Kestrel® *4000* POCKET WEATHER TRACKER

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FUNCTIONS

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

actual size
(A4 page)

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 4000 readings**
- **Data upload (with optional PC interface or integrated *Bluetooth*® wireless technology)**
- **Runs from 2 AAA batteries (supplied)**
- **Available in grey, safety orange or olive drab**

Bluetooth® model available

Ideal for streaming real-time data to laptop or PDA

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. For those with after dark requirements, the K4000NV (with an olive drab case) is available with a low intensity red backlight.

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.

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 4000 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 (+/-3% of reading) 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.

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 0.1mbar 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 five languages: English, French, Italian, Spanish or German.

FIVE-YEAR 5 WARRANTY

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TECHNICAL SPECIFICATION

Physical		Dimensions	127mm x 45mm x 28mm
		Weight	102g
		Lanyards	0.2m and 0.5m (for wrist and neck)
		Case colour	Options of grey, safety orange or olive drab for NV version
Display		Display type	Dot matrix LCD with electro-luminescent backlighting
		Display update	1 second
		Data logging	Programmable 2 second to 12 hour intervals, 4000 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)
			Temperature
			Wind Chill equivalent temperature
			Relative Humidity
			Heat Index
			Calculated Dew Point
			Barometric pressure
			Altitude
			Density altitude
			Wet bulb temperature
		Speed units	kt, m/s, km/h, mph, ft/min, Beaufort Force (B)
		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
Performance	Speed (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) 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)
	Temperature (1 sec response)	Operational range	-45.0°C to +125.0°C
		Specification range	-29.0°C to +70.0°C
		Accuracy	±1°C
		Resolution	0.1°
		Wind chill accuracy	±1.0°C (from wind speed and temperature)
	Relative Humidity (1 min response)	Operational range	0% to 100%
		Specification range	5% to 95% non-condensing
		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)
	Barometric Pressure (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)
		Wet bulb temperature accuracy	±2°C (between 0°C and 37.8°C)
		Density altitude accuracy	±75m (between 0°C and 37.8°C)
	Altitude (1 sec response)	Operational range	-2000m to +9000m (-6000 ft to +30,000 ft)
		Specification range	-2000m to +6000m at 25°C
		Accuracy	±15m (max error out of spec range: ±30m)
		Resolution	1m or 1ft
Sensors		Impeller	Diameter 25mm. High precision axle and low-friction Zytel® bearings. Replacement impeller field installs without tools.
		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
Environmental		Sealing	Electronics enclosure IP67 and NEMA-6 [Water resistant]
		Shock	Drop tested (MIL.STD.810F - unit only)
		Temperature	Operating range: -10°C to +55°C (for LCD readability and batteries) Storage range: -30°C to +60°C
		EMC	CE marked
Miscellaneous		Battery	2 off AAA alkaline, included, user replaceable
		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.