


# PosiTector<sup>®</sup> *SPG*

## *Surface Profile Gage*

---



 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
Open .....	3
View .....	3
Display .....	3
Annotate .....	3
Print .....	4
Smart Batch .....	4
New Batch .....	4
Close .....	5
Delete .....	5
Batch Summary .....	5
Statistics .....	6
Statistics .....	6
Clear .....	6
HiLo Alarm .....	6
Zero .....	7
Setup .....	8
Set Clock .....	8
Reset .....	8
Units .....	9
Battery Type .....	10
Sound .....	10
Touch .....	10
Backlight .....	10
Flip Lock .....	10
Language .....	10
Gage Info .....	10
OD Mode .....	11
Connect .....	12
Bluetooth .....	12
Enabled .....	12
Bluetooth Setup .....	12
Input Devices .....	12
Keyboard .....	12
Power Off Time .....	12
Send Batches .....	13
Sync Batches .....	13
Bluetooth Classic .....	13
Pairing .....	14
Enabled .....	14
Stream .....	14
Info .....	14

Smart Probes .....	14
USB .....	14
Sync.net Now .....	15
USB Drive .....	15
JSON Files .....	15
HTML Report .....	15
Stream .....	16
Auto Sync .net .....	16
USB Keyboard .....	16
Keyboard Format .....	16
WiFi .....	17
Setup Options .....	17
AP Channel .....	17
Gage Name .....	17
Server Enable .....	17
IP Settings .....	17
AP Passphrase .....	18
WiFi Reset .....	18
WiFi Stream .....	18
Auto Sync .net .....	18
Access Point .....	18
Enabled .....	19
Networks .....	19
WiFi Information .....	19
Sync .net Now .....	20
Updates .....	20
Help .....	21
Power Off .....	22

# Memory

The PosiTector SPG Advanced has internal memory storage for recording measurement data. Stored measurements can be reviewed on-screen or accessed via computers, tablets and smart phones. Measurements are date and time-stamped. Store up to 250,000 readings in up to 1,000 batches.

The memory icon appears and basic statistics are displayed when the Gage is set to store measurement data.

## NOTE:

Remove the last reading by pressing (-).

# Open

Select a previously created batch or sub-batch to open and make it the active batch. If it contains measurements, on-screen statistics will immediately reflect values calculated from this batch. The calibration setting (i.e. Cal 1) associated with this batch is also opened.

# 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.

# Display

Choose between display options in the upper portion of the screen while taking measurements.

## Shortcut:

Press the Up button to scroll through the display options.

## NOTE:

The Display option appears only if a batch is currently open.

# Annotate

Create meaningful batch names and enter notes directly on the Gage using a familiar onscreen QWERTY keyboard.

Either the touch screen or navigation buttons can be used to enter annotations.

Annotations can be synchronized with PosiSoft.net and the PosiTector App. They are included in PosiSoft USB Drive reports.

## Print

Sends a statistical summary and individual measurements to the optional Bluetooth wireless printer.

### NOTE:

To cancel printing, simultaneously press and hold the (-) and (+) buttons.

## Smart Batch

Each PosiTector SPG measurement represents the distance between the highest local peaks in the profile and the particular valley into which the tip has projected.

Since each measurement represents the distance between the peaks and a specific valley, multiple measurements are required to accurately read the surface profile.

Therefore, most organizations and contract specifications require multiple measurements be taken and analyzed to produce a final result that better characterizes the surface.

The Smart Batch menu option makes it simple to comply with the statistical approaches defined in various standards and test methods published by organizations such as ASTM, SSPC, ISO, IMO, US Navy, SANS and AS.

For instructions on how to use the Smart Batch™ feature, see [www.defelsko.com/smartbatch](http://www.defelsko.com/smartbatch)

## New Batch

Closes any currently opened batch and creates a new batch name using the lowest available number. For example, if only B1 and B3 exist, then B2 would be created and made the current batch. Each measurement will be displayed and stored into this new batch.

On screen statistics are immediately updated with each measurement. New batches are date and time stamped when they are created.

Shortcut: When a batch is open, press (+) to create a new batch

#### **NOTE:**

Remove the last reading from the current open batch by pressing (-).

## **Close**

Stops the recording process, closes the current batch, and removes batch information from the display.

## **Delete**

Removes a batch or sub-batch completely from memory. The name is deleted and all measurements are erased. Sub-batches can be deleted individually. To delete all related sub-batches, simply delete the top-level batch.

## **Batch Summary**

Displays a summary of all stored batches with the Batch Name, Probe Type and Number of Readings listed for each batch.

## Statistics

Menu option for configuring Statistics and HiLo Alarm modes.

## Statistics

When selected, a statistical summary will appear on the display.

Remove 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 down (-) or up (+). Select NEXT to accept this value. The current Hi setting is now displayed. Follow the same procedure to adjust the Hi setting.

Measurements will be compared to your defined HiLo 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 HiLo icon will appear on the display.



# Zero

The PosiTector SPG has only one adjustment point at zero. The zero point can be set using one of two methods. Both methods are found under the Zero menu option.

## Glass Plate Zero

Zeroing on the included glass plate is the preferred method for best accuracy:

1. Select Zero from the menu.
2. Press the (+) button to select the number of readings to be used to obtain an average, typically 3.
3. Repeatedly measure the glass plate. After the last measurement, the Gage will calculate a zero which represents the average of all the zero readings taken.

## Factory Zero

If a glass plate or suitable smooth, hard surface is not available, the factory zero setting can be restored

Select Zero from the menu. Press the Down button to select Reset and press the center navigation button. The factory calibration icon will appear on the LCD.

### NOTE:

The factory zero setting may not always be accurate, particularly after a probe tip exchange. For best accuracy, the Gage should be zeroed on the included glass plate.

# 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.

## NTP

Enables automatic time synchronization with a remote server over WiFi using the NTP (Network Time Protocol).

Enter a NTP Server address and TZ (Time Zone) details. The PosiTector uses POSIX format to set the time zone.

Eastern Time in the USA is input as the following:

EST5EDT4,M3.2.0,M11.1.0

From left to right:

- EST5 is the time zone name and offset from UTC
- EDT4 is the daylight savings time zone name and offset from UTC
- M3.2.0 is the start of EDT. 'M' specifies that the date will follow a 'Month.Week.Day' format. 3.2.0 is the third month, second week, first day (Sunday)
- M11.1.0 is the end of EDT. 'M' specifies that the date will follow a 'Month.Week.Day' format. 11.1.0 is the eleventh month, first week, first day (Sunday)

Detailed NTP instructions available at: [www.defelsko.com/NTP](http://www.defelsko.com/NTP)

## 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.

The Zero adjustment is returned to the factory setting.

Menu settings are returned to the following:

Memory = OFF  
Statistics Mode = OFF  
HiLo Alarm = OFF  
Auto Dim = ON  
Bluetooth & Stream = OFF  
Bluetooth BLE Keyboard = OFF  
WiFi & Access Point = OFF  
USB Keyboard & Stream = OFF  
Display = None

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

#### **NOTE:**

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

## **Units**

Converts the display from inch to metric or vice versa. Stored measurements in memory are not converted.

#### **NOTE:**

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

## 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).

## 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.

## 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.

# OD Mode

(PosiTector SPG-OS probes only)

OD mode is designed for use on the convex, outside diameter (OD) surface of curved parts. OD mode is the default operating mode. When enabled, OD is displayed in the top icon bar of the Gage screen.

In Normal mode, the probe operates like the PosiTector SPG, taking a reading immediately after the probe tip touches the test surface. Normal mode is recommended for measuring on flat surfaces. To enable Normal mode, uncheck OD mode.

# Connect

Configure communication and connection options for the Gage.

# Bluetooth

Configure Bluetooth communication and connection options for the Gage.

# Enabled

When Enabled, allows communication with a computer or smart device running the PosiTector App via auto-pairing Bluetooth Smart (BLE) wireless technology.

# Bluetooth Setup

Setup options for Bluetooth input/output communication modes.

# Input Devices

Displays the currently paired Bluetooth keyboard or barcode scanner. Use your external Bluetooth keyboard or barcode scanner to conveniently enter reading and batch annotations.

To add a new device, put your keyboard or barcode scanner into pairing mode, then press Next. Select your input device from the displayed list. Once connected, the gage will return to the main measurement screen. The Bluetooth input (keyboard) icon will be displayed indicating a successful connection.

# Keyboard

BLE Keyboard mode communicates wirelessly with your computer by emulating keyboard keystrokes. When connected in this mode, PosiTector Advanced instruments will be recognized as a simple Bluetooth keyboard. Each reading is typed, followed by a carriage return (enter). This provides a simple way to capture readings as they are taken without any special software, drivers or complex setup.

For more information on BLE Keyboard mode visit: [www.defelsko.com/connect](http://www.defelsko.com/connect)

# Power Off Time

By default, the PosiTector Advanced powers off after 5 minutes of inactivity. This power off time interval can be adjusted when connected wirelessly via Bluetooth Smart to help

maintain connectivity while measuring. The interval is user selectable in 5-minute increments up to a maximum of 60 minutes. Use the (-) and (+) buttons to adjust the interval time, then select Ok.

## Send Batches

Transfers selected batches to the PosiTector App. Send Batches is useful when switching between devices, as only readings and batches that have yet to be synchronized with any smart device are synchronized automatically.

The Send Batches option is visible in the menu when the Gage is connected to a smart device running the PosiTector App.

## Sync Batches

Select batches to flag them for synchronization to the PosiTector App. Sync Batches is useful when connecting a new device to a gage with pre-existing batches, since only batches created while Bluetooth Smart is enabled are automatically selected.

Selected batches are synchronized when the next reading is taken in a batch flagged for synchronization, or when the Sync Batches option is selected at the bottom of the list of selected batches.

### NOTE:

If Bluetooth Smart is disabled, data from batches selected in the Sync Batches menu are held in a queue until communication with the PosiTector App is re-established.

## Bluetooth Classic

Allows readings to be sent to a computer, optional printer or compatible device using Bluetooth wireless technology. Pairing required.

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

### NOTE:

Bluetooth Classic is not compatible with the PosiTector App. Enable Bluetooth for use with the PosiTector App.

## Pairing

The instrument and receiving device must be paired before readings can be transmitted.

For pairing instructions, see [www.defelsko.com/bluetooth](http://www.defelsko.com/bluetooth)

## Enabled

Allows readings to be sent to a computer, optional printer or compatible device using Bluetooth Classic wireless technology. Pairing required.

## Stream

Stream individual readings to a USB connected computer via a serial protocol. Ideal for use with serial compatible SPC data collection software.

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

## Info

Lists information about your current Bluetooth connection, including the currently paired device and MAC address.

## Smart Probes

Displays available PosiTector DPM-L and PosiTector CMM-IS Smart Probes within range of the PosiTector gage. Smart Probes must be powered ON to be visible.

### Shortcut:

Check the Shortcut box to add the Smart Probes menu option to the gage's main menu.

## 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.

## Stream

Stream individual readings to a USB connected computer via a serial protocol. Ideal for use with serial compatible SPC data collection software.

For more information on USB Keyboard and Streaming visit:  
[www.defelsko.com/usb/stream](http://www.defelsko.com/usb/stream)

## 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.

## USB Keyboard

USB Keyboard mode enables PosiTector Advanced instruments to emulate a USB keyboard when connected to a computer.

USB Keyboard mode communicates with your computer by emulating keyboard keystrokes. When connected in this mode, PosiTector Advanced instruments will be recognized as a simple USB keyboard. Each reading is typed, followed by a carriage return (enter). This provides a simple way to capture readings as they are taken without any special software, drivers or complex setup.

For more information on USB Keyboard mode visit: [www.defelsko.com/connect](http://www.defelsko.com/connect)

## Keyboard Format

By default, when a measurement is transferred in Keyboard mode, it's followed by a carriage return (enter). Keyboard Format allows the user to customize the delimiter to match forms or software field input requirements. Multiple delimiters can be joined together.

For more information on Keyboard mode visit: [www.defelsko.com/connect](http://www.defelsko.com/connect)

## WiFi

Allows connection to your local wireless network or mobile hot spot. Ideal for using your network's internet connection for synchronizing stored measurements with PosiSoft.net.

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

## Setup Options

Setup WiFi configuration options for the Gage.

### AP Channel

The access point channel corresponding to a frequency range. (Default Channel: 6)

For most users the default channel will not have to be altered. If you are experiencing poor connection or are unable to connect, try another channel.

Press the Up button to highlight the channel. Use the (-) or (+) buttons to change the channel. Press the Down button and select OK.

### Gage Name

Enter a unique name for the Gage (up to 14 Characters). This helps identify the gage on your local network.

### Server Enable

The gage contains a WebServer that can be accessed by network connected devices. This option enables (default) a connection between the network and the Gage. To access the gage server, browse to the gages IP Address:8080 using an internet browser.

### IP Settings

Manually enter network IP information as follows...

IP Type (DHCP or Static), IP Address, Gateway, Netmask, DNS1, DNS2

See your network administrator or IT department for assistance.

## AP Passphrase

A series of characters, numbers or symbols used to log on to a WiFi network. Default Passphrase: password

Press the center navigation button to display on-screen keyboard. Enter a Passphrase for the Access Point. The Passphrase will be required for all devices connecting to the PosiTectors Access Point.

The PosiTector is now visible to all WiFi enabled devices. Simply connect your devices WiFi to the new PosiTector Access point. All PosiTectors are uniquely identified by their respective gage body serial numbers or user selected Gage Name.

## WiFi Reset

Removes all previously configured networks and restores default WiFi settings.

## WiFi Stream

Wirelessly stream readings to a device or computer over WiFi.

When enabled, the gage will send a GET request to specified URL for each reading. The URL can contain tags which are replaced by the PosiTector with values corresponding to the reading. This solution turns the PosiTector gage body into an Internet of Things device and is ideal for users with an existing WiFi network and a desire to stream live readings to a central application or database.

For more information on WiFi Streaming visit: [www.defelsko.com/connect](http://www.defelsko.com/connect)

## Auto Sync .net

When enabled, the Gage automatically attempts to synchronize stored measurement data with PosiSoft.net upon power-up (internet connected WiFi network required). Alternatively, select Sync .net Now to immediately synchronize stored measurement data.

## Access Point

Creates a wireless network to allow your smart device or computer to connect directly to the PosiTector. Ideal when a WiFi network is not available.

To enable, select Access Point from the Connect &gt; WiFi menu. The Access Point icon will display in the upper left of the PosiTector display.

## Securing your Access Point

To ensure the PosiTector is only accessible to authorized devices, it is important that you enter a passphrase (password) for the Access Point. The default Passphrase is password.

In the Connect &gt; WiFi &gt; Setup menu, select AP Passphrase to modify the default passphrase.

## Enabled

Select to allow connection with your local WiFi network. The WiFi icon will appear on the display and the Gage will attempt to connect to any previously configured network. Connect to a new network from the Networks menu option.

## Networks

Searches and displays all available WiFi networks within range. Select a network, then enter the password, if required. The WiFi icon will appear on the display.

**NOTE:** Some networks may not be visible and will require manual configuration using the Add Network option. See your network administrator or IT department for assistance.

## WiFi Information

Displays information about the local WiFi network connection including:

### SSID:

the network's name

### State:

the network connection status

### IP Address:

the assigned IP Address for the Gage on the network

## Sync .net Now

When selected, the Gage immediately synchronizes stored measurement data to PosiSoft.net (WiFi internet connection required).

## 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, or a WiFi network.

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 it's 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.