

## K4100 FEATURES

- Multifunction instrument
- Graphical three-line displays
- Data capture up to 2000 readings
- Minimum/maximum/average values
- User defined screens
- Compact, rugged design
- High accuracy
- Wide operating range
- Precision jewel mounted impeller
- User-replaceable impeller
- Fast response temperature sensor
- Easy to read back-lit display
- Hard cover protects impeller
- Language selection
- Runs from 2 AAA batteries
- Data upload (with optional PC interface)
- Available in safety orange

## K4100 FUNCTIONS

- Air velocity
- Volume air flow
- Temperature
- Wind Chill
- Relative humidity
- Heat index
- Dew point
- Time & Date



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The Kestrel 4100 Pocket Air Flow Tracker has been designed for HVAC applications, allowing instant and accurate readings of air flow and environmental conditions whenever and wherever you are. At the touch of a button, air flow information is clearly shown in digital or graphical form.

Ideal for HVAC, health & safety, facilities and maintenance engineers, the Kestrel 4100 offers a multitude of features to help monitor your environment in one single instrument – right in the palm of your hand.

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 4100 can be set up to log data automatically (as well as manually) at programmable intervals, in order to display a history of environmental information. Graphs display up to 2000 data points. When a data point is highlighted, the value, time and date of capture point can be shown. An optional interface is available to upload the data direct to a PC.

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 0.4 m/s. The impeller is user-replaceable in case of damage, also ensuring high accuracy levels are

maintained for life. An integral hard flip-open 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%.

Volume air flow is based on the air velocity and dimensional shape of the opening or duct. The user simply selects the shape type and enters the duct diameter or length and width. Volume air flow readings are automatically calculated.

The combination of the Kestrel 4100's multiple sensors result in the following derived functions: wind chill, heat index and dew point. Wind chill is the combination of air velocity and air temperature, so the greater the air velocity 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.

The Kestrel 4100 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 different languages: English, French, German, Italian or Spanish.

**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	Safety orange	
<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, 2000 data points with graphical display. Manual data capture. Data upload with optional PC interface.	
	Functions	Air velocity (current, maximum and average)	
		Volume air flow	
		Air temperature	
		Wind Chill equivalent temperature	
		Relative Humidity	
		Heat Index	
		Calculated Dew Point	
	Velocity units	kt, m/s, km/h, mph, ft/min, Beaufort Force (B)	
	Flow units	m <sup>3</sup> /s, m <sup>3</sup> /min, m <sup>3</sup> /hr, l/s, ft <sup>3</sup> /min	
	Temperature units	°C, °F	
	Relative humidity units	%	
Duct/opening	cm, m, in, ft		
Shape of duct	Circular (diameter), rectangular (length and width)		
Date and time display	dd/mm/yy, mm/dd/yy, 12 hour, 24 hour		
<b>Performance</b>	Speed (1 sec response)	Operational range	0.4m/s to 60m/s (0.8 to 135.0mph)
		Specification range	0.4m/s to 40m/s (0.8 to 89.0mph)
		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)
		Heat index accuracy	±2°C (between 21.1°C and 54.4°C)
	Dew point accuracy	±2°C (above 20% relative humidity)	
<b>Sensors</b>	Impeller	Diameter 25mm. High precision axle and jewel (sapphire) bearings. User replaceable impeller assembly	
	Temperature	Thermally isolated, hermetically sealed precision thermistor	
	Relative Humidity	Polymer capacitive sensor, mounted externally in thin-walled chamber	
<b>Environmental</b>	Sealing	Electronics enclosure IP67 [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	
<b>Miscellaneous</b>	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	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	Air velocity, temperature 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	

This information is subject to change – check our website [www.r-p-r.co.uk](http://www.r-p-r.co.uk) for details

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