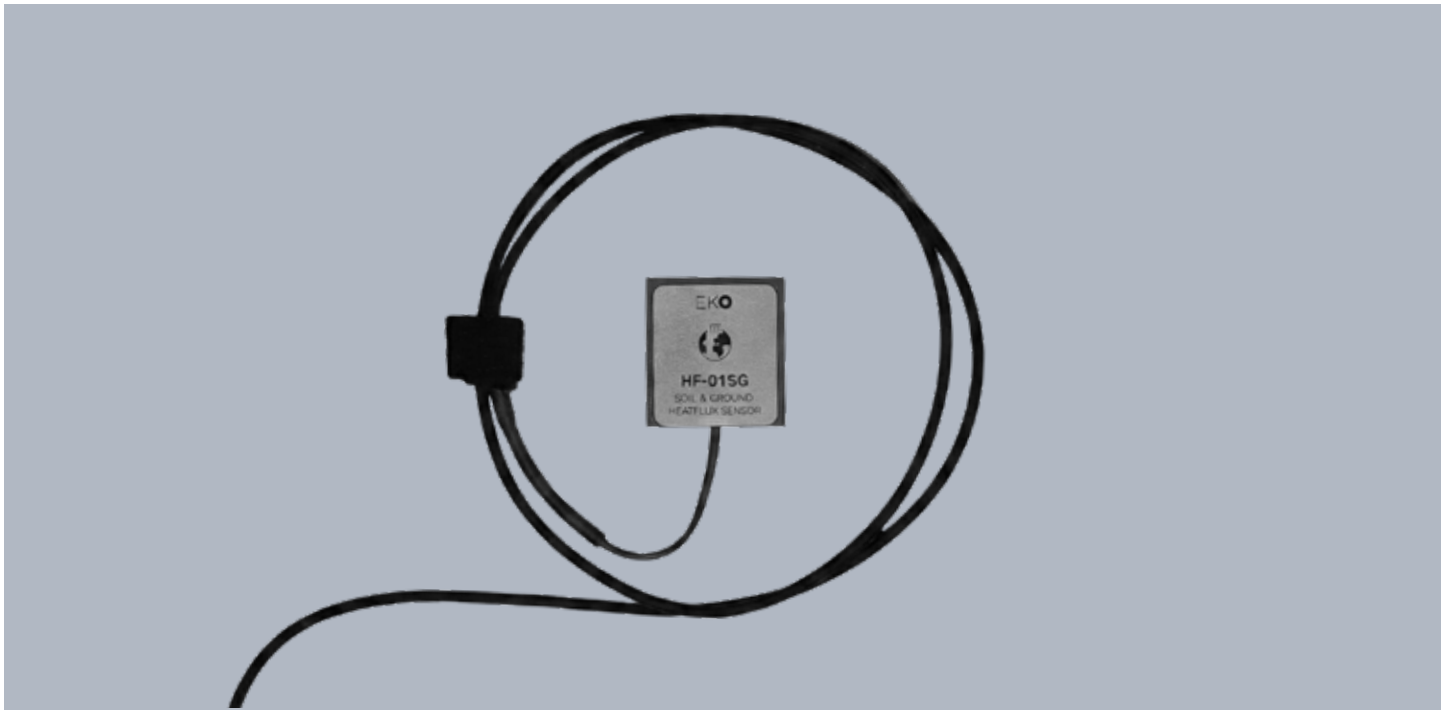
THERMAL ANALYSIS INSTRUMENTS | SPECIFICATION SHEET

HF-01SG

Soil & Ground Heat Flux Sensor



Overview

The HF-01SG is a small size standard plate type heat flux sensor, developed specifically for soil and ground heat flux measurement applications. It is an ideal option for research and controlling applications related to soil and ground thermal management. Manufactured in compliance with standards ASTM C1046 and ISO 9869, it ensures an even heat flux distribution and therefore a reliable measurement experience. The unique combination of small size, thin body, fast response, and high sensitivity, makes this sensor a perfect choice for accurate measurement of heat flux, even in low heat flux conditions. Thanks to the small and thin body, the sensor's installation is very easy and the disturbance to the soil is minimal. Avoid plant root disturbance caused by large sensors and experience the convenience of this low-key sensor. Never lose the HF-01SG sensors under the ground, and locate them using the location tag, included in the package.

Features

- High sensitivity
- Fast response
- Thin, small, compact form factor
- Water proof (IP67)
- Durable & versatile
- Suitable for burring under the soil and ground

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Sensor Specifications

Nominal Sensitivity	50 µV/W/m²
Time Constant (63%)	< 2 sec
Thermal Resistance	2.3 x10^{-3} m² K/W
Electric Impedance	8 Ω – 12 Ω (+10°C – +40°C)
Operating Temperature Range	-30 to 80°C, cable -20°C to +60 °C
Heat Flux Range	±10000 W/m²
Temperature Dependancy	0.12 %/°C
Dimensions (L x W x H)	25 x 24 x 2.3 mm
Sensing Area	500 mm²
Guard Width	5x thickness of the sensor
Calibration Uncertainty	±3 % (K=2)
Ingress Protection	IP67
Cable Dimensions	3m (Diameter: 2.1 mm)

Application

Use HF-01SG to measure the heat flux into or out of the soil. This is essential for determining the soil's energy balance, monitoring ground heat storage, supporting climate research, and optimizing agricultural practices. The sensor can be installed in different soil types and at various depths, making it ideal for field studies, agricultural monitoring, and environmental research. By installing the sensor beneath the soil surface, you can evaluate heat flux at specific depths.

For even greater insight, combine HF-01SG with temperature sensors to determine soil thermal conductivity directly on site. Installation is straightforward, but correct placement is crucial for accurate and reliable data. Follow the **Quick Start Guide** and watch the **Demonstration Video** to ensure proper installation and measurement.

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Use the QR code to visit our website, contact our team, or to find out more about the **HF-01SG**, other related products, and the full range of industry-leading EKO sensors and instruments.

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