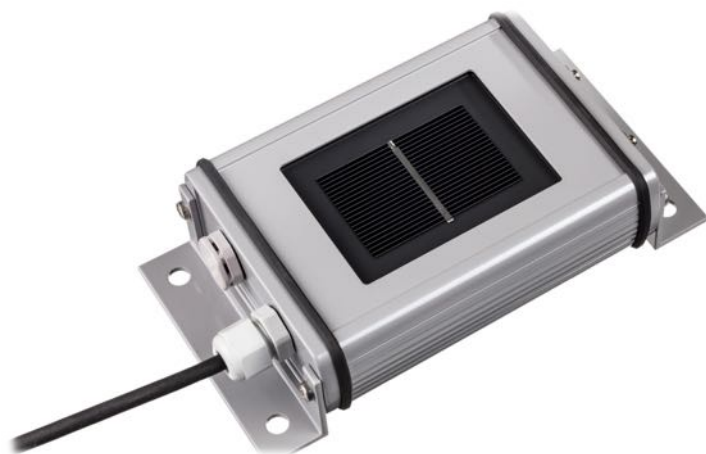


# Quick Reference Guide

## digital Silicon Irradiance Sensor



### Main Data

Irradiance Measurement:	Up to 1500 W/m <sup>2</sup>
Cell Temperature Measurement:	-40 to +90°C
Working Temperature:	-35 to 80°C
Weight:	Approx. 0.4 kg

### Type Overview

Type	Voltage Supply	Measuring Range Irradiance	Protocol
All sensors	10 to 28 VDC	0 to 1500 W/m <sup>2</sup>	MB: Modbus (RTU) MT: M&T protocol
Type	Measuring Temperature Solar Cell	Note	
Si-RS485TC-T-MT Si-RS485TC-T-MB	-40 to +90°C	./.	
Si-RS485TC-2T-MT Si-RS485TC-2T-MB	-40 to +90°C	Hard-wired external ambient temperature sensor (-40 to 90°C)	
Si-RS485TC-3T-MT Si-RS485TC-3T-MB	-40 to +90°C	Two female connectors for two optional external temperature sensor (-40 to 90°C)	
Si-RS485TC-T-Tm-MT Si-RS485TC-T-Tm -MB	-40 to +90°C	Hard-wired external module temperature sensor (-40 to 90°C)	
Si-RS485TC-2T-v-MT Si-RS485TC-2T-v-MB	-40 to +90°C	Female connectors for optional external temperature sensor (-40 to 90°C) and wind speed sensor (0 to 80 m/s)	

### Measurement Uncertainty over all,

according to GUM (Guide to the Expression of Uncertainty in Measurement), k = 2

Irradiance	<b>±0.4 W/m<sup>2</sup> ± 1.6 % from rdg.</b>	Range 0 to 1500 W/sqm, perpendicular incidence of the light, spectrum AM 1.5
Irradiance	<b>IEC 61724-1, Class A</b>	Classification
All Temperatures	<b>1,0 K</b>	Range -35 to 80°C

### User information

The sensor is designed for the measurement of solar irradiance (not concentrated) at PV monitoring. The warranty is for 1 year from the date of invoice for the intended use. M&T does not accept any liability for possible losses or damage due to incorrect usage of the sensor. Liability for consequential damages is excluded.

**Special note: The housing for the Si sensors is not allowed to be opened by the installer or user, because as a consequence, the housing will no longer be sealed after it is closed. If the housing is opened, the manufacturer's warranty will be rendered void.**

### Maintenance

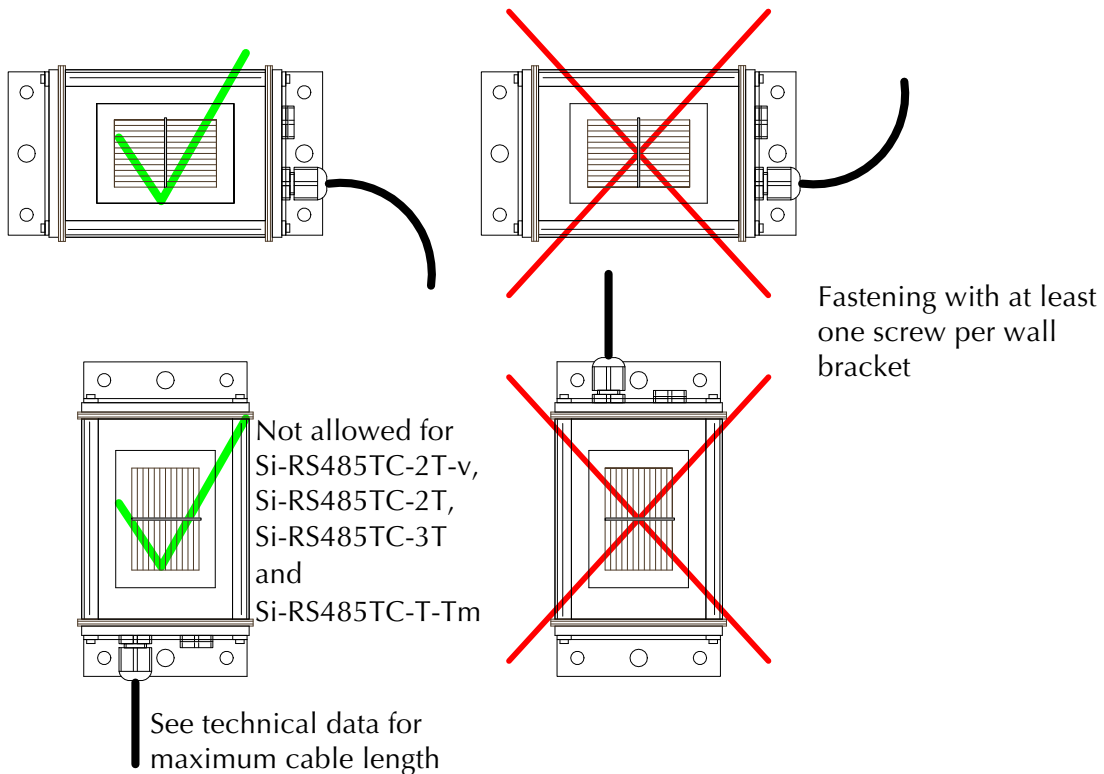
Scope of the regularly check (at least every 2 years): Cleaning of solar cell, external damage, mechanical fastening, cable laying and any damage to the cable.

In the report IEA-PVPS T13-03: 2014 "Analytical Monitoring of Grid-connected Photovoltaic Systems" an interval of 1 to 2 weeks is recommended.

Should damage be found that degrades the function or safety, the sensor is to be replaced.

A recalibration is recommended at least every 3 years.

**Mounting Instruction**



**Technical Data**

General Data		
Solar Cell	Monocrystalline Silicon; 50 mm x 33 mm	
Housing Material	Powder Coated Aluminium	
Dimension / Weight	155 mm x 85 mm x 39 mm / approx. 350 to 470 g	
Degree of Protection	IP 65	
Operating Temperature	-35 to +80°C	
Supply Voltage	24 VDC (10 ... 28 VDC)	
Current Consumption	Typical 25 mA at 24 VDC	
Sensor Cable	LiYC11Y 4x0.14mm <sup>2</sup> ; length typical 3m	
Maximum Cable Length	1000 m	
Galvanic Isolation	Up to 1000 V between supply voltage and RS485	
Customs Tariff Number / HS Code	90 15 80 20	
Protocol	Settings (Default)	Note
Modbus (RTU)	Address: 1 Transmission rate: 9600 baud Format: 8N1	Address can be set (e.g. using software "Si Modbus Configurator") Max. transmission rate 38400 baud
MT	Address: last two digits of serial number Transmission rate: 9600 baud Format: 8N1	Cannot be changed

Note for configuration with software **"Si Modbus Configurator"**: Required are a computer, a voltage supply and an USB to RS485 interface converter.