Met One Instruments

ES-642

REMOTE DUST MONITOR

The ES-642 Remote Dust Monitor is an industrial air-quality sensor designed to provide accurate particle concentration measurements in indoor and outdoor environments. The unit is supplied in a rugged weatherproof enclosure and includes an LCD display to provide information about particulate concentration, flow rate, instrument status, and power. The electronics and optical system are protected from moisture by a built-in intake heater that is humidity level controlled. The heater power is regulated to maintain a minimum humidity level. Additional features include a purge air system and an automatic zero calibration routine. The sensor can be wall-mounted or installed on a vertical mast up to 3 inches in diameter. The ES-642 comes with a 10 ft cable and connector for power (15 to 40 VDC) and signal output.

The ES-642 measures particulate concentration using a highly sensitive forward scatter laser nephelometer, having a measurement range of 0 to 100 mg/cubic meter or 0 to 100,000 ug/cubic meter. Optional sharp-cut cyclones are used to set the measurement level of the ES-642. As supplied, it provides particulate monitoring for TSP; with the addition of the sharp-cut cyclone, measurements are set for particulate smaller than PM_{10} or smaller than $PM_{2.5}$, or PM_1. The instrument's accuracy is set for particles +/-5% based on a traceable PSL 0.6 micron reference standard.

APPLICATIONS:

- Building Automations
- Environmental Clean Up Sites
- Air Pollution Level Monitoring
- Dust Level Warning Systems
- Military Applications
- Surface Emissions Modeling
- HVAC Control
- Industrial Hygiene

SPECIFICATIONS

ES-642

Measurement Principles	Particulate concentration by forward light scatter laser Nephelometer.
Available Cut Points	TSP Inlet Standard. PM10, PM2.5, and PM1 sharp-cut cyclone inlets available.
Measurement Range	0 to 100 mg/m3 (0 to 100,000 µ g/m3)
Measurement Sensitivity	.001 mg/m3.
Nephelometer Accuracy	± 5% traceable standard with 0.6um PSL.
Particle Size Sensitivity	0.1 to 100 micron. Optimal sensitivity 0.5 to 10 micron particles.
Display	2 X 16 back lit LCD. Provides information on operation including: Power, Flow Operation, Status and Concentration.
Zero Calibration	Automatic Zero Calibration every hour or as programmed from 1 to 999 minutes.
Flow Rate	2.0 liters/minute ± 0.1 lpm
Power	15 – 40 VDC @ 1.5 A maximum
Power Consumption	350 mA (no heater) 1.1 A (with heater) @ 15 VDC
Analog Output	4-20 mA and 0 – 10 VDC
Digital I/O	RS-485 full and half duplex, RS-232
Serial Communication	ASCII Text data and MODBUS RTU
Alarm Output	Normally open and normally closed relay 30 VDC @ 1A maximum
Operating Temperature	0 to +50°C (Ambient Temperature Sensor Range -30 to +50°C)
Barometric Pressure	600 to 1040 mbar pressure sensor range
Ambient Humidity Range	0 to 90% RH, non-condensing
Intake Moisture Control	Automatic 10 Watt inlet heater module controlled to sample RH set point.
Factory Service Interval	24 Months typical, under continuous use in normal ambient air.
Mounting Options	Wall mount bracket standard, or EX-905 tripod.
Unit Weight	2.27 kg (6.0 lbs)
Unit Dimensions	22.9cm high, 17.8cm wide, 10.8cm deep, (9.0" x 7.0" x 4.25"), w/out inlet assy. 48.3cm high, 17.8cm wide, 10.8cm deep, (19.0" x 7.0" x 4.25"), w/ inlet assy.

Specifications are subject to change at any time.

FEATURES:

- Automatic Zero Calibration
- Controlled Input Heater
- Easily Removable Filters
- Contact Closure Alarm Output
- Front Panel LCD Display
- Sealed Environmental Enclosure

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