




# 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<sub>10</sub> or smaller than PM<sub>2.5</sub>, or PM<sub>1</sub>. 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

<b>Measurement Principles</b>	Particulate concentration by forward light scatter laser Nephelometer.
<b>Available Cut Points</b>	TSP Inlet Standard. PM10, PM2.5, and PM1 sharp-cut cyclone inlets available.
<b>Measurement Range</b>	0 to 100 mg/m <sup>3</sup> (0 to 100,000 µg/m <sup>3</sup> )
<b>Measurement Sensitivity</b>	.001 mg/m <sup>3</sup> .
<b>Nephelometer Accuracy</b>	± 5% traceable standard with 0.6µm PSL.
<b>Particle Size Sensitivity</b>	0.1 to 100 micron. Optimal sensitivity 0.5 to 10 micron particles.
<b>Display</b>	2 X 16 back lit LCD. Provides information on operation including: Power, Flow Operation, Status and Concentration.
<b>Zero Calibration</b>	Automatic Zero Calibration every hour or as programmed from 1 to 999 minutes.
<b>Flow Rate</b>	2.0 liters/minute ± 0.1 lpm
<b>Power</b>	15 – 40 VDC @ 1.5 A maximum
<b>Power Consumption</b>	350 mA (no heater) 1.1 A (with heater) @ 15 VDC
<b>Analog Output</b>	4-20 mA and 0 – 10 VDC
<b>Digital I/O</b>	RS-485 full and half duplex, RS-232
<b>Serial Communication</b>	ASCII Text data and MODBUS RTU
<b>Alarm Output</b>	Normally open and normally closed relay 30 VDC @ 1A maximum
<b>Operating Temperature</b>	0 to +50°C (Ambient Temperature Sensor Range -30 to +50°C)
<b>Barometric Pressure</b>	600 to 1040 mbar pressure sensor range
<b>Ambient Humidity Range</b>	0 to 90% RH, non-condensing
<b>Intake Moisture Control</b>	Automatic 10 Watt inlet heater module controlled to sample RH set point.
<b>Factory Service Interval</b>	24 Months typical, under continuous use in normal ambient air.
<b>Mounting Options</b>	Wall mount bracket standard, or EX-905 tripod.
<b>Unit Weight</b>	2.27 kg ( 6.0 lbs)
<b>Unit Dimensions</b>	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