

# PosiTector<sup>®</sup> **UTG**

## *Ultrasonic Thickness Gage*

---

**i** On-Gage Help Reference

Ayuda en el Medidor | On-Gerät-Hilfe | Aide sur l'instrumentation



**DeFelsko<sup>®</sup>**  
The Measure of Quality

# Introduction

This Reference is a compilation of the On-Gage Help that is available on your PosiTector gage. To view these help items on the gage, enter the gage menu and touch the  icon or press the  button with the desired menu item selected.

For an overview of the use and operation of your instrument, refer to its included Instruction Manual or download a digital PDF at [www.defelsko.com/manuals](http://www.defelsko.com/manuals).

Update your gage to ensure your PosiTector includes these latest help references. Instructions are available at [www.defelsko.com/updates](http://www.defelsko.com/updates).

# Contents

Memory .....	3
View .....	3
Off .....	3
On .....	3
Clear .....	3
Statistics .....	4
Statistics .....	4
Clear .....	4
HiLo Alarm .....	4
Calibration Settings .....	5
Zero .....	5
Material .....	6
Cal Reset .....	6
2 Pt Adjust .....	6
Cal Lock .....	7
Velocity .....	7
Thickness .....	7
Setup .....	8
Set Clock .....	8
Reset .....	8
Units .....	9
Min Scan .....	9
Sensitivity .....	10
Battery Type .....	10
Sound .....	10
SmartCouple .....	10
Touch .....	11
Backlight .....	11
Flip Lock .....	11
SE Mode .....	11
Language .....	11
Gage Info .....	11
Reading Tick .....	12
Connect .....	13
USB .....	13
Sync.net Now .....	13
USB Drive .....	13
JSON Files .....	14
HTML Report .....	14
Auto Sync .net .....	14
Updates .....	14
Help .....	15

Power Off .....	16
-----------------	----

# Memory

The PosiTector UTG Standard has internal memory storage for recording measurement data. Stored measurements can be reviewed on-screen or downloaded to a computer. Measurements are date and time-stamped. Store up to 1000 readings (per probe) into a single batch.

The memory icon appears when the Gage is set to store measurement data.

# View

Use the Up or Down buttons to scroll through information, statistical summary, and a list of each reading in the currently opened batch. Press the center navigation button to exit.

# Off

Turns memory off and stops recording (stored readings remain in memory)

# On

Turns memory on and begins recording measurements.

# Clear

Removes all stored readings from memory.

# Statistics

Menu option for configuring Statistics and HiLo Alarm modes.

## Statistics

Statistics mode continually displays/updates average, standard deviation, min/max thickness and number of readings while measuring.

When selected, the statistics icon and statistical summary will appear on the display.

Ignore the last measurement by pressing the (-) button. Press (+) to clear statistics.

## Clear

Clears all on-screen Statistics and HiLo tabulations.

## HiLo Alarm

Allows the Gage to visibly and audibly alert the user when measurements exceed user-specified limits.

When HiLo Alarm is selected, the current Lo setting is displayed. Adjust using the (-) or (+) buttons. Select Next to accept this value. The current Hi setting is now displayed. Repeat to adjust the Hi setting.

Each measurement will be compared to the defined Hi and Lo limits. The Gage beeps if results are within those limits. A single low tone will sound if the reading is below the Lo limit, and a high tone if it is above the Hi limit. Press (+) to clear HiLo readings.

The Statistics icon will appear on the display.

# Calibration Settings

## Calibration, Verification and Adjustment

Three steps ensure best accuracy:

1. Calibration - typically performed by the manufacturer or a qualified lab. All probes include a Certificate of Calibration.
2. Verification of Accuracy - typically performed by the user on known reference standards such as calibration step blocks.
3. Adjustment - to a known thickness or sound velocity for the material to be measured.

### Calibration

Calibration is the high-level, controlled and documented process of measuring traceable calibration standards over the full operating range of the probe, and verifying that the results are within the stated accuracy of the probe. Calibrations are performed by the manufacturer, their authorized agent, or by an accredited calibration laboratory in a controlled environment using a documented process.

### Verification

Gage accuracy can and should be verified using known reference standards of the material to be tested. Verification is an accuracy check performed by the user using known reference standards. A successful verification requires the Gage to read within the combined accuracy of the Gage and the reference standards.

### Adjustment

Adjustment, or Calibration Adjustment is the act of aligning the Gage's thickness readings to match that of a known reference sample.

## Zero

PosiTector UTG probes must be zeroed after a reset and periodically during use. The Zero process compensates for probe wear and temperature. To maintain the best accuracy, perform a Zero when the ambient temperature changes.

1. Make sure the Gage is ON and the probe is wiped clean.
2. Apply a single drop of couplant onto the included zero block (PosiTector UTG CA only) or built-in zero plate located on the underside of the probe connector. DO NOT apply couplant directly onto the probe face.

3. Follow the on-screen prompts.
4. When complete, the Gage will double-beep and display dashed lines.

## Material

If a known thickness of the material is not available, but the material is known, this quick adjustment allows the user to load one of several preprogrammed material velocities.

## Cal Reset

Restores the gage back to factory calibration. The factory calibration icon will appear on the display.

## 2 Pt Adjust

A 2-Point adjustment allows for greater accuracy while simultaneously adjusting probe Zero.

Select two reference standards as close as possible in composition to the intended application. For best results, the thickness of the thicker reference standard should be equal to, or slightly greater than the thickest part to be measured. The thickness of the thinner reference standard should be equal to, or slightly less than the thinnest part to be measured.

1. Measure the thinner reference sample.
2. Lift the probe from the sample and adjust the display down (-) or up (+) to the known thickness.
3. When the expected thickness is reached, press the center navigation button.
4. Measure the thicker reference sample.
5. Lift the probe from the reference sample and adjust down (-) or up (+) to the known thickness.
6. Press the center navigation button to store the adjustment and exit.



## Cal Lock

When checked, the Cal Lock icon appears and the current Cal Settings are locked to prevent further user adjustments. Uncheck to make further adjustments.

## Velocity

If the sound velocity for the test material is known, the Gage can be adjusted to that specific sound velocity.

Adjust the display down (-) or up (+) to the desired velocity. Holding the (-) or (+) buttons increases the rate of change. Press the center navigation button when the desired velocity is reached.

## Thickness

The most common method of adjustment is to measure a sample of known thickness. Select a reference standard of material as close as possible in composition to the intended application. For best results, the thickness of the reference standard should be equal to or slightly greater than the thickness of the part to be measured.

1. Apply a drop of couplant onto the reference standard.
2. Measure the reference standard.
3. Lift the probe and adjust down (-) or up (+) to match the reference thickness.
4. Press OK to store the adjustment and exit.

# Setup

Set configuration options for the Gage.

## Set Clock

All measurements are date and time stamped (24 hour format) when stored into memory. It is therefore important to keep both the date and time current using this menu option. Use the Up and Down buttons to scroll, and the (-) and (+) buttons to adjust value. The Gage's date and time can also be viewed in Gage Info and on top of the main menu.

## Reset

Restores factory settings and returns the Gage to a known condition. The following occurs:

All batches, stored datasets, batch names and screen captures are erased.

Calibration adjustments are returned to the Gage's factory settings. The factory calibration icon will appear on the display.

Menu settings are returned to the following:

Memory = OFF  
Statistics Mode = OFF  
HiLo Alarm = OFF  
Min Scan = OFF  
Reading Tick = ON  
Auto Dim = ON  
A Scan = OFF  
B Scan = OFF  
Cal Lock = ON  
SE Mode = OFF  
USB Stream = OFF  
Display = None  
SmartCouple = OFF  
Bluetooth & Stream = OFF  
BLE Keyboard = OFF  
WiFi & Access Point = OFF  
USB Keyboard & Stream = OFF

Perform a more thorough Hard Reset by powering down the Gage, waiting several seconds, then simultaneously holding both the center navigation and (+) buttons until the Reset symbol appears. This returns the instrument to a known, out-of-the-box condition. It performs the same function as a menu Reset with the addition of:

Bluetooth Pairing info is cleared. Menu settings are returned to the following status:

Units = Millimeter  
Touch = ON  
Flip Lock = OFF  
Auto Sync .net = ON  
Sound = Medium  
Battery Type = Alkaline  
Language = English  
Backlight = Normal  
Bluetooth Smart = OFF  
USB Drive = ON

#### **NOTE:**

Date, Time and WiFi are not affected by either Reset.

## **Units**

Converts the display from millimeters to inch and vice versa.

#### **NOTE:**

Switching units will turn off Statistics, HiLo Alarm, and closes Memory.

## **Min Scan**

Normally, the PosiTector UTG continuously takes spot measurements while in contact with a surface. When the probe is lifted, the last reading will remain on the display. However, it is sometimes necessary to examine a larger region to locate the thinnest point.

When Min Scan is selected, the PosiTector UTG will take continuous readings and record min/max thicknesses when the probe is lifted from the surface – ideal for quick inspection over a large area.

During scanning operations, the probe can become physically decoupled, that is physically separated, from the material, either due to the rough and/or scaly surface of the material or due to user operation. Avoid this by using the Smart Couple feature.

## Sensitivity<sup>(PosiTector UTG C, CA and CX probes only)</sup>

By default, the gage is set to the highest sensitivity so that the minimum wall thickness, typically corresponding to ultrasonic reflections from the deepest corrosion pits in the back wall, is reported. Some metals or alloys with a grainy molecular structure may generate undesirable ultrasonic reflections from those grains, which can prevent the instrument from displaying the total wall thickness. For these applications, reduce the sensitivity until the total wall thickness is reliably displayed.

## Battery Type

Selects the type of batteries used in the Gage from a choice of Alkaline, Lithium or NiMH (nickel-metal hydride rechargeable). The battery state indicator symbol is calibrated for the selected battery type. No damage will occur if the battery type used in the Gage does not match the selected battery type.

## Sound

Adjusts the volume of built-in speaker (Off, Low, Medium, High).

## SmartCouple

When selected, the probe, once coupled, will remain coupled until the (+) button is pressed. Eliminates unintentional decoupling.

During scanning operations, the probe can become decoupled (physically separated from the material), either due to the rough and/or scaly surface of the material or due to user operation.

When this happens, analysis of the material stops and statistics are displayed for only that portion of the surface to which the probe was coupled. If the probe re-couples on purpose or accidentally, statistical values are reset to zero, and a new measurement analysis session begins.

Due to the physical decoupling of the probe, the Gage may output two or more independent measurement sessions. If the intention was to measure the maximum and minimum thicknesses continuously, erroneous indications may result due to the physical decoupling of the probe from the material.

Smart Couple mode maintains a continuous measurement session regardless of whether the probe becomes physically decoupled from the material, and analyzes the thickness values of the material at all locations where the probe was coupled.

This mode of operation provides a number of advantages. For example, the user can make multiple passes between various points of a material to be measured, and not have to actively concentrate on ensuring that the probe is physically coupled to the material. The user can therefore focus on the material itself, rather than the instrument, or can focus more closely on the measurement results displayed on the display. In addition, it provides higher accuracy and faster scanning, since the user does not have to stop and record between different scanning operations. The user can deliberately lift the probe and scan a new area knowing that all results will be analyzed as if they were from one continuous scan.

## Touch

Allows the touch screen functionality to be disabled. All gage functions can also be controlled using the navigation buttons.

## Backlight

Selects display brightness (Sun, Normal or Night). If Auto Dim is enabled (default), the display dim slightly after a period of no activity to conserve battery life. Press the Down button to brighten the display.

## Flip Lock

Disables the Auto Rotate feature by locking the display in its current orientation.

## SE Mode<sup>(PosiTector UTG M probes only)</sup>

Switches from multiple-echo to single-echo mode:

- To increase the measurement range
- To obtain thickness measurements in circumstances where multiple-echo can not

## Language

Converts displayed and printed words to the selected language.

## Gage Info

Displays the model number and serial number, probe type and serial number, PosiSoft.net registration key, the amount of remaining memory for storage of readings, date and time, and software packages.

For security purposes, the registration key is required to add the Gage to your free PosiSoft.net account.

## Reading Tick

When selected (default), the Gage will emit a tick sound every time the probe takes a measurement.

# Connect

Configure communication and connection options for the Gage.

## USB

Connect the Gage to a PC/Mac using the supplied USB-C cable. View and print readings and graphs with universal web browsers/file explorers or using PosiSoft Desktop.

### NOTE:

While connected, power is supplied through the included USB-C cable. The batteries are not used and the body will not automatically power down.

## Sync.net Now

When selected, the Gage immediately synchronizes stored measurement data to PosiSoft.net (USB connection required to a computer running PosiSoft Desktop).

Alternatively, select Auto Sync.net from within the USB connect menu to automatically synchronize upon connection to a PC. Additional measurements added to memory while connected are synchronized only when the USB cable is disconnected and reconnected, or when the Sync.net Now option is selected.

### NOTE:

PosiSoft Desktop is required when using USB connections to synchronize measurements with PosiSoft.net.

## USB Drive

When USB Drive is enabled, the PosiTector is recognized as a USB mass storage device which provides a simple interface to retrieve stored data in a manner similar to USB flash drives and digital cameras. USB Drive is also required to import stored measurements into PosiSoft Desktop. Once connected, any computer can view measurements stored in memory by navigating a virtual drive labeled PosiTector using the supplied USB-C cable.

### NOTE:

While connected, power is supplied through the included USB-C cable. The batteries are not used and the body will not automatically power down.

## JSON Files

When enabled (default), JSON schema files will be available in PosiSoft USB drive. Files can be parsed in to databases and custom software applications.

### NOTE:

Disabling this option may reduce the time required for the computer to recognize the PosiTector when first connected via USB.

## HTML Report

When enabled (default), a formatted HTML report is viewed by selecting the index.html or START\_HERE.html file found in the root directory. Optionally, text (.txt) files located in each batch folder provide access to measurement values. Stored readings and graphs can be viewed or copied using universal web browsers or file explorers.

### NOTE:

Disabling this option may reduce the time required for the computer to recognize the PosiTector when first connected via USB.

## Auto Sync .net

When enabled, measurements will automatically synchronize with PosiSoft.net when connected to a computer running PosiSoft Desktop. Additional measurements added to memory while connected are synchronized only when the USB cable is disconnected and reconnected, or when the Sync.net Now option is selected.

### NOTE:

PosiSoft Desktop is required when using USB connections to synchronize measurements with PosiSoft.net.

## Updates

Determines if a software update is available for your Gage.

To perform an update the Gage must be connected to an internet connected computer running PosiSoft Desktop.

See [www.defelsko.com/update](http://www.defelsko.com/update)

### WARNING:

The Gage will perform a Hard Reset after an update. All stored measurements will be erased from memory.



# Help

When a Menu option is highlighted, the (i) icon indicates on-gage help is available. Press (+) or touch the (i) icon to display the help. Update your gage to ensure that you have the latest on-gage help information.

A formatted PDF containing all on-gage help items is available at [www.defelsko.com/help](http://www.defelsko.com/help).

## Menu Operation

To access the Menu, power-up the gage, then press the center navigation button. Either the keypad or touch screen can be used to navigate the menu. If desired, touch screen functionality can be disabled within the Setup > Touch menu.

Select a menu option by touching it, or use the Up and Down buttons to highlight the desired option and press the center navigation button to select it.

On menus longer than one page, the current page number is displayed below the menu name. Navigate between pages using the Up button when the first menu item is selected, or Down button when the last menu item is selected. If using touch, navigate between pages by touching the left or right arrow, or by swiping up or down.

Press the (-) button or swipe right to return to a previous screen. Select Exit to close the Menu.

A menu option with a > indicates that a sub-menu exists for the Menu option. Select the option to display its sub menu.

## Screen Capture

Press both (-) and (+) buttons simultaneously to save an image of the current display. The last 100 screen captures are stored in memory and can be accessed when connected to a computer via PosiSoft USB Drive.

## Power Off

To conserve battery life, the gage will automatically go to sleep after 5 minutes of inactivity and enter Sleep Mode. While in Sleep Mode the gage powers up significantly faster— convenient when moving between parts or locations. The gage will completely power off after 4 hours of inactivity. Alternatively, select Power Off from the main menu. All settings are retained.

# DeFelsko®

## The Measure of Quality



[www.defelsko.com](http://www.defelsko.com)

© DeFelsko Corporation USA 2020  
All Rights Reserved

### **Limited Warranty, Sole Remedy, and Limited Liability**

DeFelsko's sole warranty, remedy, and liability are the express limited warranty, remedy, and limited liability that are set forth on its website: [www.defelsko.com/terms](http://www.defelsko.com/terms)

This manual is copyrighted with all rights reserved and may not be reproduced or transmitted, in whole or part, by any means, without written permission from DeFelsko Corporation.

DeFelsko, PosiTector, and PosiSoft are trademarks of DeFelsko Corporation registered in the U.S. and in other countries. Other brand or product names are trademarks or registered trademarks of their respective holders.

Every effort has been made to ensure that the information in this manual is accurate. DeFelsko is not responsible for printing or clerical errors.