

# Monitor functions

The monitor base is an electronics platform with an ergonomic design into which you plug your chosen sensor head(s). The monitor base has a range of features that allow it to be used in a variety of different applications. The image and functions shown below are for the Series 500 monitor. For a comparison of the different monitor bases see page 22.





# Particulate Matter

## Why measure it?

Airborne particulate matter (PM) is categorized into different size fractions. Total Suspended Particulate (TSP) includes all particle sizes and is a good measure of nuisance dust. PM<sub>10</sub> (particles ≤ 10 microns) is a criteria pollutant and is a serious health risk because PM<sub>10</sub> particles can penetrate the lungs. PM<sub>2.5</sub> (particles ≤ 2.5 microns) is also a criteria pollutant which has even greater health impact due to risk of penetration deeper into the respiratory system. Research has linked particulate pollution to lung and heart disease, strokes, cancer, and reproductive harm.

## Where does it come from?

### Natural sources

Large particles (generally PM<sub>10</sub> and above) come from natural sources stirred up by wind or human activity. PM<sub>10</sub> occurs naturally; for example, as sea salt, dust (airborne soil), or pollen. Airborne soil particles, although natural, are also produced by human-made processes such as construction and industrial activities. Natural particulates can make up a large portion of PM<sub>10</sub> in some areas.

### As a pollutant

Small particles (generally PM<sub>2.5</sub> and below) are by-products of combustion, e.g. emissions from vehicles and power stations. Particles from these sources react with other gases in the atmosphere to create particles of various chemical compositions. Gas to particle conversion can also produce fine particulate.

## How we measure it

In the portable monitor range we use a laser particle counter (LPC) for its small size and portability.\*

Like all sensors in the portable range the PM sensor benefits from active fan sampling and comes factory calibrated.



PARTICULATE MATTER	SENSOR CODE	SENSOR TYPE	RANGE (mg/m <sup>3</sup> )	MINIMUM DETECTION LIMIT (mg/m <sup>3</sup> )	ACCURACY OF FACTORY CALIBRATION	RESOLUTION (mg/m <sup>3</sup> )	RESPONSE TIME (S)	OPERATING CONDITIONS		APPLICATION TYPE		
								TEMP	RH	ENV	IAQ	IND
(PM <sub>2.5</sub> ) (PM <sub>10</sub> )	PM	LPC	0.001-1.000	0.001	±0.005 mg/m <sup>3</sup> + 15%	0.001	5	0 to 40°C	0 to 90%	✓	✓	✓

\*Refer to table on page 4 for sensor technology description.