

# Renewable Energy Tools

Renewable energy is experiencing rapid acceleration, particularly in the solar market, with a new installation capacity of approximately 168GW by the end of 2021, accounting for about 55.63% of the overall energy growth. This trend is expected to continue at an increasingly rapid pace. In order to keep up with this expanding market, UNI-T offers a range of tools specifically designed for renewable energy, ensuring swift, safe, and efficient installation and maintenance of solar systems.



## UT-M24

### AC Electric Vehicle Charging Pile Test Adapter



The UT-M24 is an AC electric vehicle charging pile test adapter. This test adapter (with type 2 connector) simulates the presence of an electric vehicle and is used in conjunction with appropriate testing instruments (such as installation testers, digital multimeters, or oscilloscopes) for testing. The adapter is used to verify whether the AC charging pile works normally after installation and during regular maintenance, or to troubleshoot the charging pile when it does not work properly.



#### Product Highlights:

- ◆ Charging status simulation
- ◆ Charging fault/alarm simulation
- ◆ Suitable for multiple testers

Specifications	Description	
Charging status simulation	PP Simulation	Open, 13 A, 20 A, 32 A, 63 A
	CP States	State A, B, C, D
Charging fault/alarm simulation	CP Error state "E"	On/off (CP signal short-circuited to PE)
	PE Error state "F" (Earth fault)	On/off (interruption of PE conductor)
PE Pre-Test	Visible indication >50 V, AC/DC between PE conductor and touch sensor	
CP signal terminal	It is used to monitor the CP signal	
Phase indication	Yes	
Testing Terminal	L1, L2, L3, N, PE terminal	
Charging port type	Type 2 (Europe standard) - male	
External power supply plug	yes, it is able to plug the external power plug	
Rated voltage	AC 300V MAX (Single phase); AC 510V MAX (Three phase); 50/60Hz	
Working temperature	-20°C~ +40°C; Relative humidity: 10% to 85%, normal operation, non-condensing	
Storage temperature	-20°C~ +50°C; Relative humidity: 0 to 85% storage, non-condensing	
Safety standard	IEC/EN 61010-1; IEC/EN 61010-2-030	
IP rating	IP54 (with cap closed); IP20 (cap not closed)	
Overtoltage category	CAT II 300V	



IP54

CAT II 300V

\*Product is preliminary and subject to change pending final release information.

# UT673PV SERIES

## Solar MPPT Meters



The UT673PV series solar MPPT meters test solar panels for maximum power, voltage, current to find the abnormalities. With a large screen, automatic measurement, and portable design, it enhances efficiency for photovoltaic industry professionals and users.

### Product Highlights:

- ◆ Large LCD with multiple readings
- ◆ Equipped with MC4 connector
- ◆ Equipped with MC4 wrench
- ◆ Portable and lightweight design

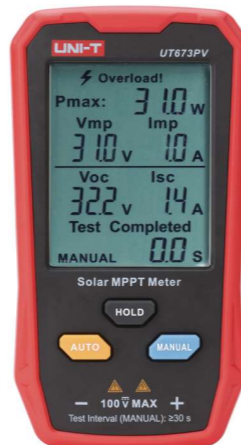
Specifications	UT673PV+	UT673PV
Manual language	EN, FR, DE, IT, ES, SV, PL, CZ	
Pmax	5~1800W ±(1.0%+10)	5~800W ±(1.0%+10)
I <sub>mp</sub>	0~20A ±(1.5%+5)	0~35A ±(1.5%+5)
V <sub>mp</sub>	10~150V ±(1.5%+5)	10~60V ±(1.5%+5)
V <sub>oc</sub>	10~150V ±(1.5%+5)	10~60V ±(1.5%+5)
I <sub>sc</sub>	0~20A ±(1.5%+5)	0~35A ±(1.5%+5)
Display	Large LCD (52 x 66mm)	Large LCD (52 x 66mm)
Reverse polarity connect protection	✓	✓
Over voltage protection	✓	✓
Over current protection	✓	✓
Over temperature protection	✓	✓
Over power protection	✓	✓
Manual MPPT test	✓	✓
Bluetooth app	✓	
Data hold	✓	✓
Data storage	✓	
Power supply	1.5V AAA x 3	
Category rating	CAT 0 150V	CAT 0 60V

Characteristics	Red + Black	Red + Black
Product color	Red + Black	Red + Black
Product size	169 x 81 x 46mm	143 x 74 x 25mm



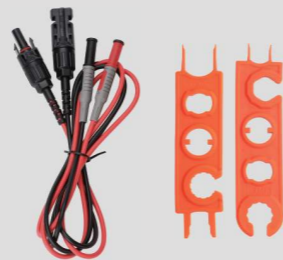
UT673PV+

CAT 0 150V



UT673PV

CAT 0 60V



\*Equipped with MC4 connector & Wrench



# UT541

## 15KW Photovoltaic I-V Curve Analyzer



The UT541 is crafted to assess solar panels, diagnose defects, and enhance efficiency during PV power plant installation, maintenance, and project acceptance. It streamlines professional tasks, effectively addressing on-site challenges for optimal results.

### Product Highlights:

- ◆ I-V curve test: 15kW (with STC converting)
- ◆ Solar irradiance: 0~1300W/m<sup>2</sup>
- ◆ Working temp.: -40°C to 120°C
- ◆ Voc/V<sub>mp</sub> @OPC test: 1500V/20A
- ◆ I<sub>sc</sub>/I<sub>mp</sub> @OPC test: 0.10-20.00A
- ◆ CAT III 1500V

Specifications	EN, FR, DE, IT, ES, SV, PL, CZ	
Manual language	EN, FR, DE, IT, ES, SV, PL, CZ	
Voc/V <sub>mp</sub> @OPC	1500V/20A	±(0.5%+2)
I <sub>sc</sub> /I <sub>mp</sub> @OPC	0.10-20.00A	±(1%+2)
Pmax @OPC	15kW	±(1%)
Voc/V <sub>mp</sub> @STC	5.0 V to 1500 V	
I <sub>sc</sub> /I <sub>mp</sub> @STC;	0.10-20.00A	
Pmax @STC	50W-15kW	±5%
	Accuracy of duplicate Measurement	±2%
Solar Irradiance:	0-1300W/m <sup>2</sup>	
Temperature:	-40°C-120°C	±1°C
Continuity (grounding)	0.2Ω-2000Ω	
Voltage test (Live)	AC/DC: 0.0V to 1500 V	±(2.5%+2)
Current test (Live); (External clamp)	AC/DC: 1.0A to 100.0A	±(5%+2)
Working power (AC/DC)	5W/VA to 100kW/kVA	±(7.5%VI+0.6V+0.2 I)
Diode	0.50V dc to 6.00V dc	
SPD	0.0V to 1000V	
Insulation resistance	0.05MΩ-999MΩ	±(5%+5) (1000V)
Fill factor	✓	
DPmax	✓	
Series & Parallel resistance	✓	
Voltage polarity	✓	
AC+DC auto identification	✓	
Solar Irradiance Meter configuration	Sensitivity; Lower limit value	
Internal PV module database custom management	✓ (convert the I-V curve to STC conditions for comparison), with the optional accessory temperature or light meter	
Communication interface	Bluetooth, USB	
PV strings/Moduls parameter	50 set	
Data storage	999 set (I-V curve)	
Other features	1, APO; 2, LCD contrast; 3, Adjustable backlight; 4, Unit config; 5, Date & Time config	
Dimension & Weight	250 x 122 x 125mm	
Overvoltage category	CAT III 1500V	



CAT III 1500V



GET IT ON Google Play



Download on the App Store

### Get the UNI-T Smart Measure!

- Generating testing report;
- Generating real-time charts;
- Export multiple test data: PDF/XLS/JPEG/CSV;



External Clamp: UT-CS07 (Optional)

\*Product is preliminary and subject to change pending final release information.

# UT197PV

## Digital Multimeter



The UT197PV is a true RMS digital multimeter tailored for precise high DC voltage measurements in solar systems. With power measurement features and the ability to endure 12kV impulse voltage, it is fortified with IP67 and 5-meter drop protection. Ideal for PV applications and diverse sectors like mining, making it a versatile tool for specialized industries.

**Product Highlights:**

- ◆ High precision with 6000 display count
- ◆ Voltage test: DC 2500V+AC 1500V
- ◆ Power measurement
- ◆ Working temp.: -40°C to 55°C



### Voltage & Power measurement



Working environment (-40°C-55°C)



High Ruggedness (IP67 water/Dust proof)

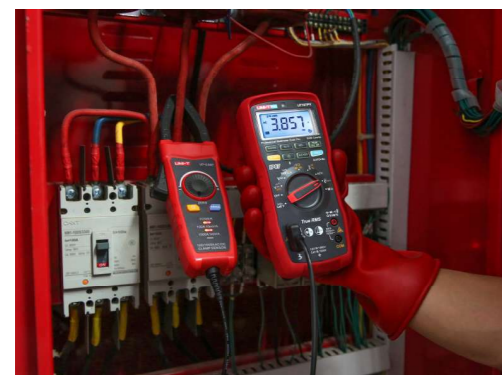
- IP67
- 5m drop
- CAT III 1500V
- CAT IV 1000V
- True RMS



### Get the UNI-T Smart Measure!

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### External Clamp: UT-CS07 (Optional)



Specification			
Voltage (DCV)		600.0mV	±(0.3%+5)
		6.000V/60.00V/600.0V	±(0.2%+5)
		2500V	±(1.0%+5)
Voltage (ACV)	45~1kHz	600.00mV/6.000V/60.00V/600.0V/1500V	≥45Hz, <500Hz: ±(0.8%+3)
			≥500Hz, <1KHz: ±(1.8%+3)
VFD (ACV)	45~200Hz	600.0V/1500V	±(2.0%+5)
Auto Loz	45~400Hz	600.0V	±(1.5%+5)
		1500V	±(1.8%+5)
ACV+DCV		600.00mV/6.000V/60.00V/600.0V/1500V	≥45Hz, <500Hz: ±(1.5%+5); ≥500Hz, <1KHz: ±(2.5%+5);
Resistance		600.0Ω	±(0.8%+5)
		6.000kΩ/60.00kΩ/600.0kΩ/6.000MΩ	±(0.5%+5)
		60.00MΩ	±(2.5%+5)
Capacitance		60.00nF	±3.0%
		600.0nF/6.000μF/60.00μF/600.0μF	±(3.0%+5)
Continuity		600.0Ω	±(10.0%+5)
Diode		3.2V	±(1.0%+5)
Frequency		99.99Hz/999.9Hz/9.999kHz/99.99kHz/999.9kHz	±(0.02%+5)
Duty cycle		10Hz~10KHz (10%~90%)	±(2.0%+30)
Temperature		-40°C~1000°C	±(1.0%+30)
		-40°F~1832°F	±(1.0%+60)
External clamp (DCA)	UT-CS07 (optional)	100A(10mV/A) & 1000A(1mV/A)	±(0.8%+5)
External clamp (ACA)	UT-CS07 (optional)	45~400Hz: 100A(10mV/A) & 1000A(1mV/A)	±(1.0%+5)
AC Power 100A (10mV/A)	Active power	60.00kW/150.0kW	±(3.0%+5)
	Apparent power	60.00kVA/150.0kVA	±(2.0%+5)
	Reactive power	60.00kVAr/150.0kVAr	±(5.0%+5)
AC Power 1000A(1mV/A)	Active power	600.0kW/1500kW	±(3.0%+5)
	Apparent power	600.0kVA/1500kVA	±(2.0%+5)
	Reactive power	600.0kVAr/1500kVAr	±(5.0%+5)
DC Power 100A (10mV/A)		60.00kVA/250.0kVA	±(3.0%+5)
		60.00kVA/250kVA	±(3.0%+5)
Display count		6000	
True RMS		√	
PEAK		√ (250μs bandwidth pulse signal)	
Multifunctional protection		√	
Bluetooth		√	
Drop protection		5m	
IP rating		IP67	
Working temperature		-40~55°C	
Overvoltage category		CAT IV 1000V/CAT III 1500V	

The device also includes the following features: analog bar display, non-contact voltage detection (NCV), auto-ranging capability, relative measurement mode (REL), max/min recording, data hold function, high-voltage alert system, low-battery indicator, auto-adjusting backlight, and automatic power-off (APO).

# UT219PV

## Professional AC/DC Clamp Meter-SOLAR

The UT219PV is an AC/DC clamp meter designed for PV systems, offering precision in measuring parameters like voltage, current, and resistance. It excels not only in solar applications but also in other high-voltage settings like energy storage systems, UPS, and large motors.

### Product Highlights:

- ◆ Ultra-thin Jaw for solar system
- ◆ High-voltage measurement (AC/DC)
- ◆ Dual LCD display: V+A
- ◆ Audible & Visual alarm
- ◆ IP65 protection & CAT III 1500V
- ◆ Data communication: Bluetooth app

Specifications	Range	
Manual language	EN, FR, DE, IT, ES, SV, PL, CZ	
Current (ACA)	999.9A	40Hz~100Hz:±(2.0%+5) 100Hz~1000Hz:±(2.5%+5)
Current (DCA)	999.9A	±(2.0%+5)
Voltage (ACV)	999.9V/1500V	40Hz~1000Hz: ±(1.0%+5)
Voltage (DCV)	999.9V/2500V	±(1.0%+5)
Voltage (DC mV)	999.9mV	±(1.0%+5)
ACV (with LPF)	999.9V	±(2.0%+9)
ACA (with LPF)	999.9A	±(2.5%+9)
ACA (with LPF): flex clamp sensor	30.00A/300.0A/3000A	±(4.0%+9) (center area)
ACA: with flex clamp sensor	30.00A/300.0A/3000A	±(3.0%+5) (center area)
Power (DC)	999.9 kVA/2500 kVA	±(2.0%+20)
Frequency (A&V)	5.0 Hz to 999.9Hz	±(0.5%+5)
Resistance (Ω)	999.9Ω/9.999kΩ/99.99kΩ	±(1.0%+5)
Capacitance (F)	100.0μF/1000μF	±(1.0%+5)
Temperature	-40°C~400°C/-40°F~752°F	±(1.0%+30); ±(1.0%+60)

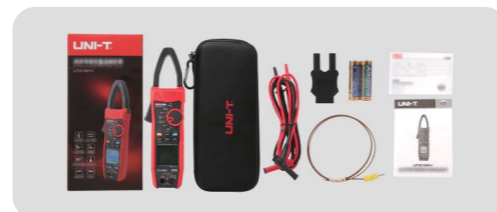
Features	
True RMS	√
Display count	9999
Display	LCD: Dual display (V+A)
Jaw (Max conductor dia.)	35mm
Diode	√
Solar panel polarity indication	when <-10 DCV, Audible & Visual alarm
Negative indication (DC)	Audible + Visual alarm
Alarm/Indication	High voltage alarm; Over range indication
AUTO HOLD	√
Inrush current	√
PEAK	√
Bluetooth	√
Data storage	√
Flexiable clamp compatible	UT-CS09D (optional)
IP rating	IP65
Overvoltage category	CAT III 1500V, CAT IV 600V

Characteristics	
Power supply	AAA x 1
Product dimension	197 x 34.5 x 39.9mm
Product color	Grey + Red
Accessories	Test probe, temperature probe, batteries, manual



### Get the UNI-T Smart Measure!

- Generating testing report;
- Generating real-time charts;
- Export multiple test data: PDF/XLS/JPEG/CSV;



# UT196

## Professional Multimeter - Solar Pro

The UT196 True RMS solar digital multimeter is an ideal rugged tool for solar system maintenance, capable of measuring up to 1700V DC, 1500V AC. Featuring IP65 & 2m drop protection, a low-pass filter, and a low impedance mode, it ensures safe and efficient work in challenging conditions.

### Product Highlights:

- ◆ DC voltage measurement: 1700V
- ◆ Clamp sensor supported (current test)
- ◆ Low pass filter function

Specifications	Range	
DC voltage (V)	1700V	±(0.2%+5)
AC voltage (V)	1500V	±(0.8%+3)
Frequency (Hz)	1MHz	±(0.08%+4)
Resistance (Ω)	60MΩ	±(0.8%+2)
Capacitance (F)	60mF	±(1.9%+5)

Features		
Display count		6000
Dual display		√
Auto range		√
NCV		√
Diode/Continuity test		√
Relative mode		√
Max/Min		√
Data hold/Peak		√
Low pass filter (LPF)		√
Audible and visual indication		√
Low battery indication	<7.5V	√
Optional flex clamp	3000A AC (UT-CS09D)	√
Analog bar graph		√
Auto power off	15minutes	√
Flashlight		√
IP rating		IP65
Drop test		2m
Safety rating		CAT III 1000V, CAT IV 600V

Characteristics	
Standard accessories	Test leads, batteries
Power	9V (6F22)
Product size	195 x 95 x 58mm
Product net weight	485g
Standard individual packing	Gift box, carrying bag, English manual
Standard quantity per carton	10pcs
Standard carton measurement	480 x 370 x 195mm



**UNI-T**

# UT503PV

## PV Insulation Tester



The UT503PV measures photovoltaic insulation resistance without requiring panel shutdown. It also features ordinary insulation resistance tests, auto AC/DC voltage test, stepping voltage, automatic discharge, and Bluetooth transmission. Commonly used for testing insulation in solar system, battery storage, and so on.

### Product Highlights:

- ◆ IR test in PV system
- ◆ Portable and compact design
- ◆ Auto AC/DC voltage test
- ◆ Stepping voltage & Auto discharge



### Get the UNI-T Smart Measure!

- Generating testing report;
- Generating real-time charts;
- Export multiple test data: PDF/XLS/JPEG/CSV;



Energized device test (DC 1000V; PV)



Output voltage	Insulation resistance	PV insulation resistance	Accuracy
Manual language	EN, FR, DE, IT, ES, SV, PL, CZ		
125V	<1.51MΩ		For reference only
	1.51MΩ~100.0MΩ 100.1MΩ~1000MΩ	N/A	±(1.5%+5) ±(5%+6)
250V	<1.51MΩ		For reference only
	1.51MΩ~200.0MΩ 200.1MΩ~2000MΩ	N/A	±(1.5%+5) ±(5%+6)
500V	<1.51MΩ	<1.51MΩ	For reference only
	1.51MΩ~1000MΩ 1001MΩ~4000MΩ	1.51MΩ~1000MΩ 1001MΩ~4000MΩ	±(1.5%+5) ±(5%+6)
1000V	<1.51MΩ	<1.51MΩ	For reference only
	1.51MΩ~1000MΩ 1001MΩ~4000MΩ	1.51MΩ~1000MΩ 1001MΩ~4000MΩ	±(1.5%+5) ±(5%+6)
Voltage measurement	DC Voltage	5~1000V DC	±(1%+4)
	AC Voltage	5~600V AC	±(1%+4)
Short circuit current	IR measurement	<1.5mA	
	PV IR measurement	<1.2mA	

Features	
Continue measurement (IR)	√(default setting)
Time measurement	√
Compare function(IR)	√
Stepping voltage	√
Auto discharge	√
Energized device test	IR measurement: DO NOT test if the DUT voltage is above 25V PV IR measurement: the DUT voltage should ≤ DC 1000V
High voltage alarm	√
Data storage	1000 set
Communication interface	Bluetooth, USB
Product dimension	161(L) x 117.3(D) x 63(H)mm
IP	IP54 (with cap closed)
CAT rating	CAT II 1000V, CAT III 600V

Characteristics	
Product color	Red + grey
Product weight	About 0.5KG (including battery)
Product size	161(L) x 117.3(D) x 63(H)mm
Standard package	Hard cloth bag + carton box
SPQ	2
Package size	360 x 230 x 290mm

# Insulation Resistance Testers

Insulation resistance testing measures the resistance of electrical insulation materials to prevent current leakage. Our products deliver accurate, reliable readings, helping users identify insulation defects early, avoid equipment breakdowns, ensure electrical safety, and extend device lifespan. Widely applied in power generation, electrical maintenance, automotive electronics, industrial machinery, and construction sectors for routine checks and pre-commissioning tests.

