

K4100 FEATURES

- Multifunction instrument
- 3-line display
- Graphical displays
- Data capture up to 480 readings
- Minimum/maximum/average values
- User defined screens
- Language selection
- Small robust design
- High accuracy
- Precision jewel mounted impeller
- Fast response temperature sensor
- User replaceable impeller
- Easy to read back-lit display
- Hard cover protects impeller
- Runs from 2 AAA batteries
- Optional PC download
- Available in orange

K4100 FUNCTIONS

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



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 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 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 480 data points, 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 0.3 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%.

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 diameter or length and width.

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.

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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	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, 480 data points and optional PC download
Functions	Air velocity, volume air flow, air temperature, wind chill, relative humidity, heat index, calculated dew point
Velocity units	Knots, metres per second, kilometres per hour, miles per hour, feet per minute, Beaufort
Flow units	Cubic feet per minute, litres per second, cubic metres per second, cubic metres per minute, cubic metres per hour.
Temperature units	Centigrade, Fahrenheit
Relative humidity units	Percent
Duct/opening	Centimetres, metres, inches, feet
Shape of duct	Circular (diameter), rectangular (length and width)
Date and time display	dd/mm/yy, mm/dd/yy, 12 hour, 24 hour

PERFORMANCE

Air velocity range	0.4m/s to 40m/s
On axis accuracy	Greater of $\pm 3\%$ of reading or $\pm 0.1\text{m/s}$. (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°
Velocity calibration drift	<2% after 100 hours use at 7m/s
Velocity resolution	0.1 kt, m/s, km/h, mph. 1 fpm below 1999 FPM, 10 FPM above 2000 FPM. 1 Beaufort (0 to 12)
Flow range	0.0 cfm to 99999cfm
Flow accuracy	$\pm 3\%$ of reading
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)

SENSORS

Impeller	Diameter 25mm. High precision jewel bearings. User replaceable impeller assembly
Temperature	Hermetically sealed precision thermistor
Relative humidity	Silicon based capacitive sensor

ENVIRONMENTAL

Sealing	Electronics enclosure IP67
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	Average life, 400 hours of use, \pm depending on backlight use
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	24 months with registration, parts & labour

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