Revised 07/08

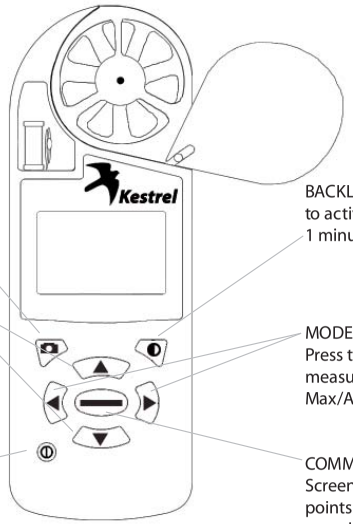
Kestrel® 4100 Pocket Air Flow Tracker

with Backlight

In a hurry?
Be sure to read pages 5-7 to ensure that your Kestrel is setup properly!

Instruction Manual For Kestrel 4100 Pocket Air Flow Tracker

www.kestrelweather.com ***800.784.4221***



MANUAL MEMORY BUTTON Press to manually store current conditions to memory.

MEASUREMENT BUTTONS Press to scroll between screens: Date/Time, Measurements, User Defined Screens.

POWER/SETUP BUTTON Hold to turn power on or off. Press to enter and exit Main Setup Menu.

BACKLIGHT BUTTON Press to activate backlight for 1 minute.

MODE BUTTONS Press to change mode of measurements: Current, Min/Max/Avg, Chart.

COMMAND BUTTON In Chart Screens, press to view data points. In Setup Menus, press to make selection.

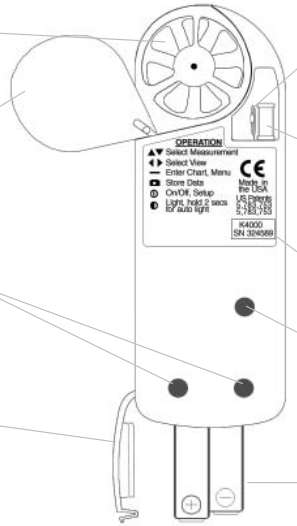
FRONT

IMPELLER Sapphire jewel bearings on a user-replaceable impeller.

IMPELLER COVER Swivel cover protects impeller when not in use.

DATA UPLOAD OPTICAL COUPLER Software and serial port interface sold separately.

BATTERY DOOR Sealed with o-ring to keep product watertight.



TEMPERATURE SENSOR Hermetically sealed precision thermistor coiled to isolate from case temperature.

HUMIDITY SENSOR Capacitive sensor with secondary thermistor to improve accuracy and response.

SERIAL NUMBER

PRESSURE SENSOR Monolithic silicon piezoresistive sensor. Do NOT insert any objects into this hole.

AAA BATTERIES

BACK

TABLE OF CONTENTS

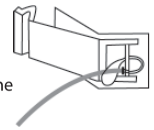
Congratulations on the purchase of your Kestrel 4100 Pocket Air Flow Tracker! The Kestrel 4100 is our newest and most comprehensive HVAC-specific instrument. It not only measures EVERY major environmental condition easily, accurately and right in the palm of your hand, but now also automatically calculates Volume Air Flow (CFM) and Humidity Ratio (grains).

While the Kestrel 4100 is user-friendly and simple to use, reading the instruction manual is recommended in order to use the Kestrel 4100 to its fullest potential.

NK, manufacturer of Kestrel Pocket 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: www.nkhome.com.

GETTING STARTED

Pouch and Lanyards
A neck lanyard and a small wrist and neck lanyards and a small pouch have been provided. To install the lanyard, feed the thin end of the lanyard around the metal post on the battery door (as shown in diagram). Feed the thick end of the lanyard through the loop on the thin end. Using tweezers can help.



Battery Installation
Use only AAA batteries. Install batteries as indicated on the battery door. After installing the batteries, the Kestrel 4100 will automatically start in the Date and Time Setting mode. (See Date and Time Setup below.) Custom settings and chart data will be saved during a battery change; only the date/time and MMA values will be lost.

Turning the Kestrel Meter ON and OFF
To turn the Kestrel Meter ON, press ⏻ the button. To turn the Kestrel Meter OFF, hold the ⏻ button for two seconds. Or, press the ⏻ button, then press the — button with the word OFF highlighted. (Note: your unit will continue to automatically store data when the power is turned off.) When first turned on, the Kestrel Meter will display a splash screen displaying the model number, the battery indicator, and the code version. This battery indicator will indicate the percentage of battery life remaining, which is helpful in preventing unexpected dead batteries.

Date and Time Setup
The first time that you turn on your Kestrel Meter, as well as after a battery change, you will need to set the date and time. The Introduction Screen will appear for 3 seconds, followed by the Date/Time Setup Screen. Press the ▲ and ▼ buttons to scroll through the settings. Press the ◀ and ▶ buttons to scroll through the settins. After entering the

date and time, press the ⏻ button to exit the Date/Time Setup. Then press the ⏻ button again to exit the Main Setup Menu.

NAVIGATION

Measurements use ▲ and ▼

- Air Flow
- Air Velocity
- Temperature
- HI Wind Chill
- DP Humidity
- Heat Index
- Dew Point

The Kestrel 4100 is set up to display 7 Measurements (some are calculations) in 3 Modes.

The Measurements are listed here with their corresponding screen icon. In addition to these Measurements and Modes, there are also 3 User Screens, which simultaneously show 3 current measurements, and the Date & Time Screen, which gives the current date and time. Use the ▲ and ▼ buttons to scroll through the various Measurements, followed by the 3 User Screens and the Date/Time Screen. Any of these screens can be turned off so that you can customize your Kestrel Meter to show the screens that your application requires. (See the Measurements section in the Main Menu.)

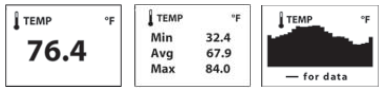
The Modes are displayed below. Use the ◀ and ▶ buttons to scroll through the various Modes. From any mode, you may still scroll to a different Measurement by pressing the ▲ and ▼ buttons.

Current - Displays the instantaneous reading.

Min/Max/Avg - Displays the Minimum/Maximum/Average readings from stored data. If there is no stored data, the values will be displayed as –.-.

Chart - Displays a graphical representation of up to 2000 stored data points for each measurement. If there is no stored data, the axis will appear, but the chart will be blank. (See the following section for information on Chart Navigation.)

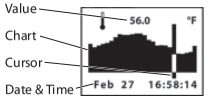
Modes use ◀ and ▶



Navigation of Charts
The Kestrel 4100 is capable of storing up to 2000 data points for each measurement. To review the data, press the — button while viewing a chart. A cursor will appear on the most recent data point. Press the ◀ and ▶ buttons to scroll through the data points. The date and time at which the data was stored will be displayed at the bottom of the screen, and the data value will be displayed at the top of the screen. Hold down the ◀ or ▶ button to scroll quickly through the data points.

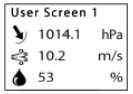
Press the ▲ or ▼ button to review the data for the other measurements. Please note that the cursor will remain at the same date and time. If new data is stored while viewing chart data, the entire chart will shift left with the new data point charted on the right. The cursor will not shift with the chart.

Press the — button to return to the Chart Mode.



SPECIAL FUNCTIONS

User Screens



The Kestrel Meter has three User Screens that can be customized to display three current measurements simultaneously. These screens can also be turned off. (See the Main Menu section for setup instructions.)

Max/Avg for Air Flow, Air Velocity & Wind Chill
The Max/Avg values for Air Flow, Velocity and Wind Chill are measured independently from the stored and charted data. This allows the user to start and stop the averaging period in the most appropriate manner for their application. Averaging on all velocity-related values (air flow, air velocity and wind chill) will be started and stopped together.

While viewing the Min/Max/Avg screen for any of these measurements, hold the unit into the wind, and press the — button when the screen displays "--average" to begin collecting data for all measurements, and again when the screen displays "--stop" to stop collecting data and hold the values on the display. Press the — button when the screen displays "--clear" to clear the data. This routine will work simultaneously for all measurements, regardless of which one is displayed while the routine is run. The Max/Avg for these velocity values will not affect any other Min/Max/Avg or stored data.

Manual Data Storage
To manually store data, press the 📷 button. One of the following will appear: Data Stored (data has been captured and will appear on chart), Full (Overwrite is off and data log is full), or Off (Manual Store button has been disabled). (See the Main Setup Menu section for more information on memory.)

Backlight
Press the ◐ button to activate the backlight. The light will remain activated for one minute. Press the ◐ button within one minute to deactivate the light manually.

Air Flow
The Kestrel Air Flow Tracker will display the volume airflow, based on the instantaneous air velocity and cross-sectional area of the opening through which the air is passing. If your particular industry uses a standard of practice for air flow measurements, be sure to adhere to those standards when using this product.

To set the dimensions of the duct or opening, press the — button while viewing the AIR FLOW screen. The DIMENSIONAL SETTING screen will appear with the word SHAPE highlighted.

The shape of the opening can be selected by pressing the ◀ or ▶ button. The options are round or rectangular openings. Press the v button to highlight the dimensional settings. For round openings, simply set the correct diameter of the opening. Use the ◀ and ▶ buttons to increase and decrease the value. Holding these buttons will increase and decrease the value quickly. For rectangular openings, set both the length and the width of the opening.

When the dimensional settings are correct, press the — button to exit the DIMENSIONAL SETTING screen and return to AIR FLOW screen. The displayed airflow value will be the result of multiplying the instantaneous air velocity by the area of the programmed opening.

Note that you may change the units for setting opening dimensions under the Main Setup Menu (see the Main Menu setup section instructions). Choices are inches, feet, centimeters and meters.

The Kestrel Air Flow Tracker also features an averaging function that allows you to traverse a duct and the unit automatically averages the CFM. This method may yield more accurate results, especially in ducts with variable flow or with registers on them. To do so, from the current Air Flow screen, simply press the ▶ button to enter the Max/Average screen. Press the — button to begin averaging, and traverse the duct. When finished, press the — button again to stop the averaging. Press — to clear the data. See the "Applications Examples" section for more information.

Relative Humidity

The Kestrel Meter is capable of measuring RH to a high accuracy: +/– 3% RH between 5 and 95%. To ensure operation within these specifications, please follow these recommendations:

- Avoid taking measurements in direct sunlight, which will heat the air inside the humidity sensor enclosure and cause inaccurate readings.
- If your circumstances force you to expose the Kestrel Meter to a large temperature swing prior to taking a relative humidity reading (such as when taking a Kestrel Meter stored inside at 70° F outside to a temperature of 40° F), you will need to take additional steps to ensure that the Kestrel Meter's external temperature sensor is in thermal equilibrium.
  - Ideally, provide an airflow of at least 1 M/S (2.2 MPH), over the temperature sensor - point the Kestrel Meter into the airflow. If there is no airflow, simply wave the unit back and forth so air passes over the sensors. With airflow over the temperature sensors and humidity chambers, readings within specifications will be provided within two to three minutes, even after a large temperature shift.
  - If no airflow can be provided, you must allow sufficient time for the RH value to stabilize. This can take as long as 20 minutes—the greater the temperature change, the greater the time. You can use the logging capability of the Kestrel Meter to confirm that the unit has stabilized to a correct reading: Set the memory options to a relatively short logging interval (20 seconds works well), select the graphical display of RH, and you can see when the value is no longer changing significantly. At that point, the RH value is stable and can be relied upon to be within the accuracy specifications.

MAIN SETUP MENU

You can customize your Kestrel Meter in multiple ways. Press the ⏻ button to access the Main Setup Menu. Press the — button to select the highlighted setting. The Main Setup Menu contains: OFF, Memory Options, Measurements, Graph Scale, Units, User Screens, System, Date & Time, Language and Restore.

Off
Press the ⏻ then the — button to turn the display off. Even when the Kestrel Meter's display is turned off, the unit will continue to automatically store data at the defined Store Rate. The battery life will be decreased if data is stored frequently. The only way to completely shut off the unit is to remove the batteries. Custom settings and data will be stored when the batteries are removed.

Memory Options
These settings control the data storage properties.

Setting	Description	Operation
Clear Log (Go/Done)	All stored data is cleared. This will also clear Min/Max/Avg data.	Press ◀ or ▶ to clear the log.
Reset MMA (Go/Done)	All Min/Max/Avg data is cleared. Chart data will remain intact.	Press ◀ or ▶ to clear the MMA.
Auto Store (On/Off)	When On, data is automatically stored at preset Store Rate. When Off, data is only stored when manually captured with the 📷 button.	Press ◀ or ▶ to toggle between On and Off.

Store Rate* (2 sec – 12 hr)	The frequency at which data sets are automatically stored. (Battery life may be shortened if data is stored frequently.)	Press ◀ or ▶ to increase or decrease Store Rate frequency.
Overwrite (On/Off)	This setting only applies when the data log is full. When On, oldest data point is discarded to allow memory for the new data point. When Off, new data points are not saved.	Press ◀ or ▶ to toggle between On and Off.
Man Store (On/Off)	When On, data is stored when the 📷 button is pressed. When off, the 📷 button is disabled.	Press ◀ or ▶ to toggle between On and Off.

* When unit is off, data is NOT stored for 2 sec and 5 sec Store Rates.

Measurements
Measurement screens can be turned off, or "hidden" from the normal measurement navigation. For example, if wind chill is not of interest, it can be hidden. Press the ◀ or ▶ button to toggle between ON and OFF for each individual measurement. Press the ▲ or ▼ button to highlight the desired measurement. Press the ⏻ button to return to the Main Setup Menu. Even when measurements are hidden, the Kestrel Meter will continue to log data for all measurements. If you wish to see the logged data for measurements that are hidden, simply enter the Measurement screen and turn them back on. The data will be stored in the same manner as all other measurements, as specified in the Store Rate.

Graph Scale
These settings control the chart limits of your Kestrel Meter. Depending on the conditions, the lower and upper limits of the chart scale may need to be adjusted in order to get the best view of the data. Highlight

the desired measurement by pressing the ▲ or ▼ button. Select the highlighted measurement by pressing the — button. Press the ◀ or ▶ button to increase or decrease the value of the limits. Press the ▲ or ▼ button to change between the upper and lower limits. Press the ⏻ button to exit and return to the Measurement Selection screen. Press the ⏻ button to return to the Main Setup Menu.

Units
The units of measure can be adjusted to best suit the application. The following units are available:

Air Velocity	Air Flow	Temperature, Dewpoint, Wet Bulb Temp, Wind Chill & Heat Index		Dimensions
m/s meters per second	Cfm cubic feet per minute	°C	Celsius	Ft feet
km/h kilometers per hour	M^3/h cubic meters per hour	°F	Fahrenheit	Cm centimeters
kt knots	M^3/m cubic meters per minute			M meters
mph miles per hour	M^3/s cubic meters per second			In inches
ft/m feet per minute	L/s liters per second			
Bft Beaufort				

Highlight the desired measurement by pressing the ▲ or ▼ button. Press the ◀ or ▶ button to scroll through the available units. Press the ⏻ button to return to the Main Setup Menu.

User Screens
The three User Screens can be reconfigured to display the most appropriate information for your application. For example, if you need to monitor the wind speed, humidity and barometric pressure, a User Screen can display these current measurement values on the same screen for quick reference. Only current measurements can be selected for the User Screens - Min/Max/Avg and Charts are not available.

Highlight the desired User Screen by pressing the ▲ or ▼button. Press the — button to select the highlighted User Screen. Press the ▲ or ▼buttons to change lines, and the ◀ or ▶ button to scroll through the available measurements for each highlighted line. Press the ⏻ button to return to the User Screen Setup Menu. Repeat above process for the other User Screens or press the ⏻ button to return to the Main Setup Menu. The User Screens may also be hidden if not needed.

System
The display Contrast and Auto Shutdown can be reconfigured as required. The relative humidity and pressure sensors can also be recalibrated. Press the ▲ or ▼buttons to highlight the appropriate selection, and the ◀ or ▶ button to adjust or select.

The Contrast can be adjusted for better visibility depending on the ambient lighting conditions. Press the ◀ or ▶ button to increase or decrease the contrast from 0 to 20 (0 is lightest, 20 is darkest).

The display can be set to automatically turn off in order to conserve the battery life. Auto Shutdown will only occur after the preset time has elapsed without any button presses. Press the ◀ or ▶ button to scroll through the Auto Shutdown options (15 minutes, 60 minutes, Off). Battery life will be shortened if the Auto Shutdown is turned to Off.

Humidity Cal - *Recalibration of this sensor is not typically required, and it is not recommended that you recalibrate without speaking to an NK technician.* The humidity sensor can be calibrated by "teaching" it the correct humidity. Some special equipment is required for this calibration, including two hermetically sealed containers and saturated salt solutions. NK offers a calibration kit, and instructions are available on www.nkhome.com. If recalibration is desired, the unit may also be returned to NK for service.

Date & Time
The date and time, as well as date and time formats, can be adjusted. The Time Formats available are 12 hour and 24 hour. The Date formats available are day/month/year and month/day/year. (See the Date and Time Set Up section for instructions.) Press the ⏻ button to return to the Main Setup Menu.

Language
Displayed text can be set in one of five languages: English, French, German, Italian or Spanish. To choose a language, use the ▲ or ▼ buttons to highlight the desired language. Press the — button to select the language and return to the Main Setup Menu. Otherwise, press the ⏻ button to return to the Main Setup Menu without changing languages.

Restore
Default settings for units of measure, date and time formats, and system settings can be restored. (See the Factory Default Settings section for more information.) Press the ▲ or ▼ button to highlight the desired default setting: Metric, Imperial or Defaults. Press the ◀ or ▶ button to reset the factory setting. Press the ⏻ button to return to the Main Setup Menu.

APPLICATION EXAMPLES

This section provides examples of applications where a Kestrel Meter might be used, and the appropriate memory settings.

HVAC - Environmental Monitoring

Auto Store	On
Store Rate	5 min
Overwrite	On
Man Store	Off

These settings will record conditions every five minutes, for a total storage of almost 7 days. You can monitor the conditions in a laboratory or manufacturing plant, both day and night, to determine if the climate control is working properly. Or you can examine the effect on the environment when employees enter and exit the building.

HVAC/R - System Function Verification

Auto Store	Off
Store Rate	—
Overwrite	Off
Man Store	On

These settings will require you to press the Manual Store Button in order to store any data at a duct, hood, vent, or other system location. The meter will not store any data automatically. Be sure to record the location and date/time of storage for reference when reviewing the data. After storing the conditions at each location, simply review the data and balance the system.

Air Duct Measurements
There are two useful techniques for measuring airflow in a duct or at the face of a duct opening. First, the

unit can be used in the Max/Avg Mode. Hold the unit in one corner or side of the duct. Press the — button to begin the averaging interval. Slowly traverse the duct. Press the — button at the end of the traverse of the duct. The maximum and average airflow measurements will be displayed.

Second, the unit can be used to store the airflow at multiple points in a duct. Hold the unit in one position in or on the duct. Press the ⏀ button to manually store the measurements. Repeat this process in multiple positions in or on the duct. When complete, review the stored measurements in the chart data, and average them if desired.

MEMORY CAPABILITIES

Store Rate	Total Memory
2 sec	1 hr, 6 min, 40 sec
5 sec	2 hr, 46 min, 40 sec
10 sec	5 hr, 33 min, 20 sec
20 sec	11 hr, 6 min, 40 sec
30 sec	16 hr, 30 min
1 min	1 day, 9 hr, 20 min
2 min	2 days, 18 hr, 40 min
5 min	6 days, 22 hr, 40 min
10 min	13 days, 21 hr, 20 min
20 min	27 days, 18 hr, 40 min
30 min	41 days, 16 hr
1 hr	83 days, 8 hr
2 hr	166 days, 16 hr
5 hr	416 days, 16 hr
12 hr	1000 days

GLOSSARY

The below definitions have been greatly simplified in order to keep this section brief. We strongly recommend that anyone who wishes to make use of these measurements refer to one of the many excellent weather references available for a more in-depth definition. On the internet, visit www.usatoday.com or www.noaa.gov. Or, locate the USA Today publication, *The Weather Book*.. Please note that any words in a definition printed in *italics* are themselves defined in this glossary.

Air Flow
The volume of air passing through an area for a given period of time. This is commonly calculated by multiplying the air velocity by the cross sectional area through which the air is passing.

Dewpoint
The *temperature* to which air must be cooled in order for condensation to occur. The difference between *dewpoint* and *temperature* is referred to as the "temperature/dew point spread". A low dewpoint spread indicates high *relative humidity*, while a large dewpoint spread indicates dry conditions.

Heat Index
A practical measure of how hot the current combination of *relative humidity* and *temperature* feels to a human body. Higher *relative humidity* makes it seem hotter because the body's ability to cool itself by evaporating perspiration is reduced.

Relative Humidity
The amount of water vapor actually in the air divided by the maximum amount of water vapor the air could hold at that *temperature*, expressed as a percentage.

Temperature
The ambient air temperature.

Wind Chill
The cooling effect of combining wind and temperature. The wind chill gives a more accurate reading of how cold it really feels to the human body. The Kestrel Meter's wind chill is based on the National Weather Service standards as of November 1, 2001.

DEFAULT SETTINGS

UNIT	METRIC	IMPERIAL
Wind Functions	M/s	mph
Temperature Functions	°C	°F
Barometric Pressure	hPa	inHg
Altitude Functions	M	Ft
Time Format	24 hour	12 hour
Date Format	Day/month/year	Month/day/year

SETTING	FACTORY DEFAULT
Automatic Data Store	On
Data Store Rate	1 hour
Data Overwrite	On
Manual Data Store	On
User Screen 1	Air velocity, air flow, temperature
User Screen 2	Temperature, humidity, dewpoint
User Screen 3	Air flow, temperature, humidity
Display Contrast	10
Automatic Shutdown	15 minutes
Language	English

PC Upload
Stored data may be uploaded to a PC with the optional Kestrel Interface.

FREQUENTLY ASKED QUESTIONS

What is the most accurate way to measure variable flow with a Kestrel Air Flow Tracker?
To measure CFM, you need to first enter the duct size and shape. The simplest way to measure CFM is to hold the unit in the airflow. However, if the duct has variable flow, it is more accurate to use the Kestrel Meter's averaging mode. Enter your duct dimensions, then press the ▶ button to enter the averaging mode. Press the — button to start averaging, and traverse the duct. After a few seconds, you will see the average start to stabilize. Press the — button again to stop the averaging. This method can be used with floor vents and diffusers as well as any variable flow duct.

Why is my Kestrel Meter is not registering air velocity?
It probably just needs a replacement impeller. You can verify this by removing the impeller (press firmly on the sides of the impeller), and turn the unit on to the air velocity screen. Hold the Kestrel Meter near a television, computer monitor or some electronic device and it will display a wind speed. Or, wave a magnet (like a refrigerator magnet) back and forth by the Kestrel Meter. If the Kestrel Meter is working properly, you will register a wind speed reading, even though there is no impeller installed. Simply purchase a new impeller and your Kestrel Meter's wind speed readings will be restored to factory calibration.

What is the best way to take accurate temperature and humidity readings?
Avoid taking measurements in direct sunlight, and be sure there is airflow over the sensors. Especially if you expose the Kestrel Meter to a large temperature swing prior to taking a reading (such as taking a Kestrel Meter from the indoors to the outdoors in the winter), airflow over the sensors is necessary to measure accurate temperature and humidity readings. You can ensure airflow by either placing the Kestrel Meter in

a breeze, or by waving it back and forth. If no airflow can be provided, you must allow up to 20 minutes for the values to stabilize and accurate readings to be displayed.

Can my Kestrel Meter measure water speed by placing it in wind speed mode and submerging it?
Even though your Kestrel Meter is fully waterproof and can be submerged without damage, the viscosity of water is different than that of air. The Kestrel Meter will display a value, but the readings will not be the accurate water speed.

Why does my screen turn black in the heat? Why does screen become sluggish or blank in the cold?
The liquid crystal display used in Kestrel Meters has an operational temperature range of 14.0 to 131.0°F (–10.0 to 55.0°C). Above this temperature, the whole screen will turn black. Below this temperature, the liquid crystals will freeze and not display a reading. Even in these conditions, your Kestrel Meter will still continue to measure and record readings as specified by the automatic and manual data storage rates, you will just not be able to read the display until the environment's temperature is within the operational range. In cold environments, you can keep the Kestrel Meter warm in your pocket and remove it only to take readings. Be sure to wave the unit back and forth to create airflow over the sensors to ensure the most accurate reading possible.

Why doesn't my Kestrel Meter match the local Weather Report?
Obtaining a weather report from a local television station, airport or internet site will give you the weather where those instruments are, which is not necessarily the same as where you are. Your Kestrel Meter is measuring the conditions right where you are. The nature of microclimates and weather fronts is that they are varied, and even locations as close as a mile apart can have different weather readings. You can certainly use these weather reporting services for good estimates of what the conditions will be, but for the most accurate readings at your particular location, the Kestrel Meter is better.

CUSTOMER SERVICE

Kestrel Pocket Weather Meters Warranty
NK does not believe in "disposable electronics." We know that Kestrel Meters don't typically lead pampered lives, and we design them for years of performance in tough conditions. Every Kestrel Meter is designed and manufactured at NK's facility in Boothwyn, Pennsylvania, USA. We guarantee every Kestrel Pocket Weather Meter to be free of defects in materials and workmanship for a period of FIVE YEARS from your date of purchase. We will repair or replace any defective product or part when notified within the warranty period, and will return the product via domestic ground shipping at no charge. Additionally, each Kestrel Meter has a 30-day money back guarantee.

The following issues do not result from a manufacturing defect and are not covered under this warranty: damage due to improper use or neglect (including corrosion), impact damage, modifications or attempted repairs by someone other than an authorized NK repair agent, impeller failure not caused by a manufacturing defect, normal wear from use of the product, failed batteries, and re-calibration beyond 30 days from your date of purchase.

Your warranty period will be measured from your date of purchase. The best way to ensure full warranty coverage is to REGISTER your NK product promptly on our website: www.kestrelweather.com. We keep your registration information strictly confidential and do not sell it, share it, or use it for anything but product-related information bulletins (which you may decline receiving). If you do not register and cannot provide proof of purchase, your warranty period will be measured from our date of manufacture, determined by serial number.

We request that you contact NK if you feel your product is not working properly. We can often solve product issues by phone or e-mail, saving you the time and expense of returning the unit. If we require the product to be returned, we will issue a Return Authorization to expedite the handling of your warranty claim.

The Kestrel 4100 is covered by the following US patents: 5,783,753, 5,939,645, 6,257,074, and 7,059,170.

Calibrations, Certifications and Service

Every NK product is tested and calibrated before it leaves our factory. We guarantee that it will perform within specifications when you receive it. Each Kestrel Meter comes with a Certificate of Conformity, with the stated specifications for that product on the back. If you feel an NK product is not meeting specs when you receive it, call us and we'll make sure you are operating it correctly. If it still appears that it may be out of spec, return it to us within 30 days of purchase and we will test and recalibrate all values at no charge. Beyond 30 days, we offer reasonably-priced tests, calibration services and N.I.S.T. certified calibrations as well as Kestrel Meter tune-ups.

All of our measurements are traceable to the National Institute of Standards and Technology, ensuring the highest level of accuracy. Our primary Calibration Standards are sent for calibration in accordance with N.I.S.T. requirements and based on a regular schedule. Only approved laboratories and N.I.S.T themselves are used for these calibration services. Incoming and outgoing data is supplied with the certificate of calibration.

We also offer full factory service on every product we manufacture for as long as we make the product (and as long after as component availability permits). If we can't repair a product, we will offer you a brand-new replacement under our Customer Care Program (even for accidental damage and misuse). Cost of repairs and other important information can be found on our website.

We request that you contact NK if you feel your product is not working properly. We can often solve product issues by phone or e-mail, saving you the time and expense of returning the unit. If we require the product to be returned, we will issue a Return Authorization to expedite the handling of your claim.

Visit www.kestrelweather.com for more information and pricing for these services.

Lifetime Customer Care Warranty
NK wants you to be an NK customer for life, so we take care of you even beyond the terms of the above warranty with our Customer Care Program. Trade-in any Kestrel Pocket Weather Meter, no matter the age or condition, and receive a generous discount on the replacement product (same model only). Our Customer Care Program applies only as long as we manufacture the product, and does not cover product upgrades.

Need Help?

Our NK Knowledge Center has answers to many common questions, along with tips and tricks for using NK products. It's available 24-7 at www.nkhome.com/knowledgecenter/.

For email assistance with the installation or operation of your NK product, write techsupport@nkhome.com.

For help with an apparent malfunction, or to arrange or inquire about a repair, write repairs@nkhome.com.

Or call 800.784.4221 (610.447.1555 outside of the USA), Monday to Friday, 9 to 5, East Coast Time.

Kestrel® Pocket Air Flow Trackers are designed and manufactured in the USA by:

NIELSEN-KELLERMAN
21 Creek Circle, Boothwyn, PA 19061
Phone: (610) 447-1555 Fax: (610) 447-1577
Web: www.kestrelweather.com
Email: kestrel@nkhome.com

Instruction Manual for Kestrel 4100 version: 4.29 ALL
Please register your Kestrel Meter at www.KestrelWeather.com

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