

# Solar Sensor.

Recording the actual irradiance.

The solar sensor facilitates professional monitoring of the photovoltaic system because the expected yield is determined using the measured irradiance and then compared with the actual yield (target/actual comparison).

## Functional Description

The short-circuit current of a silicone solar cell is proportional to the solar irradiance. The monocrystalline solar cells of the Si12TC sensors are, therefore, operated in the short circuit. All sensors are additionally equipped with active temperature compensation. The temperature sensor is laminated on the rear, increasing measuring accuracy. Every individual sensor is calibrated on a regular basis.

## Mechanical Design

The solar cell is embedded in ethylene vinyl acetate (EVA) between the glass

and a layer of Tedlar, and the housing is made of powder-coated aluminium. Thus the design corresponds to that of a PV module.

## Optional Temperature Measurement

In addition to measuring the irradiation, the Si-12TC-T sensors also allow you to measure the solar cell temperature. This measurement is made by a temperature sensor that is directly laminated to the cell.

## Solar Sensor

- Solar irradiance measurement with temperature compensation
- Extended measurement range of up to 1,200 W/m<sup>2</sup>
- Module temperature measurement
- Easy to install
- Connection cable, 3 or 30 meters (UV-resistant, 0.14 mm<sup>2</sup>)

Technical Data	Solar Sensor
<b>General Data</b>	
Operating temperature	-20 °C to +70 °C
DC power supply	12 V to 24 V
Cell size	50 x 34 mm
Weight	340 g
<b>Type Si-12TC (Irradiance)</b>	
Measurement range	0 to 1,200 W/m <sup>2</sup>
Output signal	0 to 10 V
Measuring accuracy	+/- 5% of the final value
<b>Type Si-12TC-T (Irradiance and Module Temperature)</b>	
Measurement range	-20 °C to +70 °C
Output signal	1.84 V + T [°C] x 92 mV/K
Measuring accuracy	+/-1.5% at +25 °C

