



EE181-L

Air Temperature and Relative Humidity Probe



Accurate, Rugged

Ideal for long-term, unattended applications

Overview

The EE181 is a rugged, accurate air temperature and relative humidity (RH) probe that is ideal for long-term, unattended applications. It includes a proprietary coating on the RH element that increases the life of the element and protects it

from dirt, dust, salt, or other contaminants. A 1000 Ω PRT measures air temperature for the -40° to $+60^{\circ}\text{C}$ range. For optimum results, the EE181 should be recalibrated annually.

Benefits and Features

- › Well-suited for long-term, unattended applications
- › Accurate, rugged, reliable
- › Outstanding long-term stability
- › Wide operating temperature range
- › User cleanable
- › Compact and easily interchangeable
- › Low power consumption
- › Compatible with most Campbell Scientific dataloggers

Specifications

Supply Voltage	7 to 30 Vdc (typically powered by the datalogger's 12 V supply)
Current Consumption	< 1.2 mA
Filter Description	30 μm pore size, stainless-steel mesh
Startup Time	2 s
Housing Body Material	Plastic
Housing Classification	IP65
Sensor Diameter	2.1 cm (0.83 in.)
Length	16.0 cm (6.3 in.)

Weight 290 g (10.2 oz) with 5 m cable

Air Temperature

Sensor	1000 Ω Platinum Resistance Thermometer (PRT)
Operating Temperature Range	-40° to $+60^{\circ}\text{C}$
Storage Temperature Range	-40° to $+80^{\circ}\text{C}$
Output Signal Range	0 to 1 Vdc
Accuracy at $+23^{\circ}\text{C}$	$\pm 0.2^{\circ}\text{C}$



Relative Humidity

Sensor	Capacitance
Measurement Range	0 to 100% RH (non-condensing)
Output Signal Range	0 to 1 Vdc
Temperature Dependence	Typically 0.03% RH/°C

-NOTE-

Accuracy specifications include hysteresis, non-linearity, and repeatability.

Accuracy at -15° to +40°C	› $\pm(1.3 + 0.003 \cdot \text{RH reading}) \% \text{ RH}$ (0 to 90% RH) › $\pm 2.3\% \text{ RH}$ (90 to 100% RH)
Accuracy at -25° to +60°C	$\pm (1.4 + 0.01 \cdot \text{RH reading}) \% \text{ RH}$
Accuracy at -40° to +60°C	$\pm (1.5 + 0.015 \cdot \text{RH reading}) \% \text{ RH}$

For comprehensive details, visit: www.campbellsci.com/ee181-l 



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