HukseFluxUSA

HF03-LI19

Portable heat flux sensor with read-out unit / datalogger

HF03 is a heat flux sensor that is applied in mobile measurements. It is combined with LI19, a high accuracy handheld read-out unit / datalogger. The combination HF03- LI19 is typically used to study heat flux levels of flares and fires, and to verify the performance of permanently installed flare radiation monitors and flare heat flux sensors.

Figure 1 *HF03-LI19 portable heat flux sensor with read-out unit / datalogger*

Figure 2 *We offer an extensive range of products for fire testing and studies of flares. The picture shows HF03-LI19 portable heat flux sensor with read-out unit.*

Introduction

HF03 is a heat flux sensor commonly used in fire testing. It is designed for short (< 10 min) monitoring and measurement in high flux environments in the heat flux range up to 10 x 10^3 W/m^2.

LI19 displays the measured heat flux. Once programmed with the sensitivity of the connected sensor, the display will show the actual value of the heat flux in W/m^2. LI19 is programmed via its PC user interface. It communicates over USB. We recommend downloading the latest software. LI19 may also be used to store measured data. LI19 is battery powered, using 2 x AA-type batteries. Fresh batteries allow 50 days of operation. HF03-LI19 is not rated for EEx (potentially explosive) environments; nevertheless it is often admitted, because the instrument operates on 3 VDC only.

Operation

Operation of HF03-LI19 is easy. As LI19 has already been programmed at the factory, measurements can start by switching on the LI19. The data storage interval is set by using the LI19 user interface software.

Directions for operation:

- connect the LI19 to the HF03 sensor
- switch on LI19
- check sensor sensitivity settings on the display (displayed 1 s after startup) against the HF03 product certificate and hand grip
- check the zero signal with the protection cap on the HF03
- remove the protection cap from HF03
- check the functionality of the system by short exposure to a strong heat flux source
- start measurement, write down measured values

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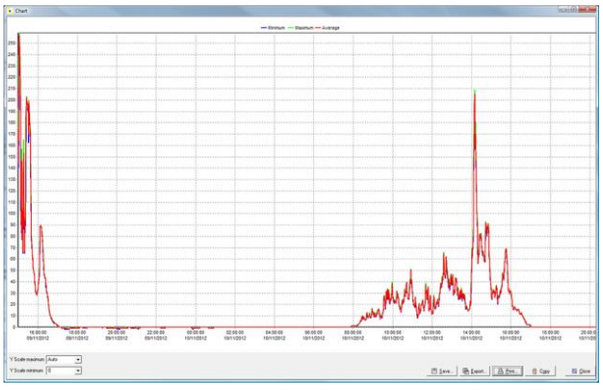

Figure 3 *screenshot of LI19 software user interface on PC*

Suggested use

- performance of verification permanently installed flare radiation monitors such as HF02
- monitoring during fire-safety demonstrations

See also

- our complete line of heat flux sensors
- SBG01 for high-accuracy indoor heat flux flame measurement
- heat flux sensors type HF02 (for permanent installation close to flares)

Delivery

- HF03 with cap
- programmed LI19 with 2 x AA battery
- 2 spare batteries (type AA)
- transport case with space for sensors
- LI19 product certificate
- HF03 product certificate
- strip with measurement unit markers
- USB cable
- LI19 software

Figure 4 *HF03 with its protection cap*

HF03 specifications

Measurand	heat flux
Rated measurement range	0 to 10 x 10^3 W/m^2
Rated exposure time interval	0 to 10 min
Calibration traceability	to ITS90
Standard cable length	5 m

LI19 specifications

Output on display with HF03	heat flux in x 10^3 W/m^2
Stored measurement definition	minimum maximum and average over storage interval with conversion to W/m^2
A/D conversion	16 bits
Temperature dependence	< 0.5 % + 3 x 10^{-6} V over rated range
Display refreshment rate	1 s^{-1}
Battery type	2 x AA
Internal power supply voltage	3 VDC
Battery life	> 50 days (on fresh batteries)
Storage interval range	2 to 65535 s (selectable)
Storage capacity	3518 measurements
Rated operating temperature range	-10 to +40 °C
User interface on PC	LI19 software
Connection to PC	USB 1.1 / 2.0 low speed

Latest software

the latest software should be downloaded from www.hukseflux.com/page/downloads

About Hukseflux

Hukseflux Thermal Sensors offers measurement solutions for the most challenging applications. We design and supply sensors as well as test & measuring systems, and offer related services such as engineering and consultancy. With our laboratory facilities, we provide testing services including material characterisation and calibration. Our main area of expertise is measurement of heat transfer and thermal quantities such as solar radiation, heat flux and thermal conductivity. Hukseflux is ISO 9001:2008 certified. Hukseflux sensors, systems and services are offered worldwide via our office in Delft, the Netherlands and local distributors.

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