



Features

- Unique long-term stability
- Advanced particle size binning
- Superior precision in mass concentration and number concentration sensing
- Fully calibrated digital output

Working Mechanism

The Particulate Matter (PM) sensor is a technological breakthrough in optical PM sensors. Its measurement principle is based on laser scattering and makes use of innovative contamination resistance technology. This technology, together with high-quality and long-lasting components, enables precise measurements from its first operation and throughout its lifetime of more than ten years. In addition, advanced algorithms provide superior precision for different PM types and higher-resolution particle size binning, opening up new possibilities for the detection of different sorts of environmental dust and other particles.

Dust monitor is enclosed in naturally aspirated, 6-plate radiation shield. Its louvered construction allows air to pass freely through the shield, serving to keep the probe at ambient temperature. The shield's white color reflects solar radiation. The most effective passive shelter protects sensor from solar radiation and other sources of radiated and reflected heat. Multi-plate construction for maximum airflow

Parameters	: PM1, PM2.5, PM4, PM10, NC1, NC2.5, NC4, Particle Size
Construction	: UV-stabilized white thermoplastic plates, aluminum mounting Bracket, white powder-coated, stainless-steel U-bolt clamp
Plate Diameter	: 196 mm
Plate Height	: 110mm
Power	: 12 -24vdc
Max power consumption	: 1.2W

Specifications

Parameter	Conditions	Value	Units	
Mass concentration range	-	0 to 1'000	µg/m ³	
Mass concentration size range	PM1.0	0.3 to 1.0	µm	
	PM2.5	0.3 to 2.5	µm	
	PM4	0.3 to 4.0	µm	
	PM10	0.3 to 10.0	µm	
Mass concentration precision ^{1,2} for PM1 and PM2.5 ³	0 to 100 µg/m ³	±10	µg/m ³	
	100 to 1000 µg/m ³	±10	% m.v.	
Mass concentration precision ^{1,2} for PM4, PM10 ⁴	0 to 100 µg/m ³	±25	µg/m ³	
	100 to 1000 µg/m ³	±25	% m.v.	
Maximum long-term mass concentration precision limit drift	0 to 100 µg/m ³	±1.25	µg/m ³ / year	
	100 to 1000 µg/m ³	±1.25	% m.v. / year	
Number concentration range	-	0 to 3'000	#/cm ³	
Number concentration size range	PM0.5	0.3 to 0.5	µm	
	PM1.0	0.3 to 1.0	µm	
	PM2.5	0.3 to 2.5	µm	
	PM4	0.3 to 4.0	µm	
	PM10	0.3 to 10.0	µm	
Number concentration precision ^{1,2} for PM0.5, PM1 and PM2.5 ³	0 to 1000 #/cm ³	±100	#/cm ³	
	1000 to 3000 #/cm ³	±10	% m.v.	
Number concentration precision ^{1,2} for PM4, PM10 ⁴	0 to 1000 #/cm ³	±250	#/cm ³	
	1000 to 3000 #/cm ³	±25	% m.v.	
Maximum long-term number concentration precision limit drift ²	0 to 1000 #/cm ³	±12.5	#/cm ³ / year	
	1000 to 3000 #/cm ³	±1.25	% m.v. / year	
Sampling interval	-	1±0.04	s	
Typical start-up time ⁵	number concentration	200 – 3000 #/cm ³	8	s
		100 – 200 #/cm ³	16	s
		50 – 100 #/cm ³	30	s
Sensor output characteristics	PM2.5 mass concentration	Calibrated to TSI DustTrak™ DRX 8533 Ambient Mode		
	PM2.5 number concentration	Calibrated to TSI OPS 3330		
Lifetime ⁶	24 h/day operation	> 10	years	
Acoustic emission level	0.2 m	max.	25	dB(A)
Long term acoustic emission level drift	0.2 m	max.	+0.5	dB(A) / year
Additional T-dependent mass and number concentration precision limit drift ²	temperature difference to 25°C	typ.	±0.5	% m.v. / °C

Communication

Port- RS485, 2-wire, Half Duplex, Start-Stop Synchronized Protocol - Modbus RTU
 Baud Rate Default : 9600 ,Parity : None, Stop Bit : 1
 Communication Parameters : programmable
 Max. Units per Loop 31
 Max. Distance 1200 Metres

Terminal Details

24 V	485
+	-

Sensor			
B	R	Y	G

Note : while mounting the enclosure ensure the Gland is at the bottom and tightened fully to avoid precipitation