

PMsense

PARTICULATE MATTER TRANSMITTER

INTRODUCTION

PMsense is the ultimate solution for outdoor air quality monitoring, designed to accurately measure concentrations of **PM1.0, PM2.5, and PM10 particulate matter**.

Utilizing advanced **laser scattering technology**, PMsense provides precise, real-time data on dust particle concentrations in the air, ensuring you have reliable insights into environmental air quality, especially in applications such as smart cities, municipalities, road controls, environmental studies.

FEATURES

Enhanced functionality

PMsense also offers the option to integrate a CO₂ sensor, transforming it into the PMBsense model, making it a comprehensive tool for monitoring multiple air quality parameters simultaneously. This added capability makes it ideal for a wide range of applications, from urban pollution monitoring to industrial and commercial environments.

Maintenance-free by design

PMsense promises ease of use and reliability. Its rapid response time, coupled with high sensitivity, ensures that you receive timely and accurate data. Moreover, with excellent stability and a long operating life, PMsense represents a robust investment in long-term air quality monitoring, delivering dependable performance that you can count on for years to come.

CONFIGURATION & MEASUREMENT

Output flexibility

The transmitter is equipped with a robust digital RS485 output that supports both Modbus-RTU and ASCII proprietary protocols, allowing for **seamless integration with existing monitoring and control systems**.

Additionally, we offer a version with two extra 0/4...20 mA (or 0...10 V on request) analog outputs, which can be independently configured to monitor any of the detected parameters, providing flexible data output options to suit your specific needs.

Adaptable operating modes

The measuring circuit can run continuously for uninterrupted data collection, or it can be set to operate at cyclic intervals to extend the sensor's lifespan—an option that's configured by default. The measuring cycle interval is fully user-configurable, giving you the ability to tailor the device's performance to your precise monitoring requirements.



DETECTING CHANGES IN AIR QUALITY DIRECTLY

Fast detection of PM1.0, PM2.5 and PM10



FLEXIBILITY

Output at choice according to your needs



FAST & RELIABLE

Continuous air measurement and alarming. Measurement data rate configurable to increase the lifetime of the sensor

Measurement specifications

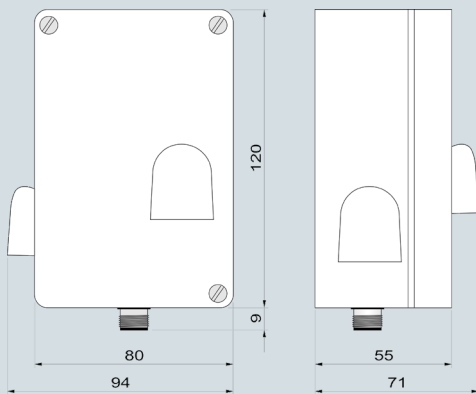
Particulate Matter

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%
Sensor warm up time	15 s
Sensor lifetime	5 years approx. in 5 minutes cyclic operating mode (default) > 10,000 hours in continuous operating mode (1 meas./s)
Temperature drift	< 0.01 µg/m ³ /°C

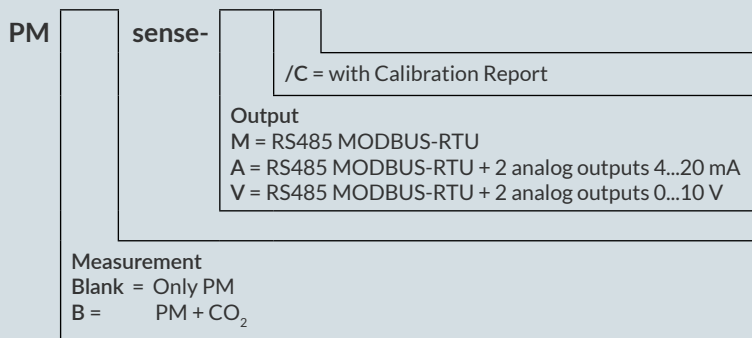
CO₂ (only PMBsense...)

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

Dimensions



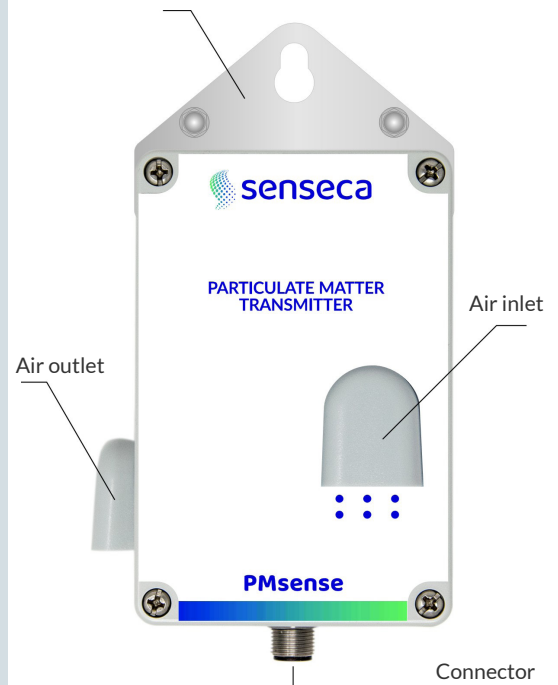
Ordering codes



General specifications

Output	RS485 with Modbus-RTU or ASCII proprietary protocol Only P[B]Msense-A: 2 x analog 0/4...20 mA (R _{Lmax} = 500 Ω) Only P[B]Msense-V: 2 x analog 0...10 V (R _{Lmin} = 10 kΩ)
Power supply	7...30 Vdc (15...30 Vdc for 0...10 V analog outputs)
Power consumption	25 mA @ 24 Vdc during measurement 4 mA in stand-by (only for cyclic operating mode) The indicated consumption does not include the consumption due to the analog outputs
Connection	M12 8-pole circular connector
Operating conditions	-20...+70 °C 0...95 %RH 500...1500 hPa
Housing material	Polycarbonate
Protection degree	Housing equipped with a rain-proof and UV resistant inlet air filter – IP 53
Weight	330 g

Fixing bracket with U-bolt



V 1.0

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