Defelsko DPM L Dew Point Meter Logger Plus Instruction Manual

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Contents

Introduction

The **PosiTector** *DPM L+ Dew Point Meter Logger Plus* is a compact wireless probe that measures, calculates, and records climatic conditions quickly and accurately. It consists of an IP65 rated water/weather resistant housing with air temperature, humidity and magnetic surface temperature sensors.

When connected to WiFi, the **PosiTector** *DPM L+* automatically sends readings to PosiSoft.net, allowing jobsite conditions to be remotely monitored from any location.

The **PosiTector** *DPM L+* measures the following parameters.
This group of readings is referred to as a dataset:

RH Relative Humidity (measured)
Ta Air Temperature (measured)
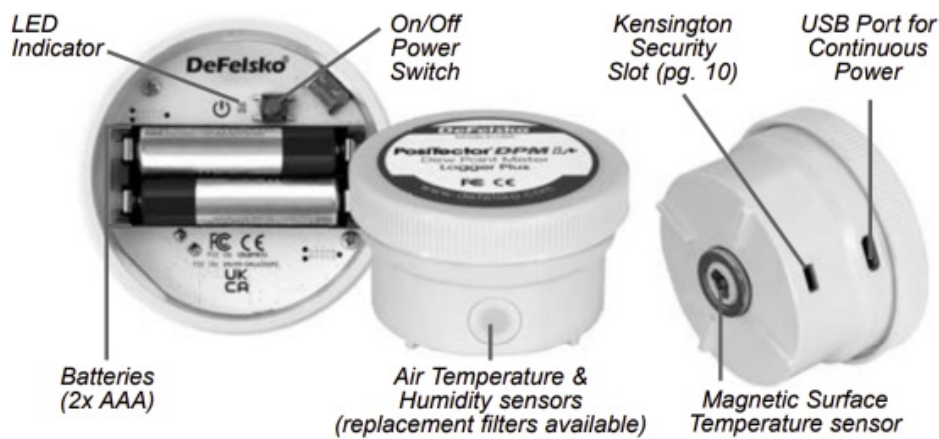**Ts** Surface Temperature (measured)
Td Dew Point Temperature (calculated)
Ts-Td Surface minus Dew Point Temperature (calculated)
Tw Wet Bulb Temperature (calculated)

CAUTION: To ensure optimal performance of the **Posit Ector** *DPM L* probe, do not obstruct the airflow near the air temperature and humidity sensors. Keep fingers away from the sensor, as body heat can influence readings. Allow time for the probe to acclimate and for the readings to stabilize when moving the probe between different environments. When attaching a probe to the surface, do not use excessive downward force, and do not drag it sideways.
When not in use, replace the protective rubber cap on the probe.

Labels: LED Indicator, On/Off Power Switch, Kensington Security Slot (pg. 10), USB Port for Continuous Power, DeFelsko, Batteries (2x AAA), Air Temperature & Humidity sensors (replacement filters available), Magnetic Surface Temperature sensor

Quick Start

PosiTector *DPM L+* probes are designed to be used with the PosiTector App.

To power up the **PosiTector** *DPM L+* probe unscrew the top cover (counter clockwise), then press and hold the power button until the LED indicator turns Solid White. Replace the top cover.

The probe is now visible to the PosiTector App within 10 m (30 feet). The probe will not begin logging until Logging Mode (pg. 6) is enabled from the PosiTector App, and will not remotely sync data to PosiSoft.net until WiFi has been configured in the PosiTector App menu (pg. 4).

NOTE: Once Logging Mode is enabled, the **PosiTector** *DPM L+* probe will continue to log readings unattended while disconnected from the PosiTector App. If WiFi has been configured, readings will be synced to PosiSoft.net at the Sync Interval.

To power down the probe, unscrew the top cover, press and hold the power button for 5 seconds until the LED indicator turns Solid Red, and then release the button.

LED Indicator

The LED indicator may flash different colors, depending on the status of the probe.

Solid White: Power button pressed and probe is ON
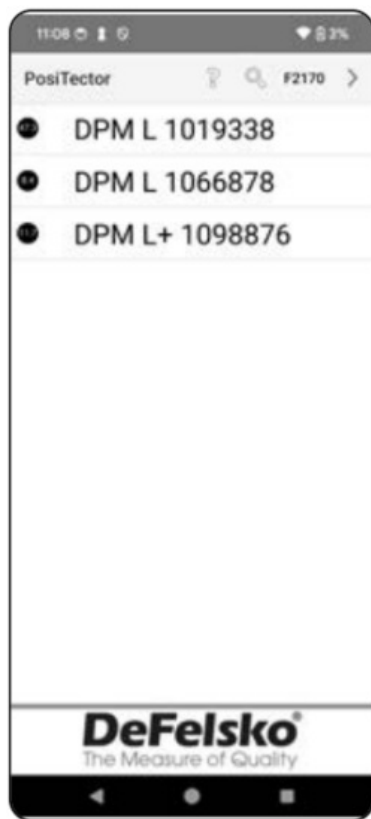**Flashing White:** Probe attempting to communicate with PosiSoft.net
Flashing Green: Sync with PosiSoft.net successful
Flashing Red: Error communicating with PosiSoft.net
Flashing Blue: Probe connected to PosiTector App via Bluetooth
Solid Red: Probe powering down due to low battery, or when the power button is pressed for 5 seconds and then released

Connecting to the Probe using the PosiTector App

Install the PosiTector App from the App Store (Apple iOS) or Google Play (Android).

Open the PosiTector App. Available probes will appear as "DPM L+" with the corresponding serial number and most recent Dew Point temperature reading, as shown at right. Select the desired PosiTector DPM L+ probe to connect.

Once connected to the PosiTector App, the LED indicator will **Flash Blue**, and the **PosiTector** *DPM L+* will download any previously logged datasets to the PosiTector App automatically. The battery icon in the top left corner of the App shows the probe's battery level.

Download the PosiTector App

WARNING: Staying connected to the **PosiTector** *DPM L+* probe via Bluetooth for long periods of time will reduce the probe's battery life. Exit the PosiTector App when not in use.

The user can now Configure WiFi (pg. 4), Start Logging (pg. 6), View Live Data (pg. 6), and View Logged Datasets (pg. 8).

More detailed instructions on using the PosiTector App are available in the Help File, located at
www.defelsko.com/app-help

Configuring WiFi using the PosiTector App

The **PosiTector** *DPM L+* features WiFi, allowing the probe to automatically sync datasets to PosiSoft.net: the free to use, cloud-based storage service. WiFi settings are configured using the PosiTector App, while connected to the probe via Bluetooth.

WiFi Info
View information on the current WiFi settings, including network name and the status of the most recent sync to PosiSoft.net.

WiFi Settings
When WiFi is toggled ON, the **PosiTector** *DPM L+* scans for available WiFi networks, and a list is displayed in the PosiTector App. Select a network from the list, enter the passcode, and select OK.

Once WiFi has been configured, the **PosiTector** *DPM L+* will perform a Network Connection Test. During the test, the PosiTector DPM L+ will disconnect from the PosiTector App.
Within 30 seconds, the probe will reappear on the list of available probes. Select the probe from the list and ensure the Last Sync Successful icon is displayed. All stored readings will be synced to PosiSoft.net whenever the power button is pressed, or automatically at the set sync interval when in **Logging Mode.** If the **Last Sync Unsuccessful** icon is displayed, the WiFi password may be incorrect, a firewall may be preventing connection with PosiSoft.net, or the WiFi signal may be too weak.

NOTE: The Last Sync Successful icon shows if the mostrecent WiFi Check was successful. If moving the PosiTector DPM L+ to a new location, use WiFi Check (pg. 5) to update the status of the icon to ensure connectivity.

Toggle WiFi OFF, and press OK to disable WiFi.

When DHCP is toggled on (default), the probe will automatically be assigned an IP address according to the Dynamic Host Configuration Protocol. To manually assign an IP address, toggle DHCP off.

See your network administrator or IT department for additional assistance.

WiFi Check
When selected, the **PosiTector** *DPM L+* will perform a Network Connection Test. During the test, the PosiTector DPM L+ will disconnect from the PosiTector App. Within 30 seconds, the probe will reappear on the list of available

probes. Select the probe from the list and ensure the Last Sync Successful icon is displayed.

NOTE: To ensure logged readings can be viewed remotely, it is recommended to Check WiFi from the location where the PosiTector DPM L+ is logging.

WiFi Streaming URL
The **PosiTector** *DPM L+* can be configured to send GET requests to a specified URL. This solution turns the probe into an Internet of Things device and is ideal for users who want to stream live readings to a central application or database.

More detailed instructions and further examples of configuring **WiFi Streaming** can be found at
www.defelsko.com/developerresources#wifi-streaming

Reset WiFi
Clears all saved WiFi settings from the **PosiTector** *DPM L+*, including Network SSID, and passcode.

Change Units
By default, **PosiTector** *DPM L+* probes display and record temperature in Celsius (°C). To convert the displayed temperature to Fahrenheit, select Units from the PosiTector App Setup menu.

Temperature units cannot be changed when Logging Mode is enabled, and the option will not be available in the menu. To change units, first select **Stop Logging** from the PosiTector App Setup menu.

WARNING: Changing units will delete all existing readings from the probe's memory

Logging Mode

Start Logging
In Logging Mode, the **PosiTector** *DPM L+* automatically records datasets into memory at user-selected time intervals. Select **Start Logging** from the PosiTector App or menu, then enter the desired logging measurement interval (between 1 minute and 8 hours) and sync interval, then select **OK**. All previously logged datasets are deleted from the probe's memory.

View Live Data
To view current sensor readings, select **View Live Data** from the PosiTector App menu.

NOTE: The first time a probe is connected, the instrument will display Live Data. Once datasets have been logged, logged datasets will be displayed.

To exit Live Data view, select **View Log Data** from the PosiTector App menu.

Set Measurement Interval

The Measurement Interval determines how often a dataset is recorded into memory. The probe is able to store up to 10,000 datasets in memory.

Set Sync Interval

The Sync Interval determines how often the datasets in memory are synced through WiFi to PosiSoft.net.

Auto-Batch Creation Interval

The Auto-Batch Creation Interval automatically separates datasets into batches based on daily, weekly, or monthly intervals. Auto-Batch creation only occurs when WiFi is on.

When a new Log is started the **PosiTector** *DPM L+* immediately records the first dataset and subsequent datasets at the user-specified measurement Interval.
The **PosiTector** *DPM L+* does not need to remain connected to the PosiTector App to continue logging datasets. A maximum of 10,000 datasets (Ta, Ts, Td, Ts-Td, RH, Tw) can be stored in **PosiTector** *DPM L+* memory. All datasets are date and time stamped.

Logged datasets download automatically from the probe when connected to the PosiTector App. Datasets are stored into a Batch (group). Each time a new Log is started, all datasets are saved into a new batch.

To quit logging, select **Stop Logging** from the menu. Datasets in the probe are not erased until a new Log is started or units are changed. All stored datasets will remain in the PosiTector App.

NOTE: If the PosiTector DPM L+ is switched off or if battery power is lost, Logging Mode will turn off. Logged measurements will remain in **PosiTector** *DPM L+* memory.

View Logged Datasets

PosiTector App

The currently active logging batch and previously downloaded logged batches can be viewed in the PosiTector App.

To view the currently active logging batch, simply connect to the **PosiTector** *DPM L+* probe (pg. 3). The batch will automatically download and display. The displayed datasets will update at each logging interval while connected via the App.

Previously logged batches can be viewed by selecting **Open** within the **Memory** menu.

Logged batches can also be viewed on PosiSoft.net or PosiSoft Desktop (pg. 9-10).

NOTE: Additional datasets cannot be stored into a previously logged batch.

Alarm Mode

Alarms

Enabling **Alarm Mode** on the **PosiTector** *DPM L+* automatically alerts the user by email when current climatic conditions exceed pre-set values. **Alarm Mode** can be used in conjunction with **Logging Mode**.

To enable **Alarm Mode**, select **Alarms** from the Setup menu in the PosiTector App.

For each parameter, select between OFF, ≥ (greater than or equal to), and ≤ (less than or equal to) using the drop down menu. Select the box next to each parameter and set the value. In **Alarm Mode**, if an alarm condition is met the relevant parameter is displayed in red, and the alarm icon is displayed beside it.

To be alerted when WiFi signal strength is low, toggle **Signal Strength** ON. To be alerted when the **PosiTector** *DPM L+* battery level is low, toggle **Battery Level** ON.

To receive email alerts when Alarm conditions are met, enter an email address in the box at the top of the Alarms screen. When connected to WiFi, the PosiTector DPM L+ probe will automatically send an email. Select **Test Email** to have a test email sent to the entered email address.

Select **OK** to accept changes and exit the **Alarm Mode** setup screen.

Reporting Stored Measurement Data

View, share and print professional PDF reports using the PosiTector App, PosiSoft Desktop software and cloud-based PosiSoft.net.

Data is downloaded from the **PosiTector *DPM L+*** probe wirelessly via WiFi and Bluetooth. The USB port on the probe is used to provide continuous power, and cannot be used to download readings from memory.

PosiTector App

Press ⤢ or ⬆ , then select **Report** to generate a PDF for the currently opened batch. To generate a report containing multiple batches, select **Batch Report** from the **Memory** menu.

Batch reports can be customized within **Batch Report Configuration**, located in the **Memory** menu.

More detailed instructions are available in the Help File, located at **www.defelsko.com/app-help**

PosiSoft.net

Web-based application offering secure, centralized storage of measurement data, allowing access from any web connected device. Measurement data from the PosiTector DPM L+ probe is automatically synchronized to PosiSoft.net when the probe is connected to WiFi, or by using the PosiTector App.

Visit PosiSoft.net on any web-connected device to view measurement data, generate .pdf reports, and access the **DPM Monitor** to view live charts of measurement data.

More detailed instructions are available in the PosiSoft.net Help File, located at:
www.defelsko.com/posisoftnethelp

PosiSoft Desktop

Powerful desktop software (PC/Mac) for downloading, viewing, printing, and storing measurement data. Download and install PosiSoft Desktop from our website: **www.defelsko.com/posisoft**

Measurement data that has been synchronized to **PosiSoft.net**, can also be synchronized to PosiSoft Desktop for local storage of readings, and for producing fully customizable reports. Simply login to a PosiSoft.net account under the .net menu. The S/N and Key can be found under 'Info' within the PosiTector App menu while connected via Bluetooth.

More detailed instructions are available in the PosiSoft Desktop Help File, found in the **Help** menu.

Power Supply

The **PosiTector *DPM L+*** can be powered using 2 AAA batteries, or continuous power can be provided through

the USB C port.

Battery life will vary, depending on the logging and sync interval set for the probe. It is recommended that a new set of batteries be installed prior to extended logging.

The probe can be provided with continuous power by connecting the probe to a power source using the provided USB-C cable.

PosiTector DPM L Lock

Secure the **PosiTector** *DPM L+* probe using the optional lock.
Attach the cable around a secure object and then connect the lock to the probe's security slot (pg. 1).

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 probe. Calibrations are typically performed by the manufacturer or by a certified calibration laboratory in a controlled environment using a documented process.

The **PosiTector** *DPM L+* is shipped with a Certificate of Calibration showing traceability to a national standard. For organizations with re-certification requirements, the **PosiTector** *DPM L+* 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 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 at:
www.defelsko.com/resource/calibration-procedures

Troubleshooting

Most **PosiTector** *DPM L+* conditions can be corrected by installing a fresh set of AAA batteries.

In the rare event the probe becomes unresponsive, with the probe powered ON, press and hold the power button for approximately 30 seconds. The LED indicator will first turn solid red, and then will begin flashing red rapidly, at which point the button can be released, and the probe will perform a factory reset.

The **PosiTector** *DPM L+* Probe does not appear in the PosiTector App: Check the batteries in the probe and replace if required. Ensure that when the power button inside the cap of the **PosiTector** *DPM L+* is pushed the LED turns Solid White. Ensure Bluetooth is enabled on the Smart device running the PosiTector App.

NOTE: Only probes within 10 m (30 ft) will be visible.

When the surface temperature probe is not on a surface, Air Temperature (Ta) and Surface Temperature (Ts) appear to be different: Under normal conditions with the surface probe in air, Ta and Ts should be within the combined tolerance of each sensor (typically 1°C/2° F). The difference may be larger if the surface probe has recently been in contact with surfaces that are at different temperatures 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 for 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, wrap the sensor in a damp cloth overnight to recondition the RH sensor.

Surface Temperature reads much higher than expected: The probe tip may be dirty or damaged. Use care if attempting to clean dirt or overspray from the sensor. If the surface temperature 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.

Returning for Service

For issues related to the PosiTector DPM L+ probes:

1. Install new batteries in the proper alignment as shown inside the battery compartment.
2. Examine the sensor for debris or damage.
3. Perform a hard reset (pg. 11).
4. Re-attempt measurement.

If these steps do not resolve the issue, visit our Service & Support page for information on sending your Gage to us for a no charge evaluation. See: **www.defelsko.com/service**

For issues related to the PosiTector App, please refer to the Help File located at: **www.defelsko.com/app-help**

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.

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**

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Documents / Resources

	Defelsko DPM L Dew Point Meter Logger Plus [pdf] Instruction Manual DPM L Dew Point Meter Logger Plus, DPM L, Dew Point Meter Logger Plus, Point Meter Logger Plus, Meter Logger Plus, Logger Plus

References

- **DeFelsko Coating Thickness Gages and Inspection Instruments**
- **defelsko.com/app-help**
- **PosiTector Developer Resources**
- **PosiTector Developer Resources**
- **PosiSoft Software Solutions- DeFelsko**
- **PosiSoft.net Help**
- **Terms and Conditions | DeFelsko**
- **User Manual**