

PosiTector[®] SmartLink

with PosiTector *DPM* probes

Instruction Manual v. 1.0



DeFelsko[®]

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Introduction

PosiTector DPM Dew Point Meter probes continually measures calculate and record climatic readings, quickly and accurately.

This instruction manual specifically covers use with PosiTector *SmartLink*.

The PosiTector *SmartLink* and free mobile app allow you to wirelessly connect a wide selection of PosiTector probes to your smart device. Take full advantage of your device's keyboard, microphone, camera, internet data connection, etc. to simplify and enhance your measurement inspection process.



(PosiTector SmartLink with PosiTector DPM probe shown)

The PosiTector *SmartLink* measurement solution consists of a PosiTector App, PosiTector *SmartLink* device and compatible PosiTector probe. In addition to the PosiTector *DPM*, compatible probes include the PosiTector *SPG/RTR-H* (*surface profile*) and *6000* (*coating thickness*) .

Why is Measurement Important?

For industrial painters, the primary reason for measuring climatic conditions is to avoid rework and the premature failure of protective coatings. Recommendations and requirements are covered under various internationally recognized standards.

Temperature -

It is important to measure both surface and air temperatures as they are often different. Application at incorrect temperatures can cause defects including: blistering, pinholing, cratering, dry spray & mud cracking. By measuring surface temperature it is possible to avoid potential application problems if air or surface temperatures become too hot or too cold for satisfactory film formation. Surface and air temperatures directly affect the rate of cure of the applied coating or lining system and are major factors in the formation of surface moisture or dew. ASTM D3276 Standard Guide for Painting Inspectors (Metal Substrates) states that the minimum air/surface temperature is usually 5°C (40°F).

Relative Humidity -

the amount of moisture in the air expressed as a percent of overall volume. High relative humidity can retard the rate of solvent evaporation. For this reason, the maximum relative humidity at which coatings or linings can be applied and cured is generally set at 85%. This can be set as an alarm in the Advanced model.

Dew Point Temperature -

the temperature at which moisture will begin to form on a surface. The dew point temperature is a function of air temperature and the relative humidity. (see ISO 8502-4 Annex A). It is the temperature to which a volume of air must be cooled in order to reach saturation. A number of major standards organizations call for careful dew point control. Moisture on a freshly blasted steel substrate will cause the steel to rust. If a thin, invisible film of moisture is trapped between the applied coating and the substrate, the system will likely fail prematurely. To ensure that dew point problems do not exist, ISO 8502-4 and SSPC guidelines state that the surface temperature must be a minimum of 3°C or 5°F above the dew point during the 3 critical phases of coating preparation, application and cure.

Calibration

Calibration is the controlled and documented process of measuring traceable calibration standards and verifying that the results are within the stated accuracy of the Gage. Calibrations are typically performed by the Gage manufacturer or by a certified calibration laboratory in a controlled environment using a documented process.

The PosiTector *DPM* is shipped with a Certificate of Calibration showing traceability to a national standard. For organizations with re-certification requirements, the PosiTector *DPM* may be returned at regular intervals for calibration.

DeFelsko recommends that our customers establish Gage calibration intervals based upon their own experience and work environment. Based on our product knowledge, data and customer feedback, a one year calibration interval from either the date of calibration, date of purchase, or date of receipt is a typical starting point.

Written Calibration Procedures are available online at no charge. http://www.defelsko.com/quality/calibration_procedures.htm

Operation Overview

The PosiTector *SmartLink* powers-up when the LED button is pressed. To preserve battery life, the PosiTector *SmartLink* powers-down after 5 minutes of no activity. Alternatively, press and hold the LED button until it turns red and shuts off (approximately 5 seconds).

All probe settings and calibration adjustments are retained within the PosiTector *SmartLink*, stored measurement data is retained within the smart device (cell phone, tablet).

- 1 Wirelessly connect the PosiTector *DPM* probe to the smart device using the PosiTector App.
- 2 Remove the protective rubber cap from the surface temperature sensor.

Measure

A typical screen consists of **RH**, **Ta**, **Ts**, **Td**, **Ts-Td** and **Tw** readings. This group of readings is referred to as a dataset.

RH	46.0	RH - Relative Humidity (measured)
Ta	82.1	Ta - Air Temperature (measured)
Ts	80.3	Ts - Surface Temperature (measured)
Td	59.2	Td - Dew Point (calculated)
Ts-Td	21.1	Ts-Td - Surface <i>minus</i> Dew Point Temperature (calculated)
Tw	67.1	Tw - Wet Bulb Temperature (calculated)

°F

RH - The relative humidity sensor is located inside the vented area of the probe housing. The sensor may require a longer period to stabilize in the event of extreme humidity changes.

Ta - The air temperature sensor is located inside the vented area of the probe housing. (Also known as Dry Bulb temperature)

Ts - A surface temperature thermocouple is located on the tip of the probe (built-in probe model). It is spring loaded and designed to quickly self-align on a surface. Press it against a surface and allow a few seconds for the value to stabilize. Do not drag the sensor over the surface, Wet the surface for a faster response. Cover with the included protective plastic cap when not in use.

For surface temperature measurement on steel over an extended of time, consider using a PosiTector Standard or Advanced model with optional Magnetic Surface Temperature probe. Both models feature Auto Log mode for monitoring climatic parameter over extended periods of time. Learn more: www.defelsko.com/dpm/

Td -The dew point temperature is a function of air temperature and relative humidity (see ISO 8502-4 Annex A). It is the temperature to which a volume of air must be cooled in order to reach saturation.

Ts-Td - The surface minus dew point temperature is important in judging the risk of condensation, or dew, forming on a surface. For example, ISO 8502-4 recommends that, unless otherwise agreed, the temperature of a steel surface generally should be at least 3°C (5°F) above the dew point when paints are applied.

Tw - The wet bulb temperature is the temperature of adiabatic saturation. This is the temperature indicated by a moistened thermometer bulb exposed to air flow.

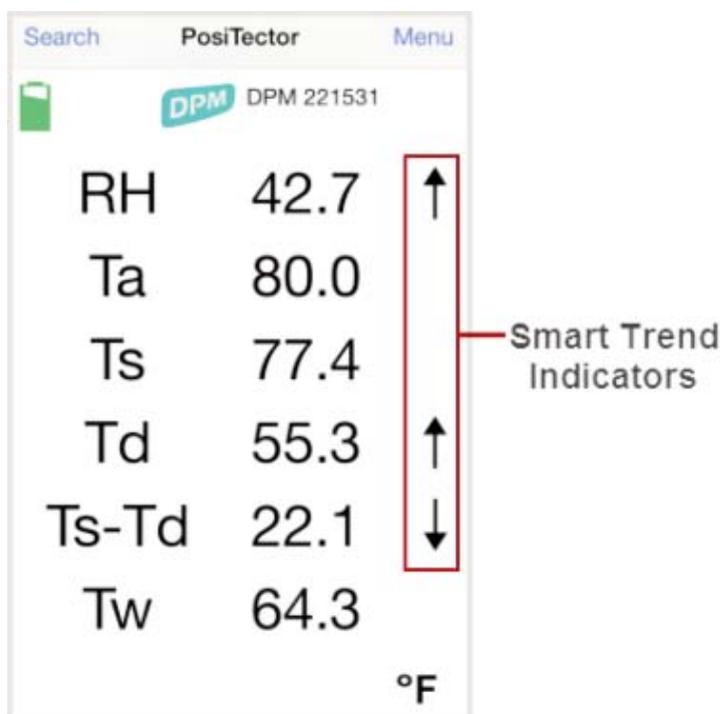
The wet bulb temperature is calculated from Ta and RH using an air pressure of 1.0 atmospheres (1013 mbar). It approximates the temperature indicated by a moistened thermometer bulb exposed to airflow. Variations of Tw at other pressures could be greater than +1°C (+2°F).

NOTE:

Acclimate - The PosiTector *DPM* sensors may require a period of time before the above climatic readings stabilize. This is most noticeable when the instrument is relocated from one extreme environment to another (i.e. from a warm location to a cold location). A period of up to 30 minutes should provide adequate time for stabilization.

Smart Trend Indicators ↑↓

Identify rising, falling or stable readings. The instrument compares each measurement with recent values to provide the current direction of change.



While the absence of an arrow does not necessarily signify stability, it can be taken to mean that particular reading is undergoing little or no change. Slow changes could therefore occur without being noted by an indicator arrow.

PosiTector App

The PosiTector App connects a PosiTector *SmartLink* to your iOS device enabling you to use PosiTector *6000*, *DPM*, *SPG* or *RTR-H* probes on your device without the need for a conventional gage body.

Screen fonts, brightness and displayed language are inherited from your smart device settings. Currently, the PosiTector App has language support for English, Spanish, French, German, Chinese and Korean. Screen orientation is fixed to portrait only, rotation to landscape is not supported.

Stored datasets, images and notes are all stored in the PosiTector App (on your smart device). The number of stored datasets is only limited by the memory available on your smart device. If the application is removed or a *Menu Reset* (pg 23) is performed, all stored datasets and associated data is permanently erased.

NOTE: Prior to uninstalling the PosiTector App or performing a *Reset* (pg 23) it is recommended that you synchronize/copy measurement data to *PosiSoft.net* (pg 26) or share the batch data (AirPrint or email report). This ensures that the data is saved for future reference.

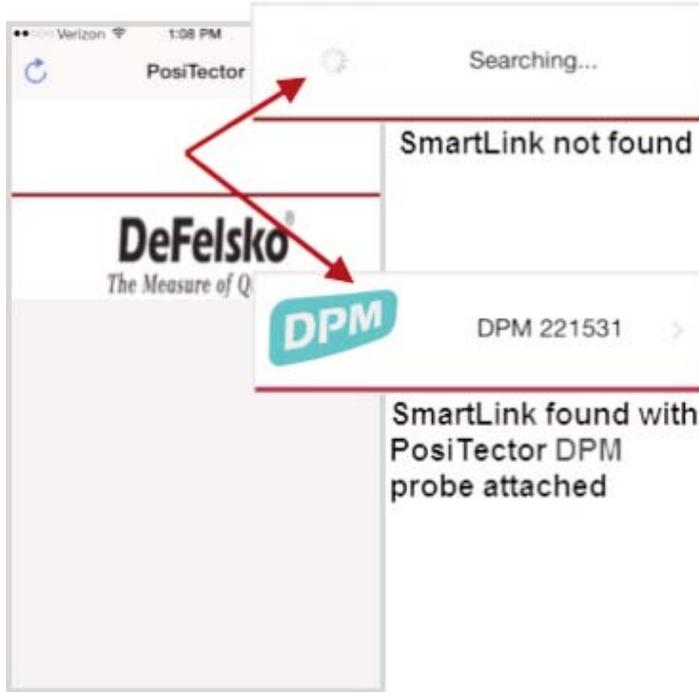
Wirelessly Connecting the PosiTector App to a PosiTector *DPM* probe

- 1 Power-up the PosiTector *SmartLink* and connected *DPM* probe by pressing the LED button. The button will blink blue.
- 2 Select the PosiTector *SmartLink* App icon on your smart device. A menu containing the following options will be displayed:



- 3 Select **Continue**. A list of available PosiTector probes (listed by connected probe type and serial number) will be displayed.

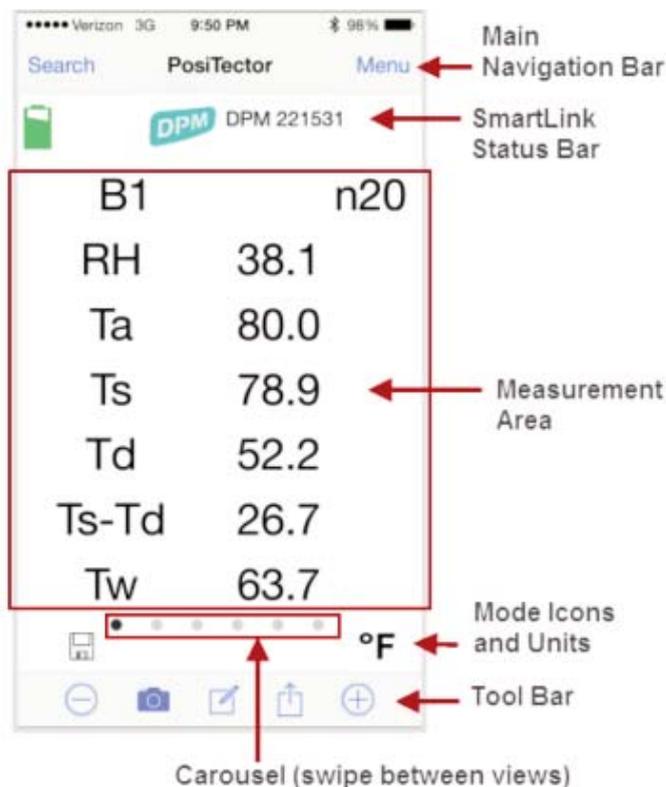
Select the desired PosiTector *SmartLink* to connect. The LED button on the PosiTector *SmartLink* will illuminate solid blue when successfully connected.



The probe model and serial number is engraved on the backside of the plastic probe connector (i.e. DPM 221531).

User Interface

The user interface was designed to combine the proven simplicity of PosiTector gages and the advanced functionality of a smart device's features including touch, swipe, keyboard, camera and more. The interface will be instantly recognizable to those familiar with PosiTector instruments.



Main Navigation Bar

The Main Navigation section is dynamic and may change from one screen to another.

In the example on page 7, **Search** and **Menu** navigation options are available.

Search returns back to the list of available PosiTector *SmartLink* devices. *Menu* accesses the *Main Menu*.

SmartLink Status Bar

Displays information about the connected PosiTector *SmartLink* and associated probe.

The example indicates that the PosiTector *SmartLink* battery status is 2/3 full and connected to a PosiTector *DPM* probe (serial number: 221531).

Measurement Area

Displays measurement (dataset) related information. The example on page 7 shows an environmental dataset. *Memory* is ON and datasets are being stored into Batch 1 (B1).

The measurement area will change depending on the connected probe type and selected modes.

Modes Icons and Units

Displays icons for active modes (such as the disk icon  for *Memory* mode, pg 13) and measurement units (°F Fahrenheit).

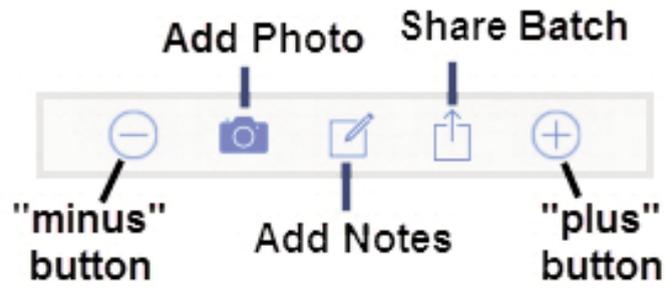
Carousel

The carousel is displayed when more than a single view (screen) is present. The number of dots represent the number of available views. Swipe your finger horizontally across the screen to switch between views.

Tip: Some views contain interactive areas. For this reason we recommend swiping horizontally across the *Mode Icons* and *Units bar*.

Tool Bar

Displays available actions applicable to current operating modes (i.e. *Memory* (pg 13), *Dew Point Alarm* (pg 23), etc.)

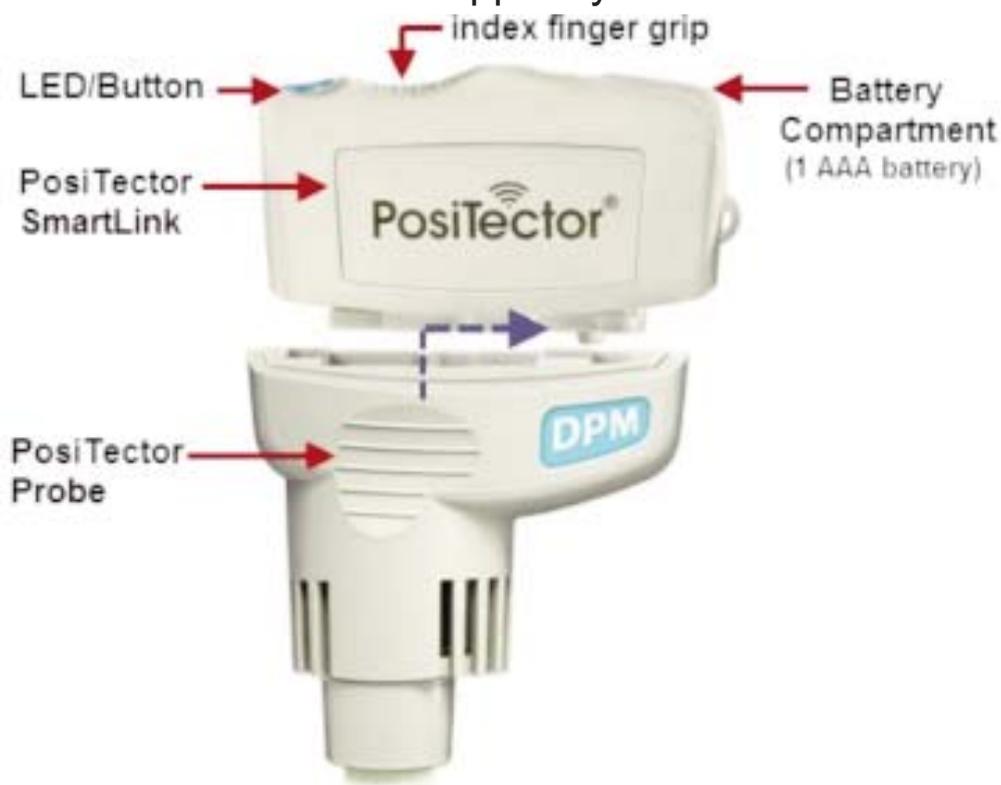


PosiTector SmartLink

The PosiTector *SmartLink* acts as a relay between the PosiTector probe and PosiTector App using wireless Bluetooth Smart (BLE Bluetooth Low Energy). No pairing required! Auto-pairing Bluetooth connection works up to 10 m (30 feet) away.

Information specific to currently selected modes (i.e. *Auto Sync* (pg 28), *Dew Point Alarm* (pg 23), etc.) and user calibration adjustments (specific to each probe) are retained within the PosiTector *SmartLink*. This allows for seamless switching between smart devices (phone and tablet).

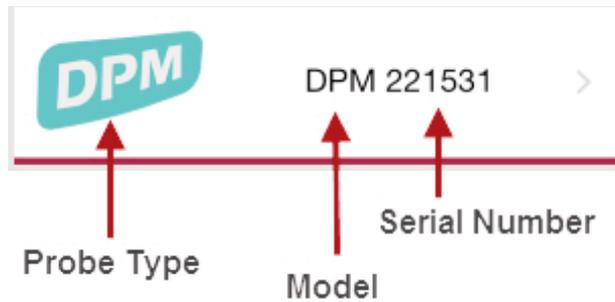
NOTE: Measurement data is not stored within the PosiTector *SmartLink*. All measurement data (datasets, images, notes) is stored within the PosiTector App on your smart device.



Connect a Probe

To connect a probe, slide the plastic probe connector in the direction of the arrow (shown on page 9) until it locks in place. Reverse for detaching the probe.

When powered-up, the PosiTector *SmartLink* automatically determines what type of probe is attached and does a self-check. The probe type, model and serial number are displayed when found within the app's *Search* screen.



NOTE: The PosiTector App features probe hot-swap. During the measurement process, probes can be interchanged without the need to go back to the *Search* screen. Simply swap probes (PosiTector *SmartLink* will power-down) and then power-up the PosiTector *SmartLink*. The PosiTector App will automatically recognize the probe and be ready to measure.

Power-up / Power-down

The PosiTector *SmartLink* powers-up when the LED button is pressed. To preserve battery life, the PosiTector *SmartLink* powers-down after 5 minutes of no activity. Alternatively, press and hold the LED button until it turns red and shuts off (approximately 5 seconds). All probe settings and calibration adjustments are retained, stored measurement data is retained within the smart device.

Tri-Color LED Button

The LED visually provides connection and measurement status.

LED Color Status:

Blue Blink = Not Connected to PosiTector App

Blue Solid = Connected to PosiTector App

Green Blink = Successful Reading

PosiTector *DPM* Probes

PosiTector *DPM* probes continually measure, calculate and record climatic readings. Two probe models (Built-In and Separate) are offered, as pictured below.



Optionally, the magnetic surface temperature probe can be disconnected from the K-Type thermocouple connector (separate probe models only) and replaced with one of the following **K-Type probes**:

- **Hand-held Surface Temperature Probe** - for spot checking hard-to-reach surfaces
- **Self-adhering Surface Temperature Probe** - sticks to solid materials including aluminum, wood, concrete, etc. Ideal for unattended monitoring.
- **Liquid Temperature Probe** - general purpose probe with stainless steel shaft

CAUTION: To ensure optimal performance of your PosiTector *DPM*, do not obstruct the airflow near the air temperature and humidity sensors. Keep fingers away from the sensor, as body heat can cause incorrect readings. Allow time for the instrument to acclimate (pg 5) and for the readings to stabilize when moving the instrument between different environments. When using the surface temperature probe, do not use excessive downward force, and do not drag it sideways.

More probe information is available at www.defelsko.com/dpm

Protective Cap

PosiTector *DPM* probes ship with a protective rubber cap (on surface temperature sensor). Remove this cap prior to use. Replace it when the instrument is not in use to protect the probe.

Factory Calibration

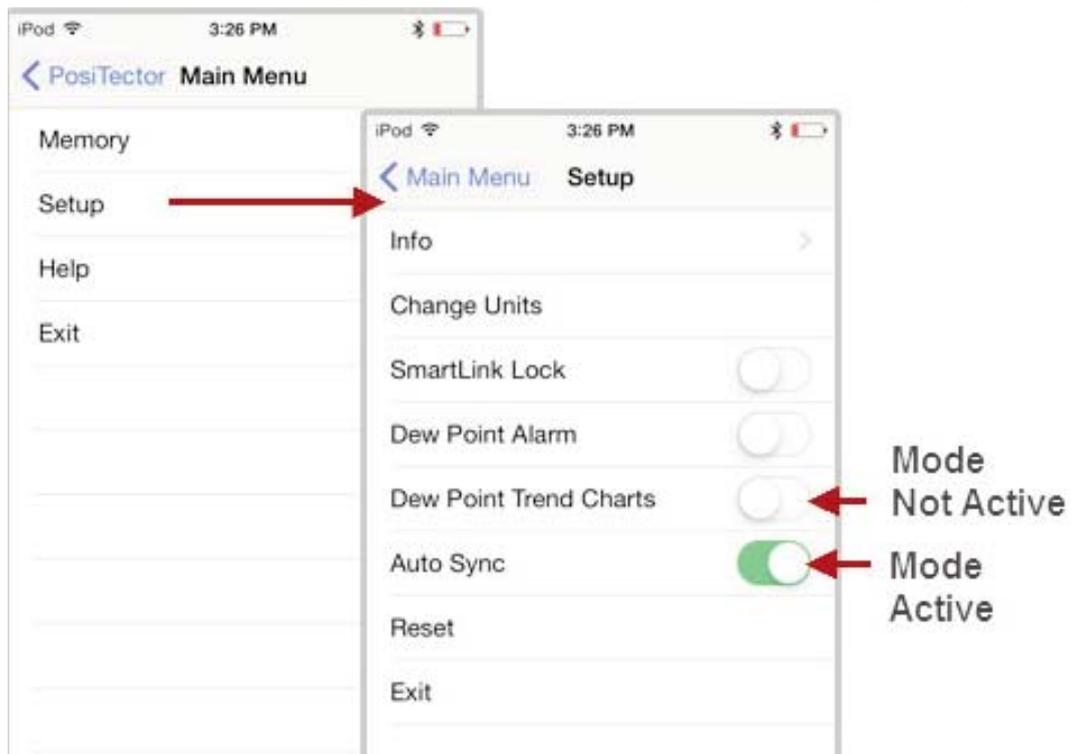
Every PosiTector *DPM* probe is factory calibrated and includes a Certificate of Calibration. This factory calibration information is permanently stored within the probe and cannot be adjusted or overwritten by the user.

Certification

PosiTector *DPM* probes include a Certificate of Calibration showing traceability to a National Metrology Institution. For organizations with re-certification requirements, instruments may be returned at regular intervals for calibration. DeFelsko recommends that customers establish calibration intervals based upon their own experience and work environment. Based on our product knowledge, data and customer feedback; a one year calibration interval from either the date of calibration, date of purchase, or date of receipt is a typical starting point.

Menu Operation

PosiTector *DPM* functions are menu controlled. Access them by selecting **Menu** in the upper right of the PosiTector App display.



The **Main Menu** contains the following **sub-menus**...

- **Memory** (pg 13)
- **Setup** (pg 22)

Select **Exit** to close the menu.

Memory Menu

The PosiTector App uses your smart device's storage for recording measurement data. Stored measurements can be reviewed on-screen, printed (AirPrint), shared via email (PDF, CSV) or synchronized with cloud-based *PosiSoft.net* (pg 26). Measurements are date and time-stamped (using date/time from smart device).

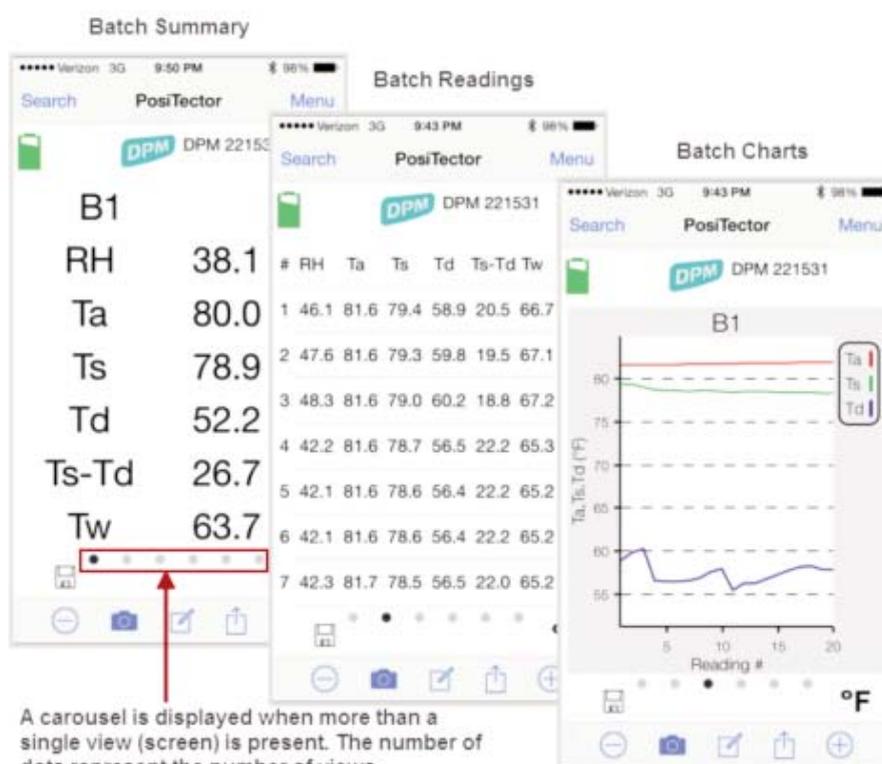
The following options appear within the *Memory* menu. Additional options may appear depending on the connected PosiTector *SmartLink* and probe type.

New Batch

Closes any currently opened batch and creates a new batch name using the lowest available number. For example, if only Batch 1 and Batch 3 exist, then Batch 2 would be created and made the current batch. The  icon appears. New batches are date-stamped at the time they are created.

Store a dataset into the currently opened batch by pressing the  icon on the display or the LED button on the PosiTector *SmartLink*.

The following screen views (3 of 6 views displayed) are available when a batch is open (*Memory ON*). Swipe your finger horizontally across the screen to switch between views.

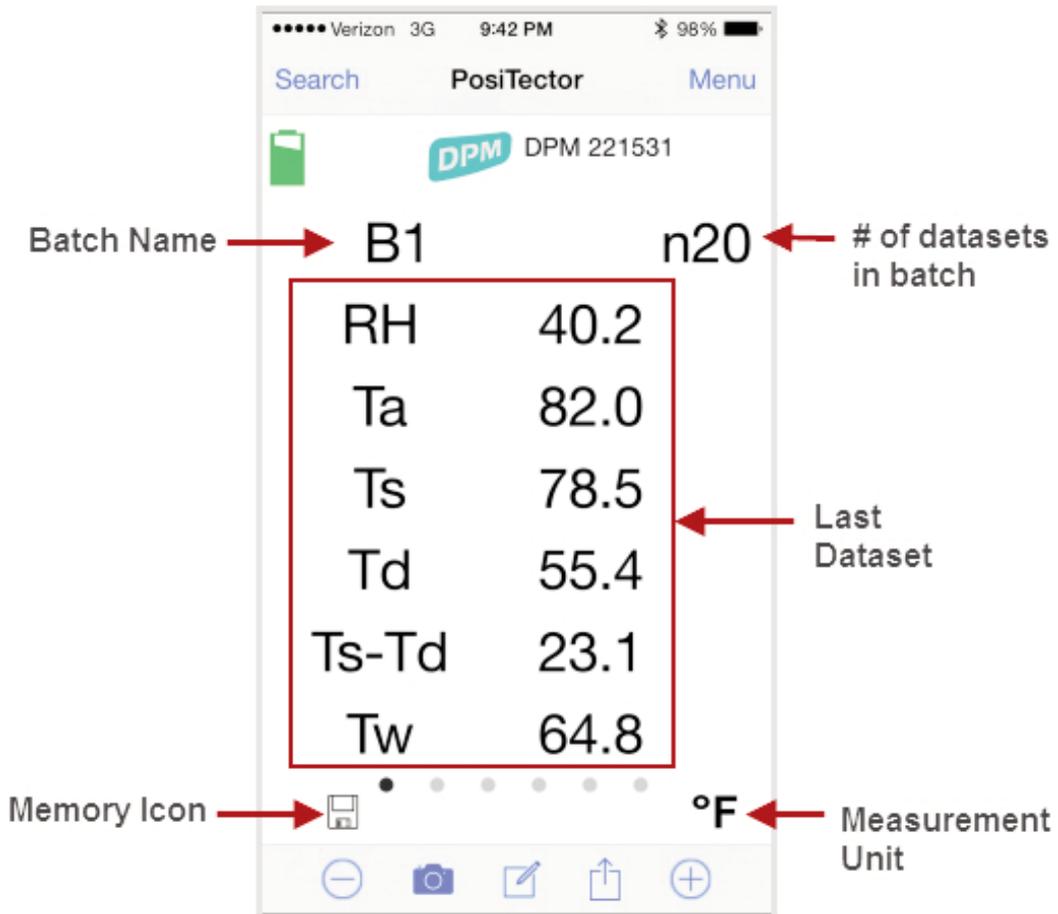


A carousel is displayed when more than a single view (screen) is present. The number of dots represent the number of views.

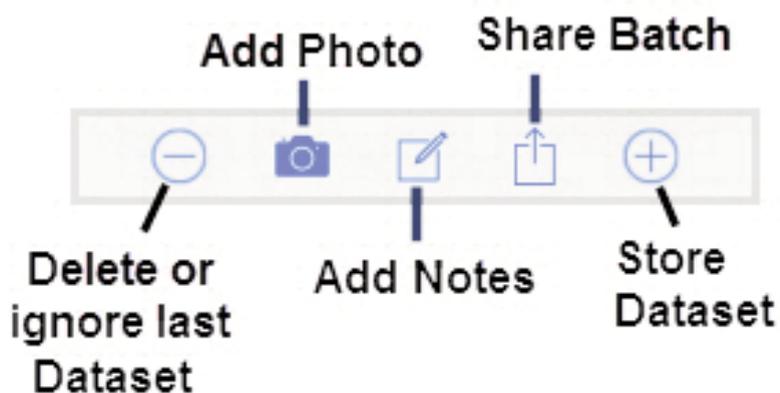
Swipe your finger horizontally across the screen to switch between views.

Batch Summary View

In the PosiTector *DPM* memory example below, the batch name is B1 and contains 20 datasets.



Use the **Tool bar icons** to add notes and change the batch name (pg 17), store dataset (pg 15) and add an image (pg 16).

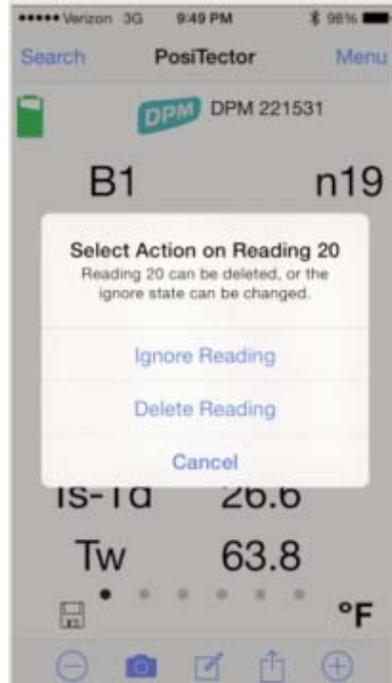


⊖ **Delete or Ignore** last reading from the current open batch.

When selected, the following menu appears.

Ignore Readings are retained within the batch but are excluded from the report's statistical summaries and charts.

The ignored readings are highlighted within the Batch Readings view (Shown here. See also pg 18).



By default Ignored Readings are not included on reports. For inclusion, toggle the Hide Ignored Readings within the *Batch Report Configuration* (pg 20). Ignored Readings will display as highlighted within the readings section of the report, but are excluded from the statistical summary and chart.

Delete Reading permanently removes the selected dataset from the current batch.



NOTE: Readings that have been synchronized (automatically or manually) with *PosiSoft.net* (pg 26) cannot be deleted. To exclude them from report summaries and charts select **Ignore Reading**.

Cancel exits the menu.

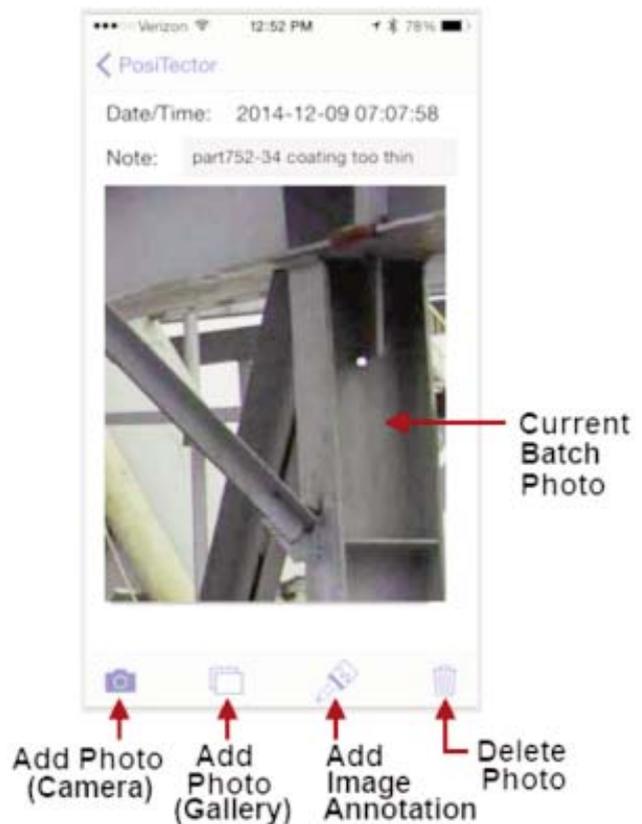
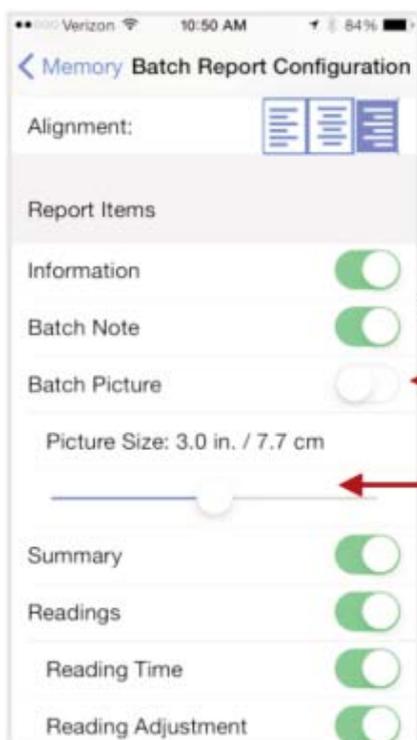
⊕ **Store Dataset**

Stores a dataset into the currently opened batch. Alternatively, press the LED button on the PosiTector SmartLink.

Add Photo to the currently opened batch or dataset.

Batch Photo, Reading Photos and Image Annotations can be included in reports (default) and synchronized with *PosiSoft.net* (pg 26).

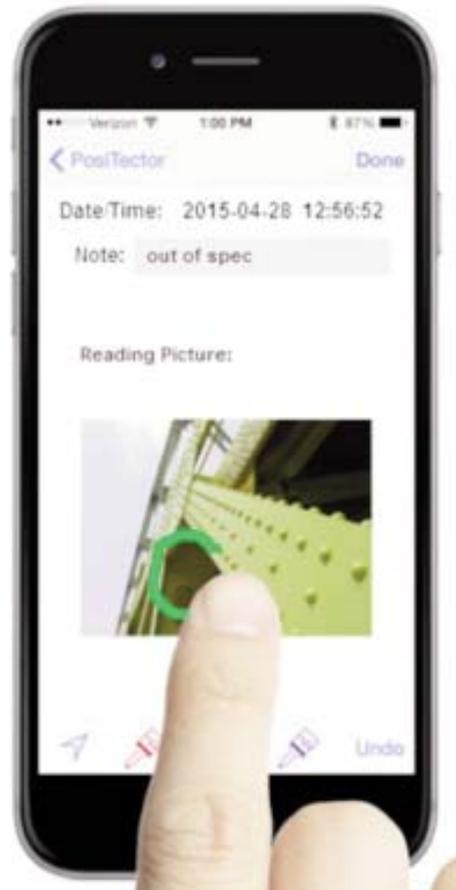
The photo can be resized or hidden from reports within the *Memory >> Batch Report Configuration* menu (pg 20).



Add Image Annotation

This drawing tool is ideal for identifying a specific location or area within an image. Choose from three paint brush colors - Red, Green or Blue.

Use finger or stylus to draw over the displayed image.

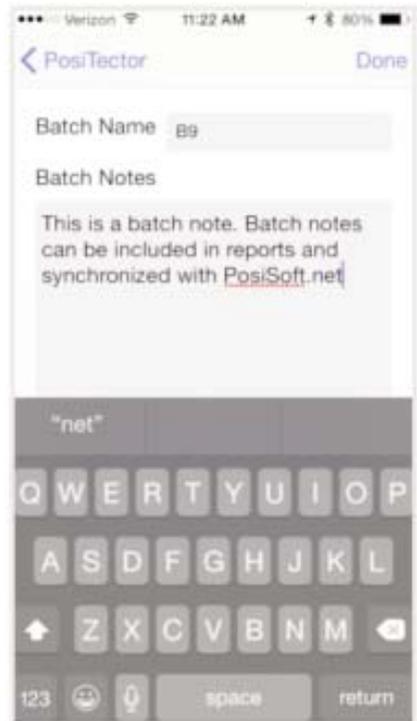


NOTE: Connection to a PosiTector *SmartLink* is not required to add a photo or image annotation to an existing batch.

 **Add Notes** to currently opened batch or dataset.

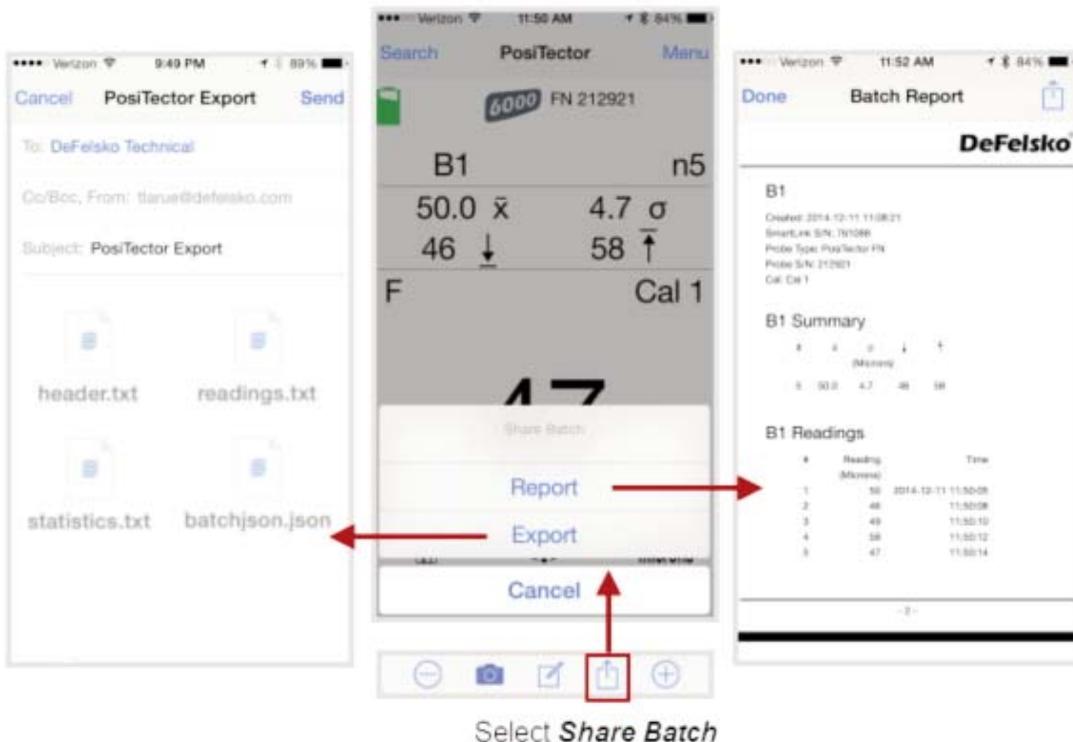
Change the batch name and add batch notes using your smart device's keyboard or dictation tools.

Batch names/notes appear on reports and are included when measurement data is synchronized with *PosiSoft.net* (pg 26).



Share Batch

Share/view professional PDF reports and CSV data instantly via email, AirPrint, Dropbox or other applications on the smart device.



Report

Generate PDF reports instantly and share via email, Dropbox or other applications on your smart device.

Batch reports can be customized within the *Batch Report Configuration* menu (pg 20).

Export

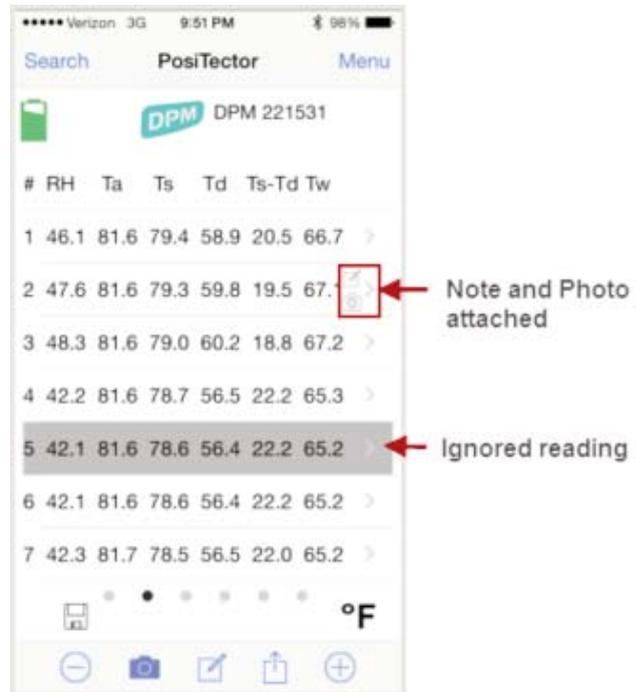
Email CSV (comma-delimited) comma-separated text files which can easily be imported into supporting applications such as spreadsheets and databases. A .json formatted file is also included.

Batch Readings View

Lists all datasets contained in the current batch. New datasets are added to the list instantly as they are taken.

A note and/or photo can be added to each individual dataset.

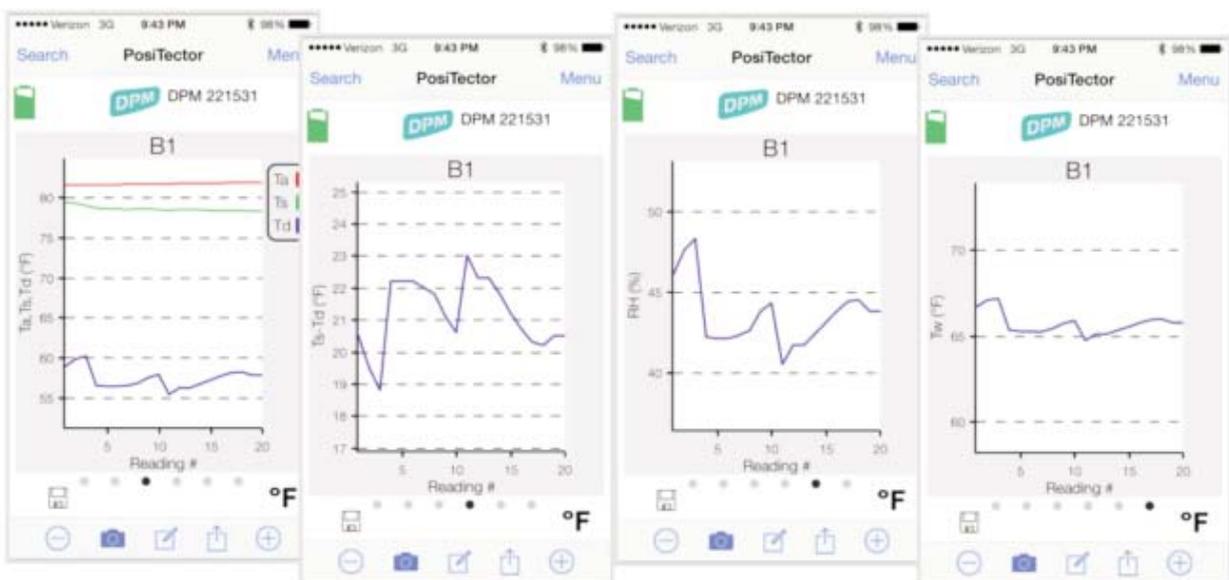
Notes and photos can be displayed in batch reports and synchronized with *PosiSoft.net* (pg 26).



Batch Chart View

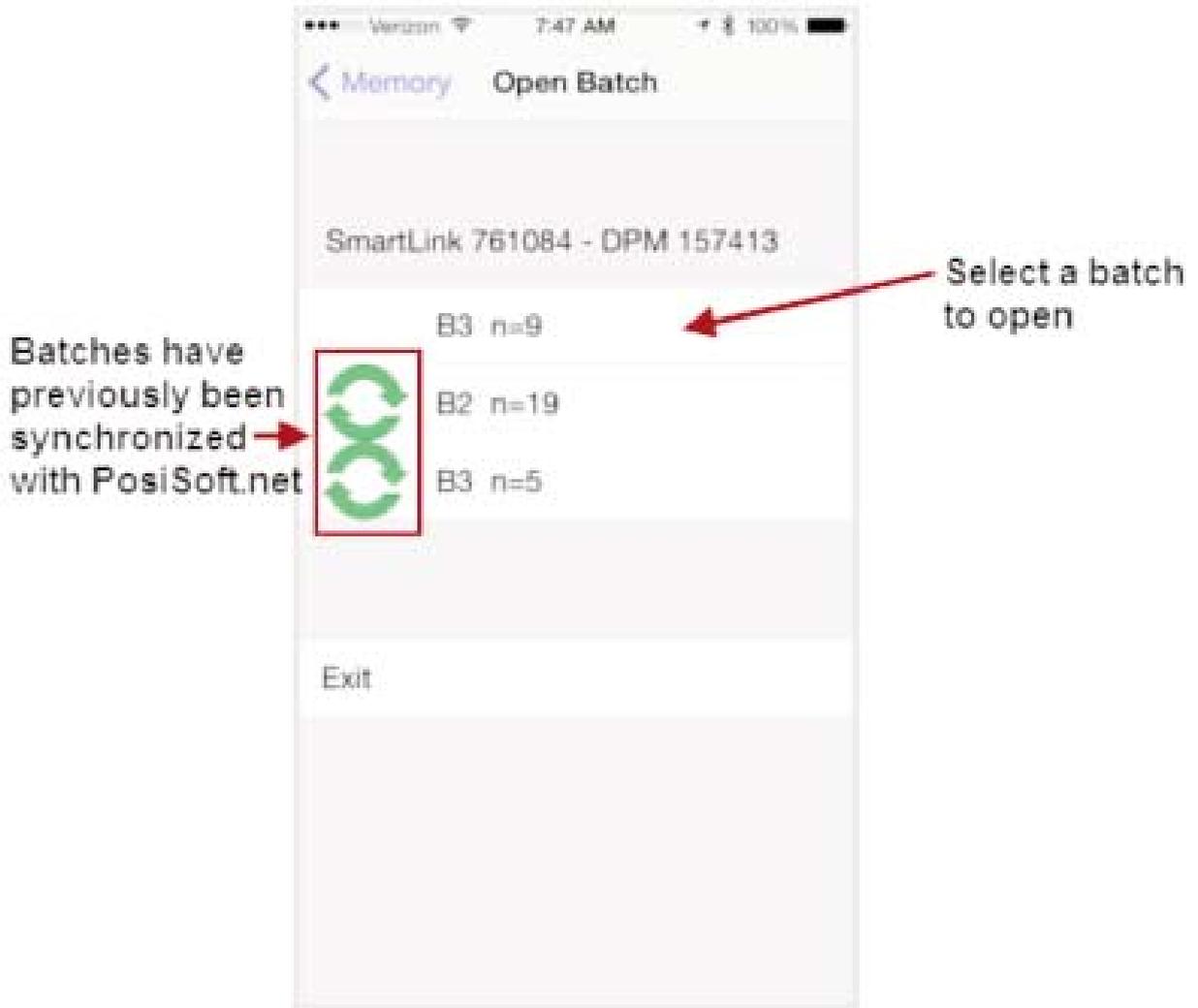
Display x-y charts for datasets contained in the current batch. The charts are instantly updated as measurements are taken.

Pinch the active region of the chart to zoom the view.



Open

Lists all stored batches. Select the desired batch to open.



Additional datasets can be added to existing batches only if the original probe is attached to the PosiTector *SmartLink*.

NOTE: Opening a batch that was not created with the currently attached probe will disconnect the PosiTector *SmartLink* from the PosiTector App. You will still be able to add notes, photos, etc. to the dataset (batch).

Close

Closes the current batch and turns *Memory* OFF.

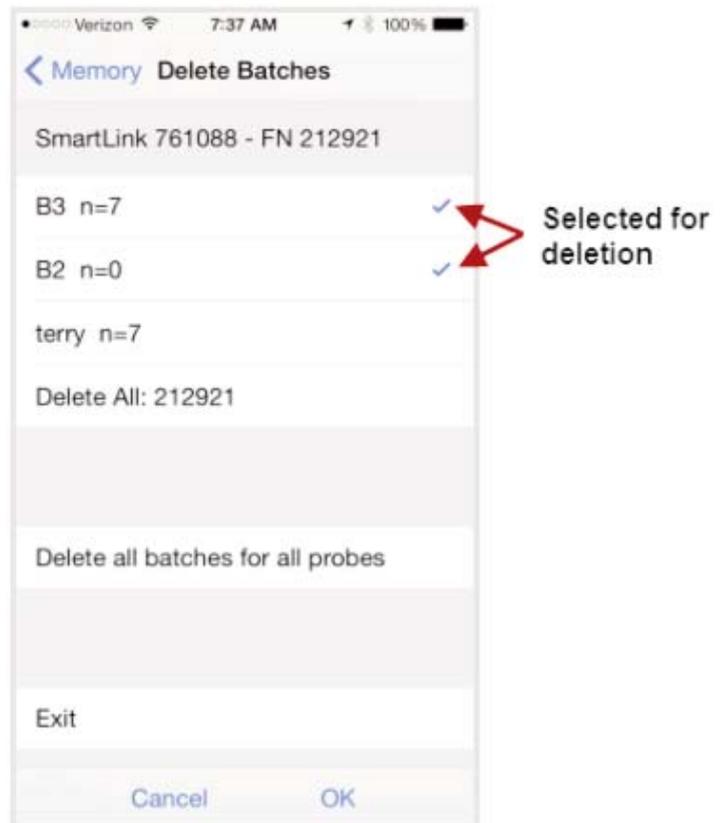
Batch measurement data is retained when a batch is closed.

Delete

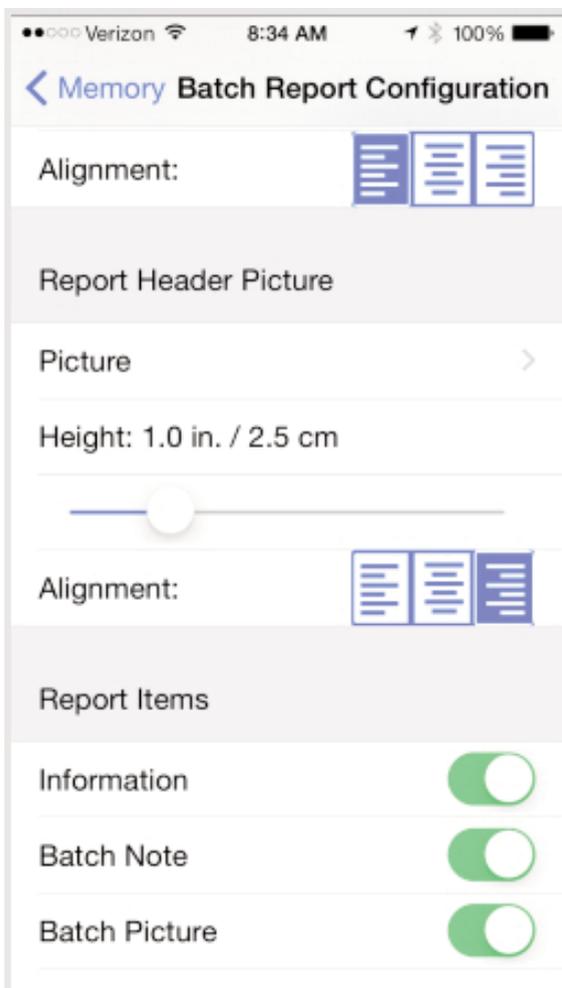
Permanently remove a batch from the PosiTector App.

Select batches for deletion, then select **OK**. Or select **Delete all batches for all probes** to **permanently** delete all measurement data from the smart device (phone/tablet).

If the batches have been synchronized or copied to *PosiSoft.net* (pg 26), a copy will remain there.



Batch Report Configuration



Batch Report Configuration

Customize reports using the *Batch Report Configuration* to include/exclude notes, images, logo, company/report name, fonts, alignment, image sizes and more.

Select **Preview Report** to review your changes.

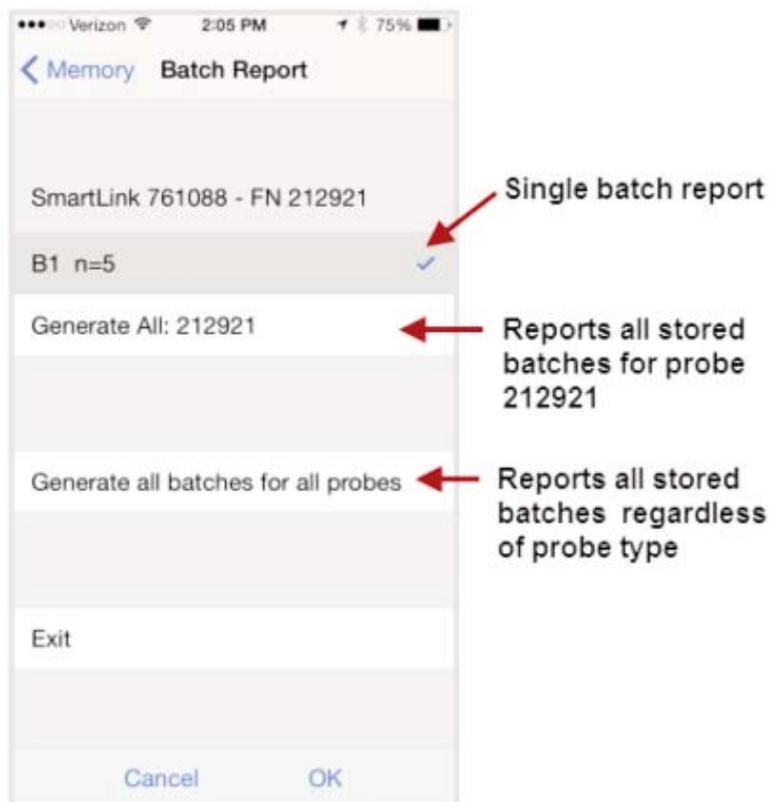
NOTE:

The *Preview Report* displays sample batch data (not your actual batch data).

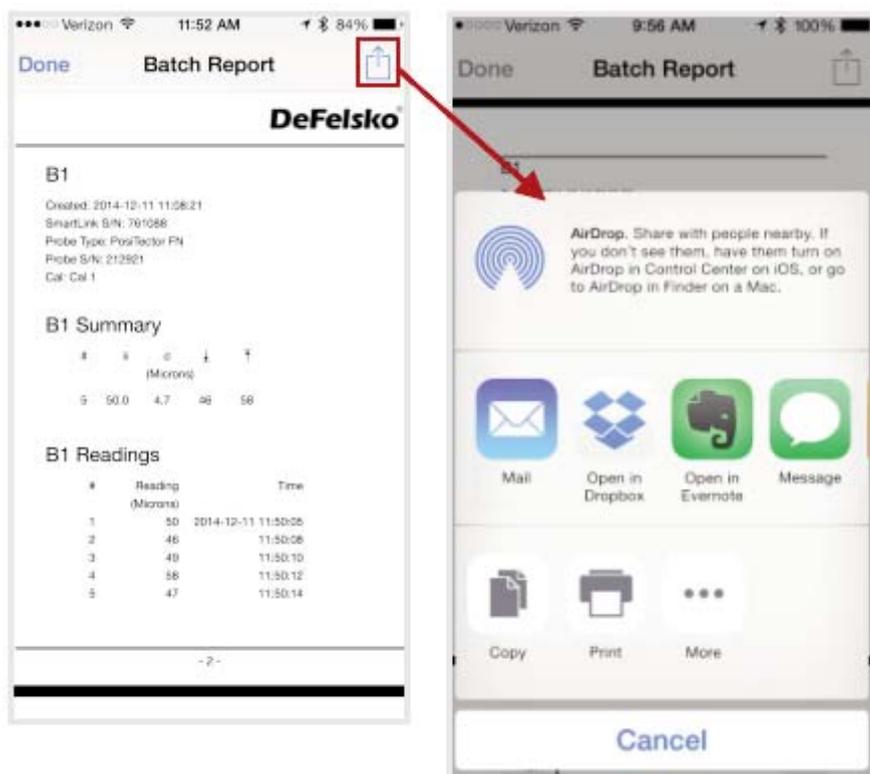
Batch Report

Generate a report summarizing an individual batch or multiple batches.

Select desired batch or batches to include in the report and press **OK**.



Share the report instantly via email, AirPrint, Dropbox or other applications on your device.



Sync Now (pg 27) *

Copy from PosiSoft.net (pg 30) *

Copy to PosiSoft.net (pg 29) *

* For details, see *Synchronize (Sync) with PosiSoft.net* (pg 27)

Setup Menu

SmartLink Info

Provides information about the currently connected PosiTector *SmartLink*, Probe and PosiTector App version.

The PosiTector *SmartLink* Serial Number and unique Key are required to register for a free *PosiSoft.net* account (pg 26). An account is not required for *Copying Batches To/From PosiSoft.net* (pg 29).



Change Units

Converts the display from Celsius (°C) to Fahrenheit (°F) or vice versa. Stored datasets in memory are not converted.

Switching units closes *Memory*.

SmartLink Lock

Locks the PosiTector *SmartLink* to a smart device. This prevents other PosiTector App users within range (10 m / 30 ft) from inadvertently connecting to a *SmartLink*.

Toggle the *SmartLink* Lock  within the *Setup* menu to lock the PosiTector *SmartLink* to a smart device. You will have to unlock it if you want to wirelessly connect to another smart device.



Key icon will appear on search screen to indicate PosiTector *SmartLink* is locked to your PosiTector App.



Other PosiTector App users (within range) will not have access to your PosiTector *SmartLink*

NOTE: The PosiTector *SmartLink* is not visible on other smart devices while you are connected (once you have selected the PosiTector *SmartLink* from the *Search* screen).

Dew Point Alarm

When toggled ON, user is visibly alerted when the surface temperature is less than 3°C (5°F) above the dew point temperature. The Ts-Td value will display **RED** (as shown here) when conditions may be unsuitable for painting.



The *Dew Point Alarm*  icon is displayed. According to ISO 8502-4 and ASTM D3276, steel surfaces should generally be 3°C (5°F) above the dew point when painting.

The *Dew Point Alarm* can be used in conjunction with Memory mode (pg 13).

Auto Sync

See *Synchronize (Sync) with PosiSoft.net* (pg 27)

Reset

Restores factory default settings. Ideal for returning settings to a known condition.

Suggestion: It is recommended that you synchronize all stored measurement data to *PosiSoft.net* (pg 26) prior to performing a *Reset*. This provides a backup solution in case measurement data has been deleted in error. Data on *PosiSoft.net* is not affected by a *Reset*.

There are two available **Reset** options:

Menu Reset and PosiTector **SmartLink (LED Button) Reset** (pg 24)

Menu Reset (*PosiTector App*)

Select **Reset** from the *Setup* menu (pg 22).

The following occurs after a warning message:

- All stored batches, datasets, images, notes, annotations are deleted.
- All calibration settings (adjustments) for all probes are cleared and restored back to factory settings. (provided *PosiTector SmartLink* is ON and connected to App). To keep calibration settings, power off the *PosiTector SmartLink* prior to performing this *Menu Reset*.

Settings are returned to the following:

Memory = OFF

Units = Celsius

Dew Point Alarm = OFF

Auto Sync = OFF

Report Configuration Settings = restored to default

LED Button Reset (*PosiTector SmartLink*)

With the *PosiTector SmartLink* powered-down, press and hold the LED button until it flashes green (approximately 10 seconds).

The following occurs...

- All calibration settings (adjustments) for all probes are cleared and restored back to factory settings.

Settings are returned to the following:

Units = Celsius

Dew Point Alarm = OFF

SmartLink Lock = OFF

Load Sample Batches

Sample measurement data can be loaded into the *PosiTector App* by selecting **Load Sample Batches** when the app is first opened.

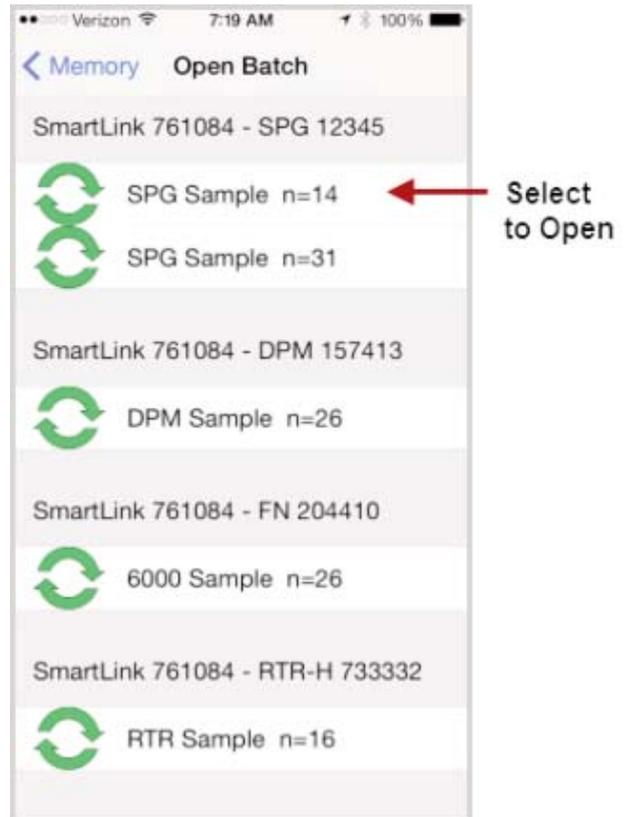
An internet (data) connection is required to load sample batches from the cloud.



To view the sample batches, select **Open** from the *Memory* menu (pg 13).

They are identified with the word "Sample" in the batch name.

- 1 Select **Menu** at the top left of the App.
- 2 Select **Memory >> Open**. The following screen will appear:
- 3 Select desired batch to open (touch selection).



Sample batches can be deleted from the PosiTector App by selecting **Delete** from the *Memory* menu (pg 13).

Select individual batches for deletion and select **OK** or select **Delete all batches for all probes** to delete all measurement data.

NOTE:

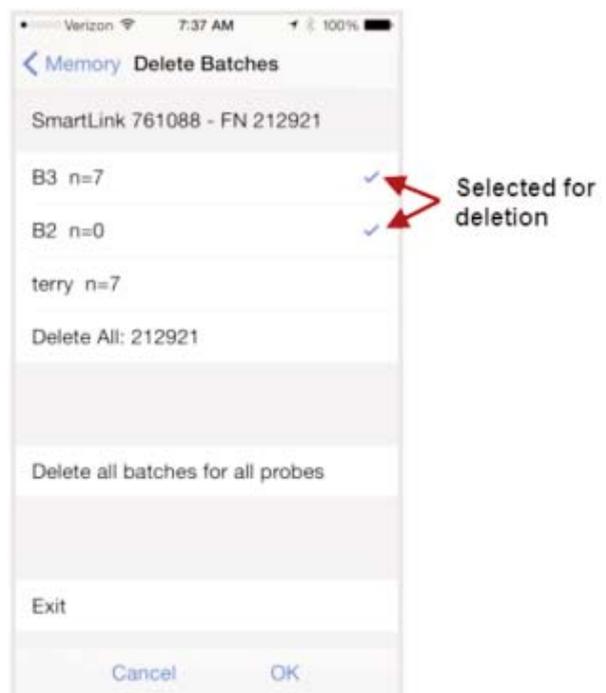
Sample Batches can be altered as desired.

Add pictures, notes, print reports to get comfortable with the app.

If you would like to restore the sample batches back to their original state, simply close and re-open the PosiTector App and select **Load Sample Batches**.

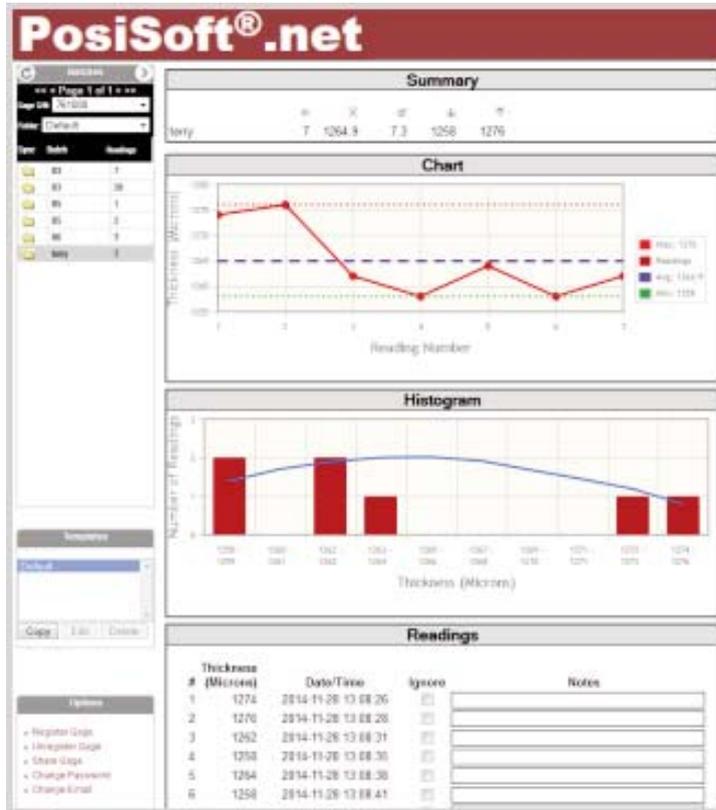
This action will overwrite the previously loaded batches.

Sample Batches cannot be synchronized with *PosiSoft.net* (pg 26).



PosiSoft.net

PosiSoft.net is a free web-based application offering secure centralized management of measurement data. It is accessed using a standard internet browser from any location in the world.



- View and manipulate synchronized measurement data
- Generate reports with graphs, annotations, and images
- Share measurement data with authorized users via a secure login from any computer or web-enabled device
- Export data to popular formats such as XML and CSV (comma-separated values)
- Securely store (backup) all measurement data in the Cloud

NOTE:

An account is not required to synchronize measurement data to *PosiSoft.net*.

Synchronize (Sync) with PosiSoft.net

Synchronizing (*Sync*) is a two-way communication process between the PosiTector App and *PosiSoft.net* (no registration required). WiFi/cellular internet data connection required.

Stored batch data including measurements, photos, notes and annotations are included in the synchronization. After synchronization, data on the PosiTector App and *PosiSoft.net* (pg 26) will match (be the same).

New changes made to either will be included and merged during the next synchronization process.

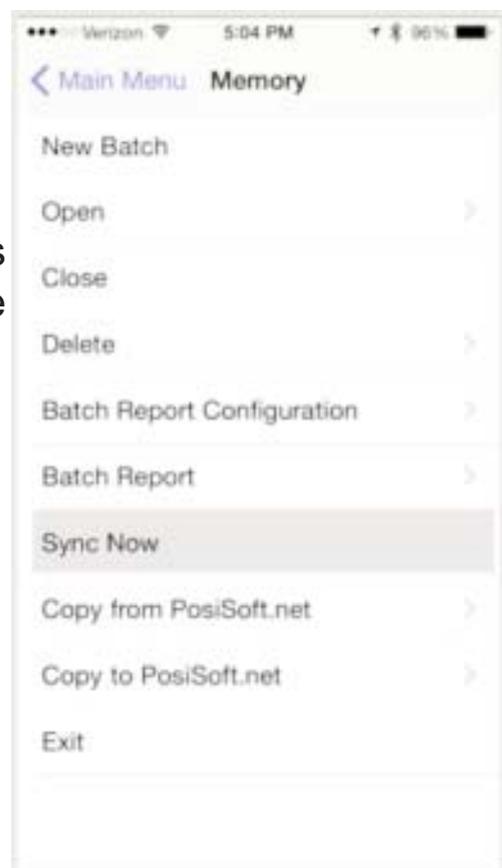
Tip: Prior to synchronizing, it is good practice to change batch names to something more meaningful. This helps identify the batch in the future. Example: Rename "B4" to "Job142-14" or "Section83".

Synchronization can be triggered either manually (*Sync Now*, pg 27) or automatically when batch data changes (*Auto Sync*, pg 28).

Sync Now (*Memory Menu*)

Immediately initiates synchronization.

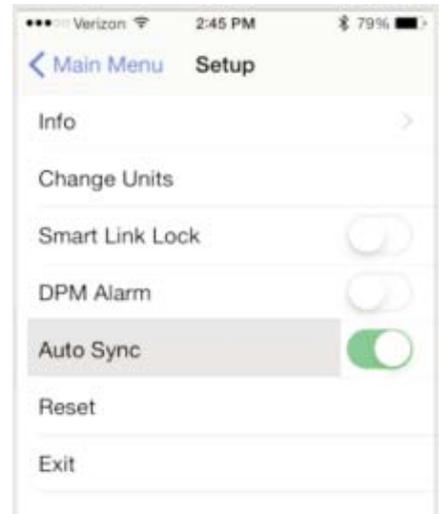
All batches, readings, photos, notes and batch names for all probes will be synchronized.



Auto Sync (Setup Menu)

When toggled ON; measurements, images and notes will automatically synchronize with *PosiSoft.net* (pg 26).

Synchronization occurs every time batch data changes (new reading, note, photo, etc.)



This example demonstrates the PosiTector App with *Memory* and *Auto Sync* ON. A reading has been stored within the app and is in the process of synchronizing with *PosiSoft.net*.



(1) **Auto Sync icon** (appears when mode is ON)

(2) Batch Synchronization status with *PosiSoft.net*

Yellow icon = batch data has changed since last sync
Green icon = batch synchronized

(3) Synchronization transfer status with *PosiSoft.net*

Green icon = successfully synchronizing
Red icon = attempting synchronization

If successful communication is not established after a period of time, the app will stop trying and the red icon will disappear. Ensure that your smart device has an internet/cellular data connection.

Auto Sync is an ideal backup solution for your measurement data. Data can be copied back to the PosiTector App on the same smart device or another (ideal for switching between smart devices).

To view/interact with synchronized data on *PosiSoft.net* (pg 26), registration of your PosiTector *SmartLink* is required (free account). To transfer all stored batches, select **Sync Now** (pg 27).

Copy To/From PosiSoft.net (Memory Menu)

Sync Now (pg 27) synchronizes all batch data for all probes associated with the connected PosiTector *SmartLink*. Sometimes only a single batch or select batches is desired for transfer.

Copy to or Copy from PosiSoft.net allows the selection of single or multiple batches for transfer.

Ideal solution for switching between smart devices (phone and tablet). Pickup exactly where you left off.

Copy to PosiSoft.net

Select an individual batch or batches to copy to PosiSoft.net.

Ideal when you don't require transferring or synchronizing all stored batches.

The selected batches will be copied to *PosiSoft.net* (pg 26) and you will be returned back to the main measurement screen.

If the batches already exist on *PosiSoft.net* (pg 26) you will be prompted with an overwrite warning message.



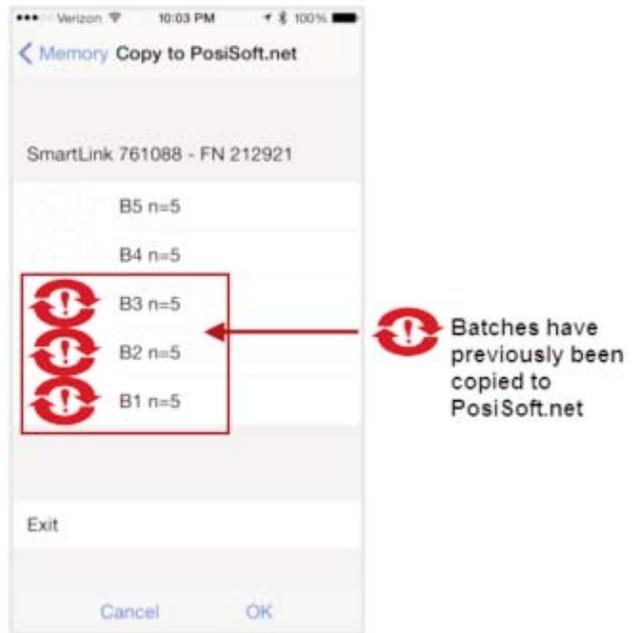
"At least one of the batches you selected already exists on PosiSoft.net. Press **OK** to overwrite existing batches. Pressing **Cancel** will not copy the batches"

If **OK** is pressed, the existing batch on *PosiSoft.net* (pg 26) will be overwritten. **This action cannot be un-done.**

The copied batches will be identified with a  symbol within the *Copy to PosiSoft.net* view.

The  means that the batch has been previously copied. It is not an indication that batch data is in sync.

If additional measurements have been taken or batch data has changed, select **Sync Now** (pg 27) to ensure that data is in sync between the smart device and *PosiSoft.net* (pg 26).



Copy from PosiSoft.net

Select an individual batch or batches to copy from PosiSoft.net to your local PosiTector App.

The  means that the batch has been previously copied. It is not an indication that batch data is in sync.

If additional measurements have been taken or batch data has changed, select **Sync Now** (pg 27) to ensure that data is in sync between the smart device and *PosiSoft.net* (pg 26).



NOTE: You must have connected the PosiTector App to a PosiTector *SmartLink* previously to be able *Copy To or From PosiSoft.net*. This initial connection associates the PosiTector App with the unique identifiers (serial number and key) stored within the PosiTector *SmartLink*. For security purposes, this information is required for the PosiTector App to communicate with *PosiSoft.net* (pg 26). The PosiTector App will retain this association for all connected PosiTector *SmartLinks* until a *Reset* (pg 23) has been performed.

Once associated, you can *Copy To and From PosiSoft.net* with or without a PosiTector *SmartLink* connected.

Switching between Smart Devices

The PosiTector *SmartLink* easily switches between multiple smart devices (i.e. phones and tablets). Batch data can be transferred between devices using the *Copy to and Copy from PosiSoft.net* (pg 29) features.

For example, you may wish to collect measurement data in the field with a smart phone and then document and generate reports on a tablet back at the office.

SmartLink Lock (pg 22) must be OFF for other devices to be able to connect to the PosiTector *SmartLink*. Ensure this is OFF prior to switching smart devices.

PosiTector *SmartLink* only (no batch data)

Ensure the PosiTector *SmartLink* is disconnected from the original smart device. Close the PosiTector App or return to the *Search* screen.

Open the PosiTector App on another smart device. Select the PosiTector *SmartLink* (identified by connected probe type and serial number) from the list.

Dataset measurements taken on the previous smart device are not present by default. To get batch data from a previous device, see *PosiTector SmartLink with batch data* (pg 32).

PosiTector *SmartLink* with batch data

Sync (pg 27) or *Copy* (pg 29) batch measurement data to *PosiSoft.net* (pg 26) prior to disconnecting the PosiTector *SmartLink* from the original device.

Ensure the PosiTector *SmartLink* is disconnected from the original smart device. Close the PosiTector App or return to the *Search* screen.

Open the PosiTector App on another smart device. Select the PosiTector *SmartLink* (identified by connected probe type and serial number) from the list.

Select ***Copy from PosiSoft.net*** (pg 30) from the *Memory* menu (pg 13) and choose the desired batches to include in the copy. Press **OK**.

The chosen batches will be copied from *PosiSoft.net* (pg 26) to your smart device. Open a batch by selecting ***Open Batch*** from the *Memory* menu (pg 13). Continue right where you left off.

NOTE: You must have connected the PosiTector App to a PosiTector *SmartLink* previously to be able *Copy To or From PosiSoft.net* (pg 29). This initial connection associates the PosiTector App with the unique identifiers (serial number and key) stored within the PosiTector *SmartLink*. For security purposes, this information is required for the PosiTector App to communicate with *PosiSoft.net* (pg 26). The PosiTector App will retain this association for all connected PosiTector *SmartLinks* until a *Reset* (pg 23) has been performed.

Once associated, you can *Copy To and From PosiSoft.net* (pg 29) with or without a PosiTector *SmartLink* connected.

Troubleshooting

When the surface temperature probe is not on a surface, Air Temperature and Surface Temperature appear to be different

Under normal conditions with the surface probe in air T_a and T_s should be within the combined tolerance of each sensor (typically 1°C each). It is possible for the difference to be larger if the surface probe has recently been in contact with surfaces that are at a different temperature than air.

RH value is slow to stabilize

If the probe is exposed to very low humidity for an extended time period and then placed in a high humidity environment, the displayed Relative Humidity (RH) may appear to respond slowly. Allow the probe to stabilize 30 minutes for a change of RH greater than 50%. It may take longer if the probe was left at low RH for several months. To increase response time soak the sensor in a damp face cloth overnight to recondition the RH sensor.

Surface Temperature reads much higher than expected

The probe tip may be dirty or damaged. Clean the probe tip by soaking in water or solvent. If Ts continues to read high then return the probe for service.

Surface temperature value does not agree with expected surface temperature or surface temperature probe is slow to respond

In some cases the surface being measured is very rough and a good thermal connection from the probe tip to the surface is not possible. If possible place a small drop of water on the surface and then place the probe tip into the water drop. Quick and accurate results can be obtained in this manner.

PosiTector *SmartLink* not displaying on *Search* screen.

Ensure PosiTector *SmartLink* is powered-up (pg 10), LED is blinking blue and is within range. Refresh the search using the arrow icon in the upper left of the display. Verify *Bluetooth* is ON in smart device settings.

Synchronization with *PosiSoft.net* not successful

Ensure *WiFi* or cellular internet connection is available and retry.

Camera does not function when attempting to add photo

Verify adequate privacy permissions are set for the PosiTector App.

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

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.