



TR4

Measurement device for up to 4 strings



In the case of control automatons with 0-20 mA analogue inputs distributed within a plant, **TR4** is the ideal control device, since it converts a maximum signal of 20 A in the primary, into a 0-20 mA process signal. **TR4** is a robust and powerful digital transducer which the user can use, along with the control automaton, to control the real time status of photovoltaic strings.

Main Features

Inputs/Outputs

- Four 20 A direct current inputs
- 8 voltage-free digital inputs (alarms)
- One 1000 V_{d.c.} input
- 230 V_{a.c.} or 24 V_{d.c.} power supply voltage

TECHNICAL FEATURES

Construction features	
Box material	V0 self-extinguishing
Communications (TR8/TR16)	
Port / Protocol	RS-485 / Modbus/RTU
Environmental conditions	
Operating temperature	-20... + 50°C
Protection degree	IP 20
Humidity (non-condensing)	5% to 95%
Maximum altitude	2000 m
Safety	
Type of insulation	Category III – 300 V _{a.c.} EN 61010 double-insulated electric shock protection class II
Standards	
IEC 61010-1 :2001, IEC 60664-1 :2007, IEC 61000-6-2 :2005, IEC 61000-6-4 :2006, EN 55011 :2007 (For TR8 and TR16), EN 61010	

Models

Measurement device for up to 4 strings	Code
TR4-020	M54508
Measurement device for up to 8 strings	Code
TR8-RS485-25	M54600
TR8-RS485-100/200	M54601
Measurement device for up to 16 strings	Code
TR16-RS485-25	M55300
Measurement modules	Code
Two 25 A circuits M/TR-25 x2	M54606
Four 25 A circuits M/TR-25 x4	M54602
One 100 A circuit M/TR-100	M54603
One 200 A circuit M/TR-200	M54605

TR

Measurement systems for photovoltaic strings

Ensures the profitability of your photovoltaic installation



TR8 - RS-485

Measurement device for up to 8 strings



It is extremely difficult to certify that a photovoltaic plant is at its maximum performance level, without controlling the primary generation sources that certify this. The **TR8** has been specifically designed to control strings in photovoltaic plants, providing real time information on the current level generated in the different sets and, as a result, information on the current flowing through the external sensors.

Main Features

Inputs/Outputs

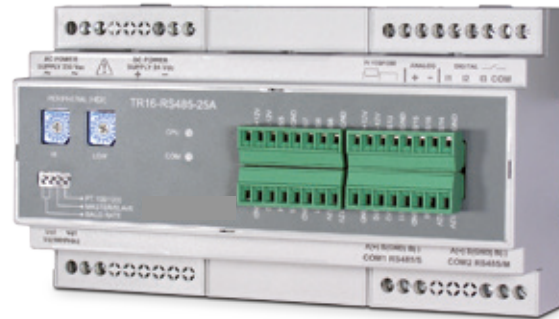
- Eight 25 A and 100/200 A direct current inputs (Hall effect system)
- Connection of 2 **M/TR** transformer modules
- 8 voltage-free digital inputs (alarms)
- One 1000 V_{d.c.} input
- 230 V_{a.c.} or 24 V_{d.c.} power supply voltage

Communications

- 2 RS-485 Modbus/RTU communications ports
- *Multi-Slave* communications system (up to 8192 strings)

TR16 - RS-485

Measurement device for up to 16 strings



The **TR16** is a more advanced version of the **TR8** model. In addition to the main current measurement features, it also includes other useful features for large-scale photovoltaic installations such as the possibility of measuring the ambient temperature in each zone of the installation.

Main Features

Inputs/Outputs

- Sixteen 25/100/200 A direct current inputs (Hall effect system)
- Connection of up to 4 **M/TR** transformer modules
- 3 voltage-free digital inputs (alarms)
- One 1000 V_{d.c.} input
- 1 input for the temperature probe Pt100 or Pt1000 (selectable)
- One 0-20 mA analogue input
- 230 V_{a.c.} or 24 V_{d.c.} power supply voltage

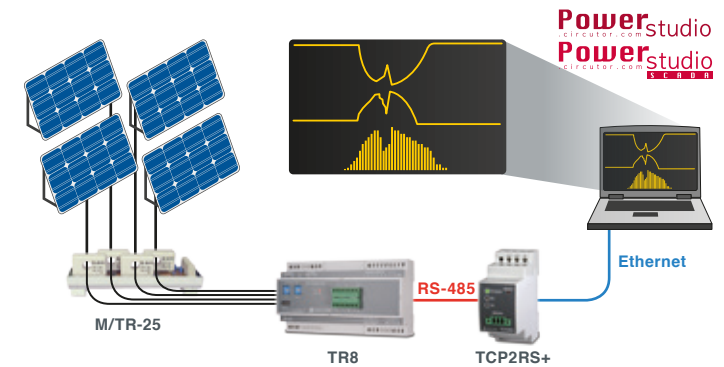
Communications

- 2 RS-485 Modbus/RTU communications ports
- *Multi-Slave* communications system (up to 7680 strings)

Communications

The **PowerStudio** energy management software is used to display the different measurements for the devices from any point, therefore providing centralised management of the photovoltaic plant.

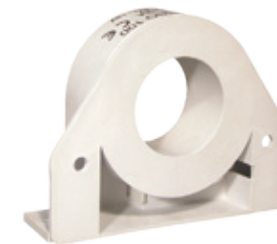
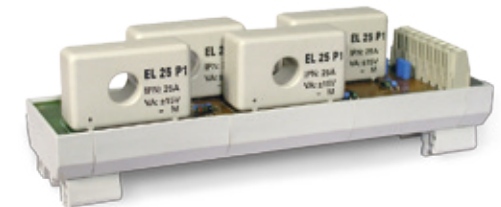
This software can be used to create all types of tables and graphics containing all the data collected from the installations.



Accessories

M/TR-25

M/TR-25 is the measurement module for 2 or 4 current circuits that use both **TR8** and **TR16** to measure currents up to 25 A_{d.c.}



M/TR-100 M/TR-200

M/TR-100 / M/TR-200 are the measurement modules used by the **TR8** to measure currents up to 100/200 A_{d.c.} depending on the type.