Photovoltaic monitoring datalogger

Description
The PV-Monitor is an energy manager used to monitor instantaneous self-consumption photovoltaic energy installations. It features a datalogger and web server with PowerStudio Embedded and a SCADA application for this purpose.

This unit provides real-time information about the photovoltaic energy production levels, energy savings and the consumption of a building, home, office, etc., as well as storing historical data to perform periodic analyses.

In addition, the following accessories can be installed with the PV-Monitor-M: a surface temperature sensor (photovoltaic modules), a solar radiation sensor and an ambient temperature sensor. These accessories can be used to calculate the installation's efficiency.

The PV-Monitor offers the following advantages:
— Detection of low performance of the PV installation (performance rate)
— Instantaneous energy balance of consumption compared to PV energy generation
— Calculation of the current month's self-consumption percentage (solar fraction)
— General alarms of the PV installation warn about anomalous operation (email alerts)
— Reduction of energy consumed from the electrical network
— Reduction of CO₂ emissions into the atmosphere.

Applications
— Photovoltaic energy installations for self-consumption (with or without injection into the grid)
— Remote energy balance monitoring and recording system (with or without injection into the grid)

References

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV-Monitor</td>
<td>E8100*</td>
<td>Photovoltaic monitoring datalogger</td>
</tr>
<tr>
<td>PV-Monitor-M</td>
<td>E8110*</td>
<td>Photovoltaic monitoring datalogger with meteorological monitoring system</td>
</tr>
</tbody>
</table>

Accessories

- RT-N150 EX0056 CIRCUTOR Router
- TR16-RS485 E80002 Current and multi-channel DC voltage and current analyzer for photovoltaic strings
- M/TR-25 x2 E80010 Measuring module for 2 current circuits with max 25 Adc
- M/TR-25 x4 E80011 Measuring module for 4 current circuits with max 25 Adc
- TH-DG-RS485 M61310 Ambient temperature sensor
- STS EX0036 Temperature sensor for photovoltaic panels
- SRS EX0033 Solar radiation sensor
- PS-24 M60415 230 Vac / 24 Vdc power supply
- PSC-120-24 M40180 Power supply for TR16 (120 Vac / 24 Vdc)

Dimensions

---

PV-Monitor

PV-Monitor M
## Technical features

**Power circuit**
- Power supply voltage: 85...264 V_ac / 120...374 V_dc
- Frequency: 47...63 Hz
- Maximum power consumption: 5...8 VA

**Output features**
- Type: Relay
- Number: 6 outputs
- Maximum operating power: 740 VA
- Maximum operating voltage: 250 V_ac
- Max. switching current: 5 A with resistive load
- Electrical working life (250 V_ac / 5 A): $3 \times 10^6$ switching operations
- Mechanical working life: $2 \times 10^7$ switching operations

**Input features**
- Type: Optoisolated voltage-free
- Number: 8 inputs
- Max. activation current: 50 mA
- Insulation: 1500 V

**Display**
- Backlit LCD: Configurable

**Build features**
- Box material: UL94 V0 self-extinguishing plastic
- Protection degree: IP 51
- Dimensions (mm): 105 x 70 x 90 mm (6 modules)
- Weight: 280 g

**Environmental conditions**
- Operating temperature: -10ºC...60ºC
- Humidity (non-condensing): 5%...95% (non-condensing)
- Maximum altitude: 2,000 m

**Network interface**
- Type: Ethernet 10BaseTX
- Connector: RJ-45
- Network protocols: HTTP / Modbus/RTU
- Connector: RS-485

**Server**
- Built-in Web and XML server

**Memory**
- Type: Internal
- Size: 256 MB

**Serial interface**
- Type: Three-wire RS-485 (A/B/S)
- Transmission speed: 4,800, 9,600, 19,200, 34,800, 57,600, 115,200 bps
- Data bits: 8
- Parity: No parity, even, odd
- Stop bit: 1 / 2

**Safety**
- Designed for CAT III 300/520 V_ac installations, in accordance with EN 61010.
- Double-insulated electric shock protection, class II

**Standards**
- IEC 60664, VDE 0110, UL 94, EN 61010-1, EN 55011, EN 61000-4-3, EN 61000-4-11, EN 61000-6-4, EN61000-6-2, EN 61000-6-1, EN 61000-6-3, EN 61000-4-8

### Connections

![Connections Diagram](image)