TR Series
Solar (PV) String Monitoring Systems

FEATURES

- Measure Current, Voltage, Power and Energy on up to 8,000 individual strings
- Completely modular and expandable
- 8 inputs for 20A, 100A or 200A Hall Effect CTs
- 1000Vdc Voltage measurement
- 8 digital inputs for status identification of 3rd party equipment
- RS485 Modbus communications interface
- DIN rail mounted
- External AC or 24Vdc auxiliary supply

TR8-RS485 is a new analyzer concept that has been specially designed for the supervision and control of your photovoltaic power plant. TR8-RS485 offers real-time information, and allows the remote detection of any incident in advance. Therefore, it boosts profitability and considerably increases the rate of returns.

It is very complex to check that a photovoltaic power plant is achieving its maximum efficiency level provided you do control primary generation sources that certify such status.

Therefore, there is no other alternative but comparing the grouped loads generation sources (strings). The purpose of the system is to evaluate whether all generation sources or strings are correctly operating, with similar levels of production, establishing minimum generation deviations between them (by means of current or % values).

TR8-RS485 has been specifically designed for the control of strings in photovoltaic power plants, in order to read the current levels generated between the different groups in real time and, as a result, to calculate the current flowing through the external sensors (25, 100 or 200 amps).

CAPABILITIES

<table>
<thead>
<tr>
<th>TR8-RS485</th>
<th>TR4-020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Inputs</td>
<td>8</td>
</tr>
<tr>
<td>Current Range</td>
<td>25, 100 or 200A</td>
</tr>
<tr>
<td>DC Voltage Input</td>
<td>1000Vdc</td>
</tr>
<tr>
<td>Current reading</td>
<td>✓</td>
</tr>
<tr>
<td>Voltage, Power &amp; Energy reading</td>
<td>✓</td>
</tr>
<tr>
<td>8 digital inputs</td>
<td>✓</td>
</tr>
<tr>
<td>RS-485 Modbus Communications</td>
<td>✓</td>
</tr>
<tr>
<td>Analog outputs (20mA)</td>
<td>✓</td>
</tr>
<tr>
<td>Auxiliary supply - AC and 24Vdc</td>
<td>✓</td>
</tr>
</tbody>
</table>

TR4-020
4 Channel DC current module with 20mA outputs

FEATURES

- Four 20A Hall Effect CTs
- 20mA analog output per channel
- DIN rail mounted
- External AC or 24Vdc auxiliary supply

Call Toll Free: 1-877-PQ-SOLNS (1-877-777-6567) or 303-805-5252 email: info@measurlogic.com

www.measurlogic.com
**SPECIFICATIONS**

**TR8-RS485**
- **Inputs**
  - Number of current inputs: 8
  - Current rating options: 25A, 100A or 200A
  - Sensing method: Non-contact, Hall-effect
  - Voltage Input rating: 1000Vdc
  - Digital Inputs: 8
  - Type: potential free, dry contact
- **Accuracy**
  - Linearity Error: ± 0.1%
  - Total Error: ± 0.5%
  - Resolution Error: ± 0.075%
  - Offset Error: ± 0.75%
  - Range: ± 100%
- **Transformer Accuracy**
  - Linearity Error (not including offset): ± 0.5%
  - Offset Error @ 77°F: ± 10mV at I=0
  - Offset drift / temp.: ± 0.56mV/°F (± 1mV/°C)
  - Thermal Gain drift: ± 0.038%/°F (± 0.5%/°C)
- **Operating Conditions**
  - Operating Temperature: 14...+149°F (-10...+65°C)
  - Relative Humidity: 5...95% RH (non-condensing)
  - Maximum operating altitude: 6500ft (2000m)
  - Protection: IP20
- **Power Supply**
  - Nominal Voltage: AC 115Vac ±30% DC 24Vdc
  - Frequency: 50/60Hz
  - Consumption without transformers: 8mVA 1.84VA
  - Consumption with 8 transformers (no load): 32mVA 7.36VA
- **Safety**
  - Category III - 300Vac (EN61010)
  - Double insulated electric shock protection Class II

**TR4-020**
- **Inputs**
  - Number of current inputs: 4
  - Current rating options: 20A
  - Sensing method: Non-contact, Hall-effect
- **Accuracy**
  - Full scale measurement margin: ± 0.5% In
  - Analog output accuracy: ± 0.5mV ± 0.028%I°F (± 0.5%I°C)
  - Transformer Accuracy: ± 0.1%
  - Linearity Error: ± 0.5%
  - Total Error: ± 0.1%
  - Resolution Error: ± 0.028%
  - Offset Error: ± 0.075%
- **Operating Conditions**
  - Operating Temperature: 14...+149°F (-10...+65°C)
  - Relative Humidity: 5...95% RH (non-condensing)
  - Maximum operating altitude: 6500ft (2000m)
  - Protection: IP20
- **Power Supply**
  - Nominal Voltage: 24Vdc
  - Power Supply tolerance: ± 10%
  - Consumption: 67mA
- **Safety**
  - Category III - 300Vac (EN61010)
  - Double insulated electric shock protection Class II

**MODEL SELECTOR**

<table>
<thead>
<tr>
<th>System</th>
<th>Model</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>25A</td>
<td>TR8-RS485 + (1 or 2) M/</td>
<td>TR8-RS485 + (1 or 2) M/</td>
</tr>
<tr>
<td>100A</td>
<td>TR8-RS485 + 100A</td>
<td>TR8-RS485 + 100A</td>
</tr>
<tr>
<td>200A</td>
<td>TR8-RS485 + 100A</td>
<td>TR8-RS485 + 100A</td>
</tr>
<tr>
<td>20A</td>
<td>TR4-020A</td>
<td>TR4-020A</td>
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