

# **APC** ErgoTouch

*Airborne Particle Counter*

*ET-1.1 en  
April 2010*

**Operation and Service Manual  
(English)**





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April 2010*

**Operation and Service Manual  
(English)**

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## **Manual History**

The following is a manual history of the  **APC** ErgoTouch Airborne Particle Counter:

<b>Revision</b>	<b>Date</b>
A	November 2008
ET-1.0 en	January 2009
ET-1.0 de	January 2009
ET-1.1 en	April 2010

# Warranty

<b>Revision</b>	ET-1.1 en / April 2010
<b>Copyright</b>	©Biotest AG / 2010 / All rights reserved.
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<b>E-mail Address</b>	<a href="mailto:HYCON@biotest.de">HYCON@biotest.de</a>
<b>Limitation of Warranty and Liability</b>	<p>Seller warrants the goods sold hereunder, under normal use and service as described in the operator's manual, shall be free from defects in workmanship and material for (12) months, or the length of time specified in the operator's manual, from the date of shipment to the customer. This warranty period is inclusive of any statutory warranty. This limited warranty is subject to the following exclusions:</p> <ol style="list-style-type: none"><li>Parts repaired or replaced as a result of repair services are warranted to be free from defects in workmanship and material, under normal use, for 90 days from the date of shipment.</li><li>Seller does not provide any warranty on finished goods manufactured by others or on any fuses, batteries or other consumable materials. Only the original manufacturer's warranty applies.</li><li>Unless specifically authorized in a separate writing by Seller, Seller makes no warranty with respect to, and shall have no liability in connection with, goods which are incorporated into other products or equipment, or which are modified by any person other than Seller.</li></ol> <p>The foregoing is IN LIEU OF all other warranties and is subject to the LIMITATIONS stated herein. <b>NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY IS MADE.</b></p> <p>TO THE EXTENT PERMITTED BY LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF SELLER'S LIABILITY FOR ANY AND ALL LOSSES, INJURIES, OR DAMAGES CONCERNING THE GOODS (INCLUDING CLAIMS BASED ON CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) SHALL BE THE RETURN OF GOODS TO SELLER AND THE REFUND OF THE PURCHASE PRICE, OR, AT THE OPTION OF SELLER, THE REPAIR OR REPLACEMENT OF THE GOODS. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES. SELLER SHALL NOT BE RESPONSIBLE FOR INSTALLATION, DISMANTLING OR REINSTALLATION COSTS OR CHARGES.</p> <p>No action, regardless of form, may be brought against Seller more than 12 months after a cause of action has accrued. The goods returned under warranty to Seller's factory shall be at Buyer's risk of loss, and will be returned, if at all, at Seller's risk of loss.</p> <p>Buyer and all users are deemed to have accepted this LIMITATION OF WARRANTY AND LIABILITY, which contains the complete and exclusive limited warranty of Seller. This LIMITATION OF WARRANTY AND LIABILITY may not be amended, modified or its terms waived, except by writing signed by an Officer of Seller.</p>
<b>Service Policy</b>	<p>Knowing that inoperative or defective instruments are as detrimental to Biotest as they are to our customers, our service policy is designed to give prompt attention to any problems. If any malfunction is discovered, please contact your nearest sales office or representative, or call Biotest's Customer Service department at +49 (0) 6103 801 496</p>
<b>Trademarks</b>	<p>APC, ERGOTOUCH, ERGOTOUCH PRO and ERGOTRAK are trademarks of Biotest AG. Biotest and the Biotest logo are trademarks of Biotest AG. Microsoft and Excel are registered trademarks of Microsoft Corporation.</p>




# Contents

<b>Manual History</b> .....	<b>ii</b>
<b>Warranty</b> .....	<b>iii</b>
<b>Safety Information</b> .....	<b>vii</b>
Laser Safety .....	vii
Labels.....	viii
Description of Caution/Warning Symbols .....	viii
Getting Help .....	ix
<b>Chapter 1 Introduction and Unpacking</b> .....	<b>1</b>
Optional Accessories.....	2
<b>Chapter 2 Getting Started</b> .....	<b>4</b>
Installing the Isokinetic Inlet.....	4
Providing Power .....	4
To Install the Lithium-ion Battery.....	4
To Use AC Power .....	5
Performing a Daily Zero Check .....	6
To Perform a Zero Check.....	6
Quick Start.....	6
<b>Chapter 3 Operation</b> .....	<b>7</b>
Warm-up Time.....	8
Main Menu and Basic Operation .....	8
Basic Operation.....	9
Start Sampling.....	9
Settings Menu .....	10
Sample Menu .....	11
Buffer Menu.....	11
Utility Menu.....	12
<b>Chapter 4 Data Handling</b> .....	<b>13</b>
System Requirements .....	13
Installation .....	13
ERGOTRAK Lite Software Configuration .....	17
Data Presentation .....	18
Data Export .....	19
File Management .....	20
Device Connection .....	21
Working with Connected Devices.....	22
Displaying Records .....	23
Device Related Application Menus.....	24
General information.....	24
Delete All Records .....	24

Export all Records.....	25
Export Selected Records .....	25
Recipes .....	26
Locations.....	28
File Menu.....	29
Device Menu .....	30
Help Menu .....	30
Troubleshooting.....	30
<b>Chapter 5 Maintenance .....</b>	<b>31</b>
Maintenance Schedule.....	31
Daily Zero Check.....	31
Cleaning the Instrument Enclosure .....	31
<b>Chapter 6 Troubleshooting.....</b>	<b>32</b>
<b>Chapter 7 Contacting Customer Service.....</b>	<b>34</b>
Technical Contacts.....	34
Returning the APC ERGOTOUCH Airborne Particle Counter for Service.....	34
<b>APPENDIX A Specifications .....</b>	<b>35</b>



## Safety Information

This section gives instructions to promote safe and proper handling of the  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.

Any attempt to open or service the instrument by non-authorized agencies or personnel will void the warranty.

## Laser Safety

The APC ERGOTOUCH Airborne Particle Counter is a handheld Class I laser- based instrument.

- During normal operation, the user will **not** be exposed to laser radiation.
- 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.

### Take these precautions:

- **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.

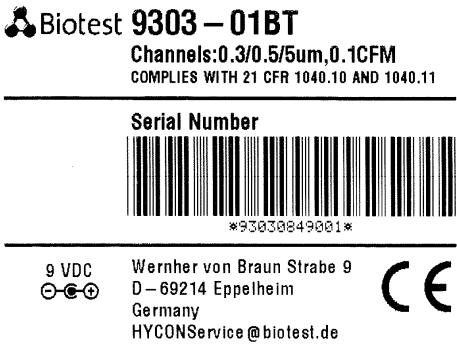






### WARNING

The use of controls, adjustments, or procedures other than those specified in this manual may result in exposure to hazardous optical radiation.

## Labels

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

<p>1. Serial Number Label (back panel)</p>	 <p><b>Biotest 9303 – 01BT</b> Channels: 0.3/0.5/5um, 0.1CFM COMPLIES WITH 21 CFR 1040.10 AND 1040.11</p> <hr/> <p><b>Serial Number</b></p>  <p>*93030849001*</p> <hr/> <p>9 VDC  Wernher von Braun Strabe 9 D – 69214 Eppelheim Germany HYCONService@biotest.de </p>
<p>2. Laser Radiation Label (internal)</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p><b>DANGER!</b></p> <p>VISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM</p> <p>WARNING: NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL</p> </div>
<p>3. European symbol for non-disposable item. Item must be recycled.</p>	

## Description of Caution/Warning Symbols

Appropriate caution/warning statements are used throughout the manual and on the instrument that require you to take cautionary measures when working with the instrument:

### Caution



<b>C a u t i o n</b>
<p>Failure to follow the procedures prescribed in this manual might result in irreparable equipment damage. Important information about the operation and maintenance of this instrument is included in this manual.</p>

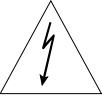



### Warning



<b>W A R N I N G</b>
<p>Warning means that unsafe use of the instrument could result in serious injury to you or cause damage to the instrument. Follow the procedures prescribed.</p>

## Caution or Warning Symbols

The following symbols may accompany cautions and warnings to indicate the nature and consequences of hazards:

	Warns that uninsulated voltage within the instrument may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make contact with any part inside the instrument.
	Warns that the instrument contains a laser and that important information about its safe operation and maintenance is included in the manual.
	Warns that the instrument is susceptible to electro-static dissipation (ESD) and ESD protection procedures should be followed to avoid damage.
	Indicates the connector is connected to earth ground and cabinet ground.

## Getting Help

To obtain assistance with this product or to submit suggestions, please contact Biotest Customer Service, Biotest Technology Center Microbiology, or your local Biotest representative or service center:

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Fax: +49 (0) 6103 801 505

## Chapter 1 Introduction and Unpacking

The APC ERGOTOUCH Airborne Particle Counter is a lightweight, handheld particle counter with a backlit LCD display. It operates on the included lithium-ion battery or AC power.





The device has a 0.1 ft<sup>3</sup> / min (2.83 L / min) flow rate and counts bin sizes from 0.3 to 5 µm (middle bin size is user-adjustable to 0.5 / 1.0 / 2.0 / or 2.5 µm). Up to 1,500 data sets can be downloaded for analysis and reporting using the ERGOTRAK LITE Data Download Software included with the device.



Typical applications for this particle counter include clean room monitoring, research, exposure assessment, indoor air quality, filter testing, clearance testing, quality assurance, and contaminant migration studies. All APC ERGOTOUCH airborne particle counters meet the JIS B 9921: 1997 standard.

### Unpacking the APC ErgoTouch Airborne Particle Counter

Carefully unpack the APC ERGOTOUCH airborne particle counter from the shipping container and verify that all the items shown in the photos below and listed in the following tables are present. Contact your local Biotest representative immediately if items are missing or broken:

**APC ERGOTOUCH Airborne Particle Counter Standard Included Items**






Qty.	Item Description	Part/Model	Reference Picture
1	APC ERGOTOUCH Airborne Particle Counter	942 500	
1	AC Power Supply with country-specific plug adapters	942 512 (included)	
1	Isokinetic Inlet	942 602 (included)	
1	Battery Pack	942 511 (included)	


Qty.	Item Description	Part/Model	Reference Picture
1	Computer Cable, USB A to mini-B	191 550 (included)	
1	Purge Filter Assembly (HEPA)	942 601 (included)	
1	ERGOTRAK LITE data download utility CD (includes Operation and Service Manual)	(included)	(not shown)
1	Operation and Service Manual	(included)	(installed on CD)
1	Calibration Certificate	(included)	(not shown)
1	Quick Start Guide	(included)	(installed on CD)

## Optional Accessories

The following photos and table list optional accessories. If you ordered optional accessories, make certain they have been received and are in working order:

### APC ERGOtouch Airborne Particle Counter Optional Accessories

Item Description	Part/Model	Reference Picture
Custom Carrying Case	942 520	
Isokinetic Inlet SS	942 602	
Isokinetic Probe SS (remote sampling)	942 603	
Barbed Inlet (remote sampling)	191 824	
Tubing, 30 m / 100 ft (remote sampling)	191 822	

Item Description	Part/Model	Reference Picture
Compressed Gas Adapter (CGA)	942 675	
CGA Nozzle Set (ErgoTouch)	942 680	(not shown)

## Chapter 2

### Getting Started

This chapter provides information to help you use the APC ERGOTOUCH Airborne Particle Counter including:

- providing power
- performing a daily check
- installing an isokinetic inlet

#### **Installing the Isokinetic Inlet**

The isokinetic inlet smoothly accelerates air into the inlet of the instrument. To install, simply thread the inlet directly onto the inlet nozzle until finger tight. The inlet seals over an o-ring so it doesn't have to be very tight to seal.



#### **Providing Power**

The APC ERGOTOUCH may be powered using a removable rechargeable lithium-ion battery, or through an AC power cord.

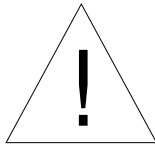
##### **Notes:**

- When using AC power, the battery (if installed) charges when the instrument is on, but not while actively sampling.
- Removing / changing the lithium-ion battery or disconnecting the AC power does not cause loss of data.
- The battery should be fully charged before use to provide optimum performance.

#### **To Install the Lithium-ion Battery**

1. The battery is shipped separately and must be installed before use.
2. Remove the battery cover on the back side of the handle with a small, flathead screwdriver.
3. Connect the battery to the socket as shown below.

4. Insert the battery with the connector at the top and replace the battery cover. Make sure all wires are inside and not pinched in the cover. Do **not** over tighten the screw
5. Fully charge the battery before use.



#### W A R N I N G

The battery supplied by Biotest has built in protection against explosion and fire hazard. Do **not** use a substitute.



#### W A R N I N G

Do **not** use non-rechargeable batteries in this instrument. Fire, explosions, or other hazards may result.

### To Use AC Power

1. Remove the AC transformer parts from their package and identify the appropriate plug adapter for your needs. Plug adapters are available for all common connections.
2. Remove the insert from the transformer using the slide lock and tilt the insert out.



3. Tilt the appropriate plug adapter into the transformer receptacle and make certain it locks into place.





4. Plug the DC end of the transformer cord into the particle counter.
5. Plug the AC end of the transformer cord into an AC outlet.
6. The Power LED lights when the battery is charging. When the Power LED is off, the battery is fully charged.
7. When the battery is charged, unplug the power supply

## **Performing a Daily Zero Check**

A zero check should be performed at least once a day. It should also be performed before conducting any important testing or certification.

### **To Perform a Zero Check**

Turn on the instrument and wait until the main menu appears.

1. Remove the isokinetic inlet if attached.  
The daily zero check cannot be performed when the isokinetic inlet is attached to the instrument.
2. Attach the zero filter to the inlet nozzle located on the top of the instrument.
3. Press the **Start** button and allow the instrument to purge for 2 minutes.
4. After the 2-minute purge, continue to sample. In accordance with JIS standards, there should be no more than 1 particle counted at any size in 5 minutes.



**Note:** If the instrument does not go to zero (1 particle in 5 min is considered zero), refer to Chapter 6, [Troubleshooting](#), for additional information.

5. Remove the zero filter and put the isokinetic inlet back on; the instrument is now ready for operation.

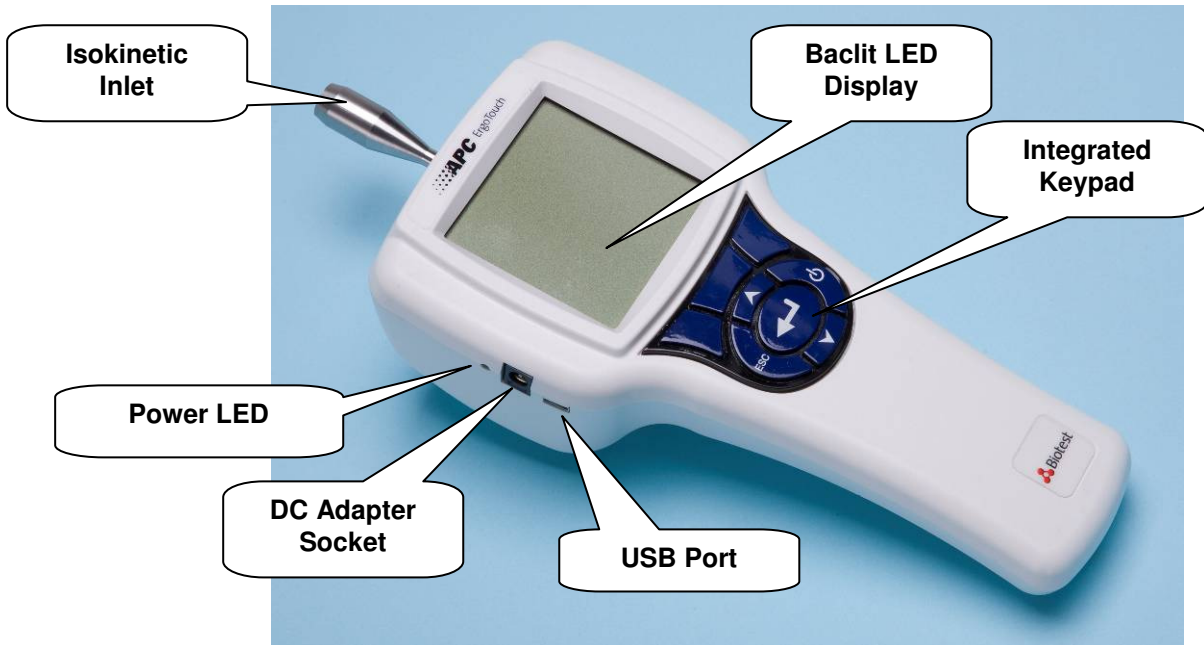
## **Quick Start**

The best way to quickly get started is to refer to the laminated "Quick Start Guide" included with your particle counter. It will help you to quickly set up the instrument and begin sampling.

Refer to the sections below for more detailed information on configuring and running the instrument.

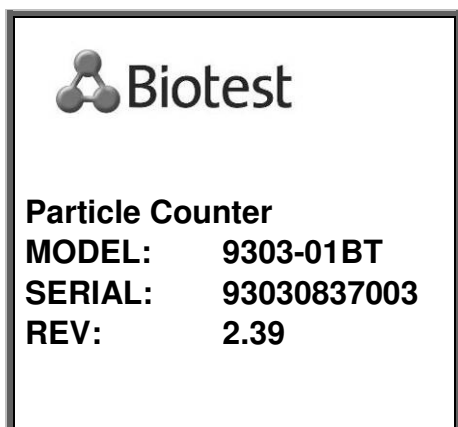
## Chapter 3 Operation

The APC ERGOtouch Airborne Particle Counter is controlled using the integrated keys and the backlit display.

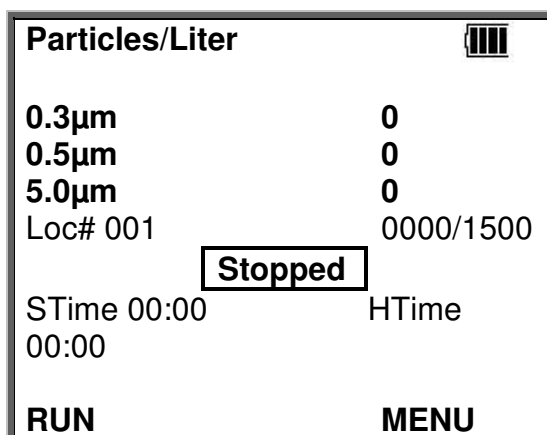


To turn on the instrument, press the **On/Off** button (located on the right side of the integral keys). A splash screen will appear for approximately three seconds, displaying the Biotest logo, model number, serial number, and firmware version number.





The instrument is ready for operation when the default screen (shown right) appears.



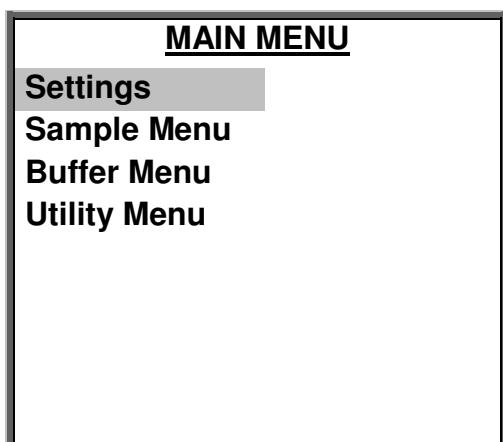
**Note:** To turn off the instrument, press and hold the On/Off key for four seconds. The instrument then turns off.

### Warm-up Time

An initial warm-up period of 15 minutes is recommended before sampling with the APC ErgoTouch Airborne Particle Counter. The warm-up period allows time for the optics to reach a steady-state temperature. This will have the effect of more reproducible results. Neglecting the warm-up time may result in overestimation of particle size (approximately 10 %). Neglecting the warm-up time will not have a significant effect on particle concentration, therefore, a zero count can still be performed without waiting for the warm-up period.

### Main Menu and Basic Operation

Press **MENU** on the Default Screen to enter and display the main menu.



Menu	Settings
<b>Settings</b>	Set language (initially English only), time and date, time and day format, and screen settings
<b>Sample</b>	Set sample mode, cycle mode, sample time, hold time, cycle count, sample units, and middle channel size
<b>Buffer</b>	View the number of records stored in the APC ERGOTOUCH, display buffer records, and clear the buffer
<b>Utility</b>	Adjust the pump speed, turn data logging on and off, and select the sampling location

## Basic Operation

This section explains the basic operation using the integrated keypad and starting sampling.

### Using the Keypad



Use the **Up** and **Down** keys to highlight a menu or a menu option, then:

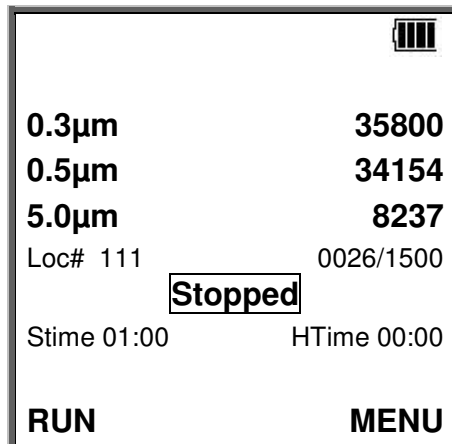
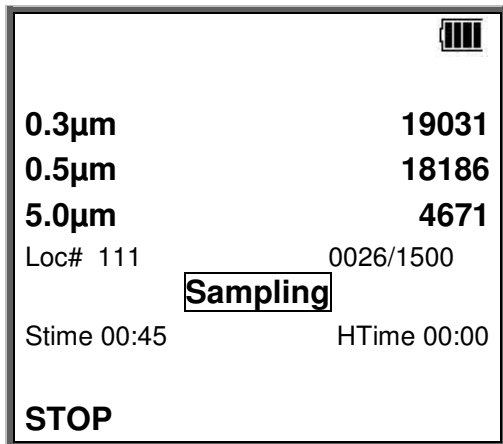
- If **Left** and **Right** arrows appear at the bottom of the screen, use **Left Soft Key** and **Right Soft Key** to select the option you want. Generally, there will be only two or three options. Soft keys change function depending on the display above them. The **Center Soft Key** is not currently used.
- If no arrows appear at the bottom, press the **ENTER** key to bring up a secondary window from which you can make a selection or modify a setting.

Use the **Up** and **Down** keys to perform operations such as increasing or decreasing a value. Use the **Right Soft Key** and **Left Soft Key** to move right and left.

The **ESC** key always brings you back to the previous screen.

## Start Sampling

To start sampling, press the **Left Soft Key** (below "**RUN**"). The APC ERGO TOUCH begins collecting samples immediately if set to manual mode, or according to the parameters that have been set for automatic mode.

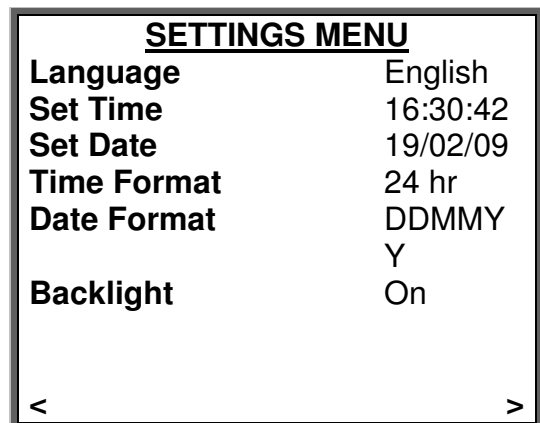


To stop sampling at any time, press the **STOP** key.

## Settings Menu

The settings menu allows the user to set language (currently English only), current time and date, select the time and day format, and set certain screen settings.

The table below describes the options of this menu and the parameters which can be set.



Option	Description	Parameters
Language	Use < and > to set the language in which information is displayed	English only (other languages may be offered at a later date)
Set Time	Press the <b>Enter</b> key to go to a secondary screen where you can set current time	Hours, minutes, seconds
Set Date	Press the <b>Enter</b> key to go to a secondary screen where you can set the current date	Day, month, year
Time Format	Use < and > to set the time format in which time is displayed and saved in the data records	12 hr. 24 hr
Date Format	Use < and > to set the date format in which date is displayed and save in the data records	DD/MM/YY, MM/DD/YY
Backlight	Use < and > to set whether the backlight on the display is on or off. <b>Note:</b> Battery life is shorter with the backlight enabled	ON – backlight is always on OFF – backlight is always off

## Sample Menu

The sample menu sets sample mode, cycle mode, sample time, hold time, cycle count, sample units, and middle channel size.

The table below describes the options of this menu and the parameters which can be set.

<b>SAMPLING MENU</b>	
<b>Sample Mode</b>	<b>COUNTS</b>
<b>Cycle Mode</b>	<b>AUTO</b>
<b>Sample Time</b>	<b>01:00</b>
<b>Hold Time</b>	<b>00:30</b>
<b>Cycle Count</b>	<b>010</b>
<b>Sample Units</b>	<b>LITER</b>
<b>Chan 2 Size</b>	<b>0.5µm</b>
<	>

Option	Description	Parameters
Sample Mode	Use < and > to set the sampling mode	Concentration, Counts
Cycle Mode	Use < and > to set the cycle mode	Manual – the counter will start when the <b>RUN</b> soft key is pressed and stop only when the <b>STOP</b> soft key is pressed. Auto – the counter will start when the <b>RUN</b> soft key is pressed and turn on and off automatically to follow the parameters set below.
Sample Time	Press the <b>Enter</b> key to get to a secondary screen where you can set the sample time	Minutes, Seconds
Hold Time	Press the <b>Enter</b> key to get to a secondary screen where you can set the hold time between samples	Hours, Minutes, Seconds
Cycle Count	Press the <b>Enter</b> key to get to a secondary screen where you can set the number of samples to take	1 – 999
Sample Units	Use < and > to set the sampling units	Liter, Cubic Feet
Channel 2 Size	Use < and > to set the bin size for the middle channel (channel 2). This is the only channel that can be set to multiple values	0.5, 1.0, 2.0, 2.5 µm

## Buffer Menu

The buffer menu allows the user to view the number of records stored in the APC ErgoTouch, display buffer records and clear the buffer.

The table below describes the options of this menu and the parameters which can be set.

<b>BUFFER MENU</b>	
<b># of Records</b>	<b>0035/1500</b>
<b>Show Buffer Record</b>	
<b>Clear Buffer</b>	

Option	Description	Parameters
# of Records	Shows the number of sample data records stored on the APC ERGOTOUCH	None
Show Buffer Record	Press the <b>ENTER</b> key to go to a secondary screen in which the sample data record can be selected for viewing. This is selected by sample number. Use the <b>Soft Keys</b> to browse through the data records	Any number from 1 to the total number of data records in memory (1 – 1 500 maximum)
Clear Buffer	Press the <b>ENTER</b> key to clear all sample data records in the buffer. You will be prompted to confirm the request	None

At right is an example of a buffer record.

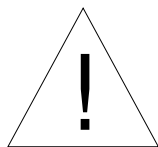
BUFFER RECORD	
Record#:	0313
Date:	01/27/08
Time:	05:50:45
0.3µm	000566473
0.5µm	000534571
5.0µm	000072056
Location:	111
Sample Time:	01:00
Hold Time:	00:00
<	>

## Utility Menu

The utility menu lets you adjust the pump speed, turn data logging on and off, and select the sampling location.

UTILITY MENU	
Pump Speed	099
Data Logging	ON
Location	001

The following table describes the options of this menu and the parameters which can be set.



C a u t i o n	
If data logging is turned off, no sample data records will be saved to the buffer.	

Option	Description	Parameters
Pump Speed	Press the <b>ENTER</b> key to go to a secondary screen where the pump speed can be increased or decreased. The pump may slow down with age, or it may be necessary to increase the speed if there are flow restrictions such as long tubing. Use a flowmeter to check the flow when taking critical measurements and adjust the pump speed as necessary.	0 – 255
Data Logging	Use < and > to turn data logging on and off	ON, OFF
Location	Press the <b>ENTER</b> key to go to a secondary screen where a location can be selected (by number)	0 - 255

## Chapter 4

### Data Handling

#### USB Computer Communication

The APC ErgoTouch Airborne Particle Counter is equipped with a USB compatible cable for uploading and downloading information to a PC. The cable plugs into the left side of the instrument as shown below (mini-B).



#### System Requirements

##### Hardware (minimum requirements):

- Pentium 90 MHz, 32 MB RAM, 20 MB of hard drive space, or minimum requirements for the operating system, whichever is higher. Free hard drive space depends on the amount of records to be stored.
- A free USB port.

##### Software (minimum requirements):

- Windows® XP operating system with Service Pack 2 or higher, Windows® Vista® operating system with Service Pack 1 or higher.
- NET 2.0 or higher.

#### Installation

The ERGOTRAK Lite version 2 software is supplied on a CD that loads software and communications drivers for ErgoTouch or ErgoTouch Pro Handheld Airborne Particle Counters. Hardware manuals are also supplied on the CD along with this software manual.

Installation consists of two parts:

- **Installation of ERGOTRAK Lite software.**  
Run "setup.exe" from the provided CD and follow on-screen instructions.
- **Installation of device drivers.**  
Device driver installation is executed in the background during the setup process and does not require user input. Once the installation is finished, drivers are ready for use.



The computer must be restarted to complete the installation. Once the ErgoTouch or ErgoTouch Pro Airborne Particle Counter is connected and powered on, the system will automatically detect the device and will proceed with installing the necessary drivers.

- **ErgoTouch**

The system will detect the device and install all necessary drivers without requiring user input.

- **ErgoTouch Pro**

When a particle counter is connected for the first time, the system will automatically detect the device and will start driver installation process:



When asked "Can Windows connect to Windows Update search for software?", select "No, not this time" and click Next.



Select Install the software automatically (Recommended) and click Next. Hardware Wizard will search for the drivers and locate them in \System32\drivers directory. Once that is done, the following screen will appear.



Depending on your system setup you may see a warning message.



Click <Continue Anyway> and the installation will proceed.



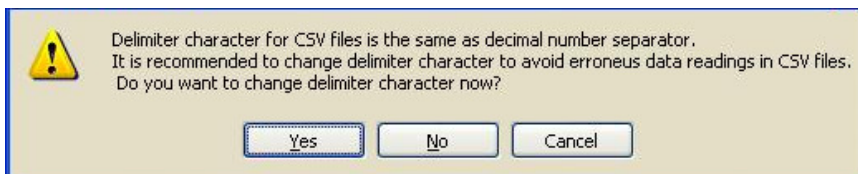
Once everything is completed, click Finish.

This procedure is required only if connecting an ErgoTouch or ErgoTouch Pro device for the first time. For all subsequent devices Windows® operating system will automatically locate necessary drivers and install them without requiring user input.

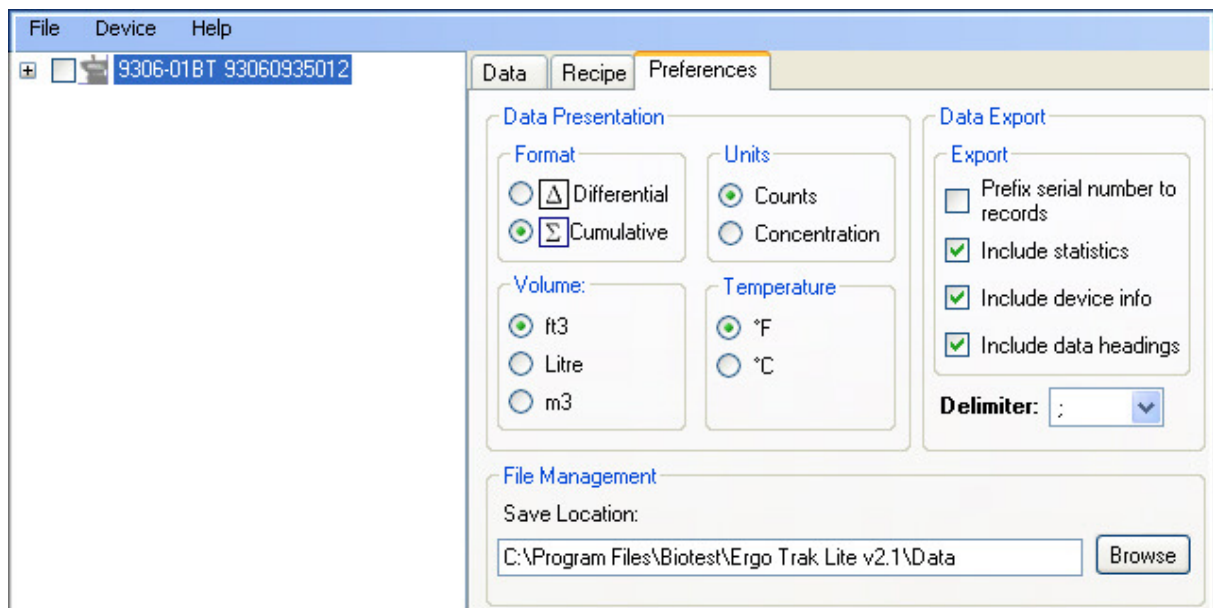
## ERGOTRAK Lite Software Configuration

It is recommended that ERGOTRAK Lite software be configured prior to connecting to the ErgoTouch or ErgoTouch Pro Airborne Particle Counter. The software can be configured at any time, but configuring it before connecting any devices will ensure smoother operation. ErgoTrak Lite software can be started either by clicking on its icon on the desktop or by selecting it through the Start menu. Shortcut to the application is located at **Start->All Programs->Biotest->ERGOTRAK Lite v2.0**.

If ERGOTRAK Lite software detects that the data delimiter for comma-separated values file is the same as the decimal point symbol on your machine, the following warning will be presented:



Clicking <Yes> will bring you to the [preferences](#) page. If you click <No> or <Cancel>, you can select preferences page by clicking on the Preferences tab inside main application window:



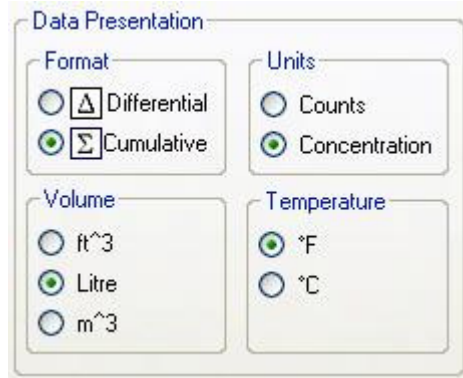
The main parameters related to the ErgoTrak Lite software application are configured on the Preferences Page.

**Note:** All settings on Preferences page are for ERGOTRAK Lite data storage and presentation only. The ErgoTouch or ErgoTouch Pro Airborne Particle Counter device configuration is not changed.

## Data Presentation

This section allows you to select specific parameters for displaying reports on data page.

Option	Description
Format	Is used to specify whether columns containing number of particles for any given channel are displayed as differential or cumulative values.
Units	This subsection specifies if data is displayed as the total number of particle counts during sampling period or as the particle concentration (Particle Counts/Sampled Volume of Air). When concentration is selected, the units of volume are determined based on the selection made in Volume subsection.
Volume	Allows you to select which units to use for concentration calculations.
Temperature	Specifies temperature readings are displayed in units of °F or °C. This is only applicable to the Airborne Particle Counter which has external temperature probe capability with the probe installed.



These settings can be changed at any point when the software is operating, and the displayed reports automatically refresh calculated values to reflect new changes.

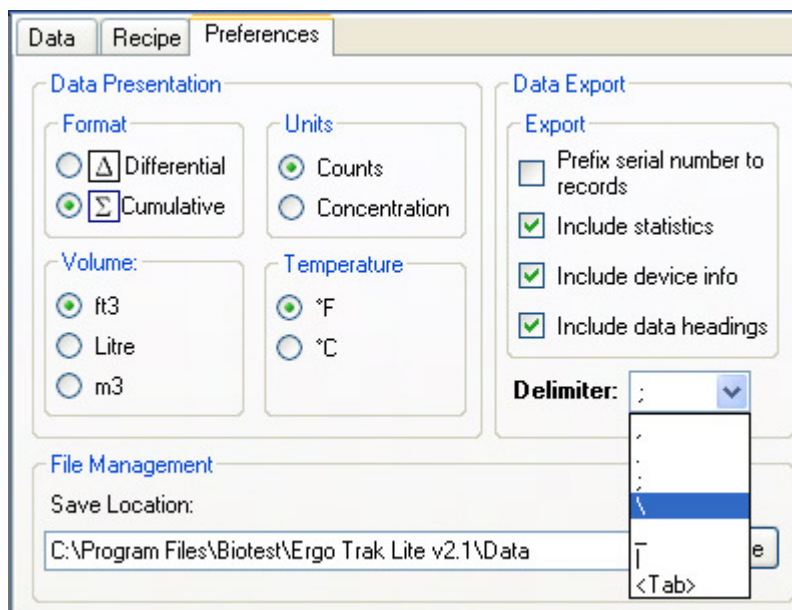
## Data Export

In addition to importing data from ErgoTouch or ErgoTouch Pro Airborne Particle Counters, ERGOTRAK Lite software allows you to select additional data which can be contained in the saved export file:



Option	Description
Prefix serial number to records	If selected, each data record will be prefixed with the serial number of the device from which it was retrieved.
Include statistics	Includes basic statistics such as minimum, maximum, average, standard deviation for all records being exported.
Include device info	Includes device information and provides information that contains data about device and units used in calculations.
Include data headings	Provides headings for data records.

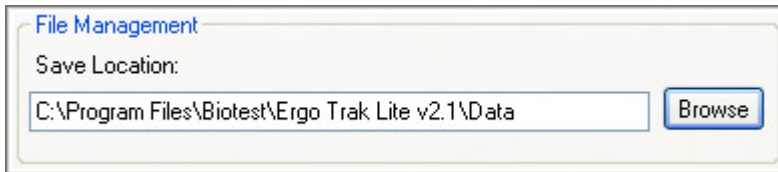
Option	Description
Delimiter	Specifies which character should be used to delimit data in the comma separated value file. It is crucial that this character differs from the character used to display decimal point in numbers in order to avoid data misalignment.





## ***File Management***

Save location is a default place where data files should be saved. Every time you choose to save information to a file, the Save File dialog is still presented allowing you to choose a different location if necessary.



All preference settings are automatically saved once ERGOTRAK Lite software is closed and will be recalled next time ERGOTRAK Lite software is started. The settings are saved on the Windows<sup>®</sup> user level. This allows a single installation of ERGOTRAK Lite software for all users on a single computer while still allowing a user to save individual preferences.

## Device Connection

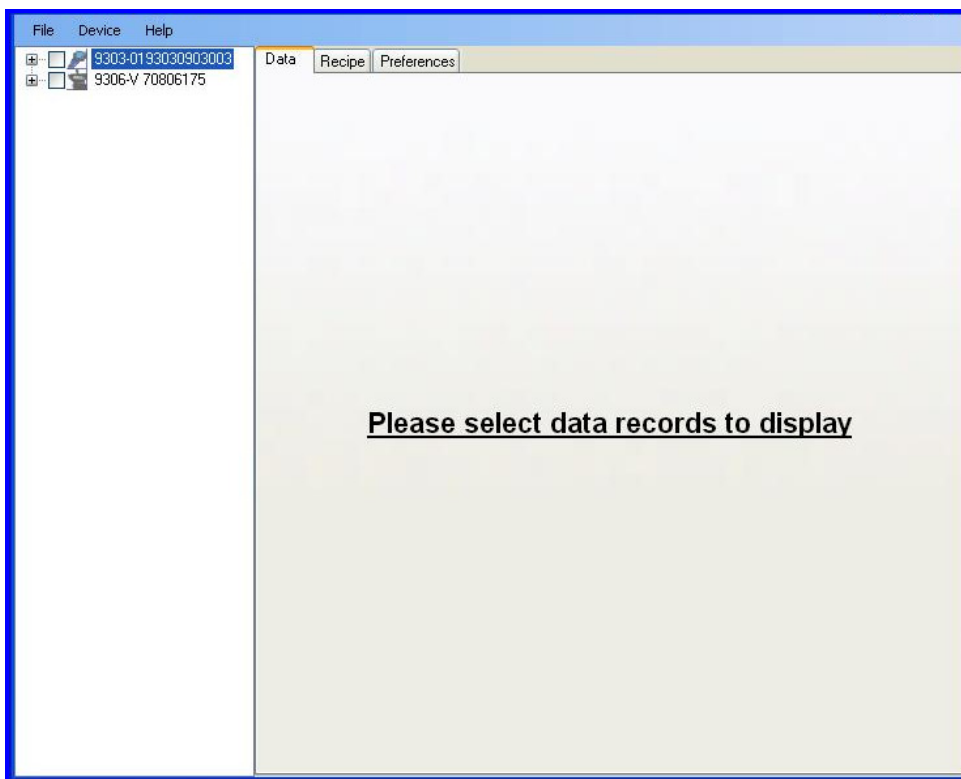
ERGOTRAK Lite software is capable of connecting multiple ErgoTouch or ErgoTouch Pro Airborne Particle Counters. It will recognize device type and will download data accordingly.

The ERGOTRAK Lite application automatically detects connected devices and initiates records download as well as download of location names and recipes (if supported by the specific ErgoTouch or ErgoTouch Pro Airborne Particle Counters).

### Note:

Although ERGOTRAK Lite software searches for new devices every 5 seconds, it is recommended that devices are fully powered on before connecting to the computer. This will ensure faster response time and fewer connection errors.

Once devices are detected, they will be displayed on left application pane:



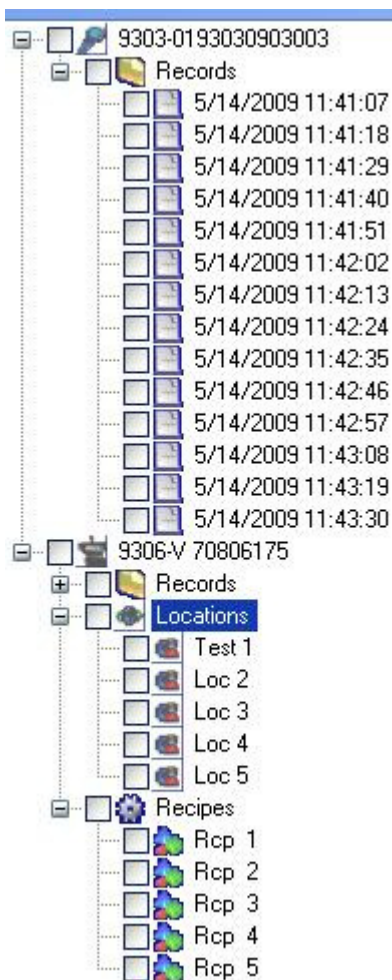


## Working with Connected Devices

Clicking on the + sign next to the ErgoTouch or ErgoTouch Pro Airborne Particle Counter icon expands the information supported by that model of ErgoTouch or ErgoTouch Pro particle counter potentially including records, locations, and recipes.

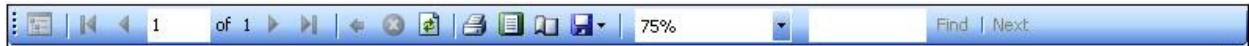


Expanding “Records”, “Locations”, or “Recipes” in same fashion allows access to corresponding data.





The report viewer tab page allows some basic operations such as printing, moving between pages, etc. Those options are accessible via the toolbar above the report.



## ***Device Related Application Menus***

All allowable operations for a given ErgoTouch or ErgoTouch Pro instrument are accessible via the right-click menu or by the **Device** menu at the top of application. Right-clicking on the device of interest or selecting the device by left-clicking and then selecting **Device** menu, potentially provides the following options (certain ErgoTouch or ErgoTouch Pro Airborne Particle Counters do not support all of these options.)

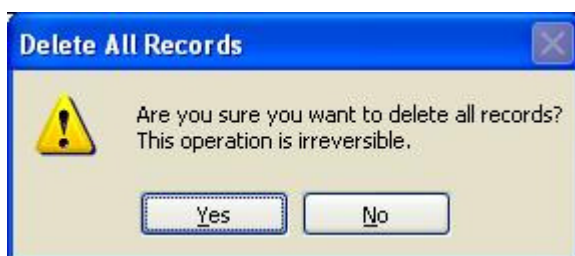


## ***General information***

This is the menu that provides access to all ERGOTRAK Lite software functionality for the specified device. If device does not support certain options, those options will be grayed out and inaccessible.

## ***Delete All Records***

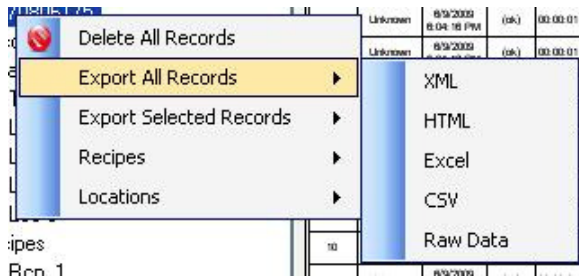
Immediately deletes all the records from the device. This operation is irreversible and you are prompted with the following warning to avoid selecting this item inadvertently.



Once you confirm decision by clicking **Yes** button, records are deleted on the device as well as from ERGOTRAK Lite software application. It is always recommended to save data before deleting it from the device.

## Export all Records

This allows you to export all the records from the device in the following formats: XML, HTML, Excel, CSV, and Raw Data. [Data Presentation](#) settings affect how the data from the records is saved and exported.



File Format	Description
XML (extensible Markup Language)	Saving data in this format allows for transfer between ERGOTRAK LITE software and other third party applications that need access to data without any formatting.
HTML	Creates a web page file that contains data in tabular format that is convenient for displaying with Web browsers.
Excel	This file saves data in Microsoft® Office XML format (not to be confused with regular XML) which can be opened by Microsoft® Excel® XP or newer. This file format allows for data formatting such as different fonts and cell background colors.
CSV	A comma separated value file that stores all data in plain text format delimited by the character selected under <a href="#">Delimiter</a> settings on Preferences tab. page.
Raw Data	This option allows you to save records for future ERGOTRAK Lite software use. Data is saved in binary format and can be opened through <b>File-&gt;Open Data File</b> menu. Only data <i>records</i> are saved if this option is selected. Recipes and locations have to be saved separately utilizing the corresponding menu selections. This is done in order to allow you to save only recipes or location in order to import them to other devices.

## Export Selected Records

Same functionality as “Export All Records” but will only export selected records instead of all the records from the device.

## Recipes

If the device selected supports recipes, this menu item allows you to perform certain manipulations on recipes that are loaded on the device.

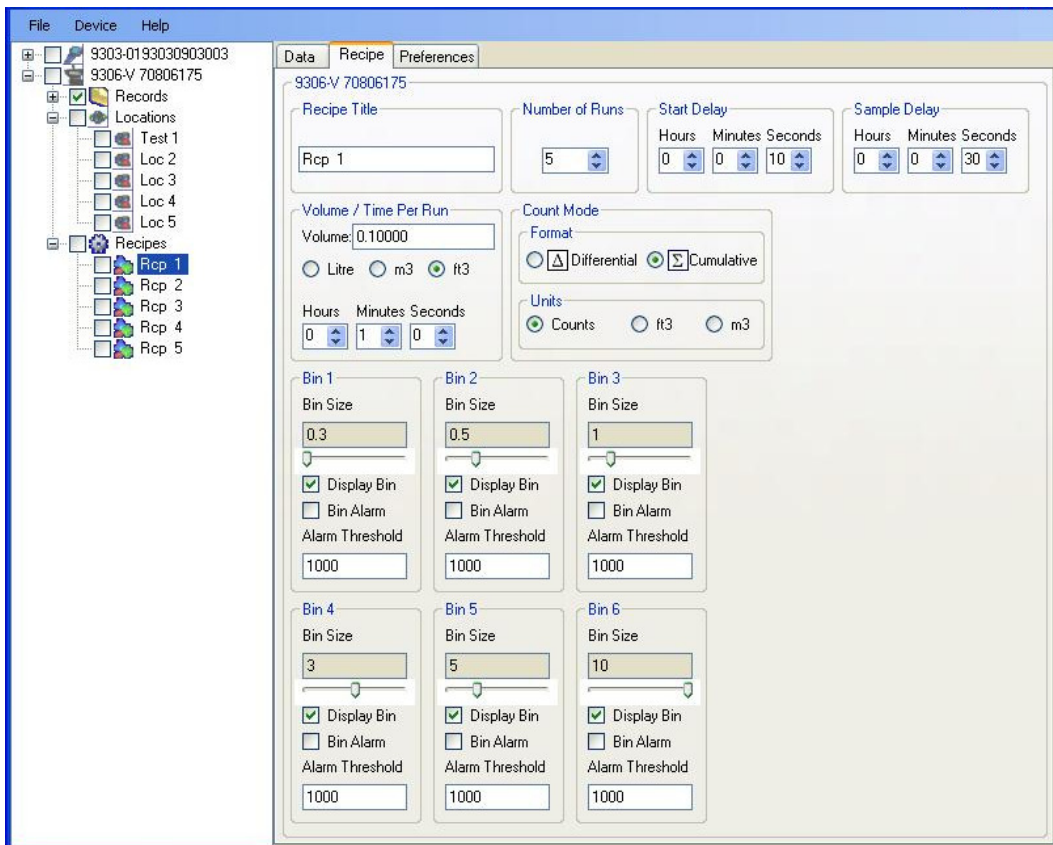


Options	Description
Export All	Allows you to export all the recipes to a binary file that can be opened by ERGOTRAK Lite software. This option is used for making backups of recipes on the device and enabling you to move recipes to different devices without the need to create them one by one.
Load from File	Loads user-specified recipe file that was created by using "Export All" option. Recipes will be added to the device in ERGOTRAK Lite software but will not be transferred to the device until you select <b>Upload to Device</b> option.
Upload to Device	Upload all the changes made to recipes to the device immediately.
Delete from Device	Deletes all the recipes from the device immediately.
New Recipe	Creates new default recipe.
Delete Recipe	Deletes selected recipe. <b>Note:</b> Only "Delete from Device" and "Upload to Device" operations are executed immediately, for all other operations, you have to select "Upload to Device" in order for changes to take effect.

If the connected device supports recipes, ERGOTRAK Lite software allows you to modify, create, delete and export recipes.



Selecting the recipe of interest in the left pane opens Recipe tab page in the right pane:

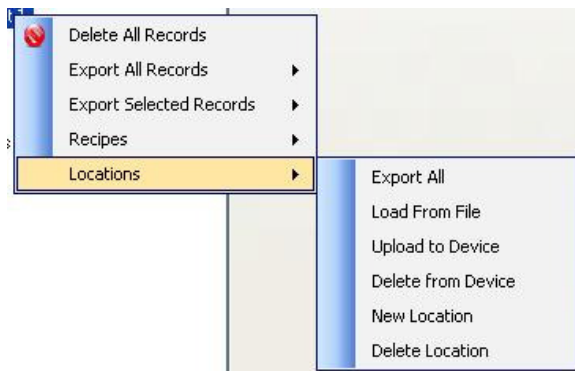


This page allows you to modify existing recipe's parameters.

Options	Description
Recipe Title	Used to change the name of recipe.
Number of Runs	The number of sample runs to be executed.
Start Delay	Amount of time to wait before starting taking samples.
Sample Delay	Time delay between sampling runs.
Volume/Time per Run	This setting allows you to set up the length of sampling time for each run. You can either set up runtime by entering the volume of air to be sampled or by choosing sampling time values.
Count Mode	Is used to set up device report display on the unit. It does not affect actual data stored in the record.
Bin (1...x)	Sets up bin boundary for each channel the instrument supports. If instrument does not support variable binning, this area is grayed out and unavailable. This menu option also enables setting of alarm thresholds, enable/disable alarms, and enable or disable particular bin from displaying in the report on the device. These settings do not affect values in downloaded records. The data from all channels is stored in the data record, even if the channel is not displayed on the ErgoTouch or ErgoTouch Pro screen.

## Locations

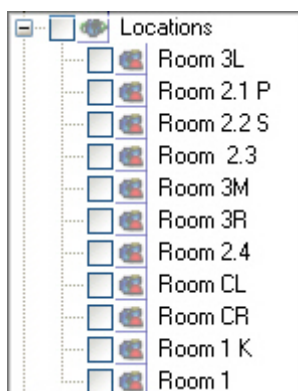
If the device selected supports location, naming this item allows you to manipulate downloaded locations.



You can save existing labels, create new ones, or rename existing ones. All the changes except selecting “Delete from Device” menu option are not applied to the device until you select **Upload to Device** from the right-click menu under Locations or from the Device menu at the top of application’s window.

<i>Options</i>	<i>Description</i>
Export All	Allows you to export all location labels to a binary file that can be opened by ErgoTrak Lite software. This option is used for making backups of location labels on the device and enabling you to move location labels to different devices without the need to create them one by one.
Load from File	Loads user-specified location labels file that was created by using “Export All” option. Locations will be added to the device in ErgoTrak Lite software but will not be transferred to the device until you select Upload to Device option.
Upload to Device	Upload all the changes made to location labels to the device immediately.
Delete from Device	Deletes all the location labels from the device immediately.
New Location	Creates new location label.
Delete Location	Deletes selected location label.

If the device connected supports location labels, they will be displayed under the device icon on the left side pane.



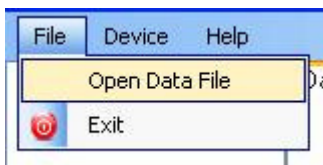
### Note:

In order to rename existing location, left-click on the location label of interest and then left-click on it again. This will change the label to edit mode. You can now type in a new name:

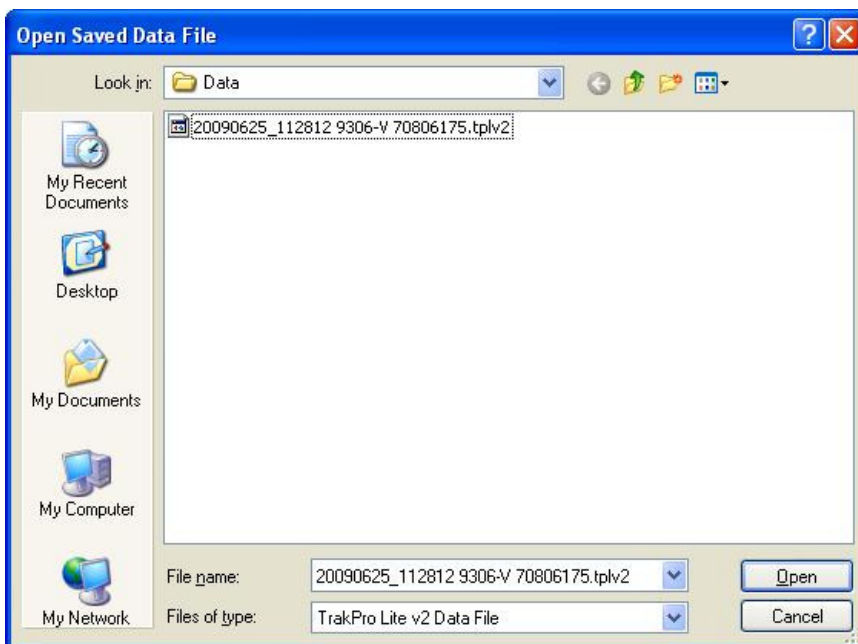


### File Menu

This menu enables you to load existing ERGOTRAK Lite software records file and exit the application.



Selecting **Open Data File** presents you with a dialog window to choose which file to open.



Once the selected file is loaded, ERGOTRAK Lite software will display device information of the device form which records have been downloaded initially in the left pane. This option is only for records' data files. Recipe and Location data files can only be opened through the right-click menu or Device menu when the device that supports them is selected in left pane.

Exit allows you to exit the application. If there are any changes that have not been saved, you will be prompted to update devices with the changes.



## ***Device Menu***

This menu is the same as right-click menu.

## ***Help Menu***

Allows you to display this help file and information about the software.

## ***Troubleshooting***

If connection is broken or device stops responding during data transfer, the ERGOTRAK Lite software will display only data that has been received up to that point. The ErgoTouch will not generate an application error. However, the ErgoTouch Pro will display the application error. This is due to the nature of communication between devices and ERGOTRAK Lite software.

***Solution:*** Power down the device and then turn it back on. Close the application and start it again.

If you have any difficulty setting up or have any technical or application questions about this system, contact us at the address provided in Chapter 7.

## Chapter 5 Maintenance

### Note

There are no user-serviceable parts inside this instrument. Opening the instrument case may void the warranty. Biotest recommends that you return the APC ERGOTOUCH Airborne Particle Counter to the factory for any required maintenance or service not described in this manual.

### Maintenance Schedule

Biotest recommends annual factory cleaning and calibration for the APC ERGOTOUCH Airborne Particle Counter. See [Chapter 7, "Contacting Customer Service"](#) for service/calibration.

### Recommended Field Maintenance Schedule

Item	Frequency
Daily zero check	Daily (or before each use).
Factory cleaning and calibration	Annually
Cleaning the instrument enclosure	As needed

### Daily Zero Check

The daily zero check ensures that the instrument is properly assembled and free from leaks, residual particles and electronic noise. Please see Chapter 2, "[Getting Started](#)" for detailed instructions on performing the zero check.

### Cleaning the Instrument Enclosure

To clean the enclosure, dampen a lint-free cloth and gently wipe the surface until surface contamination is removed.

## Chapter 6 Troubleshooting

Symptom	Possible Cause	Corrective Action
Counts are too low	<ul style="list-style-type: none"> <li>Instrument is being operated outside temperature or relative humidity specifications.</li> <li>Internal parts have been damaged because instrument was stored at a temperature greater than 122 °F (50 °C).</li> <li>Instrument has contamination on the optics due to condensation or excessive loading</li> <li>Laser or pump control is damaged</li> <li>Unit is due for calibration</li> </ul>	<ul style="list-style-type: none"> <li>Operate instrument within specifications</li> <li>Return to factory for service</li> <li>Return to factory for service</li> <li>Return to factory for service</li> <li>Return to factory for service</li> </ul>
Instrument does not turn on	<ul style="list-style-type: none"> <li>On/Off switch is not being pressed appropriately</li> <li>Battery is dead</li> <li>AC cord is not plugged into unit</li> </ul>	<ul style="list-style-type: none"> <li>Press and hold On/Off switch for one second</li> <li>Recharge battery or connect to AC power</li> <li>Connect AC cord</li> </ul>
Instrument does not meet zero count specification ( $\leq 1$ particle/5 mins)	<ul style="list-style-type: none"> <li>HEPA filter is not connected properly and room air is leaking into the HEPA filter assembly</li> <li>Residual particles from previous samples are shedding off internal parts and into the optics</li> <li>An internal component has been damaged due to operation outside of temperature specifications or one or more excessive bumps or jolts, and electronic noise is inducing false counts</li> <li>A leak has developed in the aerosol flow path</li> <li>Internal optics have become dirty</li> </ul>	<ul style="list-style-type: none"> <li>Check that the HEPA filter has been tightly connected to the inlet. Check that rubber o-ring (black) on the inlet is in place</li> <li>Purge instrument by running the instrument for 10–15 minutes before attempting zero count test</li> <li>Return to factory for service</li> <li>Return to factory for service</li> <li>Return to factory for service</li> </ul>

Symptom	Possible Cause	Corrective Action
Battery does not charge	<ul style="list-style-type: none"> <li>• The unit must be turned on but not in sampling mode for the battery to charge</li> </ul>	<ul style="list-style-type: none"> <li>• Turn on unit</li> </ul>
Low Battery Indicator	<ul style="list-style-type: none"> <li>• Low Battery charge</li> </ul>	<ul style="list-style-type: none"> <li>• Recharge the battery or connect AC power</li> </ul>

## Chapter 7

### **Contacting Customer Service**

This chapter gives directions for contacting people at Biotest AG for technical information and directions for returning the APC ERGO TOUCH Airborne Particle Counter for service.

#### **Technical Contacts**

- If you have any difficulty setting up or operating the APC ERGO TOUCH, or if you have technical or application questions about this system, contact an applications engineer at Biotest AG, +49 (0) 6221 726 5130 or e-mail [hycon@biotest.de](mailto:hycon@biotest.de).
- If the APC ERGO TOUCH, does not operate properly, or if you are returning the instrument for service, contact Biotest Customer Service at +49 (0) 6103 801 496 or email [mail@biotest.de](mailto:mail@biotest.de).
- Call your local Biotest Subsidiary or Representative.

#### **Returning the APC ERGO TOUCH Airborne Particle Counter for Service**

First contact your local Biotest representative to make arrangements. If you don't know or don't have a Biotest representative, you can contact Biotest directly:

Visit our website at <http://www.biotest.com> or call Biotest Technical Support at +49 (0) 6221 726 5130 or Biotest Customer Service at +49 (0) 6103 801 496 for specific return instructions. Customer Service will need this information when you call:

- The instrument model number
- The instrument serial number
- A purchase order number (unless under warranty)
- A billing address
- A shipping address

All instruments must be properly decontaminated prior to packing and return to Biotest. Use the original packing material to return the instrument to Biotest. If you no longer have the original packing material, seal off any ports to prevent debris from entering the instrument and ensure that the display and any connectors on the instrument as well as the front and back panels are protected.

## APPENDIX A

### Specifications

All specifications meet or exceed JIS B 9921: 1997. They are subject to change without notice.

<b>Size Range</b>	0.3–10 µm
<b>Channel Sizes</b>	0.3 and 5.0 µm fixed, 0.5, 1.0, 2.0 or 2.5 µm user-selectable middle channel
<b>Counting Efficiency</b>	50 % @ 0.3 µm; 100% for particles > 0.45 µm (per JIS)
<b>Concentration Limits</b>	2,000,000 particles/ft <sup>3</sup> @ 5 % coincidence loss
<b>Light Source</b>	Laser diode
<b>Zero Count Level</b>	≤ 1 count / 5 minutes (< 2 particles / ft <sup>3</sup> ) Meets JIS B 9921:1997
<b>Flow Rate</b>	0.1 CFM (2.83 L/min)
<b>Calibration</b>	NIST traceable
<b>Sample Probe/Tubing</b>	Isokinetic sampling probe
<b>Sampling Time</b>	1 second to 99 min 59 sec
<b>Sampling Frequency</b>	1 to 999 cycles or continuous
<b>Sample Output</b>	Internal HEPA filter
<b>Vacuum Source</b>	Internal dual diaphragm pump
<b>Communication Mode</b>	USB serial output
<b>Data Storage</b>	1,500 sample records
<b>Alarm</b>	Audible alarm on counts, low battery and sensor failure
<b>Display</b>	9.1 cm (3.6 in) 160 x 160 monochrome backlit LCD
<b>Languages</b>	English
<b>External Surface</b>	High impact injection molded plastic
<b>Power</b>	110 to 240 VAC 50 to 60 Hz Universal in-line power supply with country-specific plug adapters
<b>Battery</b>	Removable Li-Ion
<b>Battery Life</b>	Up to 2 hours of continuous use
<b>Recharge Time</b>	< 3 hours
<b>Dimensions (L x W x H)</b>	23.0 x 11.0 x 6.2 cm (9.1 x 6.3 x 2.4 in)
<b>Weight</b>	0.58 kg (1.3 lb) with battery
<b>Warranty</b>	12 months
<b>Operating Conditions</b>	5 °C to 35 °C; 20 % to 95 % non-condensing relative humidity
<b>Storage Conditions</b>	0 °C to 50 °C; Up to 98 % non-condensing relative humidity
<b>Included Accessories</b>	Power supply, battery, isokinetic inlet, purge filter, ERGOTRAK LITE data download software, operation manual on CD, USB computer cable, calibration certificate, and Quick Start Guide.
<b>Optional Accessories</b>	Stainless steel isokinetic inlet and probe, tubing, barbed inlet fitting and carrying case