FLUXTEQ

PHFS-01e

PHFS-01e Heat Flux Sensor Description

The PHFS-01e is the first low-cost heat flux sensor on the market. It has minimal thickness, while still maintaining excellent sensitivity. Copper (or other metal) foil cladding encapsulates both sides of the sensor to make this sensor both robust and reliable.

Potential Applications

- R&D of heat transfer components
- Energy efficiency of thermal systems
- Heat transfer education
- Wearable technology that detects calorie burn

Heat Flux Sensor Specifications

Sensor Type	Differential-Temperature Thermopile
Encapsulation Material	Copper (other materials available)
Nominal Sensitivity	Approx. 5.7 mV/(W/cm^2)
Sensor Thickness (t)	Approx. 450 microns
Specific Thermal Resistivity	Approx. 0.9 K/(kW/m^2)
Absolute PHFS Thermal Resistance	Approx. 1.0 K/W
Heat Flux Range	+/- 150 kW/m^2
Temperature Range*	-50°C to 120°C
Response Time**	Approx. 0.9 seconds
Sensor Surface Thermocouple	Type-T
Sensing Area Dimensions	a = 2.54 cm, b = 2.54 cm
Total Sensor Dimensions	W = 3.0 cm, H = 3.0 cm
Sensing Area	6.45 cm^2
Total Sensor Area	9.0 cm^2

*Temperature range may be larger than specified. Further testing is being conducted.
**Response time is time for one time constant or 63% of sensor output signal to a heat flux step input