



FW1

Type E Fine-Wire Thermocouple with 0.001 in. Diameter



Research Grade

High accuracy for temperature-gradient and eddy-covariance applications

Overview

The FW1 is a Type E thermocouple with a 0.001 in. diameter. It measures atmospheric temperature gradients or fluctuations with research-grade accuracy. The FW1 is compatible with

most Campbell Scientific data loggers, 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 FW1'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 data logger 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.


A reference temperature measurement is required for thermocouple measurements. The temperature sensor built into many of our data loggers' wiring panel typically provides this measurement.

Specifications

Type	Chromel-Constantan	Accuracy	Refer to the <i>Thermocouple Measurement</i> section in the data logger manual.
Typical Output	60 $\mu\text{V}/^\circ\text{C}$		

Diameter	0.0254 mm (0.001 in.)
Length	36.8 cm (14.5 in.)

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/fw1 



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