

FUNCTIONS

- Wind Speed
- Temperature
- Relative humidity
- Moisture content / humidity ratio / water grains
- Dew point
- Station pressure
- Barometric pressure
- Air density
- Relative air density
- Density altitude
- Wind chill
- Heat index
- Wet bulb temperature
- Altitude
- Time & Date

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 safety orange



actual size
(A4 page)

The Kestrel 4250 Racing Weather Tracker has been designed for those on the motor racing track, providing a portable weather monitoring station.

The Kestrel 4250 Racing Weather Tracker allows you to take instant accurate readings of environmental conditions to help make those last minute dial-in or tuning decisions. At the touch of a button important weather information is clearly shown in digital or graphical form.

The Kestrel 4250 offers a multitude of features to help you monitor your environment in one single instrument. Specifically for motor racers it provides key measurements of air density, station pressure, humidity ratio and density altitude.

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 4250 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 3600 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 pressure and density altitude to be calculated, with a resolution of 0.1mbar and 1m respectively.

The Kestrel 4250 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.

Richard Paul Russell Ltd
New Harbour Building, Bath Road, Lymington, SO41 3SE, UK
Tel +44 (0) 1590 679755 Fax +44 (0) 1590 688577
e-mail: sales@r-p-r.co.uk www.r-p-r.co.uk



| | | | |
|---|---|---|--|
| Physical | Dimensions | 127mm x 45mm x 28mm | |
| | Weight | 102g | |
| | Lanyards | 0.2m and 0.5m (for wrist and neck) | |
| | Case colour | Safety orange | |
| Display | Display type | Dot matrix LCD with electro-luminescent backlighting | |
| | Display update | 1 second | |
| | Data logging | Programmable 2 second to 12 hour intervals, 3600 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) | Air density |
| | | Temperature | Relative air density |
| | | Relative Humidity | Density altitude |
| | | Moisture content / humidity ratio / water grains | Altitude |
| | | Dew Point | Wind chill |
| | | Station pressure | Heat index |
| | | Barometric pressure | Wet bulb temperature |
| | Speed units | kt, m/s, km/h, mph, ft/min, Beaufort Force (B) | |
| | Temperature units | °C, °F | |
| | Relative humidity units | % | |
| | Pressure units | mbar, inHg, hPa, psi | |
| | Density altitude units | m, ft | |
| Air density units | kg/m³, lb/ft³ | | |
| Relative air density units | % | | |
| Moisture content / humidity ratio units | g/kg, gpp | | |
| 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 |
| | Temperature (1 sec response) | Resolution | 0.1 kt, m/s, km/h, mph. 1 FPM below 1999 FPM, 10 FPM above 2000 FPM. 1 Beaufort (0 to 12) |
| | | Operational range | -45.0°C to +125.0°C |
| | | Specification range | -29.0°C to +70.0°C |
| | | Accuracy | ±1°C |
| | Relative Humidity (1 min response) | Resolution | 0.1° |
| | | Wind chill accuracy | ±1.0°C (from wind speed and temperature) |
| | | Operational range | 0% to 100% |
| | | Specification range | 5% to 95% non-condensing |
| | | Accuracy | ±3% (when unit allowed to equilibrate to external temperature) |
| | Pressure (1 sec response) | Calibration drift | ±2% over 24 months (correctable) |
| | | Heat index accuracy | ±2°C (between 21.1°C and 54.4°C) |
| | | Dew point accuracy | ±2°C (above 20% relative humidity) |
| | | Operational range | 10 to 1100 mbar at 25°C |
| | | | 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) | |
| Air density accuracy | ±2% (between 0°C and 70°C) | | |
| Moisture content accuracy | ±10% (typical, between -29°C and 54°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. | |
| | Guarantee | 5 years | |

 The manufacturer reserves the right to amend the specification and therefore the information in this document may be subject to change. Please check our website www.r-p-r.co.uk for details