Kestrel DROP®
Wireless Environmental Data Loggers
by NK

Certificate of Conformity

This instrument was produced under rigorous factory production control and documented standard procedures. It was individually visually inspected, leak tested and electronically tested for button and software performance. The accuracy of each of its primary measurements was individually tested against standards traceable to the National Institute of Standards and Technology ("NIST") or calibrated intermediary standards. This instrument is certified to have performed at the time of manufacture in compliance with the following specifications as they apply to this Drop's specific model, measurements and features.

Methods Used in Calibration and Testing

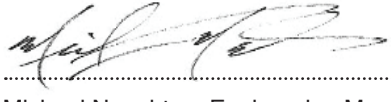
Temperature:

Temperature response is verified in comparison with a Ametek DTI-050 Digital Temperature Indicator and STS Reference Sensor. The DTI-050 is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of ±0.040°C.

Relative Humidity:

Relative humidity is verified in comparison with an Edgetech HT120 Humidity Transmitter. The HT120 is calibrated annually and is traceable to NIST with a maximum relative expanded uncertainty of ±1.0%RH.

Approved By:



Michael Naughton, Engineering Manager

The enclosed Kestrel Drop was manufactured by Nielsen-Kellerman Co. at its facilities located at 21 Creek Circle, Boothwyn, PA 19061 USA.

SENSORS

SENSOR	D1	D2	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	NOTES
Ambient Temperature	●	●	0.9 °F 0.5 °C	0.1 °F 0.1 °C	-20ºC to +55ºC	Hermetically sealed, precision thermistor mounted externally and thermally isolated (US Patent 5,939,645) for rapid response. Airflow of 2.2 mph|1 m/s or greater provides fastest response and reduction of insolation effect. Calibration drift negligible. Thermistor may also be used to measure temperature of water or snow by submerging thermistor portion into material -- ensure humidity sensor membrane is free of liquid water prior to taking humidity-based measurements after submersion.
Relative Humidity		●	2% RH	0.1 % RH	10% to 90% RH 25 ºC	Polymer capacitive humidity sensor mounted in thin-walled chamber for rapid, accurate response (US Patent 6,257,074). To achieve stated accuracy, unit must be permitted to equilibrate to external temperature when exposed to large, rapid temperature changes.

CALCULATED MEASUREMENTS

MEASUREMENT	D1	D2	ACCURACY (+/-)*	RESOLUTION	SPECIFICATION RANGE	SENSORS EMPLOYED	NOTES
Dew Point		●	TBD	0.1 °F 0.1 °C	15 to 95 % RH Refer to Range for Temperature Sensor	Temperature Relative Humidity	Temperature that a volume of air must be cooled to at constant pressure for the water vapor present to condense into dew and form on a solid surface. Can also be considered to be the water-to-air saturation temperature.
Heat Index		●	TBD	0.1 °F 0.1 °C	Refer to Ranges for Sensors Employed	Temperature Relative Humidity	Perceived temperature resulting from the combined effect of temperature and relative humidity. Calculated based on NWS Heat Index (HI) tables. Measurement range limited by extent of published tables.

ADDITIONAL SPECIFICATIONS

Bluetooth® Data Upload	●	●	Utilizes Bluetooth Low Energy (BLE) module. ios Device needed to receive uploaded data. ios Device must be within range to receive data. (See Getting Started with your Drop for more info.)
Certifications	●	●	CE certified, RoHS and WEEE compliant. Individually tested to NIST-traceable standards.
Origin	●	●	Designed and manufactured in the USA from US and imported components. Complies with Regional Value Content and Tariff Code Transformation requirements for NAFTA Preference Criterion B.
Battery Life	●	●	One CR2032 Battery (included). The battery life will vary based on usage. For baseline conditions and settings[1], the battery will last approximately 6 months. Battery life will be reduced by: a) colder conditions b) more frequent logging rates c) more frequent update rates Downloads of large data logs (or firmware updates) are best completed with a fresh battery and in temperatures above 10°C / 50°F. ([1]Temperature = 75°F, Logging Rate = 10 minutes, Update Rate = 30 seconds)
Shock Resistance	●	●	MIL-STD-810g, Transit Shock, Method 516.5 Procedure IV.
Sealing	●	●	Waterproof (IP67 and NEMA-6).
Operational Temperature Limits	●	●	-30 ºC to +55 ºC, 10 TO 1200 hPa, 0 to 100% RH, some functionality may be limited or disabled at extremes.
Storage Temperature	●	●	-22.0 °F to 140.0 °F | -30.0 °C to 60.0 °C.
Size & Weight	●	●	2.4x1.8x0.9 in / 6x4.5x2.3 cm, 1.2 oz/ 34 g
Response Time	●	●	Configurable within app up to 2 seconds
Data Storage	●	●	Configurable within app
Clock and Calendar	●	●	Time and Date is automatically updated when connected to phone.

* NOTE: Accuracy calculated as uncertainty of the measurement derived from statistical analysis considering the combined effects from primary sensor specifications, circuit conversions, and all other sources of error using a coverage factor of k=2, or two standard deviations (2Σ).