

SPM10-2,5-1 - PM1-2,5-10 particulate probe (Rev. 2 270121)

Description

The SPM dust sensors are industrial detectors for measuring the concentrations of PM1, PM2.5 and PM10 dust in air which uses the principle of diffusion of laser light. This technology allows to obtain the number of particles per unit of equivalent volume and the particle diameter; an algorithm then calculates the concentration for each type of PM1, PM2.5 and PM10 particulate.

The sensors are used to provide an indication of the value of particulate for applications where a measurement referable to regulatory standards is not required, but simply a plausible value to assess exceedances and report any alarms.

The sensor is supplied in two models SPM10-2,5 and SPM10-2,5-1 which provide a continuous measurement available with two or three 4-20mA analog outputs (one for every PMx).

Main applications

- Road construction sites with earth moving, cement dust or brick crushing plants
- Air conditioning systems and dust suppression systems
- Greenhouses or closed environments
- Port areas and coastal deposits
- Dust exceedance alarms in urban and industrial areas

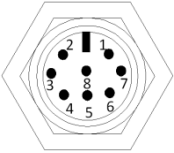
Technical specifications

Models	SPM10-2,5-I SPM10-2,5-1-I
Working principle	Light laser scattering
Measuring range	PM1: 0...1000 $\mu\text{g}/\text{m}^3$ (just for SPM10-2,5-1 version); PM2.5: 0...1000 $\mu\text{g}/\text{m}^3$; PM10: 0...1000 $\mu\text{g}/\text{m}^3$
Resolution	1 $\mu\text{g}/\text{m}^3$
Accuracy	$\pm 10\%$
Warming time	$\leq 120\text{s}$
Response time	90s
Outputs	4...20mA
Power	12...24Vdc
Consumption	100mA@12Vdc
Load resistance	100Ohm@12Vdc (<600 Ohm@24Vdc)
Working conditions	-20...+60°C, 0...80%
Materialis	Painted and anodized aluminum
Overall dim. and weight	Body of sensor: 190 x 140 x 120mm (bracket excluded), weight: 1100g
Connector	Plug IP68
Mounting	Universal bracket for fastening on horizontal or vertical pipes $\varnothing 25...42\text{mm}$

Accessories

Cable	Shielded for outdoor. Available lengths: 4, 12, 22m (others upon request)
Cod. CSxx (xx=meters of cable)	Sensor cable with IP68 connector (sensor side) and open wires (datalogger side)
Cod. CSDxx	Sensor- Geoves' datalogger cable with IP68 connector (sensor side) and terminal (datalogger side)

Electrical connection

Model	SPM10-2.5-I, SPM10-2.5-1-I (Output in current)	
Output	4...20mA (where 4mA=0µg/m ³ ; 20mA= 1000µg/m ³)	
Load resistive shunt	25...440Ω (tip.100Ω)	
IP68 Connector on the sensor 	Pin1: Iout+ PM1 (just mod. SPM10-2,5-1) Pin2: Iout- PM1 (just mod. SPM10-2,5-1) Pin3: Iout+ PM2,5 Pin4: Iout- PM2,5 Pin5: Iout+ PM10 Pin6: Iout- PM10 Pin7: Gnd Pin8: +Vdc (12...24Vdc)	

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