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Introduction

This operating guide describes how to use the Model CLJ-H603 Particle Counter and provides complete operating, application information for the particle counter. The model CLJ- H603 counter has 0.3 micron sensitivity and six particle size channels (0.3, 0.5, 1, 2, 3, 5 microns), the data will be showed on the screen and can be saved according to the different room numbers, and it also can be printed out by an optional printer or downloaded to PC.

Accessories

Isokinetic Probe (provided with counter)—used to connect to the inlet.

Purge Filter (provided with counter)—used for self clean; keeps external particles from contaminating sensor while purging sensor of internal particles.

Carrying Case—protects the counter during shipment and storage.

Software CD —used to download the data to PC

RS232 cable— used to connect the particle to computer

Unpacking and Initial Inspection

The particle counter is thoroughly inspected and tested at the factory and is ready for use upon receipt. When received, inspect the shipping carton for damage. If the carton is damaged, notify the carrier and save the carton for carrier inspection. Inspect the counter for broken parts, scratches, dents, or other damage. If the carton is not damaged, keep for reshipment. For example, you may want to reuse the carton when you return the counter for the annual factory calibration.

Safety information:

A **Warning** identifies a condition or action that poses hazard(s) to the user; a

Caution identifies a condition or action that may damage the Particle Counter or the equipment under test. Read the entire Users Manual before using the Particle Counter.

Warning

To avoid electric shock, body harm or damage to the particle counter, please follow these safety guidelines:

- Use the Particle Counter only as described in the Users manual, otherwise the protection by the instrument may be impaired;
- Do not use the Particle Counter in explosive atmospheres
- The Particle Counter contains no user serviceable parts. Do not open the instrument. For service and battery replacement, the instrument must be sent to Honri Airclean Tech Company.
- Have the Particle Counter serviced only by qualified service personnel.
- Inspect the particle counter before use, don't use it if appears damaged.
- Always use the AC adapter/charger and connector (supplied with the Particle Counter) appropriate for the voltage and outlet of the country or location in which you are working.

Caution

To avoid possible damage to the Particle Counter:

- Avoid using the Particle Counter in an excessively dirty or dusty atmosphere. Excessive particle intake can damage the Particle Counter.
- Remove the Probe Cover (the black cap) before use. Not doing so can damage the Particle Counter.
- Do not use a wrench to connect or disconnect the Probe or intake nozzle. The connection should be finger tight.
- If using the tilt stand, hold the instrument while using the keypad.

Quick Start

The Particle Counter may be used directly out of the box. To immediately use the Particle Counter:

1. Read “Safety Information”.
2. Remove the inlet Cover (the stainless steel cap)
3. Set the power switch to “on” position
4. Press the **ENTER** twice to show the “MEASURE” screen.
5. Press **MODE** to convert into manual mode, the measurement mode is displayed at the left below corner of the screen.
6. Press **Run/Stop**. Particle counting will then begin and the number of particles counted will be listed in a column opposite the size column.
7. Press **Run/Stop** again to stop counting. The total number of particles counted during the time will be displayed.

Be sure to read the entire Users Manual for more detailed information

Warning

Do not attempt to sample reactive gases (such as hydrogen or oxygen) with the particle counter. Reactive gases create an explosion hazard in the counter. Contact the factory for more information.

Exposure to infrared radiation may cause eye injury. Do not look into counter inlet tube while counter is on.

Function and Editor Key Definitions

The following keys either control functions of the counter (run/stop, print, etc.) or are used to edit the various programming functions available (locations, hold time, etc.).



Used to select the different functions and the different parameters



Used to change the parameters

Enter	Saves to memory the new setup data; confirm the functions, which you have selected.
Run/Stop	Starts the count cycle and stops the count cycle.
ON/OFF	Turn on/off the screen for saving power
Mode	Switches the count mode between Auto mode and Manual mode

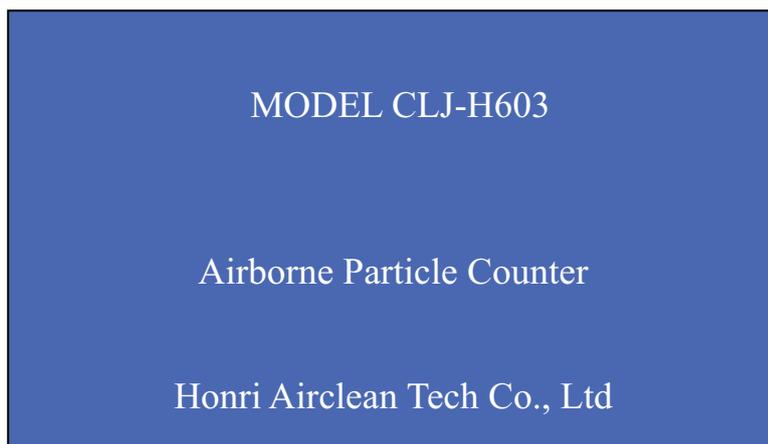
Base

On the base of the Particle Counter are the connection ports for the RS-232 Modular Cable (I/O Port) . The Tripod Mount is also located on the base

LCD Screens

The LCD Display shows several different screens and menus. Navigate through each using the keypad. The following sections explain the different screens used by the Particle Counter.

Power-On Screen (Welcome Screen)



Setup screen

SETUP				
Date: YYYY—MM-DD	Time: HH;MM:SS			
Period: xx min	Hold: xx sec			
LOCs: xx	CYCs: xx			
Conv: xx	Alarm: x			
<input checked="" type="checkbox"/> 0.3um	<input checked="" type="checkbox"/> 0.5um	<input checked="" type="checkbox"/> 1.0um	REVIEW	
<input checked="" type="checkbox"/> 2.0um	<input checked="" type="checkbox"/> 3.0um	<input checked="" type="checkbox"/> 5.0um	MEASURE	

This screen shown above provides the followed information:

- a) Date the current date
- b) Time the current time
- c) Period length of time the test lasted each cycle
- d) Hold length of time holding between cycles
- e) LOCs Total number of locations need to be measured in
 one clean room
- f) CYCs how many cycles will be taken every location
- g) Conv unit converted between M³ and Ft³ or no
 conversion
- h) Alarm setup the alarm level from 100 to 100,000

- i) Selection of channels user want to print out

Measure(Real-time data) screen

Measure	2007-1-26	15:30:34	
	Room: 01	Loc: 01	Cyc: 01
0.3 um		0	
0.5 um		0	
1.0 um		0	
2.0 um		0	
3.0 um		0	
5.0 um		0	REVIEW
Auto	Period: 01	LOCs: 03	SETUP

This screen provides following indications

- Date and time of the day
- real-time particle count information for each size range
- Current room number
- Current location number
- Current cycle number
- Period of sampling
- Total number of locations
- Count mode (Auto or Manual): the data will be saved according to different numbers, times and locations in Auto mode, and in manual mode, the data is used to observe only and will not be saved.

Data Review screen

Review	2007-1-26	15:30:34	
Data: 000	Room: 01	Loc: 00	Cyc: 00
0.3	um	0	
0.5	um	0	
1.0	um	0	
2.0	um	0	
3.0	um	0	
5.0	um	0	MEASURE
UCL	Print	Erase	SETUP

This screen provides following indications:

- **Review: xxx** room number that have been tested and saved
- **Room: xxx** to choose the inquired room number.
- **Loc: xxx** to choose the inquired location
- **Cyc: xxx** the tested date and time of current data
- **UCL** to calculate the mean value and 95% upper confidence limit
- **Print** to print out the data selected when the counter is connected to a printer
- **Erase** to clean up the data that saved in the counter
- **MEASURE** to enter the test screen
- **SETUP** to enter the parameter setup screen.

Using the counter

Setting parameters

There are two ways to enter the “setup screen”: press any key after power on , or select **SETUP** function at “review screen” and “measure screen”, then press **ENTER** key to confirm.

Setting date and time

1. Enter “setup screen”
2. Press  or  to select “date: xxx” or the “time :xxx”
3. Press  or  to change the parameters
4. Press  to confirm

Setting period (means sampling time for each cycles, 1min—10min selectable)

1. Enter “setup screen”
2. Press  or  to select “period: xxx”
3. Press  or  to change the parameters
4. Press  to confirm

Setting hold time (means holding time between sampling cycles)

1. Enter “setup screen”
2. Press  or  to select “hold: xxx”
3. Press  or  to change the parameters
4. Press  to confirm

Setting locations (means how many locations you need to sample in one room)

1. Enter “setup screen”
2. Press  or  to select “LOCs: xxx”

3. Press  or  to change the parameters
4. Press  to confirm

Setting cycles (means how many cycles you need to sample each location)

1. Enter “setup screen”
2. Press  or  to select “CYCs: xxx”
3. Press  or  to change the parameters
4. Press  to confirm

Setting the unit (default unit is 0.1 ft³)

1. Enter “setup screen”
2. Press  or  to select “CONV: xxx”
3. Press  or  to change the parameters (NO, ft3, m3)
4. Press  to confirm

Setting the alarm level (only functional under manual mode)

1. Enter “setup screen”
2. Press  or  to select “Alarm: xxx”
3. Press  or  to change the alarm level
4. Press  to confirm

Setting the channels need to be printed out

1. Enter “setup screen”
2. Press  or  to select the particle channel
3. Press  or  to change the setting
4. Press  to confirm

MEASURE

There are two counting modes “AUTO” mode and “MANUAL” mode , it can be set on the “MEASURE” screen by press key and the setting will be displayed at the left below corner of the screen.

“Manual mode”

used to observe the cleanness of the clean room, the data measured will not be saved for UCL calculation.

1. Enter the “MEASURE” screen by select “measure” on other screen
2. Setting the counting mode to “MANUAL” mode
3. Press to start the counting , and the counting down time will be displayed on the screen
4. Press to stop counting

“Auto mode”

used to counting according to the number of locations and number of cycles you have set , and the data measured will be saved in memory and used for UCL calculation

1. Enter the “MEASURE” screen by select “measure” on other screen
 2. Setting the counting mode to “AUTO” mode
 3. Press key to start counting , the counter will stop counting automatically while the cycles measured reach the cycles you have set for each location, and the data are saved in the memory for the future calculation
- After you finish the measurements of all the locations in one clean room , if you start counting again ,the room number will increase by one automatically .

Data review

1. Enter the “REVIEW” screen by select “REVIEW” on other screen
2. Press or to select “room:xxx” or “loc:xxx” or

“cycle:xxx”

3. Press or to change the value , and the data saved will be displayed according to the room number , location number and cycle number.

UCL calculation

1. Enter the “REVIEW” screen
2. Select the room you want to do the UCL calculation
3. Press or to select “UCL”
4. Press to confirm , first the Mean value will be displayed , press again , the UCL value will be displayed

Print

Print data saved

1. Connect the counter with printer by the print cable, connect the power cord
2. Enter the “review” screen
3. Display the data you want
4. Press or to select “Print”
5. Press to confirm , data of the location displayed will be printed out

Data format :

INDEX: 1-1-2

room —location—cycle

DATE:07-3-24

TIME:9:45

PERIOD:1

VOLUME:2.83

sample volume 2.83L

2-1

0.5um 0

5.0um 0

2-2

0.5um 0

5.0um 0

Print results of UCL calculation

1. Connect the counter with printer by the print cable, connect the power cord
2. Enter the “review” screen
3. Display results of UCL calculation
4. Press or to select “Print”
5. Press to confirm , data will be printed out

Data format:

STATISTICS

INDEX:1-2-1

average value of 1st location

DATE: 07-3-24

TIME: 9:45

PERIOD:1

VOLUME:2.83

0.5um 1

5.0um 1

INDEX:1-2-2

average value of 2nd location

DATE: 07-3-24

TIME: 9:45

PERIOD:1

VOLUME:2.83

0.5um	4
5.0um	0

MEAN mean value of the room

0.5um	2
5.0um	0

95%UCL

0.5um	8
5.0um	0

Clear memory

1. Enter the “review” screen
2. Press or to select “Erase”
3. Press to confirm
4. Select “Yes”
5. Press again to confirm

Maintenance

The particle counter contains no user-serviceable parts. To avoid electronic shock, injury or damage to the particle counter, do not open the instrument. For service or replacement of battery, the instrument must be sent back to Honri Airclean Technology Co., Ltd.

Cleaning the case

Periodically wipe the case and holster with a damp cloth and mild detergent. To avoid damaging the Particle Counter, do not use abrasives or solvents to clean the case.

Charging the battery and using the AC adapter

Recharge the battery as soon as  appears on the display. The ac adapter is used to recharge the battery as well as power the Particle Counter. This feature allows the counter to be used while the battery is charging.

To connect the ac adapter/charger:

1. Plug the charger into the jack on the side of case
2. Plug the ac adapter into an ac outlet. While the LED indicator on the charger is red , it means the battery is in progress of charging , when the LED turns green , charging is finished. The Particle Counter will take 4-6 hours to fully charge.

Purging the particle counter sensor

To avoid possible damage to the Particle Counter, avoid using the Particle Counter in an excessively dirty or dusty atmosphere. Excessive particle intake can damage the Particle Counter.

To purge the Particle Counter sensor:

1. Screw the purge filter to the inlet
2. Operate the instrument under manual mode for approximately 15 minutes.
3. On the average, not more than one particle greater than 0.3 μm in five minutes or not more than one particle per 0.5 cubic foot should be apparent.

This purges the Particle Counter.

Once the unit is purged, resume normal use. Remove the purge filter

Connecting the particle counter to a PC

To connect the Particle Counter to a PC:

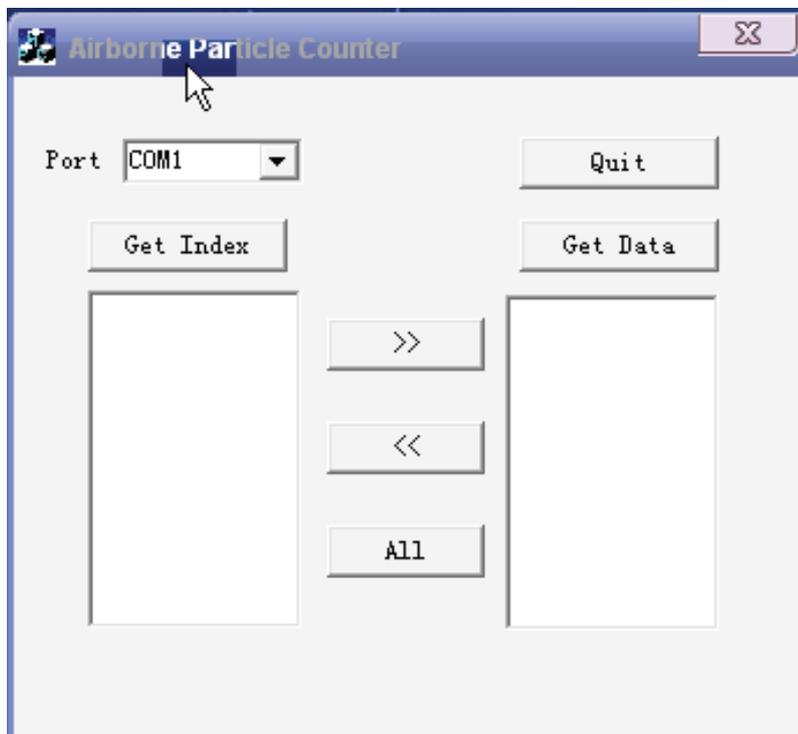
1. Connect the particle serial port to the serial communications port of the PC with the RS232 cable supplied with the instrument
2. Turn the Particle Counter on.
3. Enter the “review “screen

4. Access the utility software on the PC and run the program by clicking counter.exe.

If the software does not work properly, follow the instructions on the CD.

About software

The software allows user to download the data saved in the memory of particle counter. The software screen is as follow:



Port: used to select the serial port number

Get index: used to download the index the data saved in counter

Get buffer: used to download the data user selected and the data will be saved as hr*.txt