

AEROTRAK® HANDHELD AIRBORNE PARTICLE COUNTER MODEL 9306

QUICK START GUIDE

P/N 6004216, REVISION G
AUGUST 2016



Thank you for purchasing a TSI AeroTrak® Model 9306 Handheld Airborne Particle Counter. This guide will help you quickly begin using your particle counter.


More detailed information is in the Operation Manual located on the included TrakPro™ Lite Secure Software CD. Please refer to the manual if you have questions on the operation of your new particle counter.

Safety

This section gives instructions to promote safe and proper handling of the AeroTrak® Handheld Airborne Particle Counters.

IMPORTANT
There are no user-serviceable parts inside the instrument. Refer all repair and maintenance to a qualified factory-authorized technician. All maintenance and repair information in this manual is included for use by a qualified factory-authorized technician.


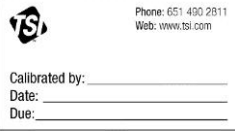


LASER SAFETY
The Model 9306 Handheld Airborne Particle Counter is a Class I laser-based instrument. During normal operation, you will not be exposed to laser radiation. However, precaution should be taken to avoid exposure to hazardous radiation in the form of intense, focused, visible light. Exposure to this light may cause blindness. DO NOT remove any parts from the particle counter unless you are specifically told to do so in this manual. DO NOT remove the housing or covers. There are no user-serviceable components inside the housing

	The use of controls, adjustments, or procedures other than those specified in this manual may result in exposure to hazardous optical radiation.
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WARNING
The battery supplied by TSI (700032) has built in protection against explosion and fire hazard. Do not use a substitute. Do not use non-rechargeable batteries in this instrument. Fire, explosions, or other hazards may result.




Labels


Advisory and identification labels are attached to the outside of the particle counter housing and to the optics housing on the inside of the instrument.

Serial number label (back panel)	
Calibration Label (side panel)	
Laser radiation label (internal)	<div style="border: 1px solid black; padding: 5px; text-align: center;">DANGER! VISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM WARNING: NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL</div>
Laser radiation symbol label (internal)	
European symbol for non-disposable item. Item must be recycled.	

Unpacking

1. Carefully unpack the particle counter from the shipping container and verify that all the items listed in the following table are present.
2. Contact TSI immediately if items are missing or broken.

Qty	Item Description	Part/Model	Reference Picture
1	AeroTrak® Airborne Particle Counter	9306-03 9306-04 9306-V2	
1	Power Supply with universal plugs	801694	
1	Isokinetic inlet	700003 AL	
1	Battery pack	700032	
1	Computer cable (2 m), USB A to B	700033	
1	Stylus	N/A	
1	HEPA zero filter assembly	700005	
1	TRAKPRO™ Lite Secure CD for 21 CFR Part 11 compliant data downloading (includes manuals)	7001901	
1	Operation Manual	6004215	Included on TrakPro™ Lite Secure software CD
1	Quick Start Guide	6004216	

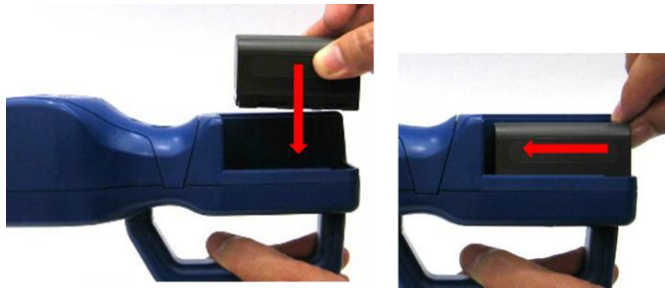
Qty	Item Description	Part/Model	Reference Picture
1	Calibration certificate	N/A	


3. Additional items may be included if accessories or spare parts were ordered.
4. The Model 9306 is equipped with an integral instrument support stand and stylus (for use with the touch screen).




Power

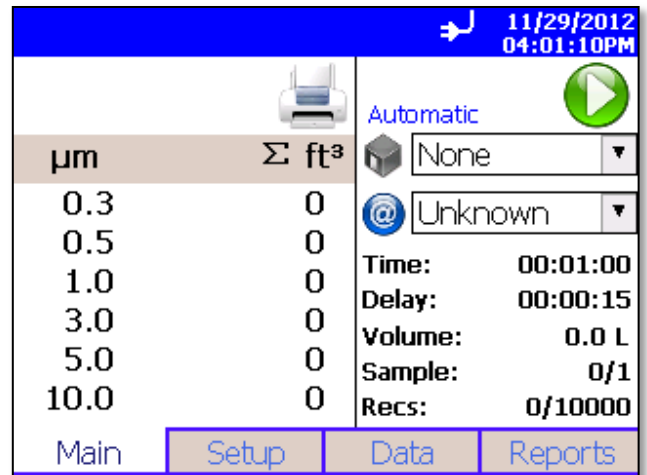
1. The Model 9306 may be powered using a rechargeable lithium-ion battery, or through an AC power cord.
2. To install the lithium-ion battery, remove the battery cover from the back of the instrument by lightly depressing the textured tab on the cover located on the lower left.



3. Place the lithium-ion battery into the battery compartment and slide it forward (toward the top of the unit) until it locks into place.
4. Replace the battery cover and slide it in place until a click is heard.
5. Connect the particle counter to AC power by connecting the AC power adapter to the appropriate country-specific power cord. Insert the AC power adapter into the bottom of the Model 9306 and connect the power cord to an AC source (100-240 VAC, 50-60 Hz, 1.9 A). The particle counter is now ready for use (or recharging the battery when unit is not sampling).
6. When using AC power, the battery (if installed) charges when the instrument is on, but not while actively sampling.
7. Removing/changing the lithium-ion battery or disconnecting AC power does not cause loss of data.
8. The battery icon's bars  shown on the instrument screen when it is on correspond to the charge amount in the battery.

Running the Particle Counter

1. The Model 9306 AeroTrak[®] Handheld Airborne Particle Counter is controlled using a touch screen display. Use the plastic stylus or a finger tip. **DO NOT** use sharp objects (such as a pen point) that may damage the screen overlay.
2. Press the **on/off** button  (located on the handle of the instrument).



3. After a splash screen displays the TSI logo, a brief start-up sequence begins as the Windows[®] CE operating system boots up.
4. The instrument is ready for operation when the Main screen appears.
5. To turn the power off, press the **On/Off** button and then select the **Turn Off** icon. This confirmation step prevents accidentally turning off the instrument and ensures that the instrument settings are all saved before shutdown. An option to charge batteries will also be presented if AC is plugged in and a battery is present.

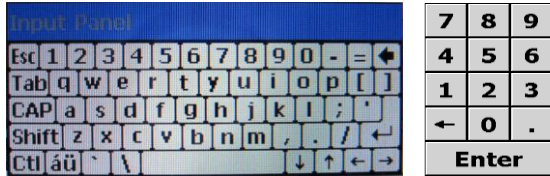
DO NOT SHUT DOWN THE INSTRUMENT BY DISCONNECTING THE POWER CORD OR LOSS OF DATA MAY RESULT.

6. There are four screens accessible using the tabs at the bottom: Main, Setup, Data, and Reports. Some screens require information to be entered. To enter information, tap on the screen and an on-screen keyboard appears.
 - The Main screen is the default. It shows the current status of the particle counter and the latest sample values.
 - Use the Setup screen to set up parameters for the particle counter (including setup for Zones, Recipes, Environmental measurements, System and Device settings).
 - Use the Data screen to review data that has been collected.
 - Use the Reports screen to select various standard reports for viewing and printing.

The screens and their options are explained in detail in the Operation Manual.

Using the Onscreen Keyboard

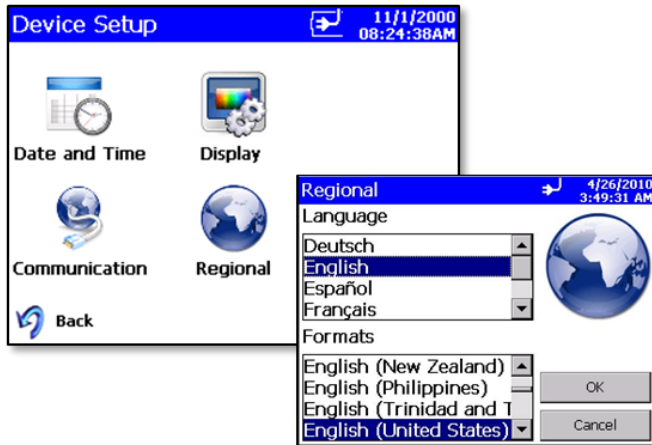
1. Throughout the setup screens, a keyboard will appear on the screen. Data may be entered using this keyboard.
2. When the entry is complete, press either the ↵ (Enter) or Esc key. The keyboard will then be hidden until another text entry box is selected.



3. When numeric input is needed, a numeric keypad will appear on the screen.

Select Language

1. From the Main tab, select **Setup | Device | Regional**.



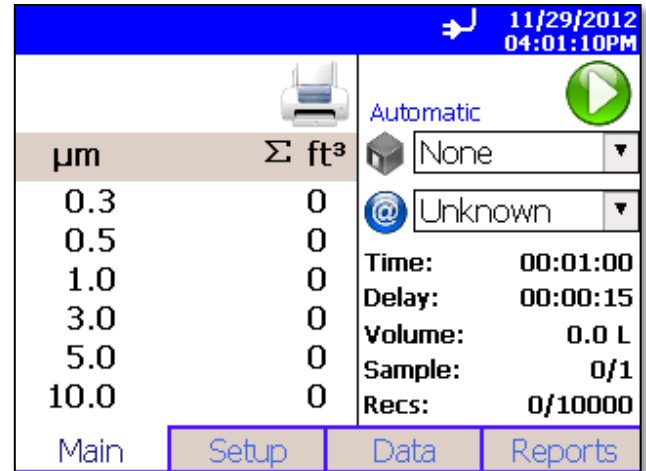
2. Language is selected from the Language list.
3. Date and number format (decimal separator) are selected from the *Formats* list.
4. Select **OK** to save the selection. The instrument will switch to using the selected Language and Formats.




Set up Time/Date

1. Select the **Setup | Device | Date and Time** tabs.
2. Use this screen to set the current date and. Press **OK** when finished. Change values using the arrows or tap the fields to use the on-screen keypad.

Collecting Samples

1. Sample collection is initiated from the Main screen:



2. Select the appropriate Zone  and Location  within the Zone. Recall, the sampling setup is configured within the Recipe associated with that Zone. The sampling setup is displayed.
3. Press  to start sampling.
4. When the Zone selection is set to “None” from the Main screen, the “Default” Recipe will be used for sampling. The initial settings for the Default Recipe provide a 60 second sample, but this Recipe can be edited as needed using the Recipe editor.
5. The Main tab is updated as samples are collected.

Zones, Locations, and Recipes

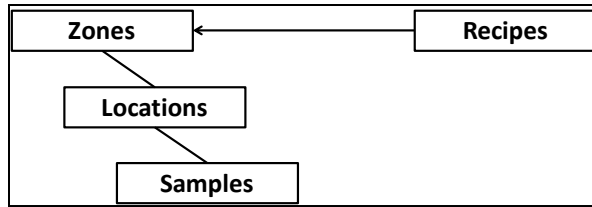
1. AeroTrak data is organized by Zones and Locations within Zones. This is modeled after the data organization used by the supported classification standards where a zone or room is classified by measuring samples at various locations within that zone.

If the instrument is not being used for standard classification, it is still a good practice to group sample data by Zone because it is easier to select the grouped data for printing and export and it helps to annotate exported sample data by relating it to the physical area where measurements were taken.

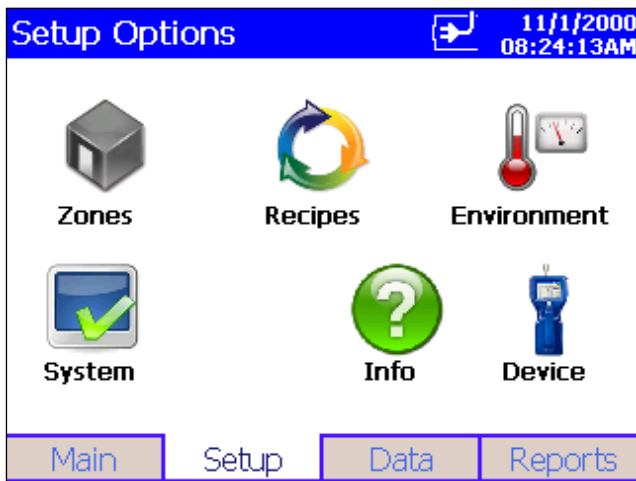
2. A Recipe consists of the sampling mode, sample timing, alarm thresholds, display preferences and other configuration settings to be used for sampling.

Each Zone has one Recipe that is associated with it, and one Recipe can be shared by several Zones. When a Zone is selected from the Main screen for sampling, its associate Recipe is also activated.

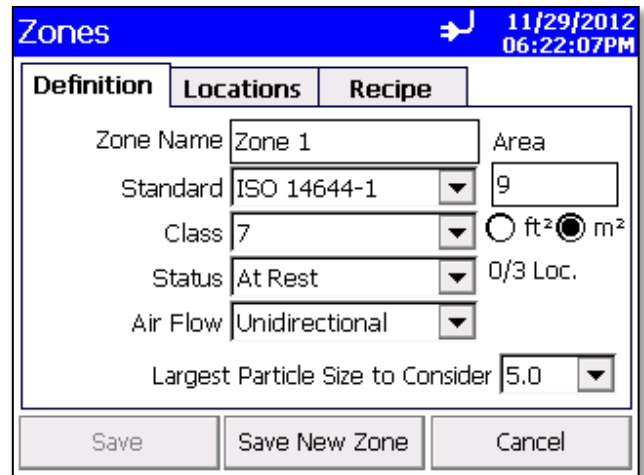
Recipes are associated with Zones. The data structure is shown schematically below:



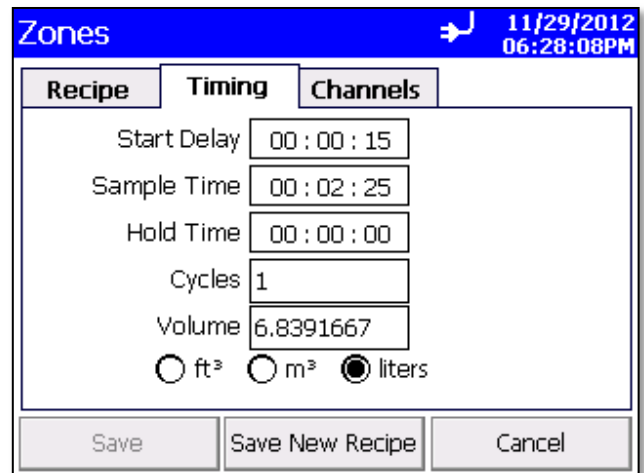
3. When conducting classifications, the type of classification can be selected and guidance is provided in terms of the sampling strategy required to meet the regulatory requirements in terms of number of Locations and length of sample.
4. When conducting sampling, no guidance is given as the sampling strategy and data organization is up to the user. Common Recipes can be configured for various sampling strategies in terms of length of individual samples and the number of samples per data collection period (time resolution is determined by sample time) and the length of data collection is determined by number of cycles.



5. Selecting **Zones** brings up the set up screen where existing Zones can be edited, deleted, or new Zones added. Zone naming is left up to the user but associating Zones with physical Locations within the facility are recommended.
6. The Zone configuration screen enables naming of Zones, Locations within the Zone, and configuration of the sampling strategy known as Recipes.



7. Zone Definition allows selected classification standards to be chosen and sampling strategy guidance will be provided based on the selected standard. If non-classification sampling is desired, the Zone allows for grouping of data physical areas and also specific Locations within the areas (Zones:Locations).
8. The Recipe selection allows the sampling strategy to be configured. The individual sample length as well as the number of samples for each data collection period is chosen. Channels allow for channels to be enabled/disabled and alarm levels to be chosen.



9. Timing field details are provided below:

Field	Description
Start Delay	Start Delay indicates how long it will be before the first sample is taken. NOTE: It takes approximately 10 seconds for the pump to reach the flow set point; taking a measurement before the pump is functioning properly may result in a data and flow error.
Sample Time	Sample time indicates how long the instrument will run for each sample.
Hold Time	Hold Time indicates how long the instrument pauses between samples.
Cycles	Cycles is the total number of samples you want to collect. In Automatic mode, a cycle value of ∞ causes the instrument to count continuously using the settings for Sample, Time, and Hold Time until the Start/Stop button is pressed again.
Volume	Volume sets the volume of air that will pass through the instrument for each sample. Select the volume unit then enter a volume value. The Sample Time will be updated automatically to the nearest second adequate to provide the desired volume.

10. Press **Save New Recipe** when finished which returns to the *Zone Configuration* screen.

Reviewing Data

1. Use the *Data* screen to review data that has been collected. Use the scroll bar (slide) on the right to scroll through the records.

Data		11/30/2012 11:48:47AM	
m ³	Size	Δ #/m ³	Σ #/m ³
	0.3	23980	28951
	0.5	4240	4971
	1.0	439	731
	3.0	0	292
	5.0	146	292
	10.0	146	146

Z:Zone 1 t2 Date: 11/30/2012
L:Location03 Time: 11:44:22AM
Sample: 00:02:25 Vol: 6.84L Alarm: No
Inst: OK

Record: 8 Records: 8 / 10000

Main Setup Data Reports

- The record number is displayed near the bottom of the screen. As each record is selected, its data and relevant parameters are displayed.
- Descriptions of each section of the data display screen are given in the following table.

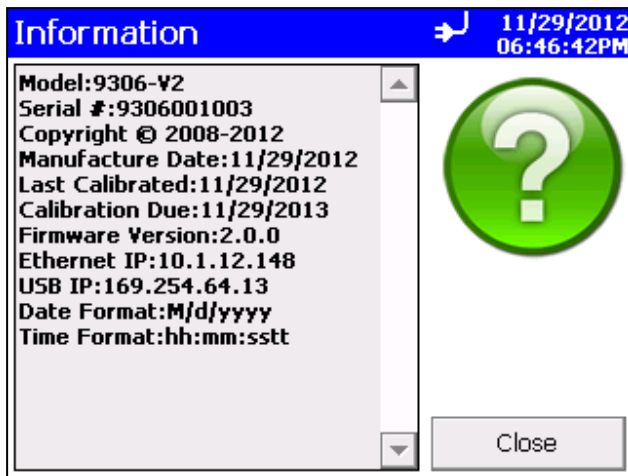
Data Screen Labels and Controls	
Field	Description
#, ft ³ , m ³	Button used to change between counts and concentration displays.
Size	Channel size.
Δ	Differential mode.
Σ	Cumulative mode.
	Export the data to a flash drive.
	Print data to the optional printer.
Zone (Z)	Zone in which the data was collected.
Location (L)	Location within the Zone.
Date	Date on which the data was collected.
Time	Time at which data collection was initiated.
Sample	Duration of the sampling period.
Vol	Volume of air that was sampled.
Alarm	Alarm threshold was triggered (Yes) or not (No).
Inst	Status of the instrument hardware. OK if no issues or error abbreviation if instrument has a possible issue.
Temp	Temperature at the end of the time the data was collected (if optional probe was connected during sampling).
RH	Humidity level at the end of the time the data was collected (if optional probe was connected during sampling).
Record	The record number of the sample being displayed.
Records	Total number of records.

Instrument Configuration

Instrument configuration can be found in the device setup screen which is located on the device tab. Use this screen to access screens to set or change the date and time, set visual parameters of the display, set up communications, set regional features, and get system information such as software version, etc.

Information Screen

To view the Information screen, select **Setup | Info**. Use this screen to view the system's model, serial number, copyright, manufacture date, calibration date, next calibration date, firmware version, USB IP address and date and time format.



Software

1. The TrakPro™ Lite Secure Data Transfer utility and user manuals come on a CD that was packaged with your particle counter.
2. To install the communications software and drivers, insert the CD into the computer drive and follow the on-screen instructions.
3. See the *TrakPro™ Lite Secure Software User's Guide* (P/N 6004404) on CD (P/N 7001901) for installation instructions.



UNDERSTANDING, ACCELERATED

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