



USER GUIDE

Kestrel 7000 Environmental Meter

www.kestrelinstruments.com

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MEASUREMENTS	Icon	5000 Environmental	5200 Professional	5500 Weather	5400 HST	7000 Environmental
Wind Speed Air Speed (mph fpm Bft m/s km/h kt)		•	•	•	•	
Temperature (°F °C)		•	•	•	•	•
Wind Chill (°F °C)		•	•	•	•	
Relative Humidity (%)		•	•	•	•	•
Heat Stress Index (°F °C)	HI	•	•	•	•	•
Dewpoint Temp (°F °C)	DP	•	•	•	•	•
Wet Bulb Temp (°F °C)	WB	•	•	•	•	
Station Pressure (inHg hPA psi mb)		•	•	•	•	
Barometric Pressure (inHg hPA psi mb)		•	•	•	•	
Altitude(m ft)		•	•	•	•	
Density Altitude (m ft)	DA	•	•	•	•	
Wind Direction (Cardinal Points, Degrees)				•	●	
Crosswind (mph fpm Bft m/s km/h kt)				•	●	
Headwind Tailwind (mph fpm Bft m/s km/h kt)				•	●	

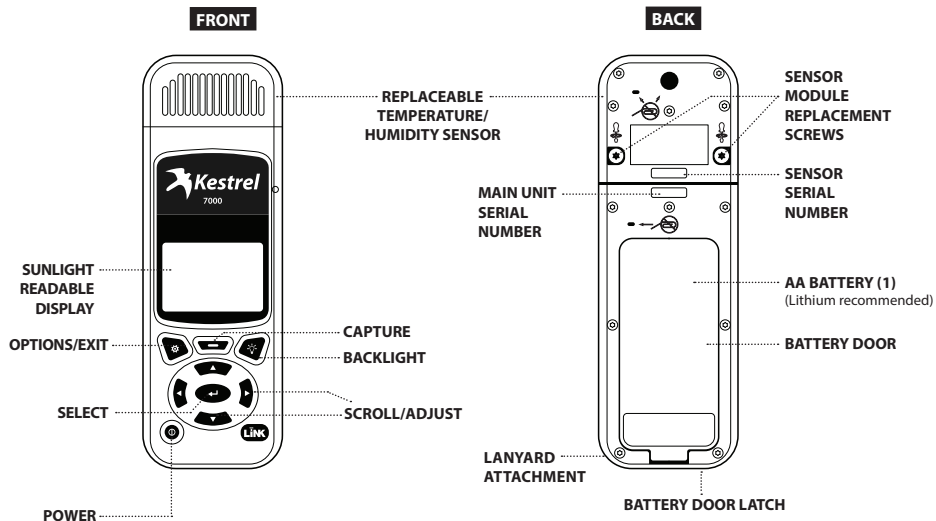
● optional

MEASUREMENTS	Icon	5000 Environmental	5200 Professional	5500 Weather	5400 HST	7000 Environmental
Moisture Content Humidity Ratio (Grains) (gpp, g/kg)			•			
Air Density (lb/ft ³ , kg/m ³)			•			
Relative Air Density (RAD) (%)			•			
Evaporation Rate (lb/ft ² /hr, kg/m ² /hr)			•			
Volume Air Flow (%)			•			
Delta T (°F °C)			•			
Wet Bulb Globe Temperature (WBGT) (°F °C)					•	
Thermal Work Limit (TWL) (°F °C)					•	
Globe Temperature (°F °C)					•	
Naturally Aspirated Wet Bulb Temp (°F °C)					•	








• optional

FEATURES	5000 Environmental	5200 Professional	5500 Weather	5400 HST	7000 Environmental
Replaceable Sensor(s)					•
LiNK Connectivity & Kestrel LiNK Mobile App	•	•	•	•	•
Backlit Display switchable white or Night-Vision preserving red	•	•	•	•	•


GETTING TO KNOW YOUR KESTREL



BUTTONS

Button	Name	Function
	POWER	Turns Kestrel on and off. Press for on, hold for two seconds to turn off.
	OPTIONS/ EXIT	Enter the main Options menu or exit a menu.
	SELECT	Access Settings on any measurement screen or select a menu option to enter its submenu or confirm a task.
	UP/DOWN	Scroll up and down through measurement screens or menus. Adjust values when entering text in name menus.
	LEFT/ RIGHT	Scroll options left and right. Adjust values in combo menus and setting submenus.
	CAPTURE	Manually capture all environmental values.
	BACK- LIGHT	Turn backlight on or off. (Also turns off automatically after one minute.)

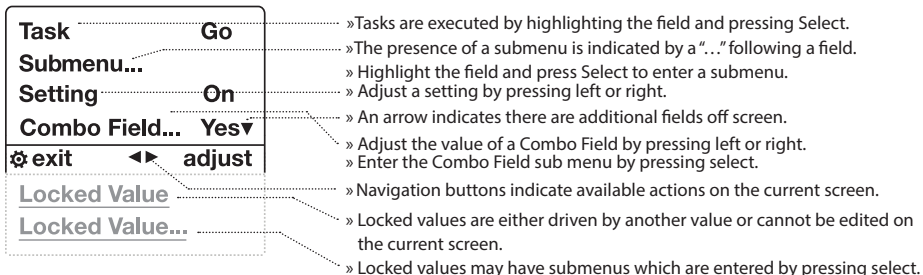
KESTREL OPTIONS MENU

Most system-wide and weather setup options are accessed from the main Options menu by pressing the  button from any Weather Measurement Screen or the main Targeting Screen.

- **BLUETOOTH**
 - » Bluetooth On/Off
 - » Conct
- **MEMORY OPTIONS**
 - » Clear Log
 - » Auto Store
 - » Store Rate
 - » Overwrite
- **GRAPH SCALE**
- **DISPLAY**
 - » Auto Shutdown
 - » Contrast
 - » Backlight
- **SYSTEM**
 - » Time & Date
 - » Measurements
 - » Units
 - » Lang
 - » Batt
 - » Factory Restore
- **ABOUT**
 - » Version
 - » Legal

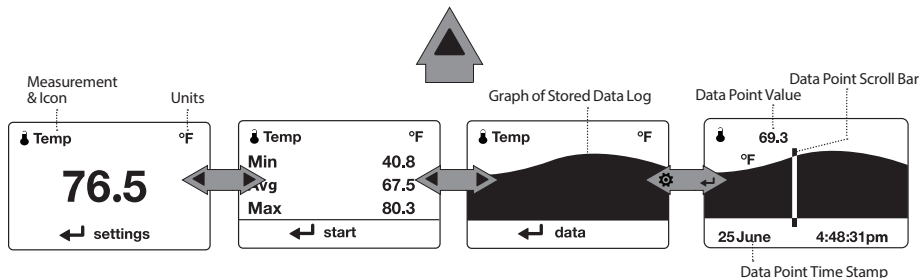
KESTREL MENU NAVIGATION

TYPES OF MENU ITEMS



MODE SCREENS

MORE MEASUREMENTS



Current Measurement Screen

Press SELECT to enter settings menu for that measurement.

Min Ave Max Screen

Press SELECT to start, stop and clear the Min/Avg/Max tracking.

Data Graph Screen

Press SELECT to enter the Data Log Detail Screen to view logged data points.

Data Points Screen

Press LEFT/RIGHT to scroll through data points. Press OPTIONS to exit Data Log Details Screen.

MORE MEASUREMENTS

- » The UP/DOWN buttons navigate between all weather measurements set to "On" in Options|Measurements.
- » The LEFT/RIGHT buttons scroll between the three display screens for the measurement.
- » The OPTIONS button exits the **settings** submenu and Data Log Detail Screen.

GETTING STARTED

1. **INSTALL BATTERY.** Slide the battery door latch and open door. Insert the provided AA lithium battery as indicated by the label. Replace the battery door, ensuring it “clicks” fully into place.
2. **POWER ON KESTREL.** Press **Ⓚ** to power on Kestrel.

SETTINGS

Settings are accessed from the **⚙️** Options menu:

1. **SET AUTO STORE RATE.** Scroll to and select **Memory Options**. Scroll to **Auto Store** and ensure it is set to **ON**. Scroll to **Store Rate** and adjust to desired frequency of automatic weather data logging.
2. **SET OVERWRITE.** Scroll to and select **Memory Options**. Scroll to **Overwrite** and set to **On** to allow the data log to wrap once full and to **OFF** to stop logging when full.
3. **SET GRAPH SCALE.** Scroll to and select **Graph Scale**. Scroll to and select the desired measurement type. Adjust the **Set High** and **Set Low** values for Temp and Humidity to bound the desired display values.
4. **SET AUTO SHUTDOWN.** Scroll to and select **Display**. Scroll to **Auto Shtdwn** and choose a time window after which the Kestrel will shut down without any button presses.
5. **SET BACK LIGHT COLOR.** Scroll to and select **Display**. Scroll to **Backlight** and set to either **White** or **Red**. White is very bright and ideal for any dim light use. Red is reduced brightness and a wavelength selected to preserve adapted night vision for true dark operations.
6. **SET DATE AND TIME.** Scroll to and select **System**. Scroll to and select **Time & Date**. Adjust the time and date.
7. **TURN ON/OFF MEASUREMENT SCREENS.** Scroll to and select **System**. Scroll to and select **Measurements**. Set measurement screens to either **On** or **Off** as desired.
8. **SET UNITS.** Scroll to and select **System**. Scroll to and select **Units**. To change all units select **Global**, then set **Global to Imperial** or **Metric**, and then scroll to **Apply** and select **Go**. To set units individually, scroll to each measurement type in the **Units** submenu and set to the desired units. Units can also be set in the **Settings** menu for each measurement.
9. **SET LANGUAGE.** Scroll to and select **Lang**. Adjust to desired language: **English, Deutsche, Francais, Espanol**.

Pressing the right scroll button from any Current Measurement Screen will open the Min/Avg/Max Screen. The capture process is linked for all measurement screens, capturing Min/Avg/Max values on one measurement screen will capture Min/Avg/Max values over the same time period for all measurements. Each new Min/Avg/Max capture overwrites the previously captured value from all measurements.

CAPTURING MIN/AVG/MAX VALUES:

- » Scroll to the Min/Avg/Max Screen of the desired measurement. This can be done by scrolling right from the desired Current Measurement Screen or scrolling vertically from another measurement's Min/Avg/Max Screen.
- » Press Select to **Start** a new Min/Avg/Max capture.
- » Press Select to **Stop** the capture time period and view Min, Avg, and Max values.
- » Press Select to **Clear** the Min/Avg/Max values.

If your Kestrel is marked LiNK on the bottom front label, it can be connected wirelessly to other LiNK-compatible devices. LiNK is powered by *Bluetooth* Low Energy®, also known as *Bluetooth*® LE, which is available in most iOS devices and Android devices, as well as in a USB Dongle available from Kestrel that supports connectivity to Windows and Mac OS devices. LiNK-enabled Kestrel units can connect to mobile devices running Kestrel LiNK to install firmware updates. LiNK-enabled units can be run wirelessly to computers using the Kestrel Dongle.

CONNECTING TO A COMPUTER, MOBILE PHONE OR TABLET:

- » On your phone or tablet, follow the links at **www.kestrelinstruments.com** to locate Kestrel LiNK for iOS or Android in the App or Play store and install on your mobile device.



OR

- » On your computer, follow the links at **www.kestrelinstruments.com** and install on your computer. Insert your Kestrel USB Dongle (available separately) into an open USB port.
- » On the Kestrel, open the Options Menu and select **Bluetooth**. Set **Bluetooth** to **On**.

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- » On your Kestrel select **Conct** from the Bluetooth Options menu and set to **PC/Mobile**. In **PC/Mobile mode**, the Kestrel's Status will change to **Available**, indicating that it is available for pairing with a computer or mobile device.
- » Ensure the computer or mobile device is searching and in range. When **Status** changes from **Available** to **Connected**, the pairing is active and your Kestrel is ready to communicate.

BLUETOOTH CONNECTION INDICATOR:

- » When connected to any LiNK compatible device, a  icon will appear in the upper right.
- » If the paired device goes to sleep or if the connection is lost, the  icon may disappear but waking the device up or returning within range should automatically reestablish the connection and the icon should reappear.

NOTE: LiNK range is typically 100 ft/30M line of sight. Shorter distances should be expected if there are obstacles such as walls or metal enclosures. Range is also impacted by the signal strength of the other device.

In addition to taking live measurements, your Kestrel 5 Series weather meter is a powerful data logger. The Kestrel will automatically create a time stamped data log of all measurements at the logging interval you set. Additional log points can also be captured manually. Logged data can be accessed two ways:

- » Viewed on the Kestrel Meter on the Data Graph Screen and Data Log Detail Screens.
- » Kestrel LiNK mobile apps available in the App Store and Google Play Store. Requires a Kestrel LiNK-enabled meter and compatible Bluetooth® LE devices.

TURNING ON AND ADJUSTING AUTOMATIC DATA LOGGING:

- » In the main Options menu, scroll to and select **Memory Options**. Scroll to and select **Auto Store** and set to **ON**. Scroll to **Store Rate** and adjust to desired frequency of automatic weather data logging.
- » In the Memory Options sub menu scroll to **Overwrite** and set to **On** to allow the data log to wrap once full and **Off** to stop logging when full.
- » When **Auto Store** is set to **On**, the Kestrel unit will automatically begin logging at the rate set in **Store Rate**.

MANUAL DATA LOGGING:

- » Individual data points can be added to the log at any time by pressing the Capture button.
- » Manual capture simply adds every measurement to the data log at the capture time/date.

VIEWING LOGGED DATA ON THE KESTREL METER:

- » Scroll to the Graph Data Screen of the desired measurement. This can be done by scrolling right from the desired Current Measurement Screen or scrolling vertically from another measurement's Graph Data Screen.
- » A graph of the most recently logged data points will be displayed and continue to grow at the selected store rate.
- » To view individual data log points, or to view graph data older than what is shown in the Graph Data Screen, press Select to open the Data Log Detail Screen. Scrolling left or right will move the bar highlighting individual data points. Log values are shown in the upper left and the time stamp is shown along the bottom. Press Exit to return to the Graph Data Screen.

- » To change the resolution of the graph, scroll to and select **Graph Scale** in the Options menu. Scroll to and select the desired measurement type. Adjust the **Set High** and **Set Low** values to bound the desired display values.

EXPORTING DATA LOGS TO A MOBILE DEVICE:

- » Follow the links at www.kestrelinstruments.com to locate Kestrel LiNK in the App or Play store and install on your mobile device.
- » Follow the directions in the Kestrel LiNK app and in the section of this manual titled Pairing with a Computer, Mobile Phone or Tablet: to connect the mobile device to the Kestrel.
- » The Kestrel's new logged data will automatically be added to the app's log whenever the devices are connected.
- » To export logged data to a .csv file for further analysis, go to the **Stats** page of the app or the **Manage Data Logs** screen on the **Manage** page.
- » Hit the **Export Data** button. Choose a method for exporting the data and follow the in-app prompts to send.

SENSOR REPLACEMENT

TOOLS AND PARTS

- » Kestrel 7000 (0870) main unit
- » Kestrel 7000 Replacement Sensor (0870SEN or equivalent)
- » Torx T10 key (included with sensor)

GETTING STARTED

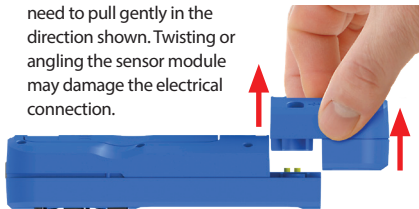
Sensor replacement should be performed in a clean, dry area.

1. Turn off your Kestrel 7000 and remove the battery. Sensor replacement should be performed with the unit completely off and without power.

2. With the T10 key, remove the two screws in the sensor module.



3. Gently remove the sensor module from the unit. You will need to pull gently in the direction shown. Twisting or angling the sensor module may damage the electrical connection.



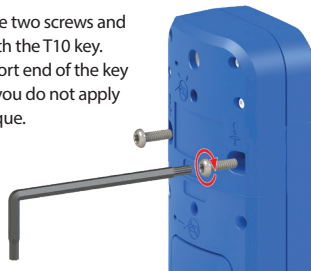
4. Visually inspect the electrical contacts on the main unit. If necessary, carefully remove any debris with a clean, lint-free cloth.



5. Carefully align your new sensor module with the main unit, and gently press it into place.



6. Replace the two screws and tighten with the T10 key. Use the short end of the key to ensure you do not apply excess torque.



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SENSOR REPLACEMENT *(cont.)*

7. Replace the battery in the main unit and turn it on. Your Kestrel 7000 will detect the new sensor module. Your new module is already calibrated, and there is no need to manually enter any calibration coefficients into the main unit.

If you have any questions or issues with sensor replacement, please use this QR code to visit the Kestrel Technical Support site.



5 YEAR LIMITED WARRANTY

Your Kestrel instrument is warranted to be free of defects in materials and workmanship for a period of FIVE YEARS from the date of its first consumer purchase. NK will repair or replace any defective product or part when notified within the warranty period, and will return the product via domestic ground shipping or NK's choice of method of international shipping at no charge. The following are excluded from warranty coverage: damage due to improper use, storage, maintenance or handling (including corrosion); damage caused by severe or excessive impact, damage caused by failed or leaking batteries, crushing or mechanical harm; modifications or attempted repairs by someone other than an authorized NK repair agent; impeller failure not caused by a manufacturing defect; normal usage wear and failed batteries. Measurement accuracy is warranted to be within the specifications on the supplied Certificate of Conformity including specified drift since date of manufacture. If no warranty registration or proof of purchase is provided, the warranty period will be measured from the product's date of manufacture.

Except for the warranties set forth herein, NK disclaims all other warranties, expressed, implied or statutory, including, but not limited to, the implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by applicable law are limited to the term of this warranty. In no event shall NK be liable for any incidental, special or consequential damages, including, but not limited to, loss of business, loss of profits, loss of data or use, whether in an action in contract or tort or based on a warranty, arising out of or in connection with the use or recalibration, performance of an NK product, even if NK has been advised of the possibility of such damages. You agree that repair, and (upon availability) replacement, as applicable, is your sole and exclusive remedy with respect to any breach of the NK Limited Warranty set forth herein.

All product liability and warranty options are governed exclusively by the laws of the Commonwealth of Pennsylvania.

Please register your Kestrel instrument at www.kestrelinstruments.com



Manufactured and Distributed by:

NIELSEN-KELLERMAN

21 Creek Circle, Boothwyn, PA 19061

Phone: (610) 447-1555

Fax: (610) 447-1577

www.KestrelInstruments.com

info@NKhome.com



**PROUDLY DESIGNED
AND BUILT IN THE USA**

CONTACT US AT

(800) 784-4221 Toll Free North America

(610) 447-1555

Email: support@KestrelInstruments.com

Facebook.com/KestrelMeters

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