



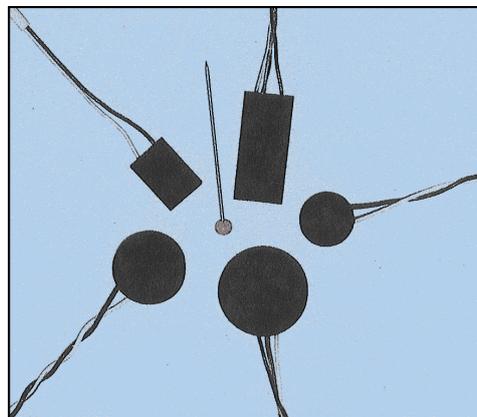
# Minature Heat Flow Sensors

For Industry, Laboratory and Resarch

Series FM and FRM

## Features:

- Rugged construction
- Small - fits in tight spaces.
- Unaffected by vacuum.
- Self-generating mV output.
- Simple to install.
- Measures Bi-directional Heat Flow.
- Waterproof.
- Measures Heat Flux and Temperature
- Sensitive to conduction, radiation and convection



## Description:

The wafer thin heat flow sensor is sensitive to heat passing through it. Consequently, it responds to all three modes of heat fluxes: heat conduction, heat radiation and heat convection, or in combinations. The majority of it's uses consists of recording heat energy entering or leaving a surface of a wall or body.

Each side of the sensor has the same nominal sensitivity. i.e., it is bidirectional. It's self-generating millivolt output, which is proportional to heat flow, can be used to measure and/or control. The models with integral thermocouple are designed to measure both heat flux and temperature.

## Applications:

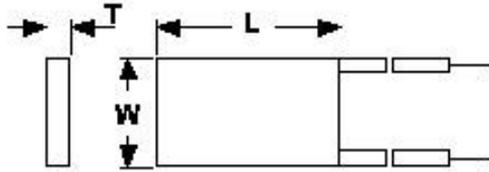
- Soil/Agriculture.
- Medicine
- Power Plants
- Aerospace.
- Submarine/Oceanology.
- Insulation Evaluation.
- Pipes & Ducts.
- Refineries.
- Laboratories Ect...

## Specifications:

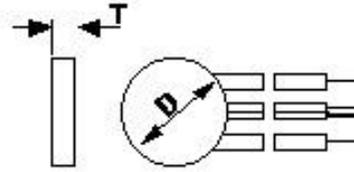
Heat Flux Range:	3000 BTU/ft <sup>2</sup> .Hr. or 9,5 kW/m <sup>2</sup>
Time response, nominal:	3 sec
Temperature Range:	-50°C to +150°C (-58°F to +300°F)
Thermal Conductivity:	0,18 BTU/ft.Hr.°F or 0,316 W/m.°K
Accuracy:	±5%
Linearity:	±2%
Calibration:	Each unit is supplied with a Sensitivity Constant traceable to NIST
Environmental Resistance:	Water proof, Impervious to high pressure or vacuum
Heat Flux Direction:	bidirectional response
Mounting:	Pressure sensitive Tape or Adhesive
Temperature Range:	-58°F to 300°F or -50°C to +150°C
Power requirement:	None, self-generating (emf) millivolts
Coating:	Proprietary black having a flat absorptivity of .94
Lead Wire:	3ft. 30 AWG, stranded, TFE insulation
For Thermistor Models:	Flexible blue jacket Cable available

## Order Informations:

### Rectangular Sensors Series



### Round Sensors Series FRM



Order number	Model	Thermocouple/	Sensitivity		Impedance Ohm	Dimensions			
		Thermistor	(BTU/ft <sup>2</sup> - Hr)/mV	(W/m <sup>2</sup> )/ mV		A mm (Inch)	B mm (Inch)	t mm (Inch)	Diameter
<b>Rectangular Sensors Series FM</b>									
C01-300-100	FM-060	w/o TC	40	126	130	8,6 mm (0,34")	19mm (0,75")	2,3mm (0,09")	--
C01-300-110	FM-060-K	Thermocouple K	40	126	130	8,6 mm (0,34")	19mm (0,75")	2,3mm (0,09")	--
C01-300-120	FM-060-T	Thermocouple T	40	126	130	8,6 mm (0,34")	19mm (0,75")	2,3mm (0,09")	--
C01-300-130	FM-060-TH44033 -F3 (w.Flx.Cable)	Thermistor (2252 Ohm @25°C)	40	126	130	8,6 mm (0,34")	19mm (0,75")	2,3mm (0,09")	--
C01-300-150	FM-120	w/o TC	120	378	25	7,4 mm (0,29")	10,7mm (0,42")	1,5mm (0,06")	--
C01-300-160	FM-120-K	Thermocouple K	120	378	25	7,4 mm (0,29")	10,7mm (0,42")	1,5mm (0,06")	--
C01-300-170	FM-120-T	Thermocouple T	120	378	25	7,4 mm (0,29")	10,7mm (0,42")	1,5mm (0,06")	--
<b>Round Sensors Series FMR</b>									
C01-300-200	FRM-060	w/o TC	40	126	130	--	--	1.8m (0,07")	16mm (0,62")
C01-300-210	FRM-060-K	Thermocouple K	40	126	130	--	--	1.8m (0,07")	16mm (0,62")
C01-300-220	FRM-060-T	Thermocouple T	40	126	130	--	--	1.8m (0,07")	16mm (0,62")
C01-300-230	FRM-060-TH44033 -F3 (w.Flx.Cable)	Thermistor (2252 Ohm @25°C)	40	126	130	--	--	1.8m (0,07")	16mm (0,62")
C01-300-240	FRM-090	w/o TC	60	189	100	--	--	1.8m (0,07")	12,7mm (0,5")
C01-300-250	FRM-090-K	Thermocouple K	60	189	100	--	--	1.8m (0,07")	12,7mm (0,5")
C01-300-260	FRM-090-T	Thermocouple T	60	189	100	--	--	1.8m (0,07")	12,7mm (0,5")
C01-300-270	FRM-200	w/o TC	140	441	40	--	--	1.8m (0,07")	9,5mm (0,375")
C01-300-280	FRM-200-K	Thermocouple K	140	441	40	--	--	1.8m (0,07")	9,5mm (0,375")
C01-300-290	FRM-200-T	Thermocouple T	140	441	40	--	--	1.8m (0,07")	9,5mm (0,375")