Introduction
Hukseflux Thermal Sensors offers a range of sensors for surface energy balance measurements. All have proven reliability.

Reference users
The National Ecological Observatory Network (NEON) of the USA is the world’s largest network employing 4-component net radiometers. After extensive testing, NEON released a list of sensors in 2013. We are proud that model NR01 is on it. NEON also employs HFP01 heat flux sensors. The Centre for Ecology and Hydrology (CEH) of the UK included NR01, STP01 and HFP01SC in its new (2014) measurement network. NOTE: the fact that a sensor is used in a network does not constitute a formal endorsement by the network owner.

The best 4-component net-radiometer
Since its introduction in 2007, NR01 4-component net radiometer has become widely applied. Reasons for its popularity:
- lowest price level at top performance level
- heated pyrgeometers, best night-time data quality
- high accuracy short-wave calibration
- low weight, low mounting costs
- modular design
- practical levelling
- practical recalibration

Figure 1 NR01 4-component net radiometer, including two pyranometers, two pyrgeometers, a heater and a 2-axis levelling assembly

Figure 2 NR01 4-component net radiometer in use in a typical meteorological station

Unique feature: pyrgeometer heating
In order to prevent condensation of water on the pyrgeometer windows, NR01 has internal heating close to the pyrgeometers. This keeps the instrument above dew point. As water blocks longwave radiation, heating will improve the reliability of longwave radiation measurement, in particular at night, when the risk of condensation is highest. Heating is a good, low cost and low power alternative to ventilation.

Market leading heat flux sensors
HFP01 heat flux plate and its self-calibrating equivalent HFP01SC are the de-facto standards for soil heat flux measurement. In high accuracy flux measurement a typical station is equipped with two or more sensors for good spatial averaging.
TP01: soil thermal conductivity

TP01 is a simple, robust sensor to measure soil thermal conductivity. In combination with STP01 and HFP01SC it offers a redundant measurement and allows users to verify the measurement accuracy of soil heat flux. In addition, TP01’s capability to perform a crude measurement of soil thermal diffusivity offers an independent possibility to verify performance of soil moisture content sensors.

STP01: accurate soil temperature profile

STP01 soil temperature profile sensor offers highly accurate temperature gradient measurement, including a reliable fixed distance between five measurement points at 2, 5, 10, 20 and $50 \times 10^2$ m below the soil surface.

Datalogger compatibility

Sensors made by Hukseflux are designed for compatibility with most common datalogger models. For many models we have example programs and wiring diagrams available.

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