



Research Grade

High accuracy for temperature-gradient and eddy-covariance applications

Overview

The FW3 is a Type E thermocouple with a 0.003 in. diameter. It measures atmospheric temperature gradients or fluctuations with research-grade accuracy. The FW3 is

compatible with most Campbell Scientific dataloggers, and it is often used in eddy-covariance systems.

Benefits and Features

- ▶ High frequency response suitable for eddy-covariance applications
- ▶ Extremely small diameter virtually eliminates solar loading
- ▶ Well-suited for temperature gradient measurements

Detailed Description

The FW3's small mass eliminates the need for a solar radiation shield. It consists of a type E thermocouple with a connector. The connector attaches the thermocouple to a datalogger via the FWC-L cable.

Type E thermocouples are comprised of a chromel wire and a constantan wire joined at a measurement junction. A

voltage potential is generated when the measurement end of the thermocouple is at a different temperature than the reference end of the thermocouple. The magnitude of the voltage potential is related to the temperature difference. Therefore, temperature can be determined by measuring the differences in potential created at the junction of the two wires.

Specifications

Type	Chromel-Constantan	Diameter	0.0762 mm (0.003 in.)
Typical Output	60 $\mu\text{V}/^\circ\text{C}$	Length	36.8 cm (14.5 in.)
Accuracy	Refer to the <i>Thermocouple Measurement</i> section in the data logger manual.	Plug Dimensions	1.8 x 3.3 x 1.0 cm (0.7 x 1.3 x 0.4 in.)
		Weight	45 g (2 oz)

For comprehensive details, visit: www.campbellsci.com.au/fw3 