CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

HFP01-L
Soil Heat Flux Plate

Extreme Accuracy

Ideal for energy-balance and Bowen-ratio systems

Overview

The HFP01, manufactured by Hukseflux, measures soil heat flux, typically for energy-balance or Bowen-ratio flux systems. At least two sensors are required for each site to provide spatial averaging. Sites with heterogeneous media may require additional sensors.

Benefits and Features

- Compatible with most Campbell Scientific dataloggers
- Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network

Technical Description

The HFP01 uses a thermopile to measure temperature gradients across its plate. Operating in a completely passive way, it generates a small output voltage that is proportional to this differential temperature. Assuming that the heat flux is steady, that the thermal conductivity of the body is constant, and that the sensor has negligible influence on the thermal flow pattern, the signal of the HFP01 is directly proportional to the local heat flux.

The HFP01's output is in millivolts. To convert this measured voltage to heat flux, it must be divided by the plate's calibration constant. A unique calibration constant is supplied with each sensor.

Specifications

Sensor Type	Thermopile
Sensitivity	50 µV W^{-1} m^{-2} (nominal)
Nominal Resistance	2 Ω
Temperature Range	-30° to +70°C
Sensor Thermal Resistance	< 6.25 x 10^{-3} K m^2 W^{-1}
Measurement Range	±2000 W m^{-2}
Expected Typical Accuracy	Within -15% to +5% in most common soils (12 hour totals)
Plate Diameter	80 mm (3.15 in.)
Plate Thickness	5 mm (0.20 in.)
Weight	200 g (7.05 oz) without cable

For comprehensive details, visit: www.campbellsci.eu/hfp01

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