

R301 and R501 Remote Airborne Particle Counters

0.1 CFM (2.83 LPM)

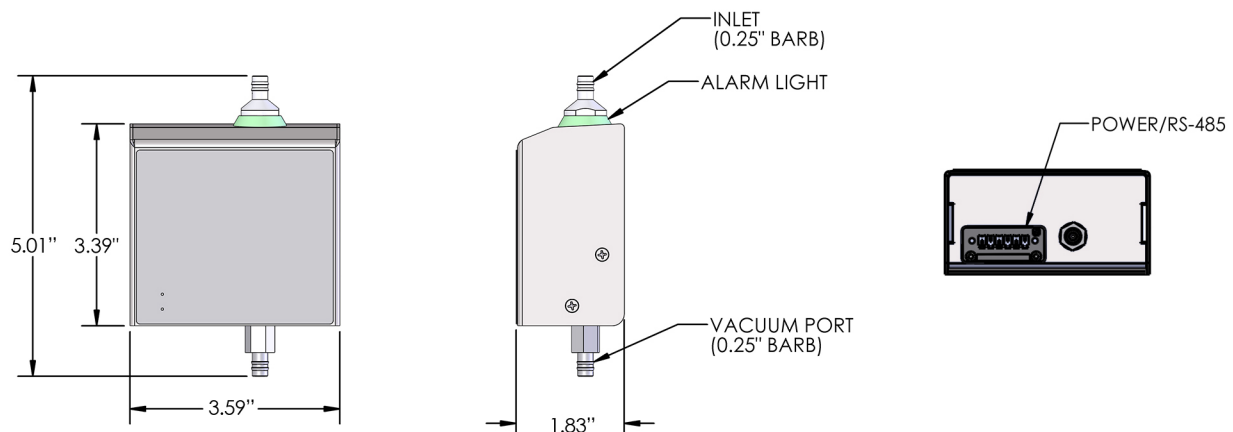


The R301 and R501 particle counters provide a range of particle size measurement from 0.3 or 0.5 to 25.0 μm at a flow rate of 0.1 CFM (2.83 LPM). These sensors allow for efficient particle counting with specifications that exceed the ISO 21501-4 and JIS B9921 calibration standards.

These sensors have 4 fixed particle size channels and are equipped with an integral critical orifice and flow sensor to provide a stable flow rate from an external vacuum source. Integration into a building automation or facility monitoring system is easy via isolated RS-485 Modbus communication.

R301 and R501: Features and Benefits

- R301: Measures 0.3 μm to 25.0 μm
- R501: Measures 0.5 μm to 25.0 μm
- 0.1 CFM (2.83 LPM) flow rate
- Long life laser diode technology
- Measures up to 4 channels of simultaneous data
- Accurate in high particle concentration environments
- Internal critical orifice
- Connect using Modbus RTU/ASCII over isolated RS-485
- Complies with ISO 21501-4 and JIS B9921 standards
- Easy to clean and wipe down with minimal particle traps
- Versatile mounting options
- Alarm light
- LED Indicators
- Seamless integration into a facility monitoring system
- Lightweight stainless steel enclosure
- 1 year limited warranty. Extended warranties available.





Specifications

Model	R301	R501
Size Range	0.3 µm to 25.0 µm	0.5 µm to 25.0 µm
Size Channels	Factory calibrated at 0.3, 0.5, 1.0, and 5.0 µm	Factory calibrated at 0.5, 1.0, 2.5, and 5.0 µm
Number of Channels	4 channels	4 channels
Counting Efficiency	50% @ 0.3µm; 100% for particles > 0.45 µm per JIS	50% @ 0.5µm; 100% for particles > 0.75 µm per JIS
Flow Rate	0.1 CFM (2.83 LPM)	
Concentration Limits	10,000,000 particles/ft³ @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/ft³ @ 10% coincidence (as tested and validated¹)	
Light Source	Long life laser diode	
Zero Count	<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.	
Calibration	NIST traceable	
Vacuum Requirements	External vacuum > 15" (38.1cm) of Hg	
Airflow	Internally monitored	
Alarm	User configurable alarm light	
Communication Modes	MODBUS™ RTU or ASCII outputs (over isolated RS-485)	
Standards	ISO 21501-4 and JIS B9921	
Instrument Calibration	Recommended minimum once per year	
External Surface	Stainless steel	
Dimensions (L x W x H)	1.83" x 3.59" x 5.01" (4.6 x 9.1 x 12.7 cm) including probes and connectors	
Weight	1.65 lb. (0.75 kg)	
Accessories	Wiring Connector, operating manual on USB flash drive	
Optional Accessories	Power Supply, Remote Mounting Bracket, Stainless Steel Barbed Isoprobe (0.1 CFM/2.83 LPM), Filter Assembly, and Sample & Vacuum Tubing	
Sample Time	1 second to 18 hours	
Power	9 - 24 VDC (< 2.5 watts)	
Operating Conditions	41° to 104°F (5° to 40°C) / 20% to 95% non-condensing	
Storage Conditions	32° to 122°F (0° to 50°C) / Up to 98% non-condensing	
Warranty	1 year limited warranty. Extended warranties available.	

1- Validated by independent analysis see paper available at www.particlesplus.com/aac2022_paper