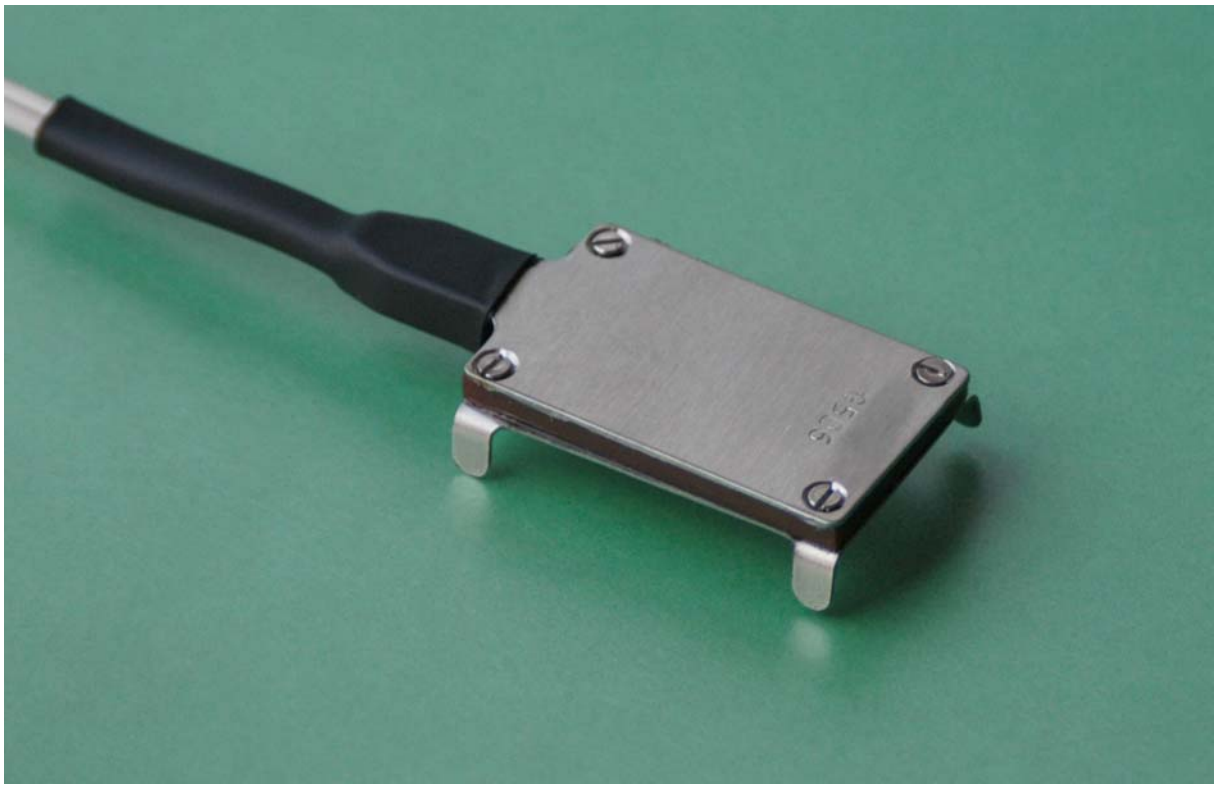
MIDDLETON SOLAR
16 WILSON AVENUE BRUNSWICK VICTORIA 3056 AUSTRALIA

CN3 HEAT FLUX PLATE

For Measurement of Conductive Heat Flux



The Middleton CN3 Heat Flux Plate measures conductive heat transmission in the medium in which it is buried. It can be used for soil energy balance measurement and for determining heat transfer in walls, roads and bridges.

Performance Specification

Sensitivity (in fine dry sand)	21µV/W.m^{-2} (typical)
Response time (to 95% in air)	30s
Thermal conductivity	0.4W/m.°C
Temperature coefficient	0.2%/°C

LOW DISTORTION OF TEMPERATURE FIELD, STABLE, DURABLE

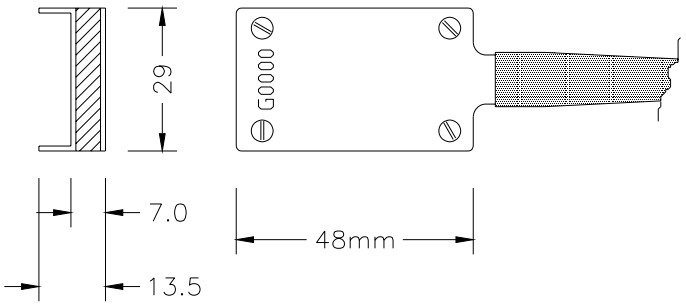
Stainless steel exterior with phenolic core.

Low heat capacity for rapid response.

Easy correction for sensor to medium conductivity miss-match.

Differential thermopile sensor.

Middleton Solar CN3 Heat Flux Plate Detailed Specification



Temperature difference between the top and bottom faces generates a DC voltage output from the sensor thermopile.
Temperature difference is proportional to the heat flow in the medium in which the Flux Plate is buried.
Output polarity changes in accordance with the direction of heat flow.
If medium is very conductive compared to the sensor then a simple formula can be applied to correct the sensor output.
Small and thin to minimise temperature field distortion.
Fully sealed construction.
Supplied with Application Note and Calibration Certificate.

General Specification

Impedance	22Ω
Operating temperature	-20 to +70°C
Insulation resistance	> 0.5MΩ
Sensor	250 junction copper-constantan thermopile
Output lead	2m of twin-core cable
Weight (excluding cable)	43gm
construction: fasteners	stainless steel
external plates	stainless steel
core	phenolic laminate + epoxy resin

An *Application Note* on the use and operation of the CN3 Heat Flux Plate is available on request.

Available from: