

# Kestrel<sup>®</sup> 2000 Pocket Weather<sup>™</sup> Meter with Backlight

Thank you for purchasing the Kestrel 2000 Pocket Weather Meter. This instrument will measure the following environmental conditions:

- wind speed
- maximum wind gust
- average wind speed
- temperature
- wind chill

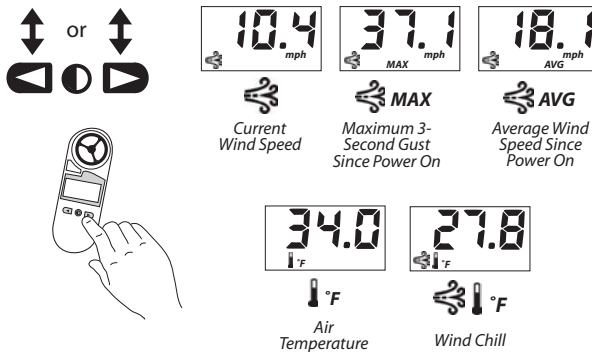
This instrument also features a data hold function, a backlight, and an automatic power-down function. Every unit is fully tested at our factory for measurement accuracy and waterproof integrity. The one-year warranty can be extended to two years by simply filling out the attached registration card.

## OPERATION

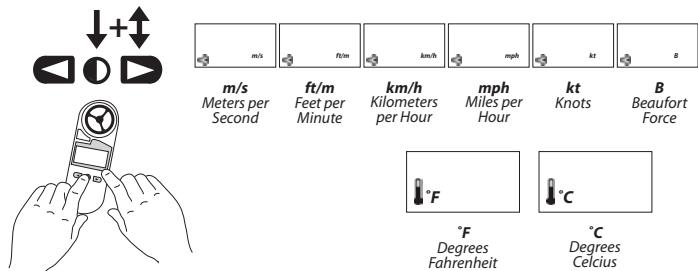
- 1) **Slide off cover.** 2) **Turn on:** Press the center button (●) to turn on the unit.



- 3) **Select operating mode.** Press the right arrow (▶) to scroll through the measurements listed below. Press the left arrow (◀) to scroll through the measurements in reverse order. The instantaneous measurements will be displayed. (See *Understanding the Measurements* section for more information.)



- 4) **Select the units of measure.** Press ▶ while holding ● to scroll through the units of measure.



- 5) **Hold mode.** Press ◀ while holding ● to hold the measured value on the display. The word "HOLD" will blink to indicate the Hold Mode. Press ◀ or ▶ to view the other measurements in Hold Mode. Press ◀ while holding ● to exit the Hold Mode. This mode can be useful for taking measurements when unable to view the display, as within a duct. The Max and Avg Wind Speed Modes will continue to work as usual.
- 6) **Turn on the backlight.** Press ● to activate the backlight for 10 seconds. If ◀ or ▶ are pressed while the backlight is illuminated, the backlight will remain illuminated for another 10 seconds. Press ● while the backlight is illuminated to manually turn off the backlight.
- 7) **Turn off.** Hold ● for 2 seconds to manually turn off the unit. The unit will automatically turn off if no buttons have been pressed for 45 minutes.

## UNDERSTANDING THE MEASUREMENTS

**Wind Speed** - average over the previous three seconds. The measurement will be accurate for air flow through the front or rear of the unit.

**Maximum Wind Gust** - maximum 3 - second wind speed since the unit was turned on.

**Average Wind Speed** - average wind speed since the unit was turned on.

**Temperature** - instantaneous temperature of the thermistor, which is located at the end of the long coiled leads in the open cavity below the impeller. The exposed thermistor will respond quickly to changes in temperature when air flows past it. For fastest response, either hold the unit into the wind or wave the unit side to side for 15 seconds. Readings should be taken in the shade.

**Wind Chill** - combination of wind speed and temperature, as defined by the US National Weather Service. Wind chill is the effective temperature on a human or animal at low temperatures due to wind speed. Wind chill readings will be the same as the temperature readings above 45°F or below 3 mph.

## MAINTENANCE & TROUBLESHOOTING

### Storing Your Kestrel

Avoid storing your Kestrel where it will be exposed to temperatures below -30°C [-22°F] or above 80°C [176°F] for extended periods of time. Doing so may cause permanent damage. (Note that the inside of a car parked in the hot sun can reach very high temperatures.)

### Use of the Lanyard and Cover

The cover can be captured on the lanyard to avoid loss. First, remove the cord poplock. Then feed the lanyard end through the large opening in the over and out the slot. Replace the poplock on the lanyard.

### Replacing the Battery

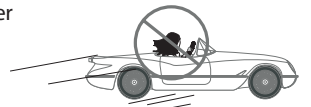
When your display flashes the low battery indicator (⚡), replace the battery. Use a large coin to open the battery compartment. Insert a new CR2032 coin cell (available where watch batteries are sold), positive (+) pole up. When replacing the battery door, be sure to keep the black rubber o-ring seated in the groove on the case back.

### Why does the Impeller Appear Imbalanced?

It is NORMAL for the impeller to oscillate as it comes to a stop. It is NOT imbalanced. Rather, it contains a very small magnet which responds to the earth's magnetic fields. This does not affect the accuracy of the wind speed readings because the magnetic field applies both a braking and an accelerating force which cancel each other. The impeller has been calibrated to provide wind speed readings accurate to within at least ± 3%.

### High Speed Use

After several hours of sustained operation over 25 M/S (~49 KT, 90 KM/H, 56 MPH or 4,923 FPM), the Kestrel will lose some accuracy due to wear of the sapphire bearings in the impeller.



**Kestrel<sup>®</sup>**  
Pocket Weather Meters

Thank you for purchasing a Kestrel Pocket Weather Meter! **Please register your Kestrel within 30 days of receipt and receive an additional year of warranty coverage.** This information will be kept confidential. Any information collected about our customers will not be sold or distributed, and will be used for the business of Nielsen-Kellerman only. We are conducting this survey in order to improve the quality of our product. Thank you for your cooperation and we appreciate your time.

The team at Nielsen-Kellerman stands proudly behind our products. If you have any questions or comments please feel free to call us at 1.800.784.4221 or visit our website at [www.nkhome.com](http://www.nkhome.com).

Sincerely,

*Katu*

Nielsen-Kellerman  
Sales Department

**Replacing the Impeller**

Press FIRMLY on the sides of the black impeller housing with your thumbs to remove the entire assembly. When inserting the new impeller, be sure the arrow is facing the display side of the unit, and is aligned with the top of the meter. Press on the sides of the housing rather than the center.



**Display**

Type: Reflective 4 digit LCD.  
Digit Height: 9mm. [0.36 in.].  
Update: 1 second.

Temperature Limitations: Normal operation from -15°C to 50°C [5°F to 122°F]. Below -15°C [5°F] the display fluid will freeze. Above 50°C, the display will turn black. This is temporary and display will function properly when unit is returned to normal temps. Accurate readings may be taken by keeping the unit warmer than -15°C [5°F], or cooler than 50°C [122°F] and exposing it for the minimum time necessary to take a reading (less than one minute).

Auto Shutdown: After 45 minutes of no button presses.

**Environmental**

Sealing: Electronics enclosure IP67 – water resistant to 1 m. [3 ft.]. Floats.  
Shock: Drop tested to 2 m. [6 ft.].  
Storage Temperature: -30°C to 80°C [-22°F to 176°F].

**Physical**

Buttons: Three sealed tactile rubber buttons control all functions.  
Battery: User-replaceable CR2032 coin cell. Typical life, 300 hours.  
Impeller: 25 mm. [1 in.] diameter, sapphire bearings, light weight. User-replaceable impeller/housing assembly.  
Case: Slip-on case prevents damage to display and moving parts.  
Dimensions: Unit: 4.8 x 1.7 x 0.7 in [122 x 42 x 18 mm]; case: 4.8 x 1.9 x 1.1 (122 x 48 x 28 mm).  
Weight: Unit 2.3 oz [65g]; case 1.3 oz [37 g].

For more information or more detailed specifications, please visit [www.nkhome.com](http://www.nkhome.com).

**BEAUFORT SCALE**

The Beaufort Scale is a system for estimating wind force without the use of instruments based on the visible effects of the wind on the physical environment. The behavior of smoke, waves, trees, etc., is rated on a 13 point scale. The scale was devised in 1805 by the British naval Commander Sir Francis Beaufort (1774-1857) and is still commonly used by mariners.

Force	Description	Kts
0	Calm	0
1	Light Air	1-3
2	Light Breeze	4-6
3	Gentle Breeze	7-10
4	Moderate Breeze	11-16
5	Fresh Breeze	17-21
6	Strong Breeze	22-27
7	Near Gale	28-33
8	Gale	34-40
9	Strong Gale	41-47
10	Storm	48-55
11	Violent Storm	56-63
12+	Hurricane	64+

**WARRANTY & SERVICE**

**Warranty**

Your Kestrel is covered by a full parts and labor warranty for one year from your date of purchase. The provisions of this warranty do not apply to: a) batteries, whether contained in a unit or sold individually; b) units which have been subjected to misuse, negligence, accident or improper maintenance or application; or c) units which have been repaired or altered by a party other than Nielsen-Kellerman's employees or agents without Nielsen-Kellerman's prior written consent. The warranty can be extended to two years by completing the registration form below.

**Parts and Service**

To order replacement parts for your Kestrel or obtain service please contact Nielsen-Kellerman or your original place of purchase.

**SPECIFICATIONS**

**Accuracy**

(Within OPERATIONAL RANGE)

Wind Speed	±3% of reading
Temperature	±1°C
Wind Chill	±2°C

**Response Time**

Wind Speed	1 Second
Temperature and Wind Chill,	<1 Minute

**Units and Operational Range**

Units	Low End	High End
Meters per Second	0.3	40
Feet per Minute	59	7877
Kilometers per Hour	1.0	144
Miles per Hour	0.7	89
Knots	0.6	78
Beaufort Force	1	13
Celsius	-29	70
Fahrenheit	-20	158

**ADDITIONAL INFORMATION**



What is a "Kestrel"? The American Kestrel is the smallest North American falcon. Beautiful and highly adaptable, it can be found virtually everywhere in North America. It is unique among falcons for its ability to both hover at very low speeds and dive at very high speeds.



Assembled in the USA. The Kestrel 2000 is protected by US Patents 5,783,753, and 5,939,645. Other patents pending. Nielsen-Kellerman reserves the right to change product specifications. © 2004. Kestrel, the Kestrel logo, Pocket Weather, NK and the NK logo are trademarks of the Nielsen-Kellerman Co.

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**NK NIELSEN-KELLERMAN**  
21 Creek Circle, Boothwyn, PA 19061  
Phone (610) 447-1555 • Fax (610) 447-1577  
Web [www.nkhome.com](http://www.nkhome.com)  
E-mail [kestrel@nkhome.com](mailto:kestrel@nkhome.com)

Please fill out the product registration below and mail it to: **Kestrel Registration, 21 Creek Circle, Boothwyn, PA 19061.**

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

COUNTRY: \_\_\_\_\_ TELEPHONE NUMBER: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_ DATE OF PURCHASE: \_\_\_\_\_

MODEL: 1000  2000  3000  4000

MALE:  FEMALE:

AGE: 18-24  25-36  37-48  49-56  57+

AVERAGE HOUSEHOLD INCOME: <\$25,000  \$26,000-45,000   
46,000-75,000  \$76,000-100,000  \$100,000+

WHERE DID YOU PURCHASE YOUR KESTREL?  
\_\_\_\_\_

HOW DID YOU LEARN ABOUT KESTREL POCKET WEATHER METERS?  
\_\_\_\_\_

PRIMARY USE (CAMPING, FIRE FIGHTING, AGRICULTURE, ETC.):  
\_\_\_\_\_

SECONDARY USE:  
\_\_\_\_\_

FAVORITE MAGAZINE:  
\_\_\_\_\_