AeroTrak®+
Portable Airborne
Particle Counter

Models A100-31/35/50/51/55

Quick Start Guide

Thank you for purchasing the TSI® AeroTrak®+ A100 Portable Airborne Particle Counter (APC). This guide will familiarize you with your particle counter and guide you on taking a measurement.

Refer to the manual for more detailed information on how to utilize a wide range of additional functionality to facilitate testing for a variety of applications. Additional information is also available at tsi.com/portables.

Safety

Please review the information below prior to use to assure safe and proper handling of the AeroTrak®+ A100 Portable Airborne Particle Counter.

I M P O R T A N T
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.

L A S E R   W A R N I N G
The AeroTrak®+ Portable 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.

W A R N I N G
The use of controls, adjustments, or procedures other than those specified in this manual may result in exposure to hazardous optical radiation.

| **W A R N I N G** |
|---|
| The battery supplied by TSI® (BAT-A100) 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. |

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.

3. Additional items may be included if you ordered accessories or spare parts.

| Qty.	Item Description	Part/Model	Reference Picture
1	AeroTrak®+ Airborne Particle Counter	A100-31 A100-35 A100-50 A100-51 A100-55	
1	Power Supply 24 VDC, 5.0A, 100-240 VAC, KPPX-4 plug. (Power cord included is country dependent)	PSU-A100	
1	Country-Specific Power Cord	700057 (US) 700058 (UK) 700059 (Euro)	
1 or 2	Battery Pack (can install up to 2 ea.)	BAT-A100 Qty = 1	
3 m (10 ft)	Sample Tubing, Clear	TUBE150-A100 3/8 ID x 1/2 OD (28.3 or 50 L/min models) TUBE100-A100 1/2 ID x 5/8 OD (100 L/min model)	
1	Sample Probe, Aluminum, Isokinetic, (connects to instrument)	SPAL1-A100 (28.3 L/min) SPAL5-A100 (50 L/min) SPAL0-A100 (100 L/min)	
1	Probe Mount (for use with sample tubing)	SPMT150-A100 (28.3 L/min & 50 L/mn) SPMT100-A100 (100 L/min)	

Qty.	Item Description	Part/Model	Reference Picture
1	Computer Cable, USB-A to USB-C (2 meters)	700360	
1	Filter, HEPA Purge/Zero Filter Assembly	FIL150-A100 (for the 28.3 and 50 L/min model) FIL100-A100 (for the 100 L/min model)	
1	Insert Card	5002751	
1	Alarm Accessories, 2-pin Alarm Connector (not wired)	ALMOUT-A100	

Instrument Features

Front
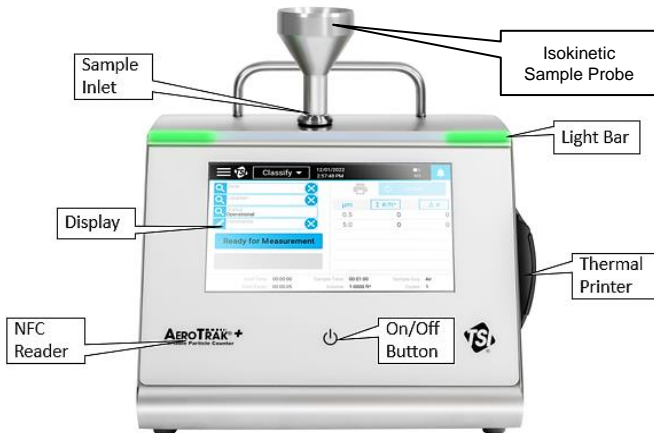
Back
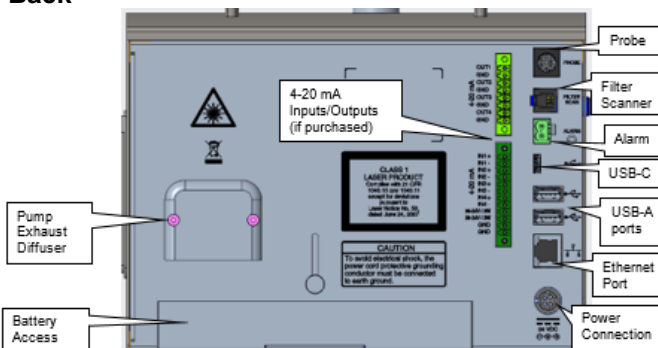
Start-up

Press the **On/Off** button on the front to power on. Once start-up is complete, the **Sample** screen will display:

The instrument must be connected to AC power or have a charged battery installed to power on.

To use AC power:

1. Connect the supplied power supply to the power connection on the back of the instrument.

2. Connect the power cord into the power supply and an appropriate outlet.

To use battery:

1. Loosen the thumbscrew and slide up the battery door on the back of the instrument.

2. Slide the battery into one of the slots (it does not matter which one) until it is flush with the back panel (note the orientation of the tabs). One battery is provided for all models, but up to two batteries can be used to extend operating time.

3. Slide down the battery door and secure with the thumbscrew.

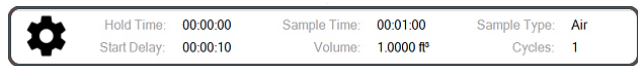| **N O T I C E** |
|---|
| To charge batteries the instrument must be connected to AC power and turned **ON**. If you often use the unit with batteries, you may consider purchasing the TSI® external dual-battery charger model DBC-A100 (see *Optional Accessories* in Chapter 1 of the Operation Manual). |

Taking a Sample

The AeroTrak®+ A100 Portable APC is controlled using the touch screen display. Use a plastic stylus or your finger tip. **DO NOT** use sharp objects (such as a pen point) that may damage the screen overlay.

Ad hoc samples can be taken quickly and easily when the instrument is set to the **Manual** sampling mode. Refer to the manual for testing in other modes, such as those for classification or monitoring.

1. From the main status bar, select **Manual** from the drop-down in the main status bar.

2. The currently configured sampling parameters are shown in the lower status bar.

3. The sampling parameters can be changed by pressing the **Settings** icon ⚙.

4. There are three tabs of editable settings, **Timing**, **Channels & Units**, and **Limits**. Once the desired settings are entered, press the **OK** button to save and return to the sample screen.
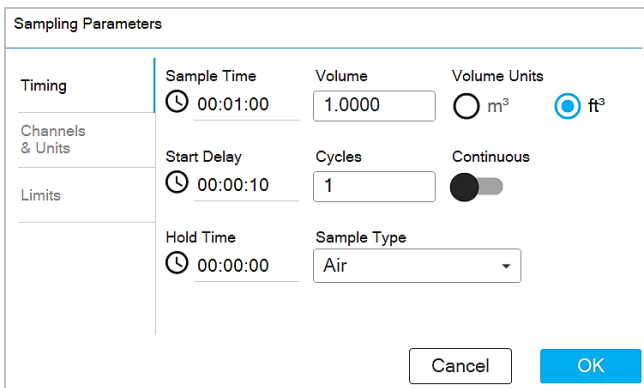
5. To start sampling press the **START** button.

6. The **START** button will switch to the **STOP** button, the pump will turn on, and once the delay time has been reached, particle counting will begin. The progress bars will indicate the state of sampling and the time remaining.
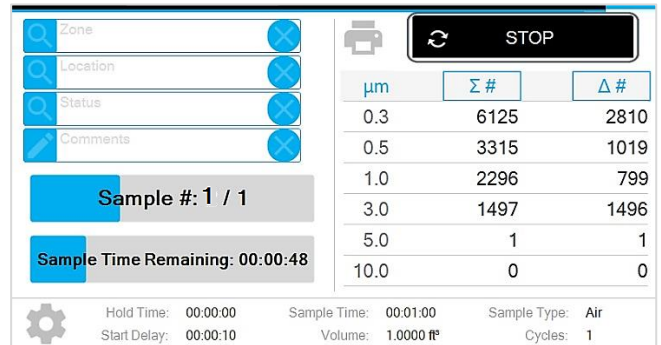

7. Data will display on the right. The data displayed in the columns can be changed by pressing the button at the top of the column. A drop-down will appear with the available options.
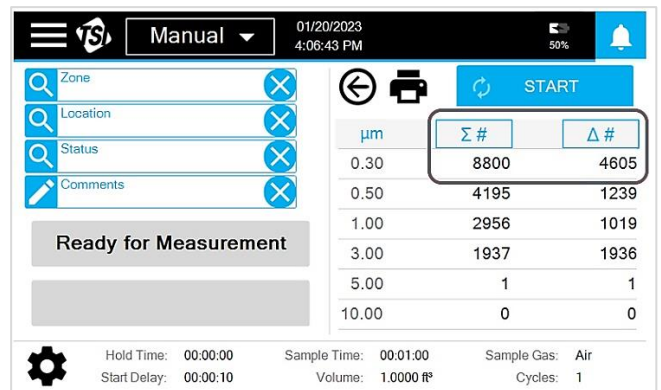

8. Once sampling is complete, the pump will turn off and the **STOP** button will turn back into the **START** button. Results can be printed by pressing the **Print** icon 🖨 .

Data Review

The data collected is stored in the data buffer of the instrument. Press the menu icon ☰ to access the **Menu** and select **Records/Reports**.
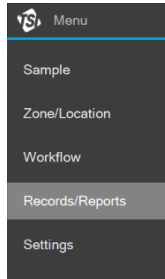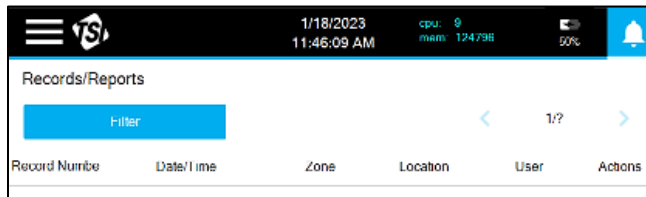
A list of all sample records, with the most recent on top, will be displayed. If there are multiple pages of results use the arrows to view other pages.
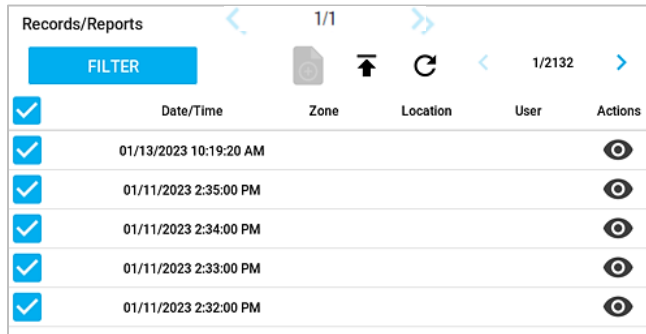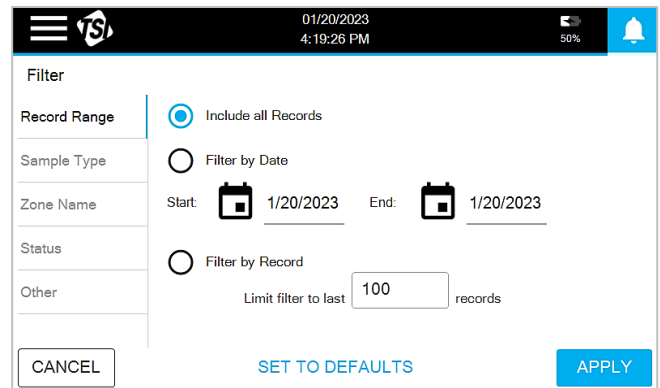

To view the complete record, press the eye icon 👁 on the right for the desired record.

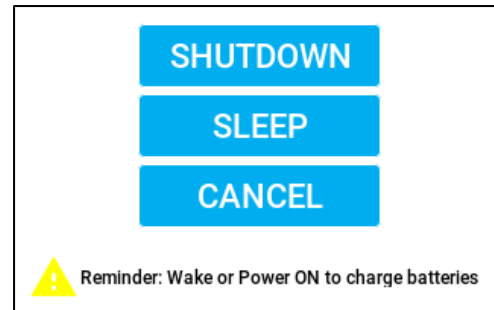To limit the number of samples appearing in the list, press the **Filter** button.

A number of filtering options will become available.

The filtered results will repopulate the **Records** screen.

Shutdown

Press the **On/Off** button on the front. A box with three buttons, **SHUTDOWN**, **SLEEP**, and **CANCEL**, will appear. Pressing **SHUTDOWN** will completely power down the instrument and require a full startup to use the instrument again. Pressing **SLEEP** will not completely power down the instrument, only certain components like the display, to allow for a fast startup. This can be used to preserve battery power between taking samples without needing to wait for a full startup each time.