



ClimaVUE50

Compact Digital Weather Sensor



Complete Weather Sensor with No Moving Parts

Low power, compact, and simple for easy installation in remote locations

Overview

The ClimaVUE™50 is an affordable all-in-one meteorological sensor that fulfills your common weather monitoring needs with simplicity, when paired with one of the most flexible and scalable Campbell Scientific platforms. This sensor uses SDI-12 to report air temperature, relative humidity, vapor pressure, barometric pressure, wind (speed, gust, and direction), solar radiation, precipitation, and lightning strike

(count and distance). It does this with no moving parts, while consuming little power. A built-in tilt sensor assures long-term data integrity. This diverse product is great for quick deployment, for remote locations, for large networks, as part of a more complex system, or if you just need something simple.

Benefits and Features

- › All the common meteorological measurements with one simple digital (SDI-12) output
- › Less than 1 mA at 12 Vdc average current, making it ideal for solar-powered sites
- › Integrated tilt sensor helps assure that the sensor stays level over time
- › Low maintenance—no moving parts significantly reduces maintenance cost and time
- › 304 stainless-steel hardware for minimal surface staining in marine environments
- › No sensor configuration required
- › Compact design for quick, low-impact installation
- › Compatible with all modern Campbell Scientific data loggers

Specifications

Measurements Made	Air temperature, barometric pressure, lightning average distance, lightning strike count, precipitation, relative humidity, solar radiation, tilt, wind direction, and wind speed.
Output	SDI-12

Operating Temperature Range	-50° to +60°C (Except the barometer and RH: -40° to +60°C.)
Minimum Supply Voltage	3.6 Vdc continuous
Maximum Supply Voltage	15.0 Vdc continuous
Minimum Digital Input Voltage	› 2.8 V (logic high) › -0.3 V (logic low)
Typical Digital Input Voltage	› 3.0 V (logic high) › 0.0 V (logic low)

Maximum Digital Input Voltage	<ul style="list-style-type: none"> › 0.8 V (logic low) › 5.5 V (logic high)
Typical Measurement Duration	110 ms
Maximum Measurement Duration	3,000 ms
Maximum Polling Frequency	10 s
Application of Council Directive(s)	<ul style="list-style-type: none"> › 2011/65/EU: Restrictions of Substances Directive (RoHS2) › 2014/30/EU: Electromagnetic Compatibility Directive (EMC)
Standards to Which Conformity Is Declared	<ul style="list-style-type: none"> › EN 50581:2012: Technical documentation for the assessment of electrical and electronic product with respect to the restriction of hazardous substances › EN 61326-1:2013: Electrical equipment for measurement, control and laboratory use—EMC requirements—for use in industrial locations
Connection Description	25 mm (10 in.) pigtail with M12 male 5-pin 316 stainless-steel knurl
Diameter	10 cm (4 in.) including rain gage funnel
Height	34 cm (13.4 in.) including rain gage funnel

Power Consumption

Quiescent	0.3 mA
Maximum Peak Current	33 mA
Average Using the R7! Command every 10 s	1.0 mA
Average Using the R7! Command every 60 s (or slower)	0.4 mA

Air Temperature

Measurement Range	-50° to +60°C
Resolution	0.1°C
Accuracy	±0.6°C

Relative Humidity

Measurement Range	0 to 100%
Resolution	0.1
Accuracy	±3% RH typical (varies with temperature and humidity)

Barometric Pressure

Barometer Operating Temperature Range	-40° to +60°C
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Measurement Range	500 to 1100 hPa
Resolution	0.1 hPa
Accuracy	<ul style="list-style-type: none"> › ±1 mb (over the range of -10° to +50°C) › ±5 mb (over the range of -40° to +60°C)

Vapor Pressure

Measurement Range	0 to 47 kPa
Resolution	0.01 kPa
Accuracy or Repeatability	Varies with temperature and humidity; ±0.2 kPa typical below 40°C.

Wind Speed

Wind Speed Maximum	10 s gust
Measurement Range	0 to 30 m/s (0 to 67 mph)
Resolution	0.01 m/s (0.02 mph)
Accuracy or Repeatability	0.3 m/s or 3% (0.67 mph or 3%), whichever is greater

Wind Direction

Measurement Range	0° to 359°
Resolution	1°
Accuracy	±5°

Solar Radiation

Measurement Range	0 to 1750 W m ⁻²
Resolution	1 W m ⁻²
Accuracy	±5% of measurement (typical)
Spectral Range	300 to 1150 nm

Precipitation

Measurement Range	0 to 400 mm/h (15.75 in./h)
Resolution	0.017 mm
Accuracy	±5% of measurement (from 0 to 50 mm/h or 0 to 1.97 in./h)

Tilt

Measurement Range	-90° to +90°
Resolution	0.1°
Accuracy	±1°

Lightning Strike Count

Measurement Range	0 to 65,535 strikes
Resolution	1 strike
Accuracy	> 25% detection at < 10 km typical (variable with distance)

For comprehensive details, visit: www.campbellsci.com.au/climavue-50 



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