



PV:1525

Handheld 1500 V 25 A
PV Test Instrument



The PV:1525 is designed for installers and O&M engineers to allow electrical safety testing and performance measures in PV systems up to 1500 V_{DC} and 25 A_{DC}, which is ideal for residential and commercial level installations.

The PV:1525 performs ground continuity, insulation resistance, open circuit voltage, and short circuit current tests.

With a new innovative user interface, the PV:1525 retains the ease of use from the previous generation while adding

additional features fit for a modern test instrument. Results can be tagged with information relating to the installation for ease of data management.

With Bluetooth® capabilities, test results can easily be transferred to a mobile app, PV:Sync Mobile (available for iOS and Android™), for review and exported for further sync with SolarCert software. Over-the-Air updates via the app ensure your instrument is always up to date with the latest features.

Key Measurement Features:

- PV string open circuit voltage measurement up to 1500 V_{DC}
- PV string short circuit current up to 25 A_{DC}
- Insulation resistance voltage up to 1500 V_{DC}

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Key Features:

- Bluetooth® data transfer to new PV:Sync Mobile app
- Wireless updates – firmware changes can be applied to the device via the PV:Sync Mobile app
- Intuitive color display
- Illuminated function buttons allow for guided navigation and testing
- Internal memory for results storage
- Manual mode for diagnostic testing

Technical Specification:

Open Circuit Voltage and Voltage Measurement (PV Terminals)

| | |
|-----------------|---|
| Display range | +10.0 V _{DC} ... +1500 V _{DC} -10.0 V _{DC} ... -440 V _{DC} 10.0 V _{AC} ... 440 V _{AC} |
| Measuring range | +10.0 V _{DC} ... +1500 V _{DC} -10.0 V _{DC} ... -440 V _{DC} 10.0 V _{AC} ... 440 V _{AC} |
| Resolution | 0.1 V _{DC} maximum |
| Accuracy | for +DC: ± (0.5 % + 2 digits) for -DC and AC: ± (5 % + 2 digits) |

Short Circuit Current Measurement (PV Terminals)

| | |
|-----------------|--|
| Display range | 0.00 A _{DC} ... 25.00 A _{DC} |
| Measuring range | 0.50 A _{DC} ... 25.00 A _{DC} |
| Maximum power | 37.5 kW |
| Resolution | 0.01 A _{DC} maximum |
| Accuracy | ± (1 % + 2 digits) |

Maximum Power

| | |
|----------------------|----------------------|
| Maximum power rating | 37.5 kW |
| Voltage | 1500 V _{DC} |
| Current | 25 A _{DC} |

Earth Continuity / Resistance Measurement

| | |
|---------------------------------|---|
| Test voltage open circuit | > 4 V _{DC} , nominal |
| Test current into 2 Ω | > 200 mA |
| Display range | 0.00 Ω ... 199 Ω |
| Measuring range (IEC 61557-4) | 0.05 Ω ... 199 Ω |
| Resolution | 0.01 Ω maximum |
| Accuracy | 0.05 Ω ... 0.09 Ω ± (2 % + 1 digit) 0.10 Ω ... 0.19 Ω ± (2 % + 2 digits) 0.20 Ω ... 1.99 Ω ± (2 % + 3 digits) 2.0 Ω ... 4.9 Ω ± (2 % + 2 digits) 5.0 Ω ... 199 Ω ± (2 % + 5 digits) |
| Test leads zero | Zero up to 10 Ω |
| Visible warning | ≥ 30 V _{AC} or V _{DC} at inputs |
| Circuitry protection | Test inhibited if ≥ 30 V _{AC} or V _{DC} at inputs |
| Repeat tests as per IEC 61557-4 | Approx. 4000 1-second tests |

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Technical Specification (Continued):

Insulation Resistance Measurement

| | |
|---------------------------------|---|
| Test voltage open circuit | 250 V, 500 V, 1000 V, 1500 V (as per IEC 61557-2) |
| Test voltage specification | -0 % +20 % (open circuit) |
| Test current short circuit | < 2 mA |
| Test voltage at 1 mA | > 1 mA into $U_n \times (1000 \Omega/V)$ (as per IEC 61557-2) |
| Display range | 0.05 M Ω ... 999 M Ω |
| Measuring range (IEC 61557-2) | 250 V / 500 V string mode: 0.05 M Ω ... 200 M Ω 1 kV / 1.5 kV string mode: 0.05 M Ω ... 999 M Ω 250 V point to point: 0.05 M Ω ... 300 M Ω 500 V point to point: 0.05 M Ω ... 500 M Ω 1 kV / 1.5 kV point to point: 0.05 M Ω ... 999 M Ω |
| Resistance resolution | 0.01 M Ω for 0.05 M Ω ... 1.99 M Ω 0.1 M Ω for 2.0 M Ω ... 19.9 M Ω 1 M Ω for 20 M Ω ... 999 M Ω |
| Resistance accuracy | $\pm(5 \% + 1 \text{ digit})$ for 0.05 M Ω ... 0.19 M Ω $\pm(5 \% + 3 \text{ digit})$ for 0.20 M Ω ... 1.99 M Ω $\pm(5 \% + 2 \text{ digit})$ for 2.0 M Ω ... 5.0 M Ω $\pm(5 \% + 5 \text{ digit})$ for 5.1 M Ω ... 99 M Ω $\pm(10 \% + 5 \text{ digit})$ for > 99 M Ω |
| Insulation voltage resolution | 1 V |
| Insulation voltage accuracy | $\pm(2 \% + 2 \text{ counts})$ |
| Maximum system capacitance | 2 μ F |
| Visible warning | $\geq 30 V_{AC}$ or V_{DC} at inputs |
| Repeat tests as per IEC 61557-2 | Approx. 4000 1-second tests |

Operating Current (Wireless via PV:1500 Clamp)

| | |
|-------------------------|---|
| Display range | 0.1 A _{DC} ... 400.0 A _{DC} |
| Current measuring range | 0.1 A _{DC} ... 400.0 A _{DC} |
| Resolution | 0.1 A |
| Accuracy | $\pm(5 \% + 2 \text{ digits})$ |

Operating Power (PV Terminals & Wireless via PV:1500 Clamp)

| | |
|-----------------|--------------------------------|
| Display range | 0.00 kW ... 600 kW |
| Measuring range | 0.50 kW ... 600 kW |
| Resolution | 0.01 kW |
| Accuracy | $\pm(6 \% + 2 \text{ digits})$ |

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General Specification:

Mechanical Design

| | |
|--------------------|---|
| Weight | Approx. 1 kg / 2.2 lb |
| Dimensions | 265 mm × 115 mm × 78 mm 10.4" × 4.6" × 3.1" |
| Display type | 3.5" color display with backlight |
| Display resolution | 480 × 320 pixels |
| Display FOV | 70° left to right 60° top to bottom |
| Power source | 11.55 V 2930 mAH lithium ion battery (rechargeable) |
| Auto power down | User-configurable |
| Onboard memory | 1000 slots |

Environmental Conditions

| | |
|-----------------------|--|
| Environment | Dry, without moisture condensation Indoor or outdoor use |
| Operating temperature | +5 °C ... +40 °C / +41 °F ... +104 °F |
| Barometric elevation | Max. 2000 m / 6562 ft. |
| Storage | -25 °C ... +65 °C / -13 °F ... +149 °F; dry, without moisture condensation; without battery pack |

Electrical Safety

| | |
|----------------------|--|
| Overvoltage category | IEC 61010-01 CAT III / 1500 V |
| Pollution degree | 2 (as per IEC 61010-1) |
| Protective system | Housing: IP40 as per IEC 60529 (Protection against ingress of solid foreign objects: = 1.0 mm / 0.039" Ø; protection against ingress of water: not protected) |
| Protection category | II |

Electromagnetic Compatibility (EMC)

| | |
|-----------------------|----------------------|
| Interference emission | IEC 61326-1, class A |
| Interference immunity | IEC 61326-1 |

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Data Interfaces:

Bluetooth® LE

| | |
|--------------------------------------|--|
| Frequency band | 2402 MHz ... 2480 MHz |
| Transmit power range | 20 dBm |
| Modulation type | GFSK |
| Channel spacing | 2 MHz |
| Radio spectrum efficiency (Art. 3.2) | STSI EN 300 328 V2.2.2 |
| Antenna type and gain | PCB antenna, 3.26 dBi |
| Usage | Transfer of test data; connection to peripherals, software updates |

Long-Range RF

| | |
|--------------------------------------|---|
| Frequency band | 433.375 MHz ... 434.625 MHz |
| Transmit power range | 4.89 dBm ERP |
| Modulation type | CSS |
| Channel spacing | 250 kHz |
| Radio spectrum efficiency (Art. 3.2) | ETSI EN 300 220-2 V3.2.1 |
| Antenna type and gain | FPC antenna, 2.8 dBi peak gain |
| Usage | Connect to SS:200LR Wireless Irradiance Meter |

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Scope of Delivery

PV:1525 Complete Kit

- 1 × PV:1525 instrument
- 1 × Set 4 mm test probes (red, black and yellow) with alligator clips
- 1 × Set instrument to MC4 test leads (yellow and black)
- 1 × Rechargeable battery pack
- 1 × Battery charging cradle
- 1 × Quick Start Guide PV:1525
- 1 × Calibration certificate PV:1525
- 2 × Declaration (CE, UKCA)
- 1 × PV:1500 Clamp**
- 1 × SS:200LR Irradiance Meter**
- 1 × Solar Survey – Quick release panel mounting bracket
- 1 × Carry case
- 1 × SolarCert software license

**Full scope of delivery see below.

SS:200LR Wireless Irradiance Meter

- 1 × SS:200LR Wireless Irradiance Meter
- 2 × AA batteries
- 1 × USB download cable
- 1 × Solar Survey temperature probe
- 1 × Quick Start Guide SS:200LR
- 1 × Calibration certificate SS:200LR
- 2 × Declaration (CE, UKCA)

PV:1500 Clamp

- 1 × PV:1500 Clamp (wireless current clamp meter)
- 1 × Test lead set (red and black probes)
- 2 × AAA batteries
- 1 × Manual PV:1500 Clamp
- 2 × Declaration (CE, UKCA)

Order Information:

Instruments

PV:1525 Complete Kit (global version)*

PV:1525 instrument (global version)*

SS:200LR Wireless Irradiance Meter (global version)*

PV:1500 Clamp

*Not for USA.

Optional Accessories & Replacements

Carry case

Set 4 mm test probes (red, black and yellow) with alligator clips

Set instrument to MC4 test leads (yellow and black)

Bypass measurement leads for power measurement

Rechargeable battery pack

Battery charging cradle

Solar Survey – Quick release panel mounting bracket

Part Number

601A910

601A911

396A942

601A1200

71G101

601A1203

601A1202

601A1201

906A001

906A021

396A979

601A528

Rev 8 (12/2025)

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