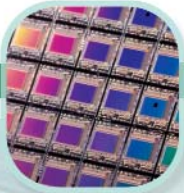


Contamination Control for Electronic and Semiconductor Applications



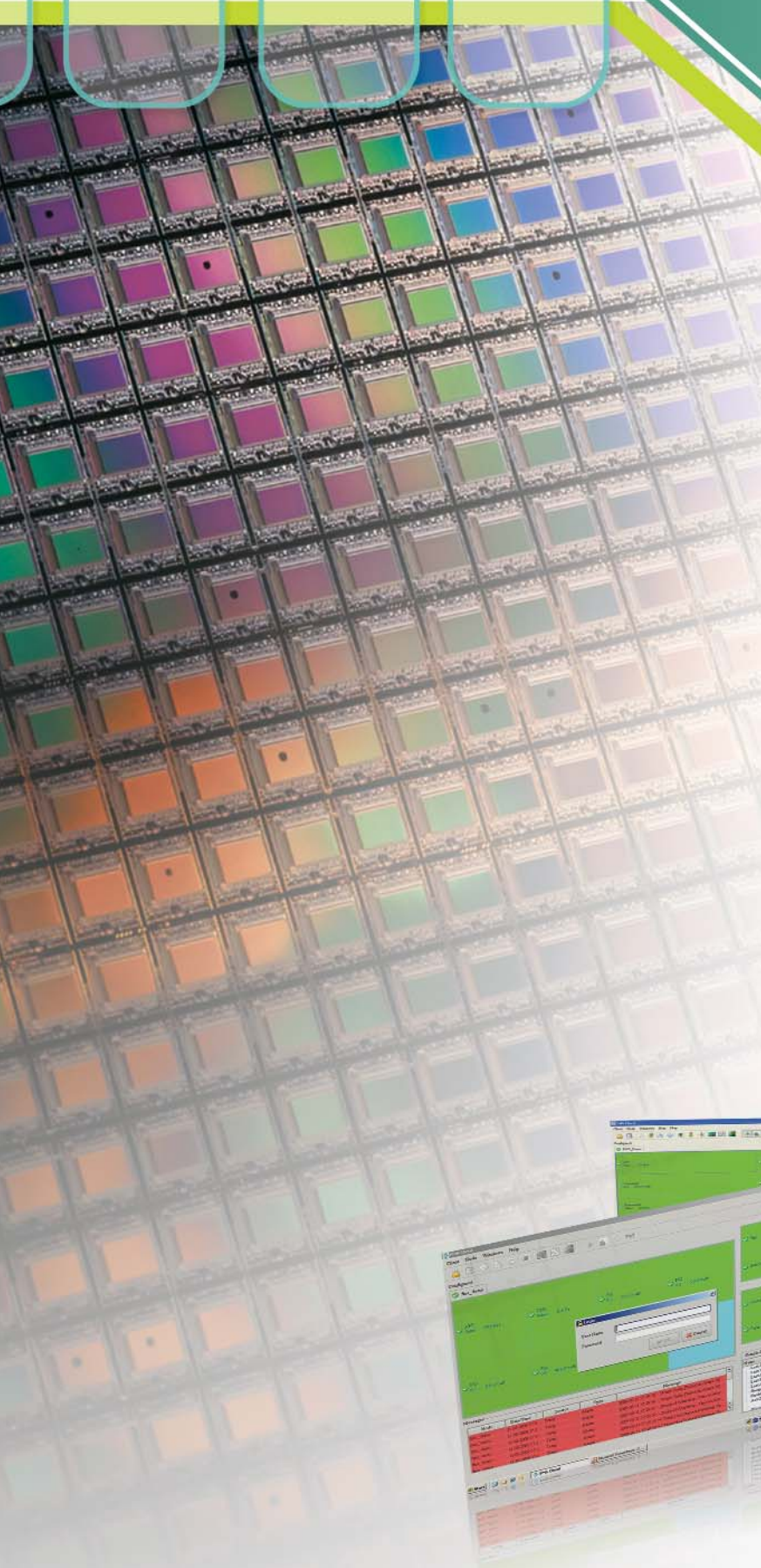
CONTROLLED ENVIRONMENTS

Contamination Control



TRUST. SCIENCE. INNOVATION.

TSI Sets the Standard



Performance

Semiconductor, hard disk drive, and flat panel manufacturers require extremely high levels of performance. Even a minor lapse in quality can result in severe economic loss. It is very important to precisely measure the environmental conditions and performance of vital manufacturing areas to ensure high yield of quality product. And when it's this important, you want to work with a name you can trust. TSI is the recognized worldwide standard for airborne particle measurements.

Control

In the continual drive for improved quality, you need reliable measurements and data to properly utilize improvement tools like Statistical Process Control (SPC). Information about processes not only helps minimize downtime, it is also important in looking for creative ways to enhance productivity. TSI's FMS 5 Software comes with SPC options, along with immediate notification alarming features to address issues as they happen. Couple TSI's world-class airborne particle measurements and FMS 5 Software with SPC options, and you have powerful tools that ensure your process is in control.



for Particle Counting



TSI – a Leader in Particle Counting

For over 40 years, TSI has been a recognized leader for accurate particle measurements. TSI is considered the leader in aerosol and particle instrumentation for many applications including:

- Filter testing
- Ambient air monitoring
- Dust monitoring
- Engine emissions
- Clean room certification
- Atmospheric and climate studies
- Nanoparticle measurements
- Respirator fit testing
- Aerosol research
- Biodetection

AERO^{TRAK}™ Particle Counters – Where Research meets Reality

The AERO^{TRAK} line of Particle Counters, including handhelds, portables, and remotes, are designed to meet the requirements for electronics and semiconductor clean room applications. AERO^{TRAK} Particle Counters comply with the stringent requirements set forth in ISO 21501-4. These particle counters are calibrated to NIST traceable PSLs using TSI's world-class Classifier and Condensation Particle Counters, the recognized standard for particle measurements. Backed with TSI's long-standing reputation for high quality and accuracy, AERO^{TRAK} Particle Counters provide the best measurement and data to help keep your processes in control.

Certification and Monitoring – Made Simple

Whether you periodically certify your clean areas, continuously monitor them, or both, TSI products help you simplify your task, while staying in compliance. AERO^{TRAK} Portable Particle Counters offer a simple icon driven touch screen interface, making it easy to set up tests. Accurate data is securely output in a variety of formats, perfect for reports.

FMS 5 Facility Monitoring Software is the backbone of a robust continuous monitoring system. AERO^{TRAK} Remote Particle Counters and other environmental sensors, seamlessly integrate into FMS 5 to collect information needed to improve your processes. FMS 5 is simple to configure and enables you to easily generate SPC charts.

Accurate Measurements down to 0.100 μm Sensitivity

When it comes to measuring particles, TSI offers 0.100 μm particle counters in remote and portable packages. Accurate measurements at this crucial size are vital to enhance the quality of your critical processes.





AEROtrak Portable Particle Counters

TSI offers a complete line of Portable Particle Counters, including 1 CFM, 50 LPM, and 100 LPM versions. The Model 9110 provides sensitivity down to $0.1 \mu\text{m}$ at 1 CFM, allowing you to classify down to ISO Class 1. All AEROtrak Particle counters interface with TSI's FMS 5 to ensure accurate control of your products and processes. Additional, unique features of these Particle Counters include:

- Multiplexed sampling with 32-port manifold allows cost-effective multi-point monitoring
- Lightest products on the market, making it easy to transport from location to location
- Most sample points (10,000) and locations (999) available, allowing you to store more information in the instrument
- Easy set up and recall of specific tests and recipes
- Instant Pass/Fail reporting on ISO 14644-1
- Draws samples through long sample tubing, making it easy to perform tests at multiple locations, to conduct filter testing, and to take surface particle samples
- Plug and play with TSI's industry leading, accurate, low velocity probes to certify critical air flows in clean rooms
- Loudest audible alarm, easy to hear in even the noisiest environments...and it's user adjustable
- Interfaces with TRAKPro™ Lite and FMS 5 Software

AEROtrak Portable Particle Counters set a new standard for your everyday needs.



Model 9110
0.100 μm Sensitivity

Particle Counters



AEROTRAK Handheld Particle Counters

TSI's Handheld Particle Counters are an excellent choice for tracking down particle contamination sources, classifying clean areas, and looking for filter leaks. When used as survey tools, these products are a great place to start when looking for early identification of problem areas, helping you save time and money.

The Model 9303 is a cost-effective, basic 3-channel, 0.1 CFM (2.83 L/min) particle counter. The Model 9306 is a best-in-class 6-channel, 0.1 CFM (2.83 L/min) particle counter with some unique features, including:

- Integrated handle for one hand operation
- Icon-driven color touch screen for simple configuration
- Unique variable binning option
- 10,000 sample record storage, 250 locations
- Classification and Pass/Fail reporting for ISO 14644-1
- Interfaces with TSI's TRAKPRO™ Lite and FMS 5 Software



Model 9303

Model 9306

ISO 21501-4 Compliant

TSI's AEROTRAK Particle Counters are fully ISO 21501-4 compliant, ensuring accurate and repeatable measurements. Classify clean rooms with confidence using products from TSI.

Air Flow Products for Clean Room Verification

TSI air flow products are the recognized worldwide standard for accurate, low velocity instruments used to verify and performance clean rooms and other clean devices. Products include:

- VELOCICALC® Air Velocity Meters
- ACCUBALANCE® Air Capture Hoods
- Air Velocity Transducers
- DP-CALC™ Micromanometers

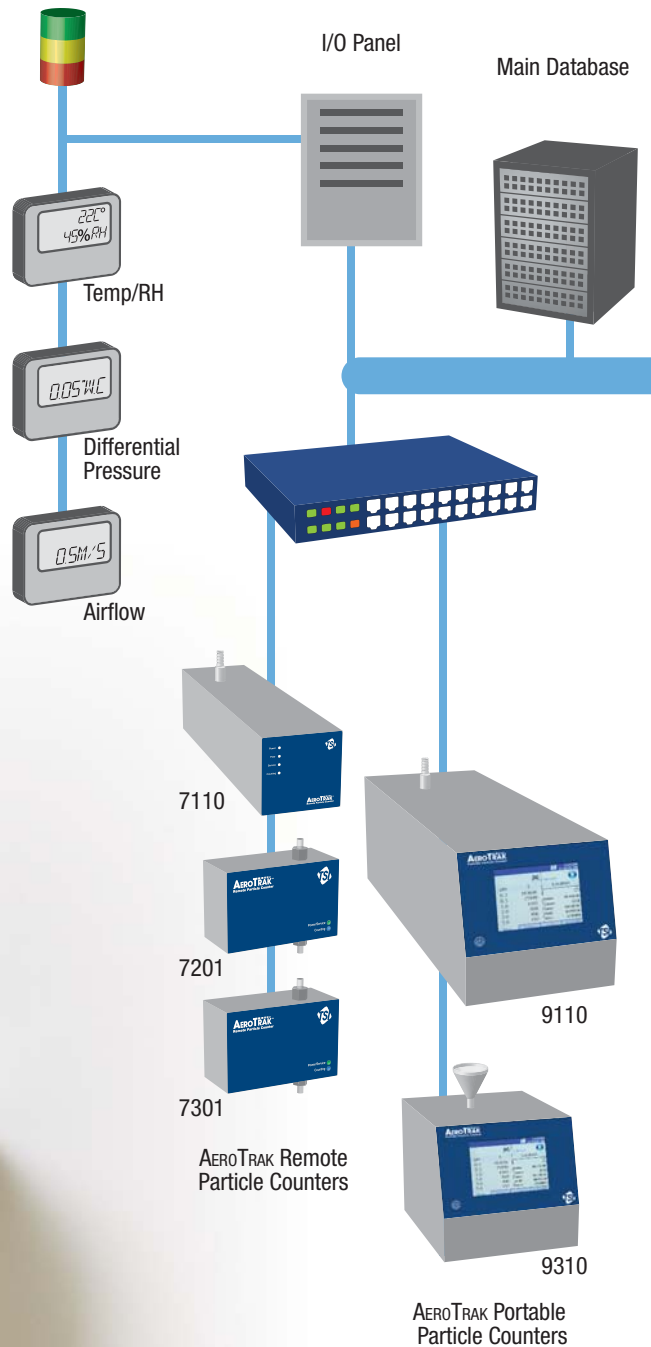


AERO TRAK Remote Particle Counters

TSI's AERO TRAK Remote Particle Counters provide a continuous stream of data that integrates directly into TSI's FMS 5. These particle counters can easily be mounted near critical locations to ensure your processes are properly controlled. These products can be powered over its Ethernet connection (Power-over-Ethernet) to simplify installation, or via a local power supply.

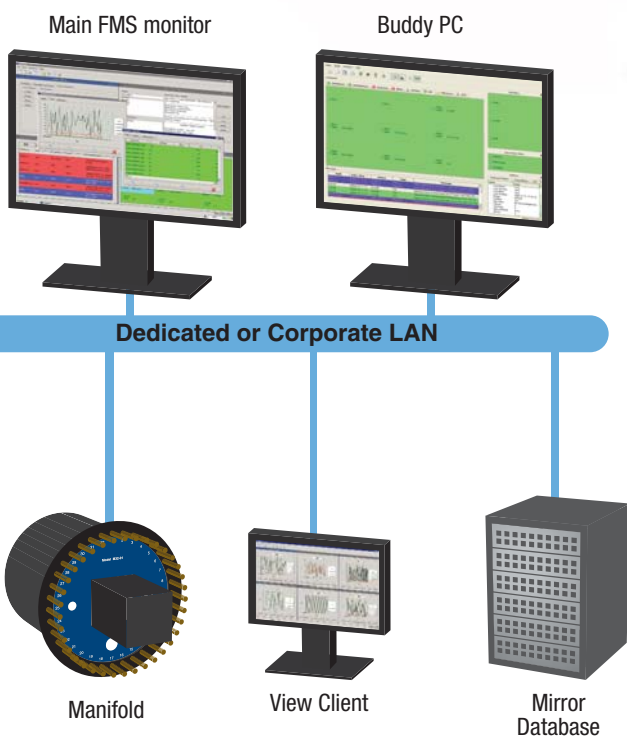
Integration is easy using Ethernet (TCP/IP) or serial Modbus RTU communications. Configuration is easily completed locally with a PC or via a web browser. These particle counters come with data redundancy in the form of a 3,000 sample point buffer. If the system goes down, these particle counters continue to collect and store valuable data.

TSI's Continuous



of Critical Processes

Monitoring System



Facility Monitoring Has Never Been So Easy

FMS 5 is a contamination monitoring software for the electronics, semiconductor, hard disk drive and other industries. FMS 5 assists you in maintaining contamination control of your critical processes, saving you time and money by minimizing downtime.

FMS 5 comes with built-in statistical process control (SPC) tools. SPC parameters can easily be configured to meet your unique application. Control charts can be generated by utilizing FMS 5 graphing functions. For defined sample points, detailed SPC information is displayed when accessed via the statistics function. FMS 5 provides a complete statistical monitoring system with the data integrity you need to ensure optimal control and uptime of your facility.

Open architecture makes it easy to integrate any sensor with standard outputs. This includes TSI's AEROtrak Particle Counters, temperature and humidity sensors, differential pressure gauges, and more. FMS 5 comes with built-in redundancy via a mirror database and a unique Buddy automatic hot standby option. User defined and automatic reporting options make it easy to get valuable timely information.

Immediate Alarms

FMS 5 comes with a variety of alarm options that provide immediate response and notification.

- Configure alarms in FMS 5 to be latched until acknowledged for quality oversight
- Notification of alarms can be sent via email and SMS (text) alerts
- Alarm relays can be configured to turn off process tools
- Easy node setup on monitors provide quick visual indication of alarms
- Utilize mapping function to identify alarm locations

Parameters and Features Chart

The chart below is a guide for selecting the products that best fit your needs.

		Sensitivity	Flow Rate	# of Channels	ISO 21501-4	Modbus RTU	Alarm Contact	Audible Alarm	Filter Scanning Probe	Velocity Probes	Temp/Humidity Sensor	Manifold Compatible	Printer	TrakPro Lite Software	Integrates with FMS 5
Handhelds	9303	0.3 µm	0.1 CFM (2.83 L/min)	3	•									•	
	9306	0.3 µm	0.1 CFM (2.83 L/min)	6	•	•		•			0		0	•	•
Portables	9110	0.100 µm	1.0 CFM (28.3 L/min)	8	•	•	•	•	0	0	0	•	•	•	•
	9310	0.3 µm	1.0 CFM (28.3 L/min)	6	•	•	•	•	0	0	0	•	•	•	•
	9510	0.5 µm	1.0 CFM (28.3 L/min)	6	•	•	•	•	0	0	0	•	•	•	•
	9350	0.3 µm	50 LPM	6	•	•	•	•	0	0	0		•	•	•
	9550	0.5 µm	50 LPM	6	•	•	•	•	0	0	0		•	•	•
	9500	0.5 µm	100 LPM	6	•	•	•	•	0	0	0		•	•	•
Remotes	7110	0.100 µm	1.0 CFM (28.3 L/min)	8	•	•	0				0				•
	7201	0.2 µm	0.1 CFM (2.83 L/min)	2, 4	•	•	0				0				•
	7301	0.3 µm	0.1 CFM (2.83 L/min)	2, 4	•	•	0				0				•
	7501	0.5 µm	0.1 CFM (2.83 L/min)	2, 4	•	•	0				0				•
	7310	0.3 µm	1.0 CFM (28.3 L/min)	2, 4	•	•	0				0				•
	7510	0.5 µm	1.0 CFM (28.3 L/min)	2, 4	•	•	0				0				•
	7301-P	0.3 µm	0.1 CFM (2.83 L/min)	3	•	•									•

• = Feature of Instrument 0 = Optional accessories available

TSI Incorporated serves a global market by investigating, identifying and solving measurement problems. As an industry leader in the design and production of precision instruments, TSI partners with research institutions and customers around the world to set the standard for measurements relating to aerosol science, air flow, health and safety, indoor air quality, fluid dynamics and biohazard detection. With headquarters based in the U.S. and field offices throughout Europe and Asia, TSI has established a worldwide presence in the markets we serve. Every day, our dedicated employees turn research into reality.

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