

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 PM₁₀ or smaller than PM_{2.5}, or PM₁. 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



| | |
|----------------------------------|--|
| 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 | .001 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. 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**

