

## FUNCTIONS

- Wind Speed
- Wind direction
- Crosswind
- Headwind / tailwind
- Heading (true and magnetic)
- Temperature
- Wind Chill
- Relative humidity
- Heat index
- Dew point
- Wet bulb temperature
- Barometric pressure
- Altitude
- Density altitude
- Time & Date



Kestrel 4500 with optional Vane Mount

## FEATURES

- High accuracy
- Wide operating range
- Compact, rugged design
- User-replaceable, precision Zytel® mounted impeller
- Fast response temperature sensor
- Easy to read back-lit display – option of olive drab NV version with low intensity red backlight
- Min/max/average values or graphical data
- User selectable units and language
- User customisable screens
- Data logging - up to 2900 readings
- Data upload (with optional PC interface or integrated Bluetooth® wireless technology)
- Runs from 2 AAA batteries (supplied)
- Available in yellow or olive drab



K4500NV



Bluetooth® model available

Ideal for streaming real-time data to laptop or PDA



actual size (A4 page)

The Kestrel 4500 Pocket Weather Tracker is a complete weather instrument, offering all the features of the Kestrel 4000 with instant and accurate measurement of wind speed, temperature, humidity and barometric pressure and numerous other derived functions.

In addition, the Kestrel 4500 has a built in digital compass. This allows you to track and log wind direction as well as wind speed. The wind direction is displayed in degrees and cardinal compass points. By setting a reference target or runway heading, the Kestrel 4500 will automatically calculate crosswind, headwind and tailwind when measuring the wind speed. The digital compass can also be used to display forward heading with reference to either magnetic or true north.

At the touch of a button environmental conditions are clearly shown in digital or graphical form. Individual functions can be displayed in three different formats: current, minimum/maximum/average and chart. There are also three user screens, which can be customised to simultaneously display the three most appropriate functions for the application.

Combined with the optional Vane Mount and Mini Tripod, the Kestrel 4500 becomes a complete weather station. This is ideal for use in remote locations for short term weather monitoring, being extremely light-weight and portable.

For those with after dark requirements, the Kestrel 4500NV (with an olive drab case) is available with a low intensity red backlight to preserve night vision.

The Kestrel 4500 can be set up to log data automatically (as well as manually) at programmable intervals, in order to display a history of weather information. Graphs display up to 2900 data points and the value, time and date of capture point can be shown. The stored data can also be uploaded to a PC, for analysis/storage with the optional Kestrel Interface and Communicator software.

High precision Zytel® bearings and a lightweight impeller provide accurate air flow measurements and the ability to operate at speeds as low as 0.6 m/s. The impeller is user-replaceable in case of damage, also ensuring high accuracy levels are maintained for life. An integral flip-open hard cover protects the impeller when not in use.

The Kestrel 4500 is powered by two easily replaceable, AAA batteries and has two power saving modes to prolong battery life. All text can be displayed in one of five languages: English, French, Italian, Spanish or German.

Every Kestrel 4500 is individually calibrated before it leaves the factory and comes with a free Certificate of Conformity.



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**TECHNICAL SPECIFICATION**

|                       |   |   |  |  |
|-----------------------|---|---|--|--|
| <b>Physical</b>       | Dimensions  | 127mm x 45mm x 28mm   |  |  |
|                       | Weight  | 102g  |  |  |
|                       | Lanyards  | 0.2m and 0.5m (for wrist and neck)  |  |  |
|                       | Case colour   | Options of yellow or olive drab for NV version  |  |  |
| <b>Display</b>        | Display type  | Dot matrix LCD with electro-luminescent backlighting  |  |  |
|                       | Display update  | 1 second  |  |  |
|                       | Data logging  | Programmable 2 second to 12 hour intervals, 2900 data points with graphical display. Manual data capture. Data upload with optional PC interface. Bluetooth models only: Integrated Bluetooth wireless data transfer with adjustable range from 5 to 30 feet.                   |  |  |
|                       | Functions   | Wind speed (current, maximum and average)   |  |  |
|                       |   | Wind direction  | Calculated Dew Point   |  |
|                       |   | Crosswind   | Barometric pressure  |  |
|                       |   | Headwind / tailwind   | Altitude   |  |
|                       |   | Temperature   | Density altitude   |  |
|                       |   | Wind Chill equivalent temperature   | Wet bulb temperature   |  |
|                       |   | Relative Humidity   | Digital compass  |  |
|                       | Heat Index  | Time and date   |  |  |
|                       | Speed units   | kt, m/s, km/h, mph, ft/min, Beaufort Force (B)  |  |  |
|                       | Direction units   | °, cardinal points  |  |  |
|                       | Temperature units                                       | °C, °F  |  |  |
| Pressure units        | mbar, inHg, hPa, psi                                    |   |  |  |
| Altitude units        | m, ft   |   |  |  |
| Date and time display | dd/mm/yy, mm/dd/yy, 12 hour, 24 hour                    |   |  |  |
| <b>Performance</b>    | Speed<br>(1 sec response)                               | Operational range   | 0.6m/s to 60m/s (1.3 to 135.0mph)  |  |
|                       |   | Specification range   | 0.6m/s to 40m/s (1.3 to 89.0mph)<br>Start-up speed stated as lower limit, readings may be taken down to 0.4 m/s   79 ft/min   1.5 km/h   .9 mph   .8 kt after impeller start-up. |  |
|                       |   | On axis accuracy  | ± 3% of reading or ± 0.1 m/s. (Some loss of accuracy from bearing wear may occur with sustained operation at or near maximum speed)  |  |
|                       |   | Off -axis response  | -1% @ 5°, -2% @ 10°, -3% at 15°  |  |
|                       |   | Calibration drift   | <1% after 100hrs operation at 7m/s   |  |
|                       |   | Resolution  | 0.1 kt, m/s, km/h, mph. 1 FPM below 1999 FPM, 10 FPM above 2000 FPM. 1 Beaufort (0 to 12)  |  |
|                       | Wind Direction /<br>Forward Heading<br>(1 sec response) | Operational range   | 360°   |  |
|                       |   | Specification range   | 0 to 360°  |  |
|                       |   | Accuracy  | ±5°  |  |
|                       | Temperature<br>(1 sec response)                         | Resolution  | 1°, 16 points  |  |
|                       |   | Operational range   | -45.0°C to +125.0°C  |  |
|                       |   | Specification range   | -29.0°C to +70.0°C   |  |
|                       |   | Accuracy  | ±1°C   |  |
|                       | Relative Humidity<br>(1 min response)                   | Resolution  | 0.1%   |  |
|                       |   | Accuracy  | ±3% (when unit allowed to equilibrate to external temperature)   |  |
|                       |   | Calibration drift   | ±2% over 24 months (correctable)   |  |
|                       |   | Dew point accuracy  | ±2°C (above 20% relative humidity)   |  |
|                       |   | Heat index accuracy   | ±2°C (between 21.1°C and 54.4°C)   |  |
|                       |   | Wind chill accuracy   | ±1.0°C (from wind speed and temperature)   |  |
|                       | Barometric<br>Pressure<br>(1 sec response)              | Operational range   | 10 to 1100 mbar at 25°C  |  |
|                       |   | Specification range   | 750 to 1100 mbar at 25°C   |  |
|                       |   | Resolution  | 0.1 mbar   |  |
|                       |   | Accuracy  | ±1.5 mbar (max error over range 0°C to 70°C: ±2.0 mbar)  |  |
|                       |   | Calibration drift   | Typically ±1 mbar per year (correctable)   |  |
|                       | Altitude<br>(1 sec response)                            | Wet bulb temperature accuracy   | ±2°C (between 0°C and 37.8°C)  |  |
|                       |   | Density altitude accuracy   | ±75m (between 0°C and 37.8°C)  |  |
|                       |   | Operational range   | -2000m to +9000m (-6000 ft to +30,000 ft)  |  |
| Sensors               | Specification range                                     | -2000m to +6000m at 25°C  |  |  |
|                       | Accuracy  | ±15m (max error out of spec range: ±30m)  |  |  |
|                       | Resolution  | 1m or 1ft   |  |  |
|                       | Impeller  | Diameter 25mm.<br>High precision axle and low-friction Zytel® bearings. Replacement impeller field installs without tools.  |  |  |
| <b>Environmental</b>  | Temperature   | Air, water or snow temperature. Hermetically-sealed, precision thermistor mounted externally and thermally isolated for rapid response. Airflow of 2.2 mph   1 m/s or greater provides fastest response and reduction of insulation effect. Calibration drift negligible.       |  |  |
|                       | Relative Humidity                                       | Polymer capacitive sensor, mounted externally in thin-walled chamber  |  |  |
|                       | Pressure  | Monolithic piezo-resistive silicon based sensor with second-order temperature correction  |  |  |
|                       | Compass   | 2-axis solid state magneto-resistive sensor. Declination/variation adjustable for true north readout. Self calibration routine  |  |  |
|                       | Sealing   | Electronics enclosure IP67 and NEMA-6 [Water resistant]   |  |  |
| <b>Miscellaneous</b>  | Shock   | Drop tested (MIL-STD.810F - unit only)  |  |  |
|                       | Temperature   | Operating range: -10°C to +55°C (for LCD readability and batteries)<br>Storage range: -30°C to +60°C  |  |  |
|                       | EMC   | CE marked   |  |  |
|                       | Battery   | 2 off AAA alkaline, included, user replaceable  |  |  |
| <b>Miscellaneous</b>  | Battery Life  | 400 hours of use, average, ± depending on backlight use   |  |  |
|                       | Auto switch off   | Selectable to remain switched on or switch off 15 or 60 minutes after last key press  |  |  |
|                       | Wind chill equivalent temperature calculation           | Perceived temperature resulting from combined effect of wind speed and temperature. Utilises the (US) NWS Wind Chill Temperature (WCT) Index, revised 2001, with wind speed adjusted by a factor of 1.5 to yield equivalent results for wind speed measured at 10m above ground |  |  |
|                       | Heat Index calculation                                  | Steadman, from temperature and relative humidity  |  |  |
|                       | Certification   | Wind speed, temperature, pressure and humidity measurements are tested during manufacture. A certificate of conformity (C of C) is included with each Kestrel. Calibration certificates are available for an additional fee.  |  |  |
| Guarantee             | 5 years   |   |  |  |

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