

## PV Monitoring

For High Accuracy Measurements of PV Systems

For performing high accurate measurements of complete PV systems IMT Solar provides complete monitoring systems. The monitoring systems are designed to meet all requirements for measurements needed in research and development.

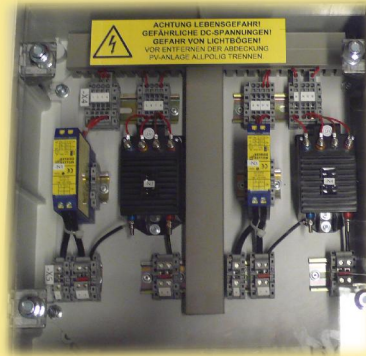
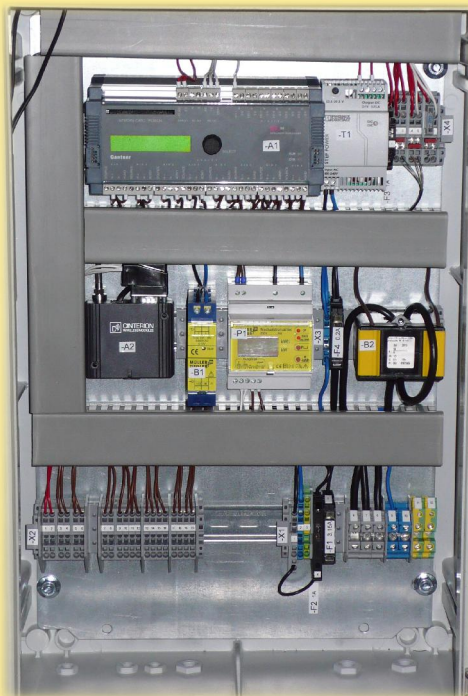
The monitoring systems provide measurement of all DC and AC quantities of the PV generator, the inverter and all required ambient conditions like PV module temperature, ambient temperature, solar irradiance and many others.

Due to the scalability of the logging system the number of measurement channels can be increased easily, so that the systems are also suitable for monitoring a large number of PV systems.

To offer maximum connectivity the system can provide communication by serial port (RS485, RS232), Ethernet, USB, GSM or EDGE.

All components are delivered in high quality outdoor measurement cabinets (glass fiber polycarbonate or stainless steel) including all internal wiring, small parts and documentation, so that they are easy to install into the PV system.

All systems are designed customer specific to provide an optimized solution to meet all requirements for best price.



- Left: Data logger, AC Measurements ( $U_{ac}$ ,  $P_{ac}$ ,  $E_{ac}$ ), GSM Terminal
- Top Right: DC Measurements (2 x  $I_{dc}$ , 2 x  $U_{dc}$ )
- Bottom Right: Meteorological Station (2 x solar irradiance horizontal, solar irradiance 30° tilted, wind speed, wind direction, air temperature, air humidity)



**INGENIEURBÜRO**  
Mencke & Tegtmeier GmbH

Meßgeräte für die Solartechnik

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HRB 202636

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## Specification Data Logger System:

Resolution: 19 bit  
Accuracy: 0.01% to 0.5% (depends on the range)  
Sample Rate: 1 sec. up to 24 h  
RAM: 128 MB  
communication: USB, RS485, Ethernet

## Overview Measurements:

Signal	Specification
DC Voltage – Udc	Up to 1000 V, 0.1% to 0.5% accuracy
DC Current – Idc	Up to 1000 A, 0.15% to 1% accuracy
DC Power – Pdc	Up to 1 MW, 0.25% to 1,5% accuracy
AC Voltage – Uac	Up to 1000 V, 0.3% to 0.5% accuracy
AC Current – Iac	Up to 1000 A, 0.3% to 1% accuracy
AC Power – Pac	Up to 1 MW, 0.6% to 1% accuracy
AC Energy – Eac	1% accuracy
Solar Irradiance	0..1300 W/m <sup>2</sup> , 3% to 5% accuracy
Global Irradiance	0..1500 W/m <sup>2</sup> , CMP 11 pyranometer
Diffuse Irradiance	0..1000 W/m <sup>2</sup> , CMP11 pyranometer
Wind Speed	0..50 m/s, 3% accuracy
Wind Direction	0..360°, 5° to 45° resolution
Module Temperature	-50..+100°C, class B
Air Temperature	-30..+70°C, DIN 1/3 class B
Air Humidity	0..100%rH, 2%rH accuracy
Air Pressure	800..1060 hPa, <1hPa accuracy

Other signals and specifications on request.



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