

Thin-Film Heat Flux

Shown with OMEGA's
DP41-E Digital Process
Indicator, see Section S

HFS Series

- ✓ Effective for Convection, Conduction and Radiation Heat Transfer
- ✓ Conveniently Interfaces with Voltmeters and Recorders
- ✓ Easily Attaches to Curved and Flat Surfaces
- ✓ Temperature Range from -200 to 300°C

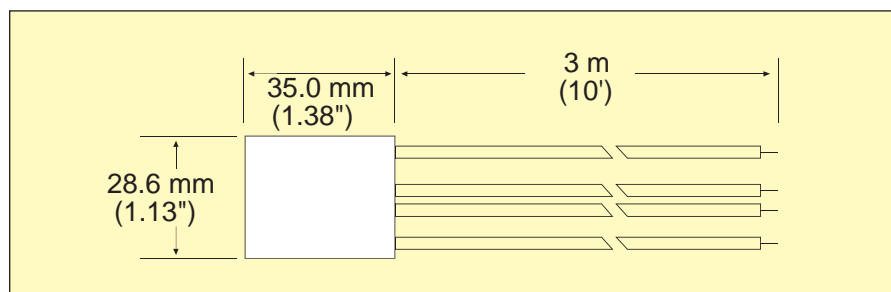
Applications

- ✓ Determining Thermal Properties of Materials
- ✓ Monitoring Structural Heat Transfer
- ✓ Process Control in Heat Treating, Rolling Mills, and Glass Production
- ✓ Determining Heat Loss and Insulation Efficiency in Housing
- ✓ Analysing Aerodynamic Wind Tunnels

Each HFS series Heat Flux Sensor functions as a self-generating thermopile transducer. It requires no special wiring, reference junctions or signal conditioning. A readout is accomplished by connecting a sensor to any direct reading dc microvoltmeter or recorder.

The HFS series sensor is designed for precise measurement of heat loss or gain on any surface. It can be mounted on flat or curved surfaces, and employs butt-bonded junctions with a very low thermal profile for efficient reading. The sensor is available with an integral thermocouple for discrete temperature measurement needed

to describe the heat flux, and is available in two different sensitivity ranges. All models utilise a multi-junction thermopile construction. The carrier is a polyimide film which is bonded using a Teflon lamination process.



Model No.	Nominal Sensitivity* (μ V/Btu/ Ft ² -Hr)	Max Rec'd Heat Flux (Btu/ Ft ² -Hr)	Max Rec'd Heat Flux (KW/m ²)	Built-in T/C Type K	Resp. Time (sec)	Thermal Capacitance (Btu per Ft ² °F)	Thermal Resistance (°F per Btu/ Ft ² Hr)	Nominal Thickness mm (inches)
HFS-3	3.0	30,000	94.6	YES	0.60	0.02	0.01	0.18 (0.007)
HFS-4	6.5	20,000	63	YES	0.60	0.02	0.02	0.18 (0.007)

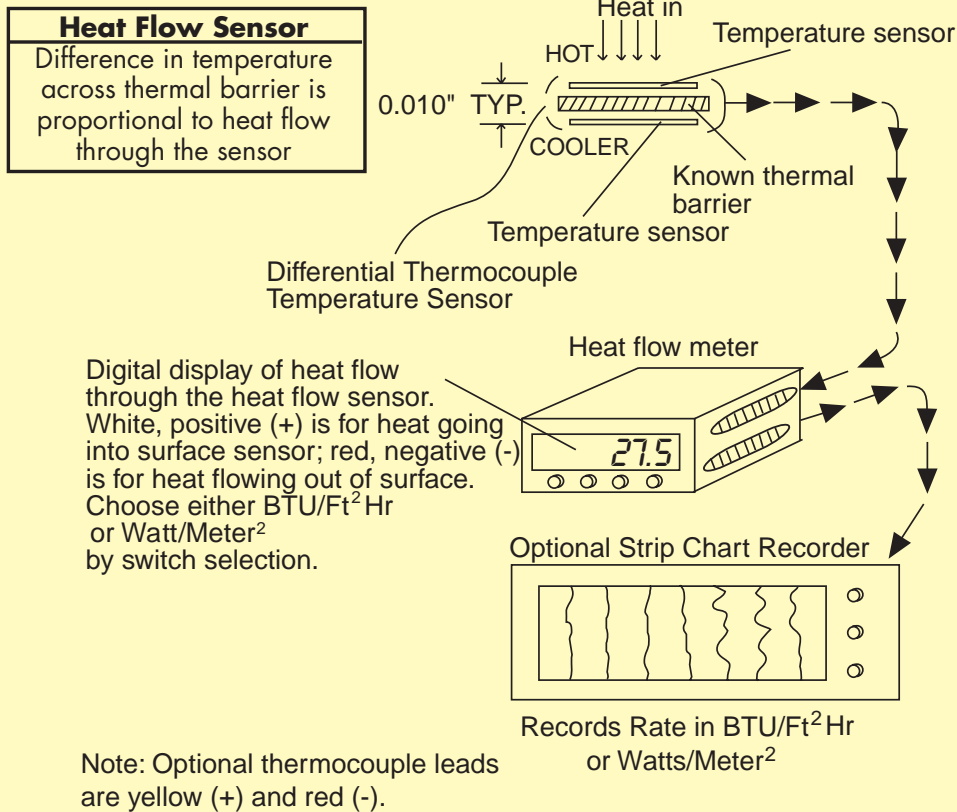
*Exceeding the maximum recommended heat flux can result in a large enough temperature rise to cause delamination of the Kapton bonding material. The given maximum values assume a 38°C (100°F) ambient



Sensors

Ideal for Precise Heat Transfer Measurement

HEAT FLOW MEASUREMENT INSTALLATION AND HOW IT WORKS



Specifications

Upper Temperature Limit:
205°C (400°F)

Number of Junctions:

HFS-3: 54

HFS-4: 112

Carrier: Polyimide Film
(DuPont Kapton)

Nominal Sensor Resistance:

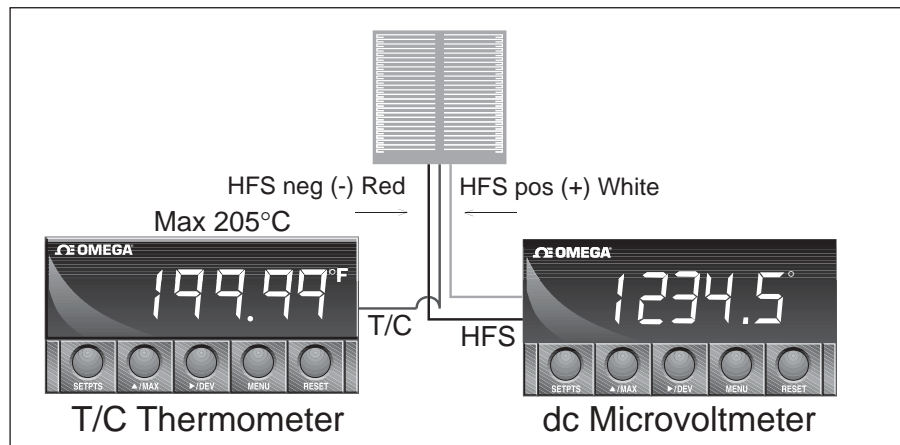
HFS-3: 140 ohms

HFS-4: 175 ohms

Lead Wires: 0.25mm diameter
Solid Copper, Teflon Insulated
colour coded, 3.1 m long

Weight:

Models HFS-3 and HFS-4, 28g.



ALL MODELS IN STOCK FOR FAST DELIVERY!

To Order (Specify Model Number)

Model Number**	Description	
HFS-3	3.0 μ V/BTU/Ft ² Hr sensor w/ type K t/c	
HFS-4	6.5 μ V/BTU/Ft ² Hr sensor w/ type K t/c	

Comes with complete operator's manual. **Other sizes and styles available, consult Sales.
Ordering Example: HFS-4, thin-film heat flux sensor

For Epoxies and cements compatible with HFS Series, see in Section E.