

Kestrel 4000

Pocket Weather Tracker

K4000 FEATURES

- Multifunction instrument
- Graphical displays
- Data capture up to 250 readings
- Minimum/maximum values
- User defined screens
- Language selection
- Small robust design
- High accuracy
- Precision jewel mounted impeller
- Fast response temperature sensor
- Replaceable impeller
- Easy to read back-lit display
- Hard cover protects impeller
- Runs from 2 AAA batteries
- Optional PC download

K4000 FUNCTIONS

- Altitude
- Barometric pressure
- Density altitude
- Dew point
- Heat index
- Relative humidity
- Temperature
- Time & Date
- Wet bulb temperature
- Wind-chill
- Wind speed



The Kestrel 4000 Pocket Weather Tracker allows you to take instant accurate readings of environmental conditions whenever and wherever you are. At the touch of a button important weather information is clearly shown in digital or graphical form.

Ideal for construction workers, engineers, sailors, flyers, farmers and those who love the outdoors, the Kestrel 4000 offers a multitude of features to help you monitor your environment in one single instrument – right in the palm of your hand.

Individual functions can be displayed in 3 different formats: current, minimum/maximum/average and chart. There are also 3 user screens, which can be customised to simultaneously display the 3 most appropriate functions for the application. The Kestrel 4000 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 250 data points and the value, time and date of capture point can be shown. The display is easy to read with illumination for use in poor lighting conditions.

High precision jewel bearings and a lightweight impeller provide accurate air flow measurements (+/-3% of reading) and the ability to operate at speeds as low as 0.3 metres a second. The impeller is user-replaceable in case of damage, also ensuring high accuracy levels are

maintained for life. An integral hard cover protects the impeller when not in use. A precision external thermistor sensor provides fast response temperature readings and accuracy of +/- 1°C. The 0.1 degree resolution of the display aids in determining when a consistent reading has been reached. A special housing protects the relative humidity sensor from contamination providing an accuracy of +/-3%. A monolithic silicon based pressure sensor enables barometric pressure and altitude to be calculated, with a resolution of 0.1mb and 1m respectively.

The combination of the Kestrel 4000's multiple sensors result in the following derived functions: wind chill, heat index, dew point and density altitude. Wind chill is the combination of wind speed and air temperature, so the stronger the wind speed the colder it feels. Heat index is the combined effect of air temperature and relative humidity. Hot, humid air actually feels hotter than hot, dry air. Dew point is the temperature at which moisture forms on a surface. Density altitude is the density of the air expressed as an altitude.

The Kestrel 4000 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 several languages such as: English, French, Spanish or German.

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SPECIFICATION

PHYSICAL

Dimensions	126mm x 45mm x 29mm
Weight	102g
Lanyards	0.2m and 0.5m (for wrist and neck)
Case colour	Metallic grey

DISPLAY

Display type	Dot matrix LCD with electro-luminescent backlighting
Display update	1 second
Data logging	Programmable 2 second to 12 hour intervals, 250 data points and optional PC download
Functions	Wind speed (current, maximum and average), Temperature, Wind chill equivalent temperature, Relative humidity, Heat index, Calculated dew point, Barometric pressure, Altitude, Density altitude, Wet bulb temperature
Speed units	Knots, metres per second, kilometres per hour, miles per hour, feet per minute, Beaufort
Temperature units	Centigrade, Fahrenheit
Pressure units	Milli-bar, inches of mercury, hecto pascal, pounds per square inch
Altitude units	Metres, feet
Date and time display	dd/mm/yy, mm/dd/yy, 12 hour, 24 hour

PERFORMANCE

Wind speed range	0.3m/s to 40m/s
On axis accuracy	Greater of $\pm 3\%$ 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°
Speed calibration drift	<2% after 100 hours use at 7m/s
Speed resolution	0.1 kt, m/s, km/h, mph. 1 FPM below 1999 FPM, 10 FPM above 2000 FPM. 1 Beaufort (0 to 12)
Temperature accuracy	$\pm 1^\circ\text{C}$
Temperature resolution	0.1°
Wind chill accuracy	$\pm 2^\circ\text{C}$ (from wind speed and temperature)
Relative Humidity range	0% to 100%
RH resolution	1%
RH accuracy	$\pm 3\%$ over range 15% to 90% at calibration temperature
RH calibration drift	$\pm 2\%$ over 24 months (correctable)
Dew point accuracy	$\pm 3^\circ\text{C}$ (above 20% relative humidity)
Barometric Pressure range	870 to 1080mb
BP resolution	0.1mb
BP accuracy	± 3 mb (from -10°C to 60°C)
BP long term drift	Typically ± 1 mb per year (correctable)
Altitude range	-500m to +9000m (-1500 ft to +30,000ft)
Altitude resolution	1m or 1ft

SENSORS

Impeller	Diameter 25mm. High precision jewel bearings. User replaceable impeller assembly
Temperature	Hermetically sealed precision thermistor
Relative humidity	Silicon based capacitive sensor
Barometric pressure	Monolithic Piezo-resistive silicon based sensor

ENVIRONMENTAL

Sealing	Electronics enclosure IP65 (Water resistant)
Shock	Drop tested to 1m
Temperature	Operating – 20°C to 60°C (operation over a wider range is possible with reduced display readability) Storage – 20°C to 60°C
EMC	CE marked

MISCELLANEOUS

Batteries	2 AAA - alkaline - user replaceable
Battery life	Typically 50 hours with unit turned on and back-light on. Typically 1 year with unit turned off (keeping time and logging data once per hour). Typically 250 hours with unit turned on and backlight off.
Auto switch off options	Selectable to remain switched on, switch off 15 minutes or 60 minutes after last key press
Heat Index calculation	Steadman, from temperature and relative humidity
Guarantee	12 months, parts & labour

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