

2301 and 2501 Remote Airborne Particle Counters

0.1 CFM (2.83 LPM)

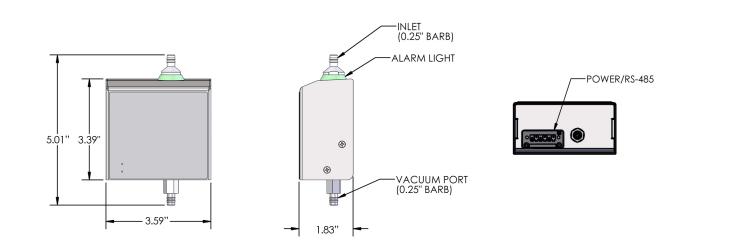


The 2301 and 2501 particle counters provide a range of particle size measurement from 0.3 or 0.5 to 25.0 μ m at a flow rate of 0.1 CFM (2.83 LPM). These sensors allow for efficient particle counting with specifications that exceed the ISO 21501-4 and JIS B9921 calibration standards.

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 or (optional) 4-20 mA analog output.

2301 and 2501: Features and Benefits

- 2301: Measures 0.3 μm to 25.0 μm
- 2501: 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
- Modbus RTU/ASCII over isolated RS-485 or (optional) 4-20 mA analog output
- 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
- 2 year limited warranty. Extended warranties available.





Specifications

Number of Channels4 channels4 channelsCounting Efficiency50% @ 0.3µm; 100% for particles > 0.45 µm per JIS50% @ 0.5µm; 100% for particles > 0.75 µm pFlow Rate0.1 CFM (2.83 LPM)Concentration Limits10,000,000 particles/ft ⁰ @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/ft ⁰ @ 10% coincidence (as tested and validated ¹)Light SourceLong life laser diodeZero Count<1 count / 60 minutes (<1 particles / 6 ft ⁰). No fault count subtraction.CalibrationNIST traceableVacuum RequirementsExternal vacuum > 15" (38.1cm) of HgAirflowInternally monitoredAlarmUser configurable alarm lightCommunication ModesMODBUST™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum TSample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)Operating Conditions41" to 104"F (5" to 40"C) / 20% to 95% non-condensingStorage Conditions32" to 122"F (0" to 50"C) / Up to 98% non-condensing			
Size ChannelsFactory calibrated at 0.3, 0.5, 1.0, and 5.0 µmFactory calibrated at 0.5, 1.0, 2.5, and 5.0 µmNumber of Channels4 channels4 channelsCounting Efficiency50% @ 0.3µm; 100% for particles > 0.45 µm per JIS50% @ 0.5µm; 100% for particles > 0.75 µm per JISFlow Rate0.1 CFM (2.83 LPM)Concentration Limits10,000,000 particles/fi³ @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/fi³ @ 10% coincidence (as tested and validated')Light SourceLong life laser diodeZero Count<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.CalibrationNIST traceableVacuum RequirementsExternal vacuum > 15" (38.1 cm) of HgAirflowInternally monitoredAlarmUser configurable alarm lightCommunication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 7Sample Time1 scond to 18 hoursPower9 - 24 VDC (< 2.5 watts)Operating Conditions41" to 104" f (5" to 40°C) / 20% to 95% non-condensingStorage Conditions32" to 122°F (0° to 50°C) / Up	Model	2301	2501
Number of Channels4 channels4 channelsCounting Efficiency50% @ 0.3µm; 100% for particles > 0.45 µm per JIS50% @ 0.5µm; 100% for particles > 0.75 µm jFlow Rate0.1 CFM (2.83 LPM)Concentration Limits10,000,000 particles/ft ³ @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/ft ³ @ 10% coincidence (as tested and validated ¹)Light SourceLong life laser diodeZero Count<1 count / 60 minutes (<1 particles / 6 ft ³). No fault count subtraction.CalibrationNIST traceableVacuum RequirementsExternal vacuum > 15" (38.1cm) of HgAirflowInternally monitoredAlarmUser configurable alarn lightCommunication ModesMODBUST ^m RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum ¹ Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Size Range	0.3 μm to 25.0 μm	0.5 μm to 25.0 μm
Counting Efficiency50% @ 0.3µm; 100% for particles > 0.45 µm per JIS50% @ 0.5µm; 100% for particles > 0.75 µm pricesFlow Rate0.1 CFM (2.83 LPM)Concentration Limits10,000,000 particles/ft ³ @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/ft ³ @ 10% coincidence (as tested and validated ¹)Light SourceLong life laser diodeZero Count<1 count / 60 minutes (<1 particles / 6 ft ³). No fault count subtraction.CalibrationNIST traceableVacuum RequirementsExternal vacuum > 15" (38.1cm) of HgAirflowInternally monitoredAlarmUser configurable alarm lightCommunication ModesMODBUS TM RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum ⁻¹ Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	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
Flow Rate0.1 CFM (2.83 LPM)Concentration Limits10,000,000 particles/ft³ @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/ft³ @ 10% coincidence (as tested and validated¹)Light SourceLong life laser diodeZero Count<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.	Number of Channels	4 channels	4 channels
Concentration Limits 10,000,000 particles/ft® @ 10% coincidence (per ISO 21501-4), 20,000,000 particles/ft® @ 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.	Counting Efficiency	50% @ 0.3μm; 100% for particles > 0.45 μm per Jl	S 50% @ 0.5μm; 100% for particles > 0.75 μm per JI
20,000,000 particles/ft³ (a) 10% coincidence (as tested and validated1)Light SourceLong life laser diodeZero Count<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.	Flow Rate	0.1 CFM (2.83 LPM)	
Zero Count<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.CalibrationNIST traceableVacuum RequirementsExternal vacuum > 15" (38.1cm) of HgAirflowInternally monitoredAlarmUser configurable alarm lightCommunication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum TSample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Concentration Limits		
CalibrationNIST traceableVacuum RequirementsExternal vacuum > 15" (38.1 cm) of HgAirflowInternally monitoredAlarmUser configurable alarm lightCommunication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum [¬] Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Light Source	Long life laser diode	
Vacuum RequirementsExternal vacuum > 15" (38.1cm) of HgAirflowInternally monitoredAlarmUser configurable alarn lightCommunication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum TSample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Zero Count	<1 count / 60 minutes (<1 particles / 6 ft ³). No fault count subtraction.	
AirflowInternally monitoredAlarmUser configurable alarm lightCommunication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & VacuumSample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Calibration	NIST traceable	
AlarmUser configurable alarm lightCommunication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum [¬] Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Vacuum Requirements	External vacuum > 15" (38.1cm) of Hg	
Communication ModesMODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog outputStandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum [¬] Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Airflow	Internally monitored	
StandardsISO 21501-4 and JIS B9921Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 1Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Alarm	User configurable alarm light	
Instrument CalibrationRecommended minimum once per yearExternal SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 1Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Communication Modes	MODBUS™ RTU, ASCII (over isolated RS-485) or (optional) 4-20 mA analog output	
External SurfaceStainless steelDimensions (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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 1Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Standards	ISO 21501-4 and JIS B9921	
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 connectorsWeight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 1Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Instrument Calibration	Recommended minimum once per year	
Weight1.65 lb. (0.75 kg)AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 1Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	External Surface		
AccessoriesWiring Connector, operating manual on USB flash driveOptional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum 1Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	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	
Optional AccessoriesPower Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum TSample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Weight	1.65 lb. (0.75 kg)	
Sample Time1 second to 18 hoursPower9 - 24 VDC (< 2.5 watts)	Accessories	Wiring Connector, operating manual on USB flash drive	
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	Optional Accessories	Power Supply, Remote Mounting Bracket, Isokinetic Probe, Filter Assembly, and Sample & Vacuum Tubing	
Operating Conditions41° to 104°F (5° to 40°C) / 20% to 95% non-condensingStorage Conditions32° to 122°F (0° to 50°C) / Up to 98% non-condensing	Sample Time	1 second to 18 hours	
Storage Conditions 32° to 122°F (0° to 50°C) / Up to 98% non-condensing	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	
vvarranty 2 year limited warranty. Extended warranties available.	Warranty	2 year limited warranty. Extended warranties availa	ble.

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

PAT. https://particlepatents.com/ Additional Patents Pending. Particles Plus, Inc. reserves the right to change specifications without notice. Contact hello@particlesplus.com or your local distributor for more details. Particles Plus and the Particles Plus logo are trademarks of Particles Plus, Inc. ©2024 Particles Plus, Inc. All rights reserved.



1490 Central Street Stoughton, MA 02072 U.S.A. +1-781-341-6898 www.particlesplus.com