

## Particulate matter transmitter

### Description

The PCTPM000 is a PM1.0, PM2.5 and PM10 Particulate Matter transmitter with RS485 Modbus-RTU output, suitable for outdoor air quality monitoring.

The dust particles concentration is measured using the laser scattering principle.

The transmitter is maintenance-free and has fast response, high sensitivity and an excellent stability.

On request, an optional CO2 sensor can be integrated in the transmitter.

The transmitter can be supplied with up to two optional configurable 4...20 mA, 0...5 V or 0...10 V analog outputs. The two analog outputs can be associated independently to any of the measured parameters.

The transmitter measuring circuit can be operated continuously or, in order to extend the life of the PM sensor, at cyclic intervals (default operating mode). The cyclic measuring range is user configurable.

The transmitter requires no maintenance and is characterised by a quick response, high sensitivity, excellent stability and a long service life.



Technical specifications may be varied without prior notice

## Technical specifications

<b>PARTICULATE MATTER</b>	
<b>Measuring principle</b>	Laser scattering
<b>Measured pollutants</b>	PM1.0, PM2.5 e PM10
<b>Measuring range</b>	0...1000 µg/m <sup>3</sup> (for each pollutant)
<b>Particle size detection range</b>	Ø 0,3...10 µm
<b>Linearity error</b>	< 5%
<b>Repeatability</b>	< 3%
<b>Warm up time</b>	15 s
<b>Sensor operating mode</b>	<ul style="list-style-type: none"> <li>Cyclic: 5 mins interval, 5 years lifetime</li> <li>Continuous: 1 sec interval, 10.000 h lifetime</li> </ul>
<b>Temperature drift</b>	< 0,01 µg/m <sup>3</sup> /°C
<b>CO<sub>2</sub> (OPTIONAL)</b>	
<b>Measuring principle</b>	Double wavelenght NDIR
<b>Measuring range</b>	0...5000 ppm
<b>Accuracy</b>	±(50 ppm+3% of measurement) @ 25 °C and 1013 hPa
<b>Response time</b>	< 120 s (air speed= 2 m/s)
<b>Long-term stability</b>	5% of measurement / 5 years
<b>Temperature drift</b>	1 ppm/°C
<b>GENERAL SPECIFICATIONS</b>	
<b>Output</b>	RS485 with Modbus-RTU or ASCII proprietary protocol. Option: 2 x analog 4...20 mA (RLmax = 500 Ω); upon request 2 x 0...10 V (RLmin = 10 kΩ)
<b>Power supply</b>	7...30 Vdc (15...30 Vdc for analog outputs 0...10 V)
<b>Power consumption</b>	25 mA @ 24 Vdc during measure; 4 mA stand-by (only for cyclic operating mode). The indicated power consumption does not include the power supply due to analog outputs.
<b>Connection</b>	M12 8-pole circular connector
<b>Operating conditions</b>	-20...+70 °C / 0...95 %UR / 500...1500 hPa
<b>Housing material</b>	Polycarbonate
<b>Protection degree</b>	IP 53 Housing sensor inlet air filter rain-proof and UV resistant
<b>Dimensions</b>	120 x 94 x 71 (excluding M12 connector)
<b>Weight</b>	330 g

## Ordering codes

Particulate matter trasnmittter

**PCTPM000**

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