Kestrel®
Weather & Environmental Meters
by NK

INSTRUCTION MANUAL

1000, 2000, 2500 & 2500NV,
3000, 3500 & 3500NV, 3500DT

⚠ CAUTION

Your Kestrel brand Weather Meter is designed to provide accurate measurement of current conditions only. Depending on your location and environment, conditions may change rapidly.

Rapid temperature and humidity changes (ie moving your meter from indoors to outdoors) may cause inaccurate readings of temperature and humidity as well as all readings that rely on either of these values. Before relying on Kestrel Weather Meter readings, use care to either a) force air flow over the sensors by waving or slinging your meter through the air; or b) wait until your unit's readings have stabilized, indicating it has equilibrated to its new environment.

To maximize the accuracy and reliability of your readings:

- *Ensure that your Kestrel Meter is in good repair and within factory calibration.*
- *Take readings frequently and carefully according to the guidelines above.*
- *Allow your meter's readings to stabilize after significant changes in temperature or humidity (ie changing location from indoors to outdoors).*
- *Allow a margin of safety for changing conditions and reading errors (2-3% of reading is recommended).*

Use extra care and good judgment when referring to your Kestrel Weather Meter to make any decisions regarding safety, health or property protection.

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NK, manufacturer of Kestrel Weather Meters,
is available to answer questions and provide support.
Contact NK by phone: 610.447.1555; fax: 610.447.1577;
email: info@NKhome.com; or web: NKhome.com.

FEATURES & OPTIONS

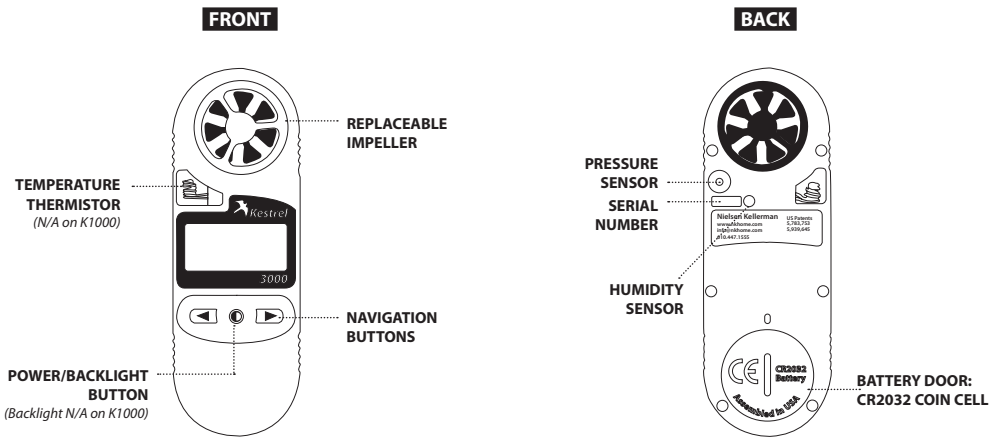
The table below shows all Measurement screens available, listed with their corresponding screen icon and "Hint" abbreviation.

Measurement	Icon	Hint	Units of Measure	1000	2000	2500	3000	3500	3500DT
Wind Speed		SPd	mph | kt | B | m/s | ft/min | km/h	•	•	•	•	•	•
Temperature		dEG	°F | °C		•	•	•	•	•
Wind Chill		chill	°F | °C		•	•	•	•	
Relative Humidity	%	r.h.	%				•	•	•
Heat Stress Index	%	H.I	°F | °C				•	•	
Dewpoint Temp		d.P.	°F | °C				•	•	•
Barometric Pressure		bAro	inHg | hPA | mb			•		•	•
Altitude		Alt	m | ft			•		•	•
Wet Bulb Temp		bulb	°F | °C					•	•
Backlit Display					•	•	•	•	•
Pressure Trend						•		•	
Delta T		dElt							•
Clock						•		•	•

**The NV series features a dim red backlight for use in low or nighttime situations.*

**Only one arrow icon will be displayed on screen to indicate the 3-hour pressure trend.*

GETTING TO KNOW YOUR KESTREL



**All Kestrel Meters with temperature measurment allow you to measure air, water and snow temperature.*

GETTING STARTED

Turning ON and OFF

- Press ◐ to turn on.
- Hold ◐ for 3 seconds to turn off.

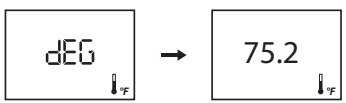
The Kestrel Meter will automatically turn off if no buttons have been pressed for 45 minutes.

Select Measurement Mode

- Use ◄ or ► to access each Measurement screen
- The instantaneous Measurement value will be displayed on each screen and updated once per second.

Each Measurement screen will flash a brief "Hint" to clarify which Measurement is being displayed. Note: Hints are not displayed in the Kestrel 1000.

The Measurement's icons and units of measure will be displayed in the lower line of the screen.



Temperature "Hint" flashes before

Temperature Measurement Screen

SETUP + OPTIONS

Select the Unit of Measure

- Select the unit of measure. While holding ◐, press ► to scroll through the available units of measure for that measurement.

Adjust the Clock

**This applies to the 2500, 2500NV, 3500, 3500NV and 3500DT.*

- Adjust the clock. Simultaneously press ◄ and ► to access clock setting. While the time is blinking, press ◄ or ► to change the time. Hold either button down to adjust quickly. Simultaneously press ◄ and ► to exit clock setting.

BAROMETRIC PRESSURE & ALTITUDE ADJUSTMENT

SETTING REFERENCE BAROMETRIC PRESSURE & ALTITUDE: KESTREL 2500 & KESTREL 3500 ONLY

The Kestrel Meter measures "station pressure," which changes in response to both changes in altitude and changes in atmosphere. Barometric pressure is a measurement of the air pressure adjusted to sea level. ***To obtain accurate barometric pressure and altitude readings, you must first enter EITHER your location's current barometric pressure OR your current altitude.***

**Station pressure is displayed if the reference altitude is set to zero.*

Starting with Known Altitude for your Location

- Use ◄ or ► to highlight the "BARO" screen.
- Press ◄ and ► simultaneously until the word "REF" starts blinking on screen.
- Use ◄ or ► to adjust the value to the correct known Altitude.
- Press ◄ and ► simultaneously to exit the reference setting mode.

After the Altitude reference is set, place the unit on a table and allow it to stabilize. The accurate Barometric Pressure reading will then be displayed on screen.

Note the correct barometric pressure reading above and use this measurement to set the Altitude:

- Use ◄ or ► to highlight the "Altitude" screen.
- Press ◄ and ► simultaneously until the word "REF" starts blinking on screen.
- Use ◄ or ► to adjust the value to the barometric pressure measurement noted above.
- Press ◄ and ► simultaneously again to exit the setting mode.

Starting with Known Barometric Pressure for your Location

- Use ◄ or ► to highlight the "Altitude" screen.
- Press ◄ and ► simultaneously until the word "REF" starts blinking on screen.
- Use ◄ or ► to adjust the reference value to the correct known Barometric Pressure.
- Press ◄ and ► simultaneously again to exit the setting mode.

After the Pressure reference is set, place the unit on a table and allow it to stabilize. The accurate Altitude reading will then be displayed on screen.

Note the correct altitude reading above and use this to set the Barometric Pressure:

- Use ◄ or ► to highlight the "BARO" screen.
- Press ◄ and ► simultaneously until the word "REF" starts blinking on screen.
- Use ◄ or ► to adjust the reference value to the correct known Altitude.
- Press ◄ and ► simultaneously again to exit the setting mode.

Once these steps are complete, both screens will display accurate readings.

**Be sure to adjust your reference measurements when you change your location for altitude and/or barometric pressure or when there has been dramatic change in weather conditions.*

MEASUREMENTS

Barometric Pressure Trend

↑ *: indicates pressure is rising quickly (> +0.18 inHg) in 3 hours*
↗ *: indicates pressure is rising (within +0.06 and +0.18 inHg)*
→ *: indicates pressure is stable (remains between -0.06 and +0.06 inHg)*
↘ *: indicates pressure is dropping (within -0.06 and -0.18 inHg)*
↓ *: indicates pressure is falling quickly (> -0.18 inHg)*

Select Units of Measure

- Use ◄ or ► to scroll to the desired Measurement screen.
- Hold down ◐ , then press ► to set the desired Units of Measure for the Measurement.

Water and Snow Temperature

The Kestrel Meter may also be used to measure the temperature of water and snow. Submerge the thermistor portion (curly exposed wire in window next to impeller) in water or snow to get an accurate reading. Kestrel Meters are completely waterproof, float and can be safely submerged in water according to IP-67 standards (up to 1 meter for a maximum of 30 minutes).

Max/Avg Function

To view the maximum wind gust recorded, press ◄ or ► until you see "MAX" appear at bottom of screen. Press again to view average wind gust. "AVG" will appear at bottom of screen. Both Max and Average are reset each time the unit is powered down. To restart averaging, simply turn the unit off and back on again.

Hold Mode

🗨 *Hold Mode can be useful for taking measurements when you are unable to view the display.*

- Hold down ◐ , then press ◄.
- The word "HOLD" will blink on each screen and all values will stop measuring and freeze in memory.
- Use ◄ or ► to view each Measurement screen in Hold Mode.
- To exit Hold Mode, hold down ◐, then press ◄ again.

Backlight*

- Press ◐ to activate the backlight for 10 seconds.
- Press ◐ again to manually deactivate the backlight before 10 seconds expire.

**The Kestrel 1000 Meter does NOT offer a backlight.*

MAINTENANCE & SERVICE

Replacing the Battery

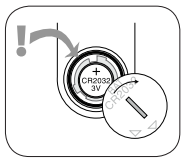
When your display becomes dim or disappears, you need to change the battery.

Use a US nickel or similar coin to twist open the battery compartment.

Replace battery with a new, clean CR2032 coin-cell battery, with positive side (+) facing up.

CR2032 batteries are available in most stores that sell batteries.

🗨 *When replacing the battery door, be sure to keep the black rubber o-ring seated in the groove on the case back.*



⚠ CAUTION

CR2032 batteries contain lithium, a toxic substance. Ingestion may cause serious injury or death. Keep battery out of the reach of children. If swallowed, immediately seek medical help. Have doctor phone 24-hour hotline at (202) 625-3333, call collect if necessary. Dispose of batteries properly and according to local regulations. Do not puncture or burn batteries.

SENSOR CALIBRATION

Impeller

The Kestrel impeller calibration drift is less than 1% after 100 hours of use at 16 MPH | 7 m/s. Drift increases with higher-speed use. For most users, the impeller will provide accurate wind speed/air flow readings for years if not physically damaged. However, if your application requires extremely high precision or if you perform frequent high-speed readings, we recommend you replace your impeller at one-year intervals. Every replacement impeller is supplied with a certificate of conformity and restores your Kestrel's calibration upon installation.

Temperature Sensor (Kestrel 2000 and higher)

The Kestrel temperature sensor exhibits virtually zero drift over time and generally does not require recalibration for accurate performance during the life of the product. If your industry or application requires calibration, please contact NK or a certified calibration lab for options and pricing.

Humidity Sensor (Kestrel 3000 and higher)

The Kestrel humidity sensor calibration drift may be up to +/- 2% over 24 months. For high-precision applications, we recommend recalibration at 24-month intervals. If you require calibration, please contact NK or a certified calibration lab for options and pricing. The humidity sensor may also be recalibrated in the field using a Kestrel Humidity Calibration Kit (NK PN-0802). Instructions for running the recalibration routine are provided with the Humidity Calibration Kit and may also be found at http://www.nkhome.com/support/instructions/cali_kit_07.html.

Pressure Sensor (Kestrel 2500 & 3500)

The Kestrel pressure sensor drift may be up to 1 mbar over 12 months. For high-precision applications, we recommend recalibration at 12-month intervals. If you require calibration, please contact NK or a certified calibration lab for options and pricing. The pressure sensor may also be recalibrated in the field with reference to a known-accurate and calibrated pressure standard. We do not recommend simply recalibrating to a local weather station as this may not be accurate for your location. Instructions for recalibrating the pressure sensor may be found at www.nkhome.com/kestrel/user-guides/calibration_field.php.

5-YEAR LIMITED PRODUCT WARRANTY

WARRANTY CERTIFICATE

Your Kestrel Weather Meter is warrantied 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 meter or part when notified within the warranty period, and will return the meter 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 or neglect (including corrosion); damage caused by severe or excessive impact, 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; failed batteries; and accuracy issues resolvable by recalibration. If no warranty registration or proof of purchase is provided, the warranty period will be measured from the meter'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 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.**

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