



Rugged, Accurate

Compatible with all Campbell
Scientific dataloggers

Overview

The 110PV is a thermistor that measures the temperature of a surface by direct contact. It typically monitors the temperature of a photovoltaic module, but can also monitor the temperature of

other devices. This thermistor easily interfaces with our dataloggers, and is ideal for solar energy applications.

Benefits and Features

- › Measures temperature across a wide range: -40° to $+135^{\circ}\text{C}$
- › Easy to install—adhesive strips on the 110PV's smooth face adhere to the back of a solar panel or other device
- › Aluminum disk protects thermistor and promotes heat transfer from surfaces!
- › Makes accurate measurements in environments with heavy electromagnetic interference
- › Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network

Technical Description

The 110PV consists of a thermistor encased in an aluminum disk. The disk protects the thermistor and promotes heat transfer from surfaces. An adhesive tab on the probe's aluminum disk fastens the 110PV to the measurement surface. If the temperature may exceed 70°C , Kapton tape is also required to secure the probe; (see Ordering Information).

The 110PV can provide the photovoltaic (PV) module temperature for solar energy applications. This measurement is useful since the output of a PV module is affected by its temperature. As the temperature of the PV module increases, its output decreases.



Ordering Information

Temperature Probe for Harsh Environments

110PV-L Surface Mount Temperature Probe with user-specified cable length. Enter cable length (in feet) after the -L. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in a connector for attachment to a prewired enclosure.
- CWS** Cable terminates in a connector for attachment to a CWS900-series interface. Connection to a CWS900-series interface allows this sensor to be used in a wireless sensor network.

Common Accessory

27015 Roll of Kapton tape for locations where the temperature may exceed 70°C.



The 110PV is mounted to the measurement surface via Kapton tape.

Specifications

- › Measurement Range: -40° to +135°C
- › Survival Range: -50° to +140°C
- › Temperature Uncertainty

Temperature	Tolerance
-40°C to 70°C	±0.2°C
71° to 105°C	±0.5°C
106° to 135°C	±1°C

- › Time Constant In Air

Test	τ
Still Air	252 seconds
Surface	25 seconds

- › Steinhart-Hart Linearization Equation Error (maximum): 0.0024°C at -40°C

- › Maximum Water Submersion Depth*

Meters	Feet	PSI
15.24	50	21

- › Maximum Lead Length: 304.8 m (1000 ft)
- › Disk Diameter: 2.54 cm (1.0 in)
- › Overall Probe Length: 6.35 cm (2.5 in)
- › Overmolded Joint Dimensions

Width	Height	Length
1.12 cm (0.44 in)	1.47 cm (0.58 in)	5.72 cm (2.25 in)

- › Disk Material: Anodized Aluminum
- › Cable Jacket Material: Santoprene
- › Cable/Probe Connection Material: Santoprene
- › Weight: 90.7 g with 3.2 m cable (0.2 lb with 10.5 ft cable)

*The 110PV's adhesive tab and the Kapton tape are not intended for submersion. Therefore, if the 110PV will be submerged, mount the sensor to the measurement surface using a user-supplied method that is compatible with submersion.

