Hukseflux
Thermal Sensors

Pyranometer calibration services

Hukseflux' worldwide calibration services at your disposal

Hukseflux is a leading manufacturer of solar radiation sensors. Our worldwide calibration and servicing organisation is at your disposal, not only for pyranometers of the Hukseflux brand.

Introduction

Hukseflux' main area of expertise is measurement of heat transfer and thermal quantities. We are known as a leading manufacturer, both in technology and market share, of solar radiation sensors. But did you know that Hukseflux offers calibration services for pyranometers as well?

Services: what we do

- perform accurate calibration of solar radiation sensors
- work according to established standards
- calibrate multiple brands

Why work with us

- well established and traceable calibration methods
- fast turnaround times
- including uncertainty evaluation
- calibration references for the most common brands and models of pyranometers, and amplifiers
- supported by an efficient calibration and servicing organisation. Hukseflux has calibration facilities in the main global economies: USA, EU, China, India, Japan and Brazil

The next page provides an overview of our pyranometer calibration services.

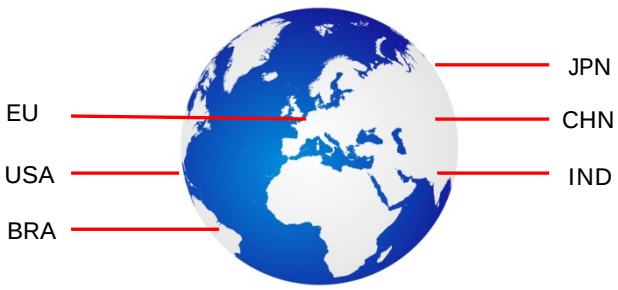

Figure 1 *pyranometer users are supported by the worldwide Hukseflux calibration and servicing organisation*

Restrictions

- Hukseflux is ISO 9001 certified, but not an accredited testing and calibration laboratory according to ISO 17025.
- Hukseflux can calibrate sensors of other than Hukseflux brands. However, Hukseflux is not able to perform diagnostics and service of sensors of those brands. In case other-than-Hukseflux brand sensors need extensive servicing or repair which cannot be performed by the user, we recommend obtaining this service from the manufacturer.
- Not all brands offer access to the internal program running on their digital sensors. In case access to the sensor software is not allowed, Hukseflux will generate a "correction factor", specifying the ratio of the sensor output according to the new calibration to the output given by the sensor. It is up to the user how to treat this factor. It may be implemented into the SCADA system. In case the correction factor differs less from the ideal factor 1 than the calibration uncertainty, most users will choose not to correct their data.

Figure 2 *at work with a typical calibration system at Hukseflux*

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Sensor calibration service capabilities

Table 1 *Hukseflux calibration services*

HUKSEFLUX CALIBRATION SERVICES			
calibration item	**brand and model**	**calibration method**	**comment**
pyranometers	Hukseflux LP, SR series Kipp & Zonen CMP, SMP series	ISO 9847:1992 Solar energy - Calibration of field pyranometers by comparison to a reference pyranometer ASTM G207 - 11 Standard Test Method for Indoor Transfer of Calibration from Reference to Field Pyranometers	Servicing and repair or desiccant replacement of other-than-Hukseflux brands may mean the end of their product warranty and therefore will not be carried out by Hukseflux Reprogramming the Kipp & Zonen SMP-series sensors cannot be carried out by Hukseflux; the user obtains a correction factor
amplifiers	Hukseflux –TR amplifiers Kipp & Zonen AMPBOX series	Calibration and re-programming. Calibration traceable to traceable voltage and current standards	

Checklist / requirements for recalibration of sensors

Table 2 *Checklist for calibration services*

HUKSEFLUX CALIBRATION SERVICES		
subject	**responsible party**	**responsibility**
RMA form	customer	Products and calibration items may only be returned or sent for calibration to Hukseflux after obtaining a Return Materials Authorisation and the accompanying RMA number. To obtain such authorisation, please request and complete the RMA form and e-mail it to info@hukseflux.com. A completed RMA form contains the sensor model(s), quantity and serial number(s), the sensor condition, in particular if additional servicing is needed or not
additional information	customer	In case of other-than -Hukseflux brand sensors only: transmit the brand name and a scanned copy of the original calibration certificates
	customer	Only if different-than-usual calibration reference condition are required: specify required calibration reference conditions
logistics; supply	customer	Specify shipment responsibility. Usually the customer will be responsible for shipment both ways
quotation, RMA authorisation, RMA number	Hukseflux	The quotation will include an RMA number. Possibly, in case of unclear condition of the sensor, the quotation includes a diagnostics fee. This fee must also be paid in case the sensor is irreparable. In case sensors are not clean, a cleaning fee may be charged per sensor
order	customer	Include RMA number
calibration	Hukseflux	A typical heat flux sensor and pyranometer calibration has a processing time of 15 working days. This can be shortened upon request
logistics: pickup	customer	Please follow Hukseflux shipment directions

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. Hukseflux is ISO 9001:2008 certified.

Would you like more information?
E-mail us at: info@hukseflux.com