FUTEK
ADVANCED SENSOR TECHNOLOGY, INC.

Quick Start Guide

test and measurement software

SENSIT

Sensor Solutions Source
Load · Torque · Pressure · Multi Component · Calibration · Instruments · Software

www.futek.com

Getting Help

TECHNICAL SUPPORT

For more SENSIT™ Test and Measurement Software support, please visit:
http://www.futek.com/sensit/support.aspx

SP1167-B

FUTEK reserves the right to modify its design and specifications without notice.
Please visit http://www.futek.com/salesterms for complete terms and conditions.

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Version update details can be found under the SENSIT release notes: **http://www.futek.com/files/pdf/SENSITReleaseNotes.pdf**

For more information of SENSIT's end user licensing agreement, visit: **http://www.futek.com/files/pdf/SENSITTerms&Conditions.pdf**

SENSIT Installation and Startup

The files needed to setup the SENSIT software can be found in the folder labeled, "Installation," and can be downloaded from our FUTEK website, or stored on the SENSIT USB flash drive provided with a SENSIT purchase. The installation will include the SENSIT software, .NET Framework, and the FTDI drivers.

To install SENSIT and supporting files:

1. In the installation folder double click on Setup.exe file which should be listed as an Application file.
2. Click install when prompted to install the .NET Framework.
3. Select Yes if prompted by the User Account Control to allow program to make changes to this computer.
4. Click install when prompted to install the FTDI Driver.
5. Select Yes if prompted by the User Account Control to allow program to make changes to this computer.
6. Choose to Extract when prompted for the FTDIChip CDM Drivers.
7. Select Next when prompted by the Device Driver Installation Wizard.
8. Choose Finish when prompted by the Device Driver Installation Wizard to close out the FTDI driver installation.
9. Select Next when prompted by the SENSIT Test and Measurement dialog window.
10. Select Next when prompted by the Welcome to InstallShield Wizard for SENSIT.
11. Choose Accept to the License Terms followed by Next when prompted by the License Agreement window.
12. Select Install when prompted by the Ready to Install dialog box.
13. Select Yes if prompted by the User Account Control to allow program to make changes to this computer.
14. Click Finish when the InstallationShield Wizard prompts at the completion of the SENSIT software.

A full installation guide can be found online at:
http://www.futek.com/files/pdf/QuickStartGuide/SENSITSoftwareGuide.pdf

View all SENSIT support videos:
http://www.futek.com/sensit/videos.aspx

Before starting the SENSIT software the FUTEK USB instrument should be connected to the computer USB port and powered on if necessary. Windows should see the device and a message that Windows has found new hardware may appear.

1. To start SENSIT click on the SENSIT desktop icon.
2. Upon first start up of SENSIT a dialog box will appear to enter the license key. The Key can be found on the SENSIT software box.
3. Note, without the license key the SENSIT software can be used in the 14 day trial version or the reading only version after the 14 day trial.
4. Upon start the SENSIT software will present a list of all found devices and offer the ability to choose which devices should be enabled or disabled for this session. Choose Load once the list is updated with the desired devices.
5. The SENSIT software will now load and will start in the Display Mode screen.

TIPS FOR INSTALLATION AND STARTUP:

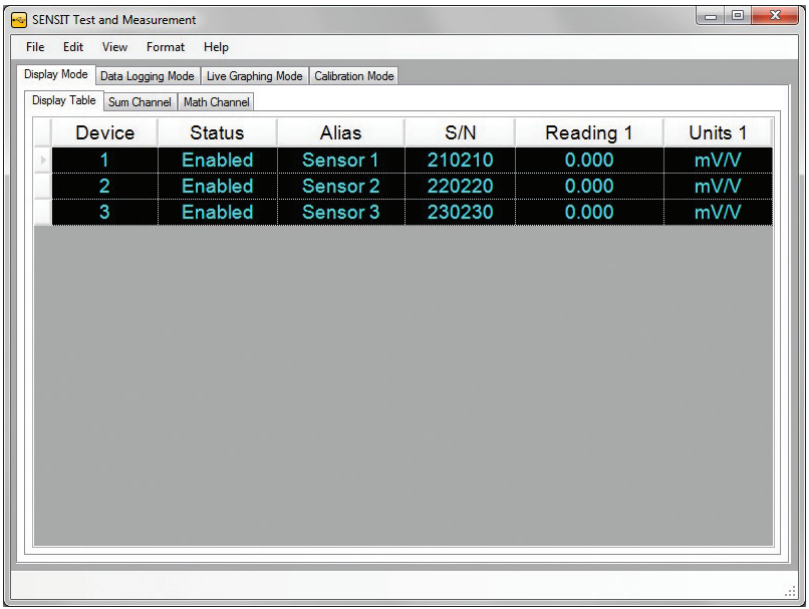
An installation video can be found online at:
http://www.futek.com/sensit/videos.aspx

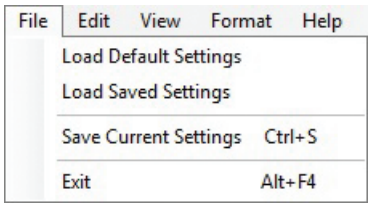
If installing from a downloaded version be sure to unzip the installation files to the local desktop.

Avoid installing to a remote location, or network location, to avoid possible network or network security issues.

If SENSIT does not see the USB instrument upon start up, confirm the USB instrument is seen by Windows in the control panel when the device is connected to the computer. If necessary a re-installation of the SENSIT software using the Setup.exe file will help insure the drivers are installed to the computer. Allowing Windows to update the driver for the device in the control panel can also help Windows see the device.

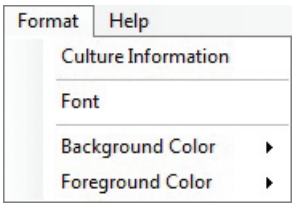
Display Mode

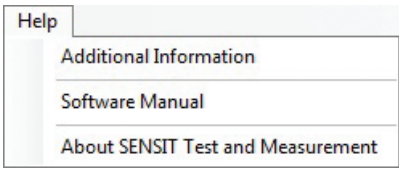


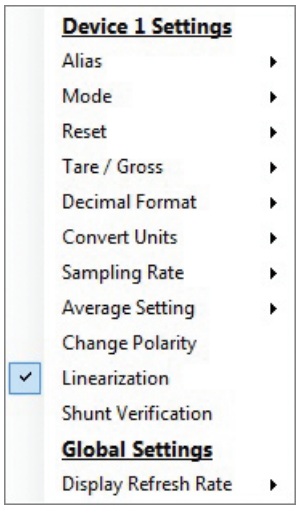


FILE
Save and load current settings or restore default settings.

The sampling rate and units can be changed through the Device Settings.





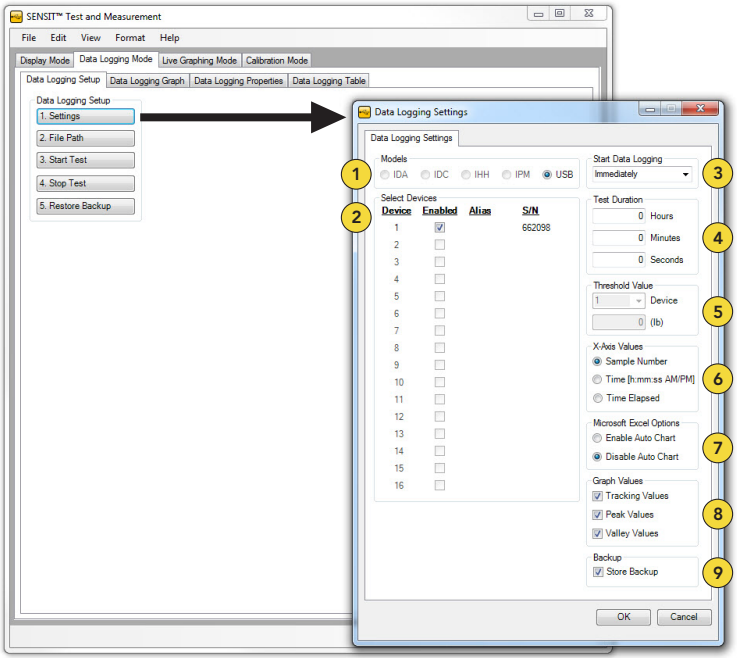


FORMAT
Options to change format of information in the user interface

HELP
Provides assistance information about SENSIT, and the USB device. Also, contains TEDS usage information.

DEVICE SETTINGS
Right click on the highlighted row of Display Mode to access Device Settings for the selected device row.

Data Logging



1. Choose the type of instrument if more than one type is connected.[1]

2. Choose the devices to include in the Data Logging Session.

3. Set the trigger to start immediately or above or below a threshold value.

4. Set the duration of the Data Logging session.

5. Set the value of the trigger from number 3.

6. Choose to have the information listed by sampling number, time, or time elapsed.

[1] Selectable options available will depend on chosen instrument model.

7 Choose to have a graph automatically drawn in Excel if the file format is Excel.

8 Enable or disable the graphing values to be displayed on the graph.

9 Check Store Backup to create a backup during a data logging to allow future recovery of any data logging information. User can restore after test is completed.

TIPS ON DATA LOGGING

Data Logging can be used to achieve up to the full sps rating of your USB device.

Sampling rate of USB device, set in Display Mode, is sampling rate used during Data Logging Test.

Data logging for IPM650 and IHH500 are done internal in the instrument and uploaded to SENSIT.

Right click on the resulting graph in SENSIT to access additional graphing options.

Hold left mouse button and drag on graph to zoom in.

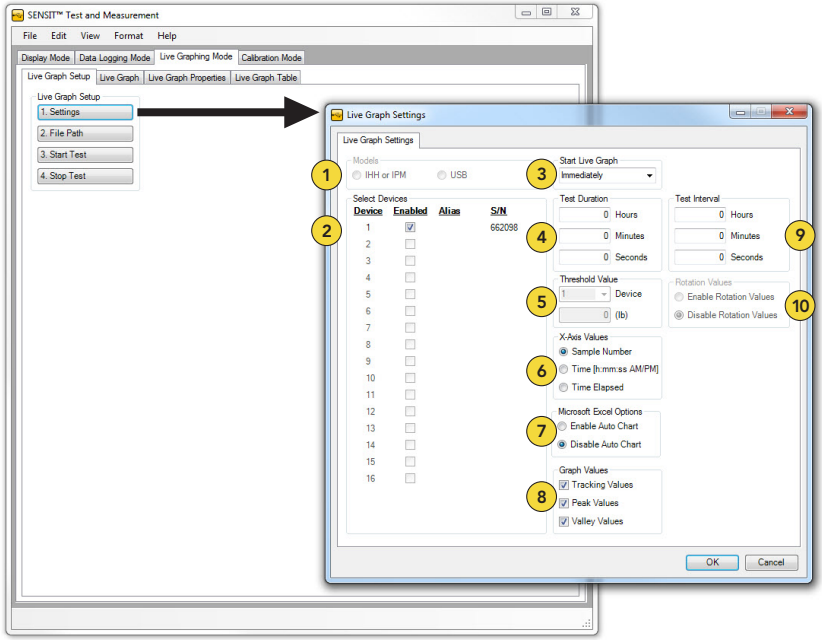
Properties shows serial numbers of devices enabled during test.

Data Logging table shows each sample captured.

Savable file formats:
.xlsx, .xls, .csv, and .txt.

A "Not Responding Message" may appear as the SENSIT screen is not updated during the test. The SENSIT screen will resume at the end of the specified test time with the results.

Live Graphing



IHH500 must be displaying encoder information to graph rotation values.

1. Choose the type of instrument if more than one type is connected.
2. Choose the devices to include in the Live Graphing Session.
3. Set the trigger to start immediately or above or below a threshold value.
4. Set the duration of the Live Graphing session.
5. Set the value of the trigger from number 3.
6. Choose to have the information listed by sampling number, time, or time elapsed.
7. Choose to have a graph automatically drawn in Excel if the file format is Excel.
8. Enable or disable the graphing values to be displayed on the graph.
9. Set how often a reading should be taken from the Device.
10. Choose to show encoder information if available.

TIPS ON LIVE GRAPHING

Right click on the resulting graph in SENSIT to access additional graphing options.

Hold left mouse button and drag on graph to zoom in.

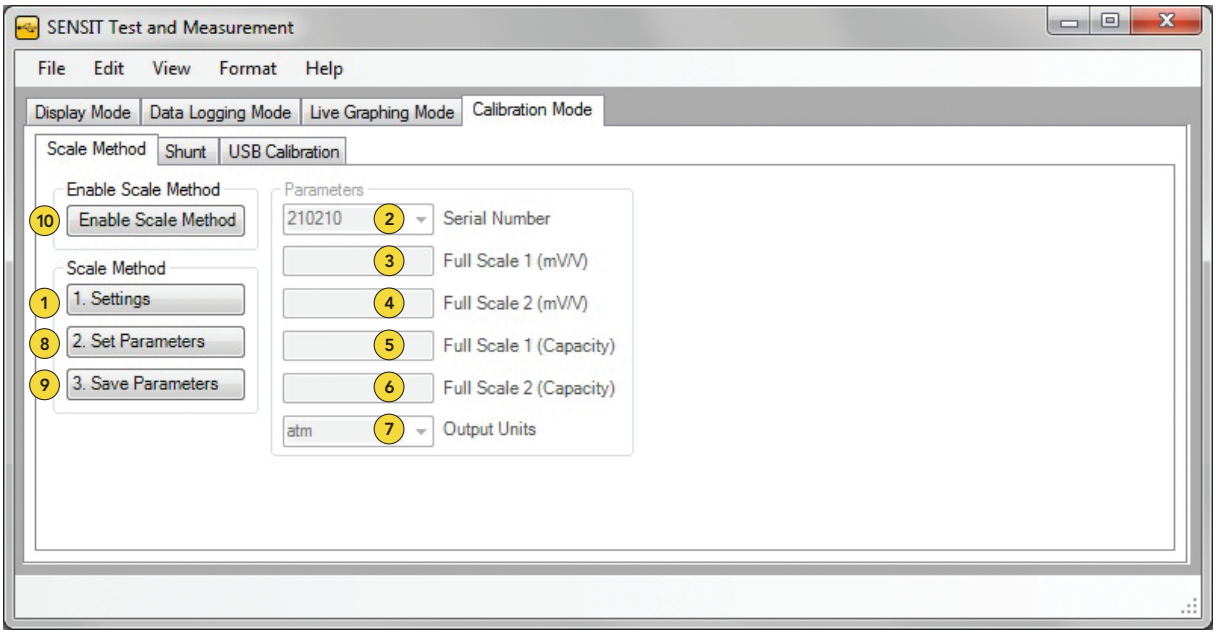
When exporting to Microsoft Excel you will be limited by the number of rows in the current version of Excel.

Live Graph Properties shows serial numbers of devices enabled during test.

Live Graph table shows each sample captured.

Savable file formats:
.xlsx, .xls, .csv, and .txt.

Scale Method



Scale Method can be used to scale a mV/V calibrated USB device into an engineering unit.

1. Press Settings to enter in values.
2. Choose the correct serial number from the drop down list.
3. Enter in the positive mV/V of your load cell. No sign is needed. (Enter same as negative mV/V if not available).
4. Enter in the negative mV/V of your load cell. No Sign is needed. (Enter same as positive mV/V if not available).
5. Enter in the positive output direction full capacity. No sign is needed. (Enter same as negative mV/V if not available).
6. Enter in the negative output direction full capacity. No sign is needed. (Enter same as positive mV/V if not avail able).
7. Select the desired engineering unit from the drop down menu.
8. Set the entered parameters.
9. Save the entered parameters.
10. Enable the Scale Method for the selected serial number.

TIPS ON SCALE METHOD

A SENSIT calibration and setup video can be found online at: **http://www.futek.com/sensit/videos.aspx**

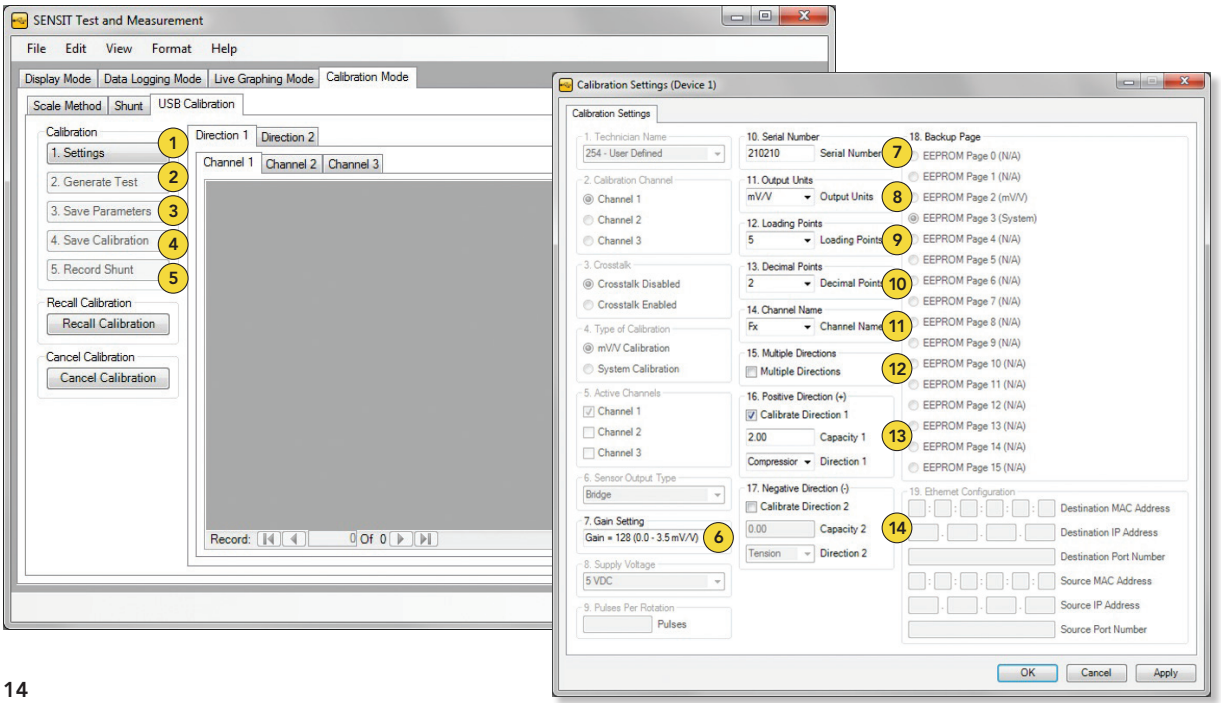
An online calibration database containing a summary of the sensor's calibration can be found at: **http://www.futek.com/calibrationData.aspx**

There can be only one profile set for each serial number.

USB device should be calibrated in mV/V for best usage of Scale Method.

The Scale method information is stored locally onto the computer. A new Scale method will need to be done when USB is used on another computer.

Calibration Settings



1. Click the settings button to enter the calibration parameters.
2. Click Generate Test after the calibration parameters are entered.
3. After the ADC values have been captured in the test, Save the Parameters to be written.
4. Save the calibration information to the device.
5. Record a shunt if applicable.
6. Set the gain accordingly for your sensor's mV/V level.
7. Type in a serial number, such as the sensor serial number, as a reference.
8. Select the appropriate engineering unit for the sensor.
9. Select the number of loading points to measure during the calibration.
10. Select the default decimal point.
11. Select a channel name if applicable.
12. Select to enable a multi directional calibration.
13. Enter the capacity that the sensor will be loaded to in the positive directional output.
14. Enter the capacity that the sensor will be loaded to in the negative directional output.

See calibration tips on next page.

Calibration Settings

CALIBRATION TIPS

Your sensor's mV/V can be found on the sensor's calibration certificate.

An online calibration database containing a summary of the sensor's calibration can be found at: **http://www.futek.com/calibrationData.aspx**

Up to 16 loading points can be selected. The number of points will be divided among the selected directions.

Each load to place on the sensor will be the total amount of the calibration divided by the loading points.

No polarity sign is needed to indicate the positive or negative directions.

The spec sheet for the sensor will indicate which direction from your sensor is positive or negative.

Press Enter in the generated calibration test to enter into the calibration capture table.

Press enter after the appropriate load has been placed on the sensor to capture the ADC value in the calibration capture table.

Click on the direction 2 tab in the calibration capture table to capture the opposite output from the sensor.

The IPM650 and IHH500 instruments perform their calibration internally and not through SENSIT.

A SENSIT calibration and setup video can be found online at: **http://www.futek.com/sensit/videos.aspx**

Troubleshooting

USB device not seen by SENSIT:

1. Check that power to USB device is on if applicable.
2. Check Windows device manager to confirm Windows sees the USB device when it is connected to the computer.

   Possible Driver Solutions:

   - If possible double click on the device and have Windows update the driver in the device manager. This may require an internet connection.
   - The driver can also be installed by running the Setup.exe file in the SENSIT installation folder as part of the SENSIT installation.
   - In the installation folder there is a subfolder for the FTDI drivers which would allow installation from this folder well.
   - The latest FTDI drivers can be found on the FTDI website. The drivers in use are part of the D2XX series.

Conversion from string "Error" to type 'Double' is not valid:

1. This message will come up if the incoming Analog to Digital information to SENSIT is not in a valid format.

   Possible Causes:

   - Short or loose wire in connection from sensor.
   - Overloaded sensor with erratic output.
   - Physically damaged sensor
   - Unplug sensor from USB device to confirm USB works without issues without sensor.

Troubleshooting (continued)

Error message at the end of a Data Logging or Live Graphing session:

1. At the end of a Data Logging or Live Graphing Session the results are automatically exported to the file name and type specified in the test setup.

   Possible Causes:

   - Ensure a full version of Excel is installed if the test results are to be exported to Excel.
   - Some Click to run Excel versions can cause issue and may require a full download of the Excel software.
   - Try exporting to a desktop location if trying to export to a network or remote location.
   - Ensure the file to export to is not already open.
   - Try exporting to a CVS or .TXT format as these are more widely supported by Windows.

No change in the output from the sensor shown in SENSIT:

1. If the load is placed on the sensor in a short amount of time, it may be that a higher sampling rate is needed.
2. There may be an open in the sensor connection to the USB device.

   Items to Confirm:

   - Confirm sensor plug is firmly connected to USB device.
   - Inspect connector to USB device and cable for any opens.
   - Try the USB device without the sensor to confirm there may be an open.

Serial number shown in SENSIT does not match what was expected:

1. The serial number store in the USB device will be the serial number of the sensor if a system calibration was performed. If there as no system calibration the serial number will be the serial number engraved on the FUTEK USB device.

TIPS FOR TROUBLESHOOTING

You are able to right click on a table from a test in SENSIT to re-export the information.

The readings in the table from a test in SENSIT can be highlighted and then copied.

SENSIT Compatible Instruments

USB CONNECTION KIT
USB Series

HANDHELD DISPLAY
IHH500

PANEL METER
IPM650

ROBUST EXTERNAL USB
USB520/530 Series

DIGITAL ANALOG AMPLIFIER
IDA100

Notes

For further video tutorial assistance, please visit:
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Notes

Notes

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