

Hg253 Portable Mercury Vapor Analyzer

Quick Reference

Main Menu



Figure 1 - Main Menu

The Hg253 software interface is divided into four sections, each accessible via touchable links on the main menu.

- 1.) **Sample** - Lets the user start, stop and monitor a sample. Also lets the user monitor the internal lamp.
- 2.) **Memory** - Lets the user store sample readings to an internal flash memory chip. These sample readings can then be uploaded to a personal computer.
- 3.) **Transfer** - Lets the user transfer stored sample readings to a personal computer using the PC Link application.
- 4.) **Options** - Lets the user set the date/time, display units, brightness, contrast, and alarm options.

Taking a Sample

- 1.) Turn the Hg253 on, and press the **sample** link to go to the *Sample* section of the interface.

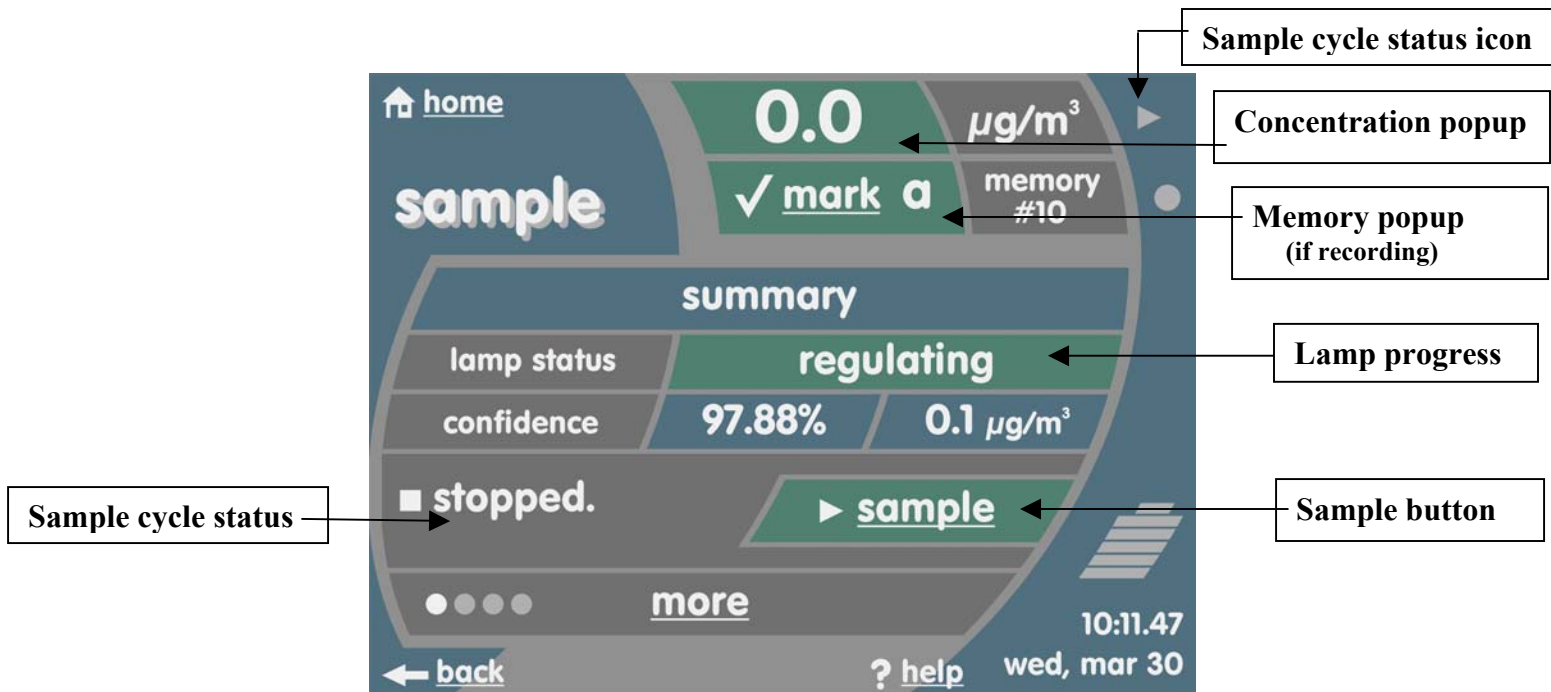


Figure 2 - Sample Section

- 2.) Monitor the white on green lamp progress bar next to the **lamp** link until the lamp is ready for sampling. The lamp will go through four stages:
 - a.) **Warmup** - 4 minutes. Warms up the lamp.
 - b.) **Profile** - 40 seconds. Calculates lamp data for use with lamp regulation.
 - c.) **Target** - Up to 4 minutes (but usually 1-2 minutes). Attempts to set the lamp to its operating level.
 - d.) **Regulating** - Lamp is operating normally and sampling is enabled.
- 3.) After the lamp reaches the regulation stage (approximately 5 - 6 minutes) the **sample** button will be enabled and its background color will turn green.
- 4.) Press the **sample** button to begin the sampling process. You will hear the pump turn on at this point and a popup window showing the current mercury concentration will appear at the top of the screen.

The Sampling Cycle

The sampling cycle is composed of the following stages, which are displayed on a status bar to the left of the **sample** button, near the lower left corner of the Sample screen.

- 1.) **Flushing** - 15 seconds. Internal plumbing lines are cleared of mercury.
- 2.) **Zeroing** - 5 seconds. Lamp correction data is calculated.
- 3.) **Resuming** - 15 seconds. Sample system is paused while internal plumbing lines are again filled with sample gas from source being probed.
- 4.) **Sampling** - 3 minutes. System is monitoring gas being probed.

This cycle is repeated until you press the **stop** button to stop the sampling process.

You should only attempt to sample a source during stage 4, the **Sampling** stage. No matter what screen you are in, you can tell whether you are in the **Sampling** stage by looking at the icon in the upper right corner of the screen. This icon will show a right-facing triangle (similar to the Play button on a VCR) if you are in the Sampling stage, and two vertical bars (similar to the Pause button on a VCR) if you are not in the sampling stage. Additionally, the background of the mercury concentration popup window will turn green if you are in the Sampling stage.

To repeat, you should only attempt to sample a source if the mercury concentration popup window has a green background and the icon in the upper right corner is a right-facing triangle.

Recording Sample Points

- 1.) With the sample system running, press **home** to return to the main menu, then press **memory** to go to the *Memory Summary* section of the interface.

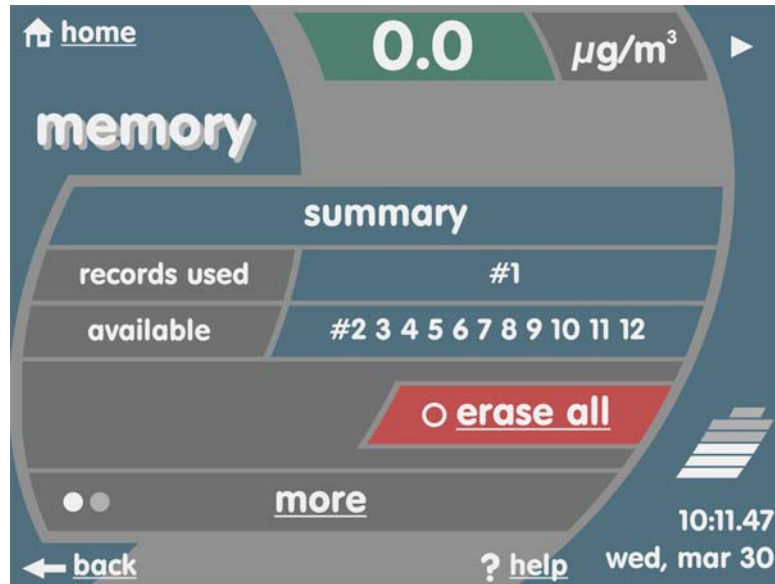


Figure 3 - Memory Summary Screen

- 2.) The Hg253 has twelve available memory slots that can hold up to two hours (7200 sample points) of data each. Press **more** to move to the memory slot selection screen.



Figure 4 - Memory Slot Selection Screen

- 3.) From the memory slot selection screen, press the **#1** link to move to the screen representing the first memory slot. If this slot contains data, you will need to press the **erase** link and follow the screens to erase the data. **Note:** The #1 slot is being used as an example. You can select any of the twelve available slots for recording your sample points.

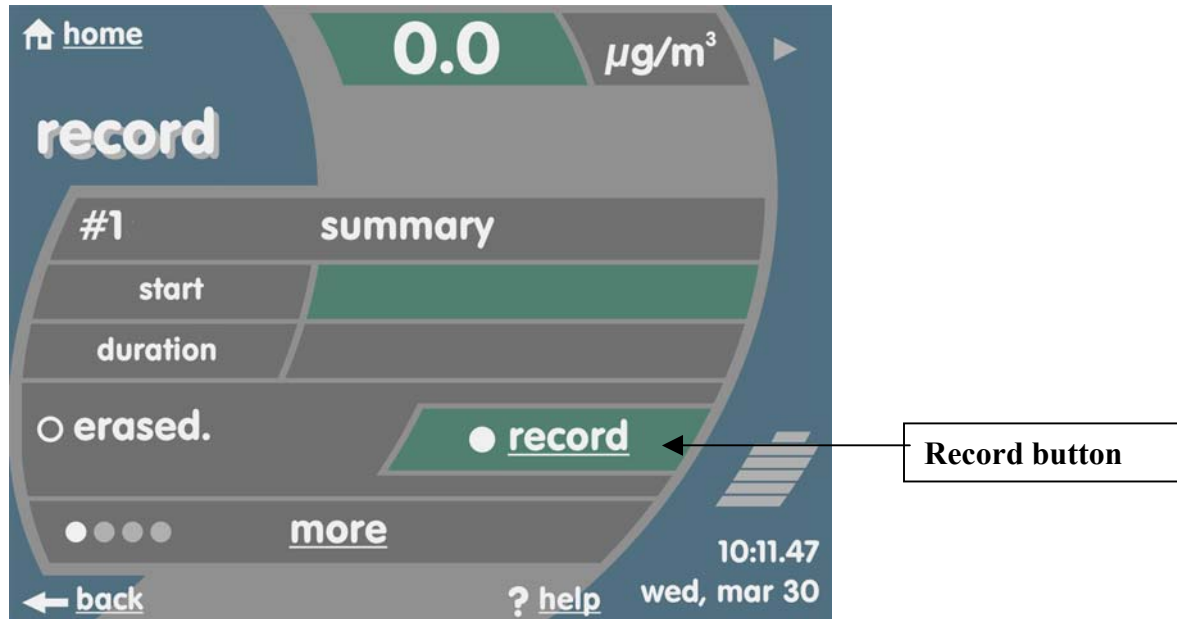


Figure 5 - Memory Slot Screen

- 4.) Press the **record** button to begin recording sample points.

After pressing the **record** button, you will notice a new popup window below the concentration popup sample window (see **Figure 1**). This popup window is used for marking data points of special interest. You can mark up to 26 points for each two hour sample recording.

For example, if you were probing 40 containers for mercury content and were particularly interested in three of them, you would press the **mark** link in the popup window each time you held the probe over one of the three. When a marked point is transferred to a personal computer, the last field in that line will contain its marked status. For example, the first marked line would read, *mark a*, the second, *mark b*, etc.

Transferring Samples To A Personal Computer

After recording, you can transfer all data samples to a personal computer using the *Hg253 PC Link* application software. This software should run under any version of Microsoft Windows™.

Connect a standard serial cable from the lower serial port on the Hg253 to a serial port on your personal computer.

On the Personal Computer:

- 1.) Run the *Hg253 PC Link* application.
- 2.) Click **next** to move past the first screen to the *Data Storage Format* screen.
- 3.) Click the **Single File** radio box to store all sample points into a single file, or the **Multiple Files** radio box to separate the data from each sample slot on the Hg253 into separate files. Click **next** to move to the *Select Location* screen.
- 4.) Enter the file name, or click **browse** to select an existing file, then click **next** to move to the next screen.
- 5.) When the connection with the Hg253 is detected, the software will automatically proceed to the transfer screen.

On the Hg253:

- 1.) After you finish recording, press **home** to return to the main menu, then press **transfer** to go to the *Transfer* section of the interface.

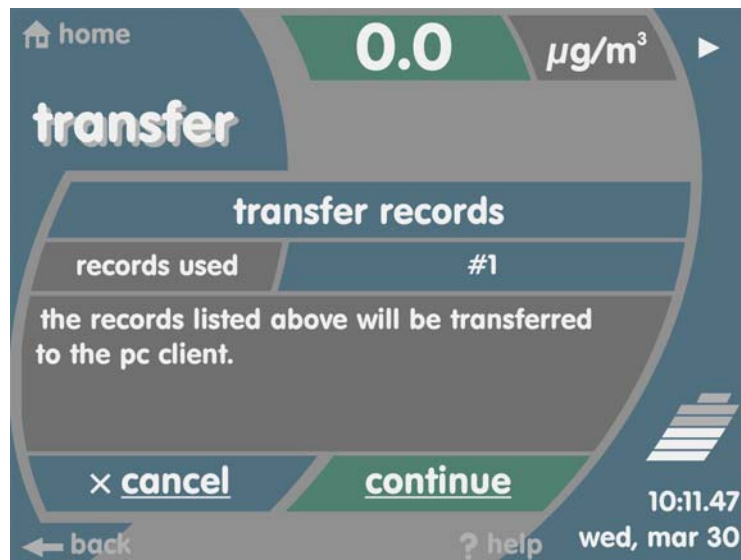


Figure 6 - Transfer Screen

- 2.) If the memory system is still recording you will be given the chance to stop the recording before continuing the record transfer. You cannot transfer data while the system is recording.
- 3.) Press **continue** to go to the *Transfer Records* screen. The Hg253 will begin searching for a connection to the *PC Link* application. After the connection is detected, the **transfer** button will automatically be pressed and the transfer of data will occur.

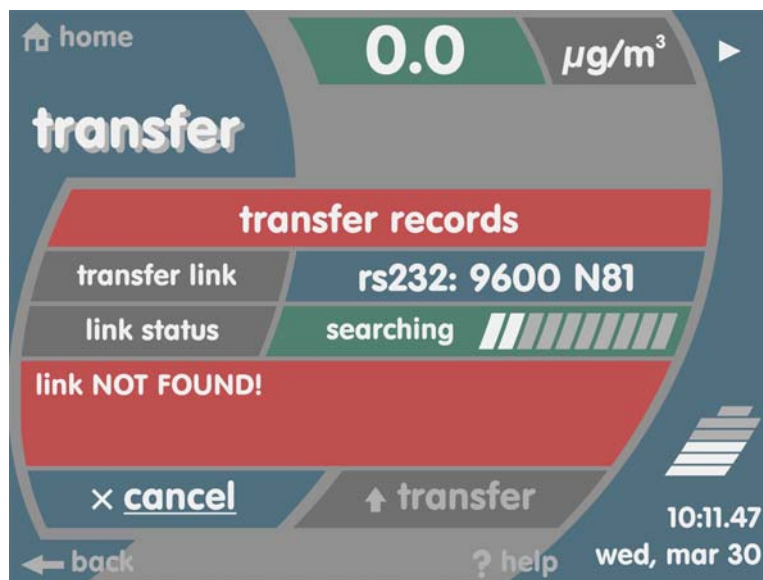


Figure 7 - Searching For PC Link

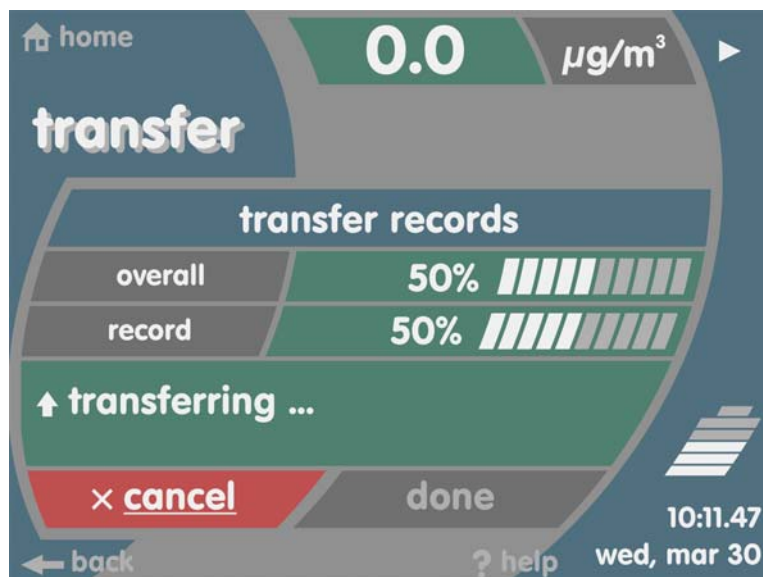


Figure 8 - Transfer In Progress

- 4.) After the data transfer is finished, press **done**.

Data transferred to the personal computer will be saved in comma-separated-values (csv) format. This format is readable by almost all common spreadsheet and database applications, including Microsoft Excel™.

Setting System Options

- 1.) Press **home** to return to the main menu, then press **options** to go to the *Options* section of the interface.
- 2.) From the first screen of the *Options* section you can change the brightness and/or contrast of the Hg253 display. Click **more** to move to the date/time set screen.
- 3.) From the second screen of the *Options* section you can set the date and/or time. Click **more** to move to the units screen.
- 4.) From the third screen of the *Options* section you can set the concentration units. The options are:
 - a.) **ug/m3** (micrograms per cubic meter).
 - b.) **mg/m3** (milligrams per cubic meter).
 - c.) **ppb** (parts per billion)

Click **more** to move to the alarm options screen.

- 5.) From the fourth screen of the *Options* section you can turn the alarm buzzer on or off, and select the concentration level above which the alarm will sound. If at any time during sampling the concentration goes above this level, an alarm will sound until the concentration drops below this level.

