Particulate Matter Transmitter

PMsense

Member of GHM GROUP

CONTINUES AIR MEASUREMENT AND ALARMING

Detecting changes in air quality **directly**

EASY CLOUD CONNECTABLE

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
Instantaneous data always available

SMART AND VERSATILE

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

COST EFFECTIVE AND RELIABLE

Useful for **smart city applications**
and widespread distributed monitoring

Main Applications

Smart city
Environmental monitoring
Mobility
Monitoring of PM pollutants

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.

Technical Specification

PARTICULATE MATTER

Measuring principle	Laser scattering
Measured pollutants	PM1.0, PM2.5 and PM10
Measuring range	0…1000 µg/m^3 (for each pollutant)
Particle size detection range	ø 0.3…10 µm
Linearity error	< 5%
Repeatability	< 3%
Warm up time	15 s
Response time	Measurements update rate 1 s
Temperature drift	< 0.01 µg/m^3 /°C

CO_2 (OPTIONAL)

Measuring principle	Double wavelength NDIR
Measuring range	0…5000 ppm
Accuracy	±(50 ppm+3% of measurement) @ 25 °C 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

GENERAL SPECIFICATIONS

Output	RS485 with Modbus-RTU or ASCII proprietary protocol
Power supply	7…30 Vdc
Power consumption	50mA in operation
Connection	M12 8-pole circular connector
Operating conditions	-20…+70 °C 500…1500 hPa
Housing material	Polycarbonate
Dimensions	120 x 94 x 71 (excluding M12 connector)
Weight	330 g

Ordering Codes

PM ☐ sense- ☐

OUTPUT
M = RS485 Modbus-RTU
A = RS485 Modbus-RTU + 2 analog outputs

MEASUREMENT
Blank = PM
B = PM + CO_2

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 Mudbus-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.

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In order to ensure the quality of our instruments, we are constantly re-evaluating our products. Improvements can imply changes in specification; we advise you to always check our website for the newest version of our documentation.

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