m3 (0 – 100ug/m3), ±10% (100 – 1000ug/m3)
RESPONSE TIME	1 second
SENSOR LIFETIME	>8 years
ANALOG MODEL	Consumption: 75 mA max @ 24 Vdc, 100 mA max @ 24 Vdc Output Signals: 4-20 mA (sourcing) or 0-5 Vdc / 0-10 Vdc (selectable) Output Drive Capability: 550Ω max for current output, 5KΩ min for voltage output Output Scale: 0 – 1000ug/m^3 (menu selectable scales)
BACnet® MODEL	Consumption: 50 mA max @ 24 Vdc, 80 mA max @ 24 Vac Interface: MS/TP, 2-wire RS-485 Baud Rate: 9600, 19200, 38400, 57600, 76800, or 115200 (menu selectable) Address Range: 0 – 127 (menu selectable)
MODBUS MODEL	Consumption: 50 mA max @ 24 Vdc, 80 mA max @ 24 Vac Interface: MS/TP, 2-wire RS-485, RTU Baud Rate: 9600, 19200, 38400, 57600, 76800, or 115200 (menu selectable) Address Range: 1 – 255 (menu selectable)
LCD SIZE	35mm W x 15mm H (1.4” x 0.6”) alpha-numeric 2 line x 8 characters
LCD BACKLIGHT	Enable or disable via menu
DISPLAY VALUES	0 – 500 Air Quality Index or 0 – 1000ug/m^3
POWER SUPPLY	24 Vac/dc ±20% (non-isolated half-wave rectified)
PROTECTION CIRCUITRY	Reverse voltage protected; overvoltage protected
OPERATING CONDITIONS	-10 to 60°C (14 to 140°F), 0 to 95 %RH non-condensing
STORAGE CONDITIONS	-40 to 70°C (-22 to 158°F), 0 to 95 %RH non-condensing
WIRING CONNECTIONS	Screw terminal block (14 to 22 AWG)
ENCLOSURE DIMENSIONS	116 x 100 x 54 mm (4.6 x 3.9 x 2.1”) – Enclosure 152 x 22.5 mm (6 x 0.85”) - Probe
ENCLOSURE / PROBE MATERIAL	Polycarbonate (UL94V-0)
TRI-COLOR LED	Good Green (0 – 50ug/m3) Yellow (51 – 150ug/m3 Red (151 – 1000ug/m3)
PM ALARM RELAY (OPTIONAL)	Contact Ratings: Form C (NO + NC), 2A @ 140 Vac, 2A @ 30 Vdc Relay Setpoint + Hysteresis: Programmable via menu Relay Time Delay: Programmable via menu
COUNTRY OF ORIGIN	Canada