

Silicon Irradiance Sensor M&T 0-10V

cost-effective, but rugged and reliable solution for irradiance measurement



Description

- Build as solar module - easily comparable to energy yield and system performance of PV systems
- Optional cell temperature as alternative to directly measured module temperature
- Output signal: 0 ... 10 V for irradiance and cell temperature

Silicon irradiance sensors show a cost-effective, but rugged and reliable solution for irradiance measurement. Based on the construction of the sensor element corresponding to a PV module they are ideal as reference for monitoring of PV systems. Especially the spectral response comparable to PV modules as well as the similar inclination error (incident angle modifier) allow an exact analysis of PV energy yields using Si sensor data.

Specifications

Sensor	Si-V-10TC	Si-V-10-TC-T
Ordner No.	S68120	S68261
Solar cell	Monocrystalline silicon (50 x 33 mm)	
Measurement uncertainty Irradiance	± 5 W/m ² ±2.5% of reading valid for temperature compensation, spectrum AM 1.5 and vertical light beam	
Measurement uncertainty Internal temp. measurement		1.0 K @ -35 ... 70 °C 1.1 K @ -35 ... 80 °C
Response time (99%)	0.15 s	
Offset	2 W/m ²	
Non-Linearity	0.10 %	
Temperature dependance	0.40 % @ -35 ... 80 °C	

Sensor	Si-V-10TC	Si-V-10-TC-T
Power supply	24 VDC (12 ... 28 VDC) typ. < 1 mA power consumption	24 VDC (12 ... 28 VDC) typ. < 2 mA power consumption
Load impedance	min. 100 kΩ	
Output signal irradiance	0 ... 10 V @ 0 ... 1500 W/m ²	
Output signal cell temperature		0 ... 10 V @ -40 ... 90 °C
Sensor connection	LiYC11Y 4 x 0.14 mm ² UL20233; length typical 3 m, UV- and temperature resistant	
Operating temperature	-35 ... +80 °C	
Housing material	Powder-coated aluminium, IP 65	
Dimensions / Weight	155 x 85 x 39 mm / approx. 350 g	
Manufacturer	Ingenieurbüro Mencke & Tegtmeier GmbH	

Sensor connection diagram

Si-V-10TC (S68120)

Sensor	Plug PIN No.	Wire Colour Sensor Cable	Meteo-40 Analog Voltage
Solar irradiance	1	orange	Ax
Solar irradiance Ground / Ref.*			Bx (Main Ground)
Ground / Ref.	2	black	Main Ground
Supply	3	red	12 ... 28 VDC

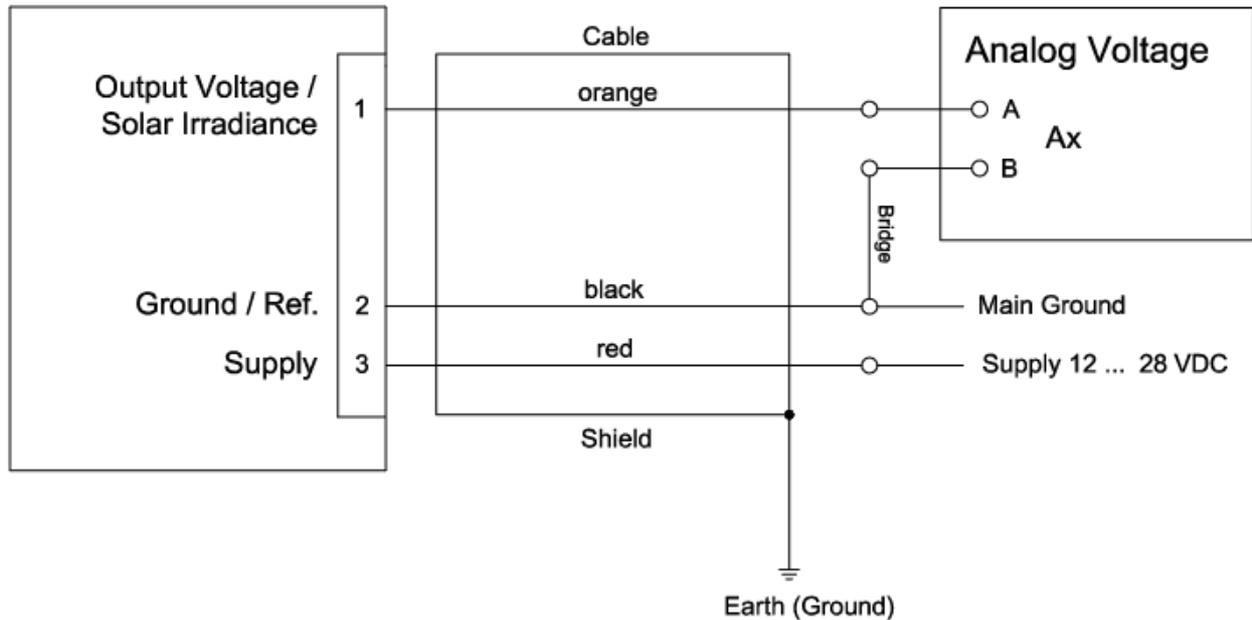
*Minus signals are identical to Ground

Cable type: LiYC11Y 4 x 0.14 mm² (cable length: 3m)

Connect the shield logger-sided to Ground (GND)

Silicon Irradiance Sensor
Si-V-10TC

Meteo-40
Data Logger



Si-V-10TC-T (S68261)

Sensor	Plug PIN No.	Wire Colour Sensor Cable	Meteo-40 Analog Voltage
Temperature	1	brown	Ax
Temperature Ground / Ref.*			Bx (Main Ground)
Solar irradiance	2	orange	Ax+1
Solar irradiance Ground / Ref.*			Bx+1 (Main Ground)
Ground / Ref.	4	black	Main Ground
Supply	3	red	12 ... 28 VDC

*Minus signals are identical to Ground

Cable type: LiYC11Y 4 x 0.14 mm² (cable length: 3m)

Connect the shield logger-sided to Ground (GND)

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