

ES 642

Remote Dust Monitor



The ES 642 Remote Dust Monitor from Met One Instruments, powered by Acoem, is a highly sensitive air-quality sensor designed for real-time particulate monitoring in both indoor and outdoor environments. It uses a forward scatter laser nephelometer to measure particle concentrations up to 100 mg/m^3 . The ES 642 supports TSP monitoring, with optional cyclones for PM_{10} , $\text{PM}_{2.5}$, or PM_{10} . It offers flexible data output options, including MODBUS, RS-232/RS-485, and analog signals.

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 PM10 or smaller than PM2.5, or PM1. The instrument's accuracy is set for particles +/-5% based on a traceable PSL 0.6 micron reference standard.

Features

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

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

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/m ³ (0 to 100,000 µg/m ³)
Measurement Sensitivity:	0.01 mg/m ³ .
Nephelometer Accuracy:	± 5% traceable standard with 0.6µm 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.
Deployed dimensions:	48.3cm high, 17.8cm wide, 10.8cm deep, (19.0" x 7.0" x 4.25"), w/ inlet assy. Height: 30.5 cm Width: 35.6 cm Depth: 36.8 cm



POWERED BY ACOEM

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