

PV:1525 Series

Handheld 1500 V 25 A PV Test Instruments



The PV:1525 Series instruments are designed for installers and O&M engineers to carry out electrical safety testing and performance measurements on PV systems up to 1500 V_{DC} and 25 A_{DC}, making them ideal for residential and commercial installations.

The PV:1525 Series performs ground continuity, insulation resistance, open-circuit voltage and short-circuit current tests, with the PV:1525-IV model also offering integrated IV curve tracing functionality.

With a new, innovative user interface, the PV:1525 series continues Seaward's tradition of intuitive, easy-to-use test equipment while introducing features designed for modern installation testing. Results can be tagged with installation-specific information, making data management simple and efficient.

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 analysis 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}
- 200 mA continuity measurement
- Graphical IV curve displayed on screen (PV:1525-IV only)
- Calculation of maximum power point voltage, maximum power point current, and fill factor (PV:1525-IV only)

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New PV:Sync Mobile app

Transfer test results directly from the PV:1525 Series to your mobile device.

Reduce manual data entry, organise results on site, and generate professional reports quickly and accurately.

SolarCert software

Download, analyse and report PV test data with ease.

SolarCert converts results into clear, professional reports, with I-V curve comparison and STC analysis, supporting accurate performance verification and streamlined certification workflows.

Application Guidance:

- Residential and commercial systems: Perfect for systems up to 1000 V
- Utility-scale systems: 1500 V capable
- Note: In higher current systems with higher irradiance values protection circuitry might be triggered due to effects of in-rush currents

Key Features and Comparison:

Feature	PV:1525	PV:1525-IV
Intuitive menu navigation and color display	✓	✓
Illuminated function buttons for guided navigation and testing	✓	✓
Auto test sequences – Efficient standard-compliant electrical safety testing according to DIN EN 62446-1 / VDE 0126-23-1 with 3 preprogrammed sequences	✓	✓
Auto test sequences – Customizable sequences for individual comfort testing	✓	✓
Manual mode for diagnostic testing	✓	✓
Open-circuit voltage and voltage measurement	✓	✓
Short-circuit current measurement	✓	✓
String test	✓	✓
Earth continuity / resistance measurement	✓	✓
Insulation resistance measurement	✓	✓
Operating power (with PV:1500 Clamp)	✓	✓
Graphical IV curve trace with display directly on screen	×	✓
Calculation of maximum power point voltage, maximum power point current, and fill factor	×	✓
Standard test condition (STC) comparison according to DIN EN IEC 60904-9 / VDE 0126-4-9 * (via PV:Sync Mobile app and SolarCert software)	✓	✓
Internal memory with structured measurement data storage (object > inverter > string)	✓	✓
Bluetooth® data transfer to PV:Sync Mobile app	✓	✓
Report generation and management via PV:Sync Mobile app and SolarCert software	✓	✓
Wireless updates – firmware changes can be applied via the PV:Sync Mobile app	✓	✓

* For accurate comparison, irradiance and temperature data via the SS:200LR Wireless Irradiance Meter are required.

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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 – String Test	
String test maximum power rating	37.5 kW* at panel efficiency ≤ 19 % 25 kW* at panel efficiency > 19 %
Voltage	up to 1500 V_{DC}
Current	up to 25 A_{DC}
IV Curve (PV:1525-IV only)	
Minimum number of test points	20
IV curve maximum power rating	37.5 kW* at panel efficiency ≤ 19 % 20 kW* at panel efficiency > 19 %
Voltage	up to 1500 V_{DC}
Current	up to 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

* Power limit is dynamically adjusted to compensate for in-rush currents due to various factors including (but not limited to) module efficiency, parasitic effects caused by the installation, and environmental factors such as irradiance.

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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 Un × (1000 Ω/V) (as per IEC 61557-2)
Display range	0.05 MΩ ... 999 MΩ
Measuring range (IEC 61557-2)	250 V / 500 V string mode: 0.05 MΩ ... 200 MΩ 1 kV / 1.5 kV string mode: 0.05 MΩ ... 999 MΩ 250 V point to point: 0.05 MΩ ... 300 MΩ 500 V point to point: 0.05 MΩ ... 500 MΩ 1 kV / 1.5 kV point to point: 0.05 MΩ ... 999 MΩ
Resistance resolution	0.01 MΩ for 0.05 MΩ ... 1.99 MΩ 0.1 MΩ for 2.0 MΩ ... 19.9 MΩ 1 MΩ for 20 MΩ ... 999 MΩ
Resistance accuracy	±(5 % + 1 digit) for 0.05 MΩ ... 0.19 MΩ ±(5 % + 3 digit) for 0.20 MΩ ... 1.99 MΩ ±(5 % + 2 digit) for 2.0 MΩ ... 5.0 MΩ ±(5 % + 5 digit) for 5.1 MΩ ... 99 MΩ ±(10 % + 5 digit) for > 99 MΩ
Insulation voltage resolution	1 V
Insulation voltage accuracy	±(2 % + 2 counts)
Maximum system capacitance	2 µF
Visible warning	≥ 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	± (5 % + 2 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	± (6 % + 2 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 and PV:1525-IV

All instruments of the PV:1525 series are available as instrument with basic accessories only or as conveniently assembled kits which include connectible devices for additional measurements and an extended range of accessories.

	Instrument Only	Complete Kit
Instrument (PV:1525 or PV:1525-IV)	✓	✓
4mm test probes with Alligator Clips	✓	✓
Instrument to MC4 Test Leads	✓	✓
Rechargeable battery pack	✓	✓
Battery charging cradle	✓	✓
PV:1500 Clamp**	×	✓
SS:200LR Wireless Irradiance Meter**	×	✓
Solar Survey – Quick release panel mounting bracket	×	✓
Carry Case	✓	✓
Quick Start Guide	✓	✓
Declaration of conformity	✓	✓
Calibration certificate	✓	✓
SolarCert software license (1 ×)	✓	✓

** Please see below for full scope of delivery of these devices.

SS:200LR Wireless Irradiance Meter

1 × SS:200LR Wireless Irradiance Meter
1 × Solar Survey Quick Fix Dual Temp Probe
2 × AA batteries
1 × USB download cable
1 × Quick Start Guide
1 × Calibration certificate
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

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Order Information:

Instruments	Part Number
PV:1525-IV Complete Kit (global version)*	601A915
PV:1525-IV instrument (global version)*	601A916
PV:1525 Complete Kit (global version)*	601A910
PV:1525 instrument (global version)*	601A911
SS:200LR Wireless Irradiance Meter (global version)*	396A942
PV:1500 Clamp	601A1200

*Not for USA.

Optional Accessories & Replacements	
Carry case	71G101
4mm test probes with Alligator Clips	601A1203
Instrument to MC4 Test Leads	601A1202
Bypass measurement leads	601A1201
Rechargeable battery pack	906A001
Battery charging cradle	906A021
Solar Survey – Quick release panel mounting bracket	396A979
Solar Survey Quick Fix Dual Temp Probe	396A980

601A528
Rev 10 (03/2026)

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