IRRADIANCE SENSOR

SENSOR / ITEM NO.

SI-RS485TC-T-MB / 423.016
SI-RS485TC-2T-MB / 423.018
SI-RS485TC-T-TM-MB / 423.036

DESCRIPTION OF FUNCTIONS

The SI-RS485TC-T is used to record the solar irradiance intensity. Furthermore, it can also record the module temperature of the measurement cell. With the RS485 interface, it is particularly suitable in the industrial sector, enabling particularly long cable sections.
In addition to the Si-RS485TC-T-MB meteocontrol offers two variants of the mentioned sensor with each an additional connected sensor.

- Si-RS485TC-2T-MB (additional sensor to measure the ambient temperature – firmly connected with a 3 m cable)
- Si-RS485TC-T-Tm-MB (additional sensor to measure the module temperature (external measurement) – firmly connected with a 3 m cable)

	SI-RS485TC-T-MB	SI-RS485TC-2T-MB	SI-RS485TC-T-TM-MB
Item-Nr.:	423.016	423.018	423.036
1 x sensor to record the solar irradiance intensity:	✓	✓	✓
1 x module temperature sensor (sensor internal measurement):	✓	✓	✓
1 x module temperature sensor (external measurement):	-	-	✓
1 x sensor to measure ambient temperature:	-	✓	-

TECHNICAL DATA

Supply voltage:	24 V DC (12...28 V DC)
Current consumption:	typical 35 mA
Galvanic isolation:	1000 V between supply and RS485 bus

IRRADIANCE MEASUREMENT

Solar cell:	Monocrystalline silicium (50 mm x 33 mm)
Current measuring shunt:	0.1 Ω (TK = 30 ppm/K)
Measuring range:	0…1400 W/m²
Deviation:	± 5 W/m² ± 2.5 % of measurement value, valid for temperature compensation, spectrum AM 1.5 (vertical light incidence).

TEMPERATURE MEASUREMENT

Measuring range:	-40…90 °C
Deviation:	1.0 K (Condition -35...80 °C)

MEASUREMENT VALUES RECORDED

G_M[1]	Irradiance in module plane
SRAD[2]	Irradiance in module plane
E_T_M1	Module temperature (sensor internal measurement)
E_T_M2	Module temperature (external measurement)
E_AT	Ambient temperature

1.) Value for WEB'Log

2.) Value for blue'Log

CONFIGURATION

Interface:	RS485
Protocol:	Modbus RTU
Default baud rate:	19200
Selectable baud rates:	9600, 19200, 38400
Default address range:	11 to 50, see identification label
Default data format:	8N1
Selectable data formats:	8N1, 8E1
Note:	Changes with regard to the communication settings are only possible in connection with a USB on a RS485 converter and the manufacturer's software.

INSTALLATION

Installation:	Horizontal mounting results in increasing reflection on the glass and thus in a higher amount of measurement errors.
Operating temperature:	–35…80 °C
Electrical connection:	3 m connecting cable, weather and UV-resistant
Casing dimensions:	155 mm x 85 mm x 39 mm
Casing, protection rating:	Powder-coated aluminium, IP 65
Weight:	approx. 350 to 470 g

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