

# AEROTRAK® CLEANROOM CONDENSATION PARTICLE COUNTER MODEL 9001



The AeroTrak® 9001 Cleanroom Condensation Particle Counter (CPC) is the only water-based, laminar flow, high flow rate instrument on the market—providing the confidence needed for monitoring critical environments. Using patented technology, the instrument provides 10 nm sensitivity at a 0.1 CFM (2.83 L/min) flow rate. With an ultra-low false count rate, the AeroTrak 9001 Cleanroom CPC is ideally suited for the low particle concentrations found in ISO Class 1 and Class 2 environments.

TSI is the world leader in condensation particle counter technology, supplying commercial instruments since 1979. TSI's world-class classifiers and CPCs are used by national and standards labs worldwide. This same technology is used in the AeroTrak 9001 Cleanroom CPC. Backed by a standard one-year warranty and TSI's long-standing reputation for high quality, there is no other CPC like it on the market today that provides the same confidence for monitoring critical environments.

Unlike other high flow rate water-based CPCs, the AeroTrak 9001 Cleanroom CPC does not use turbulent mixing, minimizing particle losses and increasing count accuracy. Unlike alcohol or other non-water based CPCs, the AeroTrak 9001 Cleanroom CPC does not introduce chemicals into clean environments.

The AeroTrak 9001 Cleanroom CPC has the same easy-to-use graphics interface as other AeroTrak Particle Counters. Multiple particle counting configurations can be conveniently stored and uploaded as needed.

The AeroTrak 9001 Cleanroom CPC can be used as a standalone particle counter or run continuously, integrated into a facility monitoring system like the TSI FMS Software. Optionally, the instrument can be interfaced to other systems using the Ethernet interface and Modbus communications.

## Features and Benefits

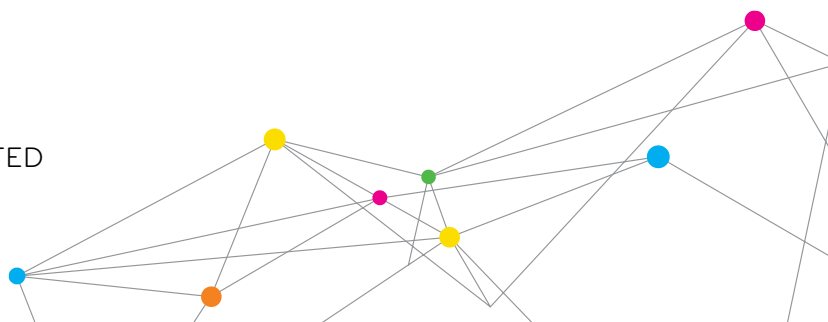
- + 10 nm sensitivity
- + 0.1 CFM (2.83 l/min) sample flow
- + Low false-count rate ( $< 0.07$  count/ft<sup>3</sup>) provides accurate measurements at low particle concentrations
- + Fast response
- + Uses Ultra-Pure or DI water as working fluid, keeping alcohol or other chemicals out of the cleanroom
- + Data Storage: 250 zones, 999 locations, and 10,000 samples
- + USB, USB storage device, and Ethernet data transfer
- + External reporting via TrakPro™ Lite Secure Software
- + Industry's loudest audible alarm
- + Easy, icon-driven touch screen operation
- + Allows storage and recall of specific recipes and zone configurations
- + Works with optional AeroTrak® 7950 High Pressure Diffuser (HPD) for measurement of high pressure gases (CDA, N<sub>2</sub>, AR)
- + 316L stainless steel enclosure

## TSI—PROVIDING THE CONFIDENCE NEEDED FOR MONITORING CRITICAL ENVIRONMENTS

- + Ultra-low false count rate
- + Trusted performance
  - Three detector design ensures reliability
  - Comprehensive self-diagnostics




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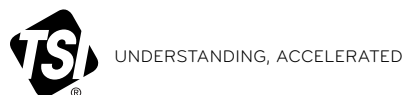
# SPECIFICATIONS

## AEROTRAK CLEANROOM CONDENSATION PARTICLE COUNTER MODEL 9001

<b>9001</b>		<b>Unit ID</b>	Configurable IP address
<b>Particle Size Range</b>	Min. Detectable Particle (D <sub>50</sub> ) - 10 nm	<b>Security</b>	2-level password protection to lock out usage and configuration
	Max. Detectable Particle - >3 µm		250 zones
<b>Particle Channel Sizes</b>	Single channel	<b>Data Storage</b>	999 Locations
<b>Counting Efficiency</b>	50% at 10 nm		10,000 sample records including date, time, particle concentration, flow status and instrument status
<b>Concentration Limits</b>	57,000,000 p/Cu. ft @ 10% coincidence	<b>Data Transfer</b>	Via USB storage device, connection to TrakPro Lite Secure Software through Ethernet or USB cable, or optional TSI FMS Software
<b>Working Fluid</b>	Ultra-Pure or De-Ionized Water		<b>Calibration Frequency</b>
<b>Light Source</b>	Long life laser diode	<b>Dimension (H x W x D)</b>	22.4 in. x 9.3 in. x 8.6 in. (56.9 cm x 24.6 cm x 21.8 cm) (without water bottle)
<b>Zero Count</b>	<0.07 count/Cu. ft		<b>Weight</b>
<b>Flow Rate</b>	0.1 CFM (2.83 L/min)	<b>Power</b>	110 to 240 VAC universal power supply
<b>Sample Tube Extension</b>	Up to 3 ft (1 m) for 10 nm particles	<b>External Surface</b>	316L Stainless steel
<b>Sampling Modes</b>	Manual, automatic, beep; count or concentration	<b>Operating Range</b>	59° to 95° F (15° to 35° C)
<b>Sampling Time</b>	1 second to 99 hours	<b>Storage Range</b>	-40° to 158° F (-40° to 70° C)
<b>Sampling Frequency</b>	1 to 9999 cycles or continuous	<b>Warranty</b>	One year
<b>Vacuum Source</b>	Internal pump	<b>Included Accessories</b>	Quick Start Guide, manual on a CD, power supply, purge filter, 2 inlets (barbed inlet and a 3/16 in. OD straight tube connector inlet), water bottle, bracket for water bottle, drain bottle and USB cable
<b>Communication Mode</b>	Modbus TCP over Ethernet or USB		<b>Optional Accessories</b>
<b>Audible Alarm</b>	Built-in; > 85 dBA at 1 m (adjustable)	<b>ISO 14644-14:2016</b>	An assessment, including an agreed upon representative mode of operation, according to ISO 14644-14 showed that the AeroTrak 9001 Cleanroom CPC has suitability for use within a cleanroom of ISO Class 3 at 0.1µm
<b>Alarm Output</b>	Dry contacts, closed when alarm is engaged		<b>Patents</b>
<b>Alarm Limits</b>	Programmable		
<b>Display</b>	VGA 5.7 in. (14.5 cm) touch screen display		
<b>Languages</b>	English, German, French, Spanish, Japanese, Chinese (simplified), Italian		
<b>Software</b>	Compatible with TrakPro Lite Secure and FMS 5 Software		

Specifications are subject to change without notice.

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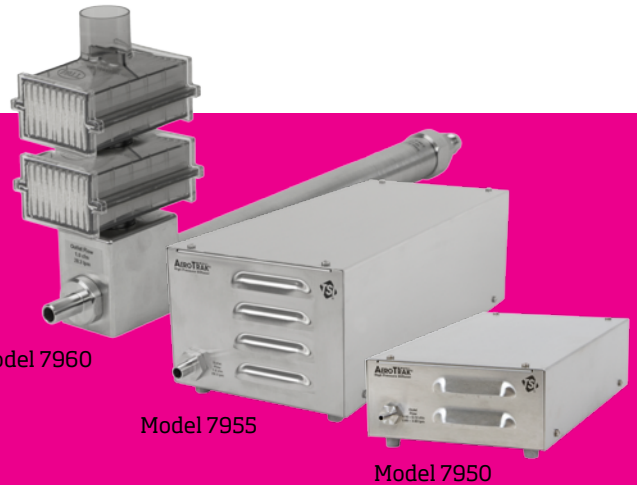


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# AEROTRAK® HIGH PRESSURE DIFFUSER MODELS 7950, 7955 AND 7960

The TSI AeroTrak® High Pressure Diffuser (HPD) Model 7950, Model 7955 and Model 7960 accessories allow the TSI AeroTrak Particle Counters to measure particulate contamination in high-pressure compressed gas systems. As particle counters cannot sample high pressure gas, they require HPD accessories to reduce the pressure of compressed gases to assess the cleanliness level of compressed gas systems.



Model 7960

Model 7955

Model 7950

## Features and Benefits

### All Models

- + For monitoring and testing to ISO 14644-1, ISO 8573-1 and SEMI 49.8 limits
- + Reduces gas pressure of up to 120 psi (8.27 bar) to near atmospheric pressure
- + Compatible with AeroTrak Particle Counters (both portable and handheld models) and AeroTrak Cleanroom Condensation Particle Counter Model 9001
- + No manual adjustments or calibration required
- + For use with Clean Dry Air (CDA), Nitrogen (N<sub>2</sub>) and Argon (Ar)
- + Passivated stainless steel enclosure resists cleanroom chemicals
- + Exhaust HEPA filter protects HPD accessory from contamination when disconnected from compressed gas source

### Model 7950

- + 0.1 cfm (2.83 lpm) nominal flow rate
- + Use with AeroTrak Cleanroom Condensation Particle Counter Model 9001 and handheld particle counters

### Model 7955

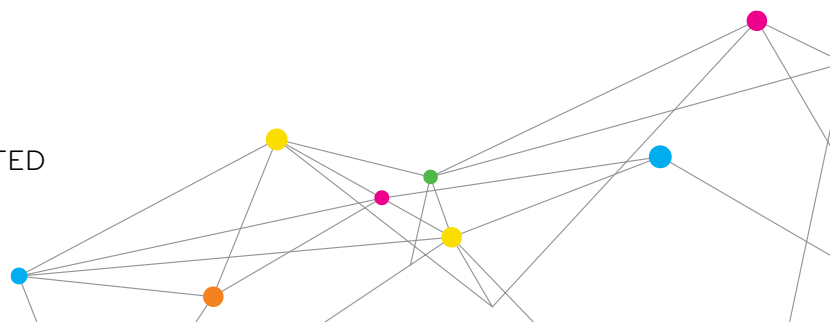
- + 1.0 cfm (28.3 lpm) nominal flow rate
- + Includes bleed air injection for use with ultra low-humidity compressed gas systems

### Model 7960

- + 1.0 cfm (28.3 lpm) nominal flow rate
- + Isokinetic-like sampling
- + Use with portable particle counters for pharmaceutical and electronics assembly



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## SPECIFICATIONS

### AEROTRAK® HIGH PRESSURE DIFFUSER MODELS 7950, 7955, AND 7960

	Model 7950	Model 7955	Model 7960
Flow rate	0.1-0.12 cfm (2.83-3.50 L/min)	1.0 cfm (28.3 L/min)	1.0 cfm (28.3 L/min) 50 L/min (Minimum inlet pressure of 40 psi) 100 L/min (Minimum inlet pressure of 80 psi)
Pressure Range	30 - 120 psi (2.1-8.3 bar)		25-120 psi (1.7 - 8.3 bar)
Max Purge Pressure	150 psi (10.34 bar)		
Zero Count Performance	≤1 count per 5 minutes @ 10 nm	≤1 count per 5 minutes @ 0.1 μm	≤1 count per 5 minutes @ 0.5 μm
Sample Gas Types	CDA, N <sub>2</sub> , Ar		
Dimensions	15.67 x 7.63 x 3.75 in. (39.8 x 19.4 x 9.5 cm)	19.03 x 7.63 x 5.99 in. (48.3 x 19.4 x 15.2 cm)	13.74 x 7.50 x 2.49 in. (34.9 x 19.1 x 6.3 cm)
Weight	7.4 lbs (3.4 kg)	12.3 lbs (5.6 kg)	2.5 lbs (1.1 kg)
Exhaust Filter	HEPA (>99.97% for 0.3 μm particles)		
Bleed Air Filter	N/A	HEPA (>99.97% for 0.3 μm particles)	N/A
Bleed Air Flow	N/A	0.1 - 0.2 cfm (2.83 - 5.86 lpm)	N/A
Inlet fitting	¼-inch VCR Fitting (316SS)		
Outlet fitting	¼-inch tube connector (316L VAR)	½-inch tube connector (316L VAR)	¾-inch tube connector (304SS)
Material	Enclosure & Body: Passivated 304 Stainless Steel		
	VCR Gaskets: Nickel		
Orifice Material	316L VAR Stainless Steel	Ruby	Ruby

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