

HFO1



HIGH TEMPERATURE HEAT FLUX SENSOR

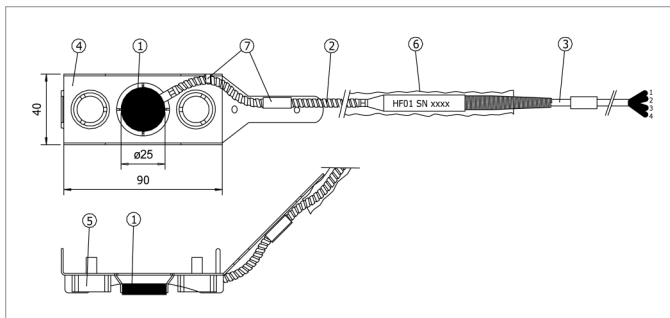
The HFO1 high temperature heat flux sensor is intended for high intensity heat flux and surface temperature measurement. The HFO1 sensing technology can also be adapted for other high intensity heat flux/temperature measurement applications on request.

The HFO1 is intended for energy balance studies within industrial furnaces, boilers, fluidized beds, distillation columns and ovens. The sensing element of the HFO1 is incorporated in a rugged stainless steel housing. A metal sheathed cable conduit extends 3 feet (900 mm) from the stainless sensor housing, providing high temperature protection for the sensor signal cable. Both sensor and metal signal cable conduit are designed to withstand temperatures up to 800 degrees C. The extension cable leading from the metal cable conduit is insulated in Teflon. To avoid the possibility of any current leakage, a silicone sleeve is installed over the metal sheathed cable conduit section.

The HFO1 outputs both heat flux (microvolt analog signal) and temperature signal data (type K thermocouple). The thermocouple allows for accurate measurement of both sensor surface contact and sensor housing temperature.

ADVANTAGES

- ▶ Rugged construction (for high temperatures)
- ▶ Fast response time (reduced experiment time)
- ▶ Low thermal resistance (improved accuracy)



APPLICATIONS

- ▶ Studies of aluminum melting furnaces
- ▶ High intensity heat flux measurement

Note: Above applications are inclusive of, but not limited to the entire HFO1 application range.

HFO1 SPECIFICATIONS

Sensitivity heat flux (nominal):	0.5 10 ⁻³ mV/W.m ²
@ 90 deg C	
Working range:	0.05 to 50 kW.m ⁻²
Temperature range sensor and metal sheathed cable:	-30 to +800 °C
Temperature range Teflon cable:	-30 to +240 °C
Optional items:	MF01 frame with magnets (to 550 °C only) cable extension
Cable protection:	IP 65
Metal cable length:	900 mm
Teflon cable length:	3500 mm
Silicone sheet:	1000 mm (optional)

MORE INFORMATION/OPTIONS

Optional: extended cable, MF01 frame with magnets

Alternative designs: Hukseflux specializes in the design and manufacture of heat flux sensors. Custom sensor models for specialized heat flux applications can be manufactured on request.

- ◀ Figure 1: HFO1. The heat flux sensor (1), connected to a metal sheathed cable with flexible conduit (2) and Teflon extension cable (3). The frame (4) with magnets (5) is an option which is intended for temporary mounting on iron furnace walls. The flexible conduit is protected by the silicone sleeve (6) and the strain relief (7). Dimensions are in mm.