# Particulate Matter Transmitter





### ○ CONTINUOUS AIR MEASUREMENT AND ALARMING

Detecting changes in air quality directly

### ○ EASY CLOUD CONNECTION

In combination with our loggers Provides the possibility to use data in **any website** 

### ○ FAST DETECTION OF PM1.0, PM2.5 AND PM10

Accurate and maintenance free solution Measurement data rate configurable to increase the lifetime of the sensor

### ○ SMART AND VERSATILE

Hand-sized layout, compact and **low energy consumption** 

### ○ COST EFFECTIVE AND RELIABLE

Useful for smart city applications and widespread distributed monitoring

# Ambient Air Quality: nowadays we are all aware of the importance of clean air!

Over the last few decades there have been numerous measures all over the world to limit pollution caused by harmful air emissions. In general, we can state that with the new regulations that have been implemented by most governments we see limitations in harmful emissions from industry, energy and transport.

Over the last years, it has become very clear that Particulate Matter, consisiting of a mixture of solid and liquid particles in the air, can cause health problems. Especially extremely small particles with diameters less than 10µm (PM10) are dangerous to human health.

The **exact content of PM** can vary by location: it is a mixture of chemical characteristics. Not in all cases the source of PM is something that can be directly controlled, some have natural sources. Main known sources of PM that can be controlled are: industrial activities, combustion engines, combustion for energy production, road traffic, dust.



### Principali Applicazioni

Smart city Monitoraggio ambientale Mobilità Monitoraggio del particolato



## **Technical Specifications**

#### PARTICULATE MATTER

Measuring principle	Laser scattering
Measured pollutants	PM1.0, PM2.5 and PM10
Measuring range	01000 μg/m <sup>3</sup> (for each pollutant)
Particle size detection range	ø 0.3…10 μm
Linearity error	< 5%
Repeatability	< 3%
Warm up time	15 s
Sensor operating mode	<ul> <li>Discontinuous (default) : 5 mins interval</li> <li>≈ 5 years lifetime</li> <li>Continuous : 1 sec interval ≈10.000 h</li> <li>lifetime</li> </ul>
Temperature drift	< 0.01 µg/m³ /°C
CO2 (OPTIONAL)	

Measuring principle	Double wavelength NDIR
Measuring range	05000 ppm
Accuracy	±(50 ppm+3% of measurement) @ 25 ℃ and 1013 hPa
Response time	< 120 s (air speed= 2 m/s)
Long-term stability	5% of measurement / 5 years
Temperature drift	1 ppm/°C

Delta OHM, as producer of AWS (Automatic Weather Stations) recognizes the demand from the market in having PM measurement in combination with an AWS, especially in industrial areas and connecting residential areas.

The **PMsense** is ready to be fully integrated with our AWS. Simple and fast, plug and play without any further start up.

Or it can be used as stand-alone unit, communication through Modbus-RTU with one of the data loggers from the HD33 series of Delta OHM or any other system that accepts Modbus communication.

By incorporating this measurement in our AWS we can provide early warnings when air pollution is getting close to the danger zone.

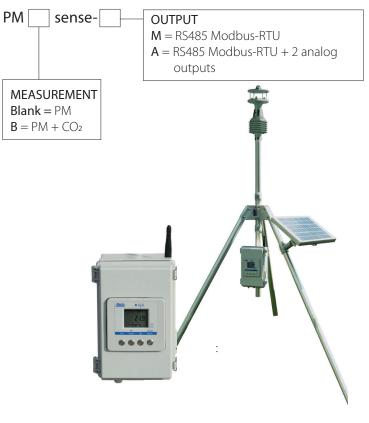


GENERAL SPECIFICATIONS		
Output	RS485 with Modbus-RTU or ASCII proprietary protocol	
Power supply	730 Vdc	
Power consumption	- Discontinuous (default) : 25 mA @ 24Vdc during measure, 4 mA stand-by - Continuous : 25 mA @ 24Vdc	
Connection	M12 8-pole circular connector	
Operating conditions	-20+70 ℃ 5001500 hPa	
Housing material	Polycarbonate	
Protection degree	IP53 Housing with sensor inlet air filter rain-proof and UV resistant	
Dimensions	120 x 94 x 71 (excluding M12 connector)	
Weight	330 g	
M	9 A 	
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The graph shows an example of vizualisation of one week of measurement. The sensor intstalled in our test field area communicates via Modbus-RTU with one of our Meteo Stations. Collected data are then sent via HTTP to the Delta OHM Cloud Platform. Different colours allow quick and easy distinction among PM1.0, PM2.5 and PM10.

### **Ordering Codes**



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