GOSSEN METRAWATT

PROFITEST PVSUN and PVSUN MEMO
Test Instrument for Testing PV Modules and Strings per DIN EN 62446 (VDE 0126-23)

3-349-671-03
9/7.15

- **Voltage measurement:** 0 to 1000 V DC
- **Current measurement (direct):** 0 to 20 A DC
- **Insulation resistance measurement**
  Measuring range: 0 to 20 MΩ
  Test voltages: 250, 500 and 1000 V DC
- **Polarity test**
- **Ground fault measurement:** 0 to 1000 V DC
- **Testing for protective conductor continuity:** 0 to 10 Ω
- **Backlit LCD panel**
- **Compact and rugged:**
  for service calls under harsh conditions
- **Extensive accessories**

PROFITEST PVSUN

PROFITEST PVSUN MEMO

- **Bidirectional USB interface**
- **Integrated memory** (> 10,000 data records)
- **PC software** (preparation of individual test structures, read-out and evaluation of measured values)

PROFITEST PVSUN MEMO

PROFITEST PVSUN-SOR

- Sensor for acquiring irradiation, temperature and inclination angle

Applications

With the PROFITEST PVSUN, all required electrical safety tests at photovoltaic systems can be executed simply and safely in accordance with DIN EN 62446.

The test instrument is suitable for testing PV modules and strings with up to 1000 V / 20 A.

In addition to insulation measurement, polarity testing and ground fault testing, protective conductor continuity can also be tested.

The tester is distinguished by its ergonomic design and easy handling with a weight of only 500 g.

Applicable Regulations and Standards

Regulations and standards in accordance with which the test instrument is manufactured and tested:

IEC 61010-1 / EN 61010-1/ VDE 0411-1	Safety requirements for electrical equipment for measurement, control and laboratory use – General requirements
EN 60529 VDE 0470, part 1	Test instruments and test procedures Degrees of protection provided by enclosures (IP code)
DIN EN 61326-1 VDE 0843-20-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements

Regulations and Standards for Use of the Test Instrument

IEC 62446 VDE 0126-23	Grid connected photovoltaic systems – Minimum requirements for system documentation, commissioning tests and inspection

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Characteristic Values

Voltage Measurement U0

Measuring range	0 to 1000 V DC (no transient voltages)
Resolution	1 V
Accuracy	±(2% rdg. + 1 d)

Current (direct)

Measuring range	0 to 20 A DC, measuring time < 1 s
Voltage range	2 to 1000 V DC
Resolution	0.1 A
Accuracy	± (1% rdg. + 1 d)
Overcurrent protection	max. 24 A (shutdown of internal circuit)

Insulation Resistance Measurement R_{ISO}

Test voltage	250 V DC	500 V DC	1000 V DC
Measuring range	0.5 MΩ to 1 MΩ	1 MΩ to 20 MΩ	1 MΩ to 20 MΩ
Resolution	0.1 MΩ	1 MΩ	1 MΩ
Accuracy	±(1% rdg. + 1 d)	±(1% rdg. + 2 d)	±(1% rdg. + 2 d)
Limit value	> 0.5 MΩ	> 1 MΩ	> 1 MΩ
Number of measurements	approx. 1000 (with battery set per IEC LR6)		

Earth Fault Measurement

Measuring range	0 to 1000 V DC
Resolution	1 V
Accuracy	± (5% rdg. + 1 d)

Low-resistance measurement

Measuring range	0 to 10 Ω
Test Current	> 200 mA
Resolution	0.1 Ω
Accuracy	± (1% rdg. + 1 d)
Number of measurements	approx. 500 low-resistance measurements (batteries: 1.5 V per IEC LR6)

Display

LCD	Multiple display with background illumination Dot matrix: 128 x 64 pixels

Reference Conditions

Ambient temperature	+ 23 °C ± 2 K
Relative humidity	40 to 75%
Battery voltage	6 V ± 1 V

Ambient Conditions

Operating temperature	0 to 40 °C
Storage temperature	–10 °C to 60 °C
Relative humidity	< 80%, no condensation allowed
Elevation	max. 2000 m above sea level

Power Supply

Batteries	4 ea. 1.5 V IEC LR6, AA, AM3, MN1500
Consumption	approx. 20 µA when switched off approx. < 30 mA during normal operation approx. 190 mA with background illumination

Electrical Safety

Voltage range	1000 V

Electromagnetic Compatibility (EMC)

EMC directive	EMC 2004/108/EC
Basic standard	EN 61326-1:2006

Data Memory (PROFITEST PVSUN MEMO only)

Memory capacity	max. 10,240 data records
Memory type	non-volatile flash memory (data are retained even if batteries are depleted)

Data Interface (PROFITEST PVSUN MEMO only)

Type	USB 2.0 (USB 2.0 full speed (12 Mbps) compatible)
Port	mini USB type B (5-pin)
Cable	USB 2.0 cable (A plug | mini B plug)

Mechanical Design

Protection	Housing: IP 42 per DIN VDE 0470 part 1/EN 60529
Dimensions	209 x 98 x 35 mm
Weight	approx. 500 g with batteries

PROFITEST PVSUN and PVSUN MEMO
Test Instrument for Testing PV Modules and Strings per DIN EN 62446 (VDE 0126-23)

Scope of Delivery

1 PROFITEST PVSUN or PROFITEST PVSUN MEMO test instrument
1 Set of 4 batteries, 1.5 V IEC LR6 (AA)
3 Safety measurement cables, 1.5 m, red, blue and yellow: banana plug – banana plug
1 Solar plug adapter, red: MC3 socket – banana socket
1 Solar plug adapter, red: MC4 socket – banana socket
1 Solar plug adapter, blue: MC3 plug – banana socket
1 Solar plug adapter, blue: MC4 socket – banana socket
1 Plug-on safety test probe with socket, red
1 Plug-on safety alligator clip with socket, yellow-gray
1 Carrying case with foam insert
1 Set of operating instructions
1 PC software (PROFITEST PVSUN MEMO only) can be downloaded from our website at: www.gossenmetrawatt.com
1 USB interface cable (PROFITEST PVSUN MEMO only)

Included Accessories

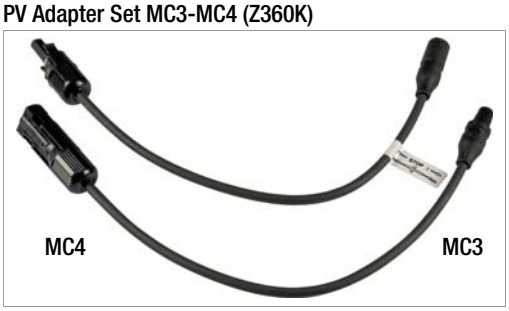
Safety Measurement Cables and Solar Plug Adapters

Carrying Case

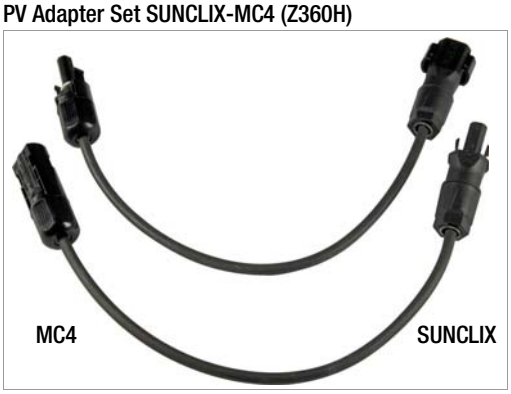
Optional Accessories

PROFITEST PVSUN-SOR (Z360N)

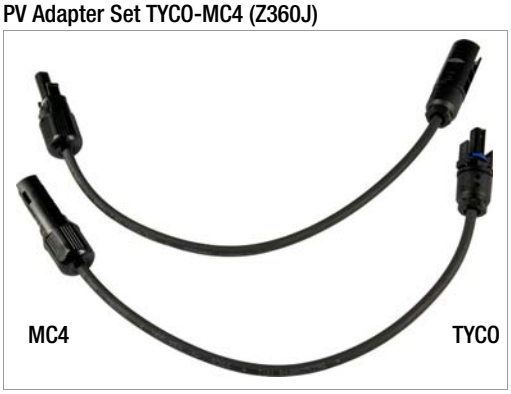
PV Adapter Set MC3-MC4 (Z360K)



PV Adapter Set SUNCLIX-MC4 (Z360H)



PV Adapter Set TYCO-MC4 (Z360J)



PROFITEST PVSUN and PVSUN MEMO
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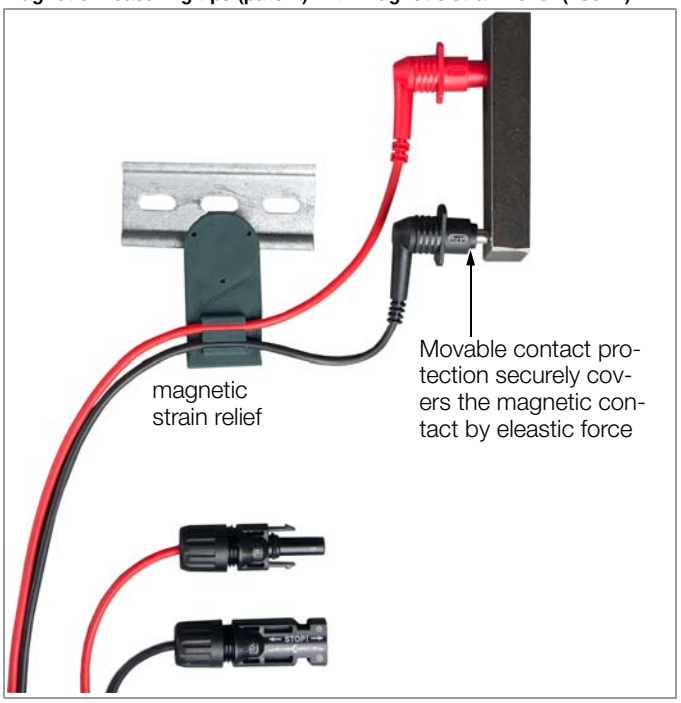
Magnetic measuring tips (patent) with magnetic strain relief (Z502Y)



Order Information

Description	Type	Article Number
Test instrument for testing PV modules and strings with up to 1.000 V / 20 A per DIN EN 62446. Insulation measurement with up to 1.000 V test voltage, polarity test, ground fault test and protective conductor continuity test. With measurement cables and adapters in test case.	PROFITEST PVSUN	M360C [1]
same as PROFITEST PVSUN, additionally with internal memory, bidirectional interface, software and USB interface cable	PROFITEST PVSUN MEMO	M360D [1]
Test equipment consisting of PROFITEST PVSUN MEMO, PROFITEST PVSUN-SOR, Set 2 – Magnetic Measuring Tips and test case	PV SUN PACKAGE	M360E
Sensor for irradiation, temperature and inclination angle for PROFITEST PVSUN and PROFITEST PVSUN MEMO	PROFITEST PVSUN-SOR	Z360N [D]
Solar connection cable, length 300 mm, diameter 4 mm	PV Adapter Set MC3-MC4	Z360K
Solar connection cable, length 300 mm, diameter 4 mm	PV Adapter Set SUNCLIX-MC4	Z360H
Solar connection cable, length 300 mm, diameter 4 mm	PV Adapter Set TYCO-MC4	Z360J
2 magnetic measuring tips with contact protection – Set with magnetic holder 5,5 mm in diameter insulated with MC4 plug (for Photovoltaic Tester), CAT III 1.000 V / 4 A, temperature between –10 °C and 60 °C, under standard conditions and flat-head screws holding force 1.200 g vertical to contact area	Set 2 – Magnetic Measuring Tips	Z502Y

[D] datasheet available

[1] DAkkS calibration certificate optionally available