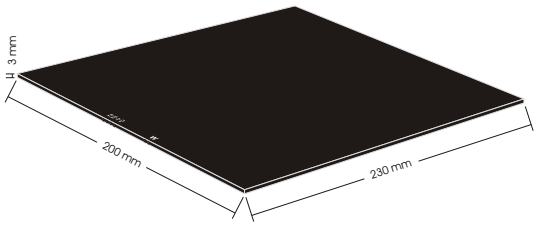
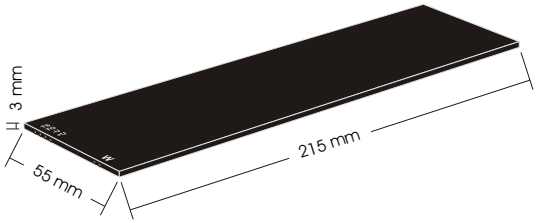
REMO-HSE	SensiLine SensiPlane Heat Flux Sensors	Datasheet





Description:

- **SensiLine** and **SensiPlane** are two high accuracy sensors with integrated temperature sensor, intended for heat flux measurements on opaque surfaces
- The sensitive area and the sensitiveness of **SensiPlane** is 5 times larger than compared to **SensiLine**

Features:

- The sensors consist of thermocouples connected in series, which are incorporated in a black plastic body and generate a voltage signal that is proportional to the heat flux density passing through the sensor:
  heat flux density[Wm^{-2}] = voltage[mV] × calibration factor[$Wm^{-2}(mV)^{-1}$]
- They are equipped with an integrated temperature sensor that generates a voltage signal proportional to the surface temperature (requires a voltage supply between 5V and 15V (unipolar))
- All signal amplitudes are sufficiently large to facilitate the direct signal processing with a conventional voltmeter or data acquisition system
- All sensors are calibrated following the DIN 52612/1 standard

Typical Applications:

- Heat flux measurement of walls, roofs and building facades as well as measurement of heat flux of insulation of refrigerator cabinets, cold storage houses, fire-protective clothing, etc
- Due to its larger sensitive area the sensor **SensiPlane** is suited to averaging the heat flux over local non-homogeneities

Additional Information:

- Since thermal conduction processes in walls are unsteady it makes sense to measure the heat flux over a sufficient period. The important thing here is that the recording time is large and the scanning rate is small compared to the thermal time constant of the wall
- The heat flux sensors should always be mounted such that an intimate thermal contact between the sensor and the corresponding surface area is guaranteed
- The calibration factor should remain unchanged. However, we recommend annual recalibration to insure high quality data

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Technical Specifications

Heat Flux Sensor

	SensiLine	SensiPlane
Operating Temperature:	–20°C to +85°C	
Calibration Factor (nominal):	15 W/m^2(mV)	3 W/m^2(mV)
	temperature: 30°C	
Temperature Coefficient:	-0.13 %/°C	
	calibration value decreases with temperature	
Accuracy:	± 5%	
U-Value of the Sensor (nominal):	≥ 100 W/m^{2}K	
Resistance (nominal):	≈ 600 Ω	≈ 3000 Ω
Approx. Dimensions:	215mm × 55mm × 3mm	230mm × 200mm × 3mm

Integrated Temperature Sensor

Operating temperature:	–20°C to +85°C
Output signal:	10 mV/ °C
Accuracy:	offset: maximal 0.4°C
	linearity: 0.2°C
Voltage supply:	between 5V and 15 DC (unipolar)
Current Consumption:	< 0.1mA

Connections of the Heat Flux Sensor SensiPlane

	Function	Colours[1)]	
Voltage Supply:	input voltage +:	white	(+U)
	input voltage –:	brown	(–U)
Integrated Temperature Sensor:	output voltage +:	yellow	(TS)
	output voltage –:	green	(TG)
Heat Flux Sensor:	sense voltage:	brown	(W)
	sense voltage:	white	(W)

[1)] The colours of the wire refer to cables delivered from REMO-HSE, only.
The delivered cables have a shielding (copper) which can be used.