P/N:110401112199X

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UNI-TREND TECHNOLOGY (CHINA) CO., LTD.

UNI-T®

UT219PV

Photovoltaic AC/DC Clamp Meter
Quick Start Guide

For more information about the product, go to https://www.uni-trend.com.
For detailed operating instructions, please download the User Manual from https://www.uni-trend.com.

Preface

Thank you for purchasing this brand new product. In order to use this product safely and correctly, please read the Quick Start Guide thoroughly, especially the Safety Notice part.

After reading the Quick Start Guide, it is recommended to keep the guide at an easily accessible place, preferably close to the device, for future reference.

Limited warranty and liability

This Uni-Trend product will be free from defects in material and workmanship for one year from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on behalf of Uni-Trend. To obtain service during the warranty period, contact your nearest Uni-Trend authorized service center to obtain return authorization information, then send the product to that service center with a description of the problem.

This warranty is your only remedy. No other warranties, such as fitness for a particular purpose, are expressed or implied. Uni-Trend is not liable for any special, indirect, incidental or consequential damages or losses, arising from any cause or theory. Since some states or countries do not allow the limitation of an implied warranty and of incidental or consequential damages, this limitation of liability may not apply to you

⚠ Warning:

Measuring voltage over 1500V applies to the measurement positions "2500V DC/ 1500V AC" and "VA/V+A" only! Do not input voltage over 1500V to other measurement positions. Otherwise, it can pose a risk of damaging the Meter!

1. Overview

UT219PV is a True-RMS AC/DC clamp meter (abbreviated as "Clamp Meter") specially designed for photovoltaic high-voltage environments. It can be used to measure AC/DC voltage, AC/DC current, LPF voltage/current, inrush current, peak current, DC power, flex current sensor, resistance, continuity, diode, capacitance, temperature, and more. UT219PV has data storage function and Bluetooth function, which enable remote control and monitoring on the measurement data via the "UNI-T Smart Measure" APP. UT219PV is an ideal meter for the installation and maintenance in photovoltaic field. This Clamp Meter can also be applied in the energy storage system, UPS (uninterrupted power supply), large-scale motor, and other high voltage environments.
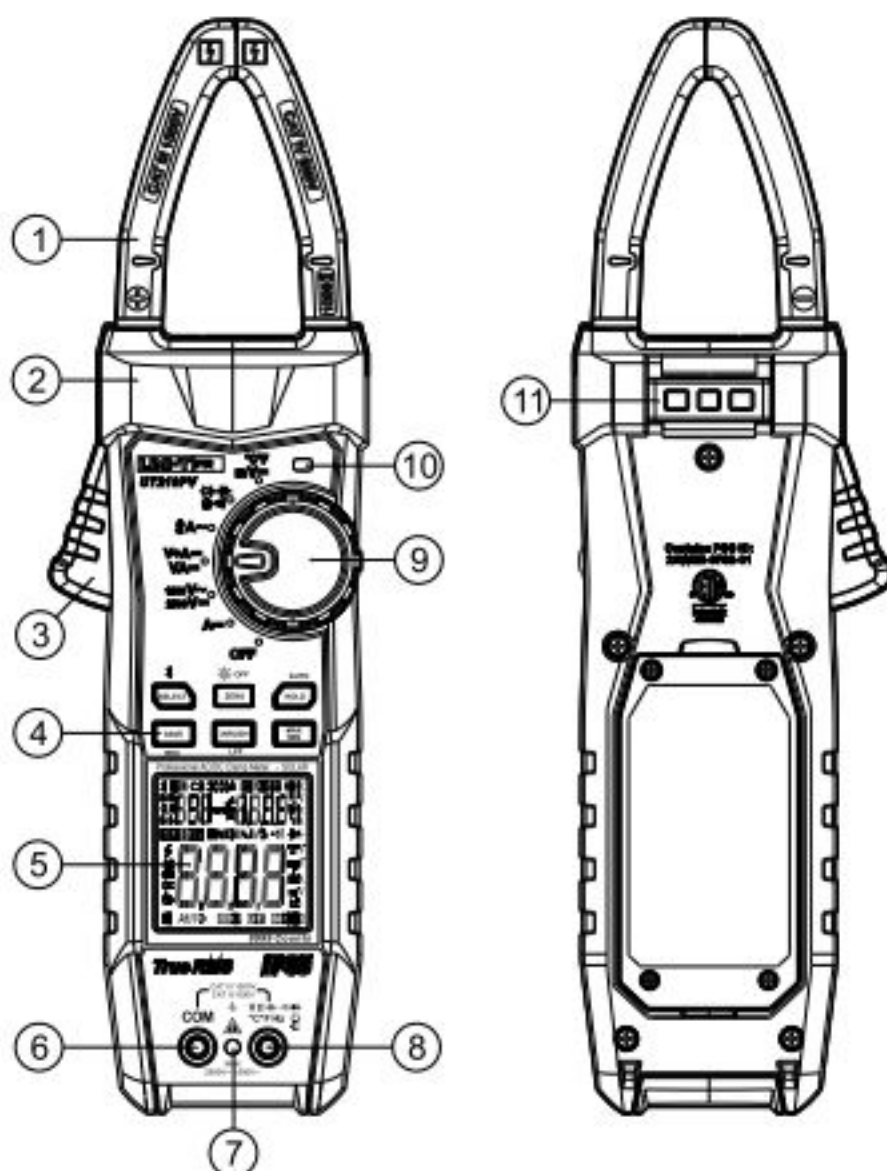
2. Accessories

User manual: -------------------------------------- 1 pc
Test leads (UT-L88): ------------------------------ 1 pair
Test leads (UT-L95): ------------------------------ 1 pair (optional)
Temperature probe: ------------------------------ 1 pc
Carrying case: ------------------------------------ 1 pc
AA 1.5V battery: ---------------------------------- 2 pcs
UT-CS09D flex current sensor: ---------------- 1 pc (optional)
Magnetic hanger: --------------------------------- 1 set (optional)

3. Safety Notice

See the "Safety Guideline" in the package or the "Safety Information" in the User Manual.

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4. External Structure

|			
1	Clamp jaw	7	Light-guide area for infrared transmission
2	Tactile barrier	8	Signal input terminal (connected with red test lead)
3	Trigger	9	Rotary switch
4	Functional buttons	10	Light-sensitive area
5	LCD display	11	For hanging strap
6	COM terminal (connected with black test lead)		

5. LCD Display
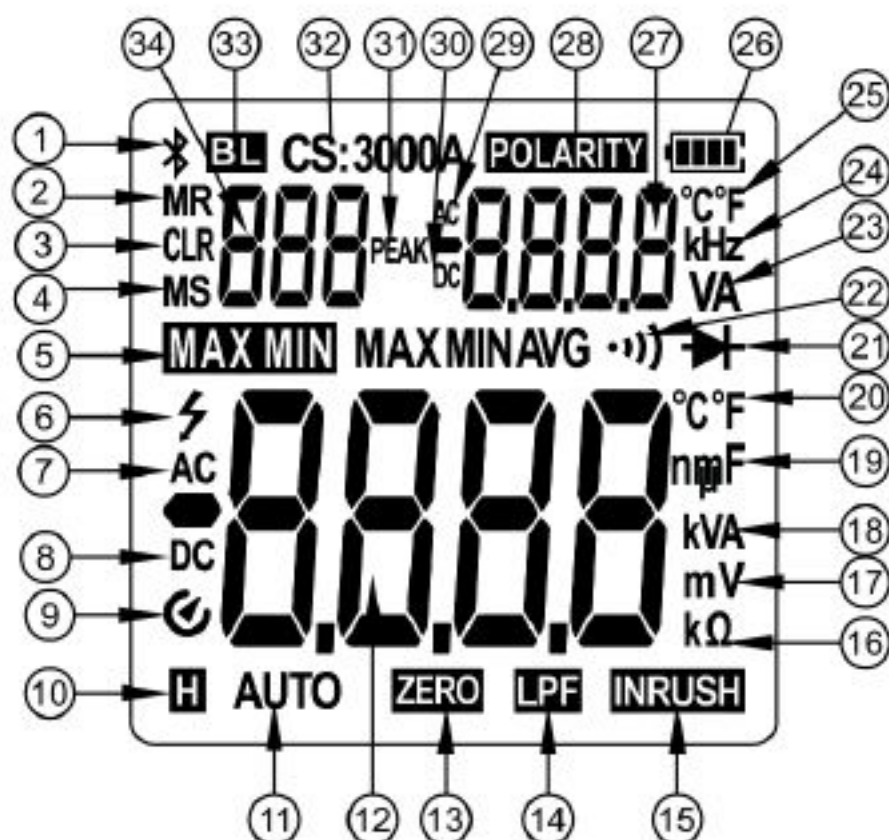
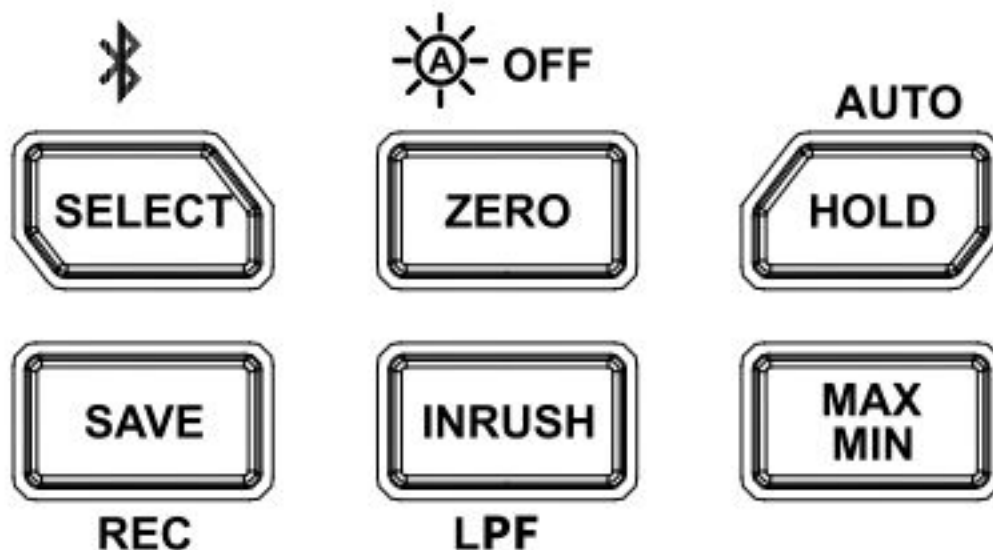| 1	Bluetooth	2	Auto-save data
3	Clearing storage data	4	Recording data
5	Max/Min/Average measurement	6	Hazardous voltage
7	AC measurement	8	DC measurement
9	Auto power off	10	Data hold
11	Auto data hold	12	Displayed value (main display)
13	Zero the residual reading of DC current	14	Low pass filter
15	Inrush measurement	16	Resistance unit
17	Voltage unit	18	Current/Power unit
19	Capacitance unit	20	Temperature (main display)
21	Diode measurement	22	Continuity measurement
23	Voltage/Current unit (sub-display)	24	Frequency unit
25	Temperature (sub-display)	26	Low battery
27	Displayed value (sub-display)	28	Polarity
29	AC measurement (sub-display)	30	DC measurement (sub-display)
31	Peak measurement	32	Connect flexible current sensor
33	Backlight	34	Number of saved data

6. Rotary Switch and Functional Buttons

6.1 Rotary Switch
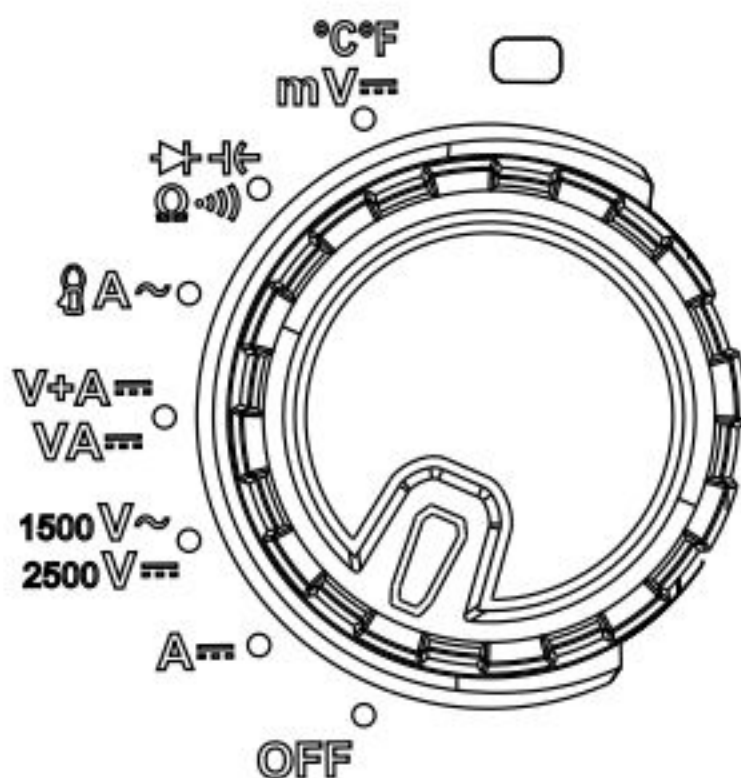
Position	Description
OFF	Power off
A⎓	DC current measurement
V⎓ / V~	AC/DC voltage measurement
VA / V+A	DC power measurement/DC voltage + DC current measurement
⌁ / A~	Flex current sensor measurement/AC current measurement (clamp jaws)
•))/Ω/▸⊢/⊣⊢	Continuity/resistance/diode/capacitance measurement
mV⎓/°C°F	mV AC/DC current measurement/Temperature measurement

6.2 Functional Buttons

	Short press:
✳ SELECT	Short press: 1) DCV/ACV position: Short press to select DCV and ACV positions cyclically. Default position: DCV 2) VA/V+A position: Short press to select VA and V+A positions cyclically. Default position: VA 3) ACA (Clamp jaw)/ACA (Flex current sensor) position: Automatically identify sensor and switch to the flex current sensor and corresponding position (No need to use SELECT). 4) Ω/Diode/CAP position: Short press to select Ω, diode, and CAP positions cyclically. Default position: Ω 5) DCmV/℃ ℉: Short press to select DCmV and ℃ ℉ cyclically. Default position: DCmV Long press: Long press to turn on/off Bluetooth communication
-☀- OFF ZERO	Short press to zero the residual reading of DCA. Long press to turn on/off the automatic backlight function.
AUTO HOLD	Short press to turn on/off the data hold mode. Long press to turn on/off the automatic hold mode (See "Table of Auto Hold Function")

SAVE **REC**	Short press: With Bluetooth off: Short press to save measurement data once in UT219PV. With Bluetooth on: Short press to start one-time recording via mobile phone. Long press: With Bluetooth off: Long press to save measurement data continuously in UT219PV. With Bluetooth on: Long press to start continuous recording via mobile phone. Note: 1. Clear the data saved in the Clamp Meter: Hold down INRUSH and press SELECT while turning on the Clamp Meter (by turning the rotary switch), then "cLr?" appears on the LCD. Press SELECT a second time, then "ErAS" is displayed on the LCD. When data clearing is done, "donE" appears on the LCD. 2. Maximum 999 sets of data can be saved in the Clamp Meter.
INRUSH **LPF**	Short press to turn on/off the inrush current and peak current measurement function. For ACA and CS_A (Flex current sensor). Long press to turn on/off the low pass filter function. For ACV, ACA, and CS_A (Flex current sensor).
MAX **MIN**	Short press to select MAX, MIN, and AVG cyclically. Long press to exit MAX/MIN/AVG mode

7. Operating Instructions

See the section "Operating Instructions" in the User Manual.

8. Specifications and Functions

Accuracy: ± (a% of reading + b digits); guaranteed for one year
Ambient temperature: 23±5°C (73.4°F ±9°F)
Ambient humidity: ≤75%RH

⚠ Warning

The temperature condition to ensure measurement accuracy is 18°C~28°C. The fluctuation range of ambient temperature stabilizes within ±1°C. If the temperature is <18°C or >28°C, the additional error of temperature coefficient is "0.1 × (specified accuracy)/°C.

Basic functions	Range	Basic accuracy
Model		UT219PV
AC current (A)	999.9A	40Hz~100Hz: ±(2.0%+5) 100Hz~1000Hz: ±(2.5%+5)
DC current (A)	999.9A	±(2.0%+5)
AC voltage (V)	999.9V/1500V	40Hz~1000Hz: ±(1.0%+5)
DC voltage (V)	999.9V/2500V	±(1.0%+5)
DC mV (V)	999.9mV	±(1.0%+5)
ACV_LPF (V)	999.9V	±(2.0%＋9)
ACA_LPF (A)	999.9A	±(2.5%＋9)
CSA_LPF (A)	30.00A/300.0A/3000A	±(4.0%+9) (Central area)
AC current (Flex current sensor) (A)	30.00A/300.0A/3000A	±(3.0%+5) (Central area)
Current frequency (Hz)	5.0 Hz ~ 999.9Hz	±(0.5%+5)
Voltage frequency (Hz)	5.0 Hz ~ 999.9Hz	±(0.5%+5)
DC power (VA)	999.9 kVA/2500 kVA	±(2.0%+20)
Resistance (Ω)	999.9Ω/9.999KΩ/99.99kΩ	±(1.0%+5)
Capacitance (F)	100.0uF/1000uF	±(1.0%+5)
Temperature in Celsius (°C)	-40°C~400°C	±(1.0%+30)
Temperature in Fahrenheit (°F)	-40°F~752°F	±(1.0%+60)

Special functions		
True RMS		√
Display count		9999
Inrush measurement		√
Peak capturing		√
Diode test		√
Data hold		√
Max/Min/Average		√
High voltage alarm		√
Low battery indication		√
Detecting the polarity of photovoltaic panel	If the DC voltage is less than -10V, the red backlight is lit up and the LED blinks for 10 seconds, the buzzer sounds for 10 seconds, and the symbol "POLARITY" blinks	√
Overrange indication		√
Auto power off	About 15 minutes	√
Auto backlight	The backlight turns off automatically one minute after it is ON.	√
Bluetooth communication		√
Drop proof	1 m	√
IP rating	IP65	√
Measurement category		CATIII 1500V / CAT IV600V
Certification		CE, cETLus, ROHS
Basic parameters		
Power supply		1.5V battery (AA) x2
Color		Red + Grey
Weight		Ablut 540g
Dimensions		295mm x 73mm x 50mm
Accessories		Test leads, temperature probe, batteries
Packaging		Carrying case, user manual

9. Bluetooth Software

1. Introduction

The Bluetooth software is a mobile APP and supports iOS 10.0 or newer and Android 5.0 or newer currently.

2. Download iDMM2.0

① For Android
Method 1: Search "UNI-T Smart Measure" at "Google Play".
Method 2: Turn on the scanning function of "Google Play", then scan the QR code below.

② For IOS
Method 1: Search "UNI-T Smart Measure" at "App Store".
Method 2: Turn on the scanning function of mobile phone, then scan the QR code below.


For Android   For iOS

3. Use

3.1) Open the Bluetooth functions of both the Clamp Meter and mobile phone, tap the "UNI-T Smart Measure" APP icon on your phone desktop to open the software, then the software enters the navigation interface and searches nearby Bluetooth-enabled meters automatically. After that, select the corresponding meter and make connection. Alternatively, scan the QR code at the meter to make direct connection. In connected state, data communication, measurement result display, button control and other operations can be achieved.

3.2) The "UNI-T Smart Measure" APP has multiple functions including Bluetooth communication, data recording, device management, report generation, data sharing, data synchronizing, and more. For the operating instructions about these functions, please refer to the "UNI-T Smart Measure" User Manual (In the APP, tap the menu button, "Setting" button, and then "Help Guide" button for the User Manual).

4. Uninstallation

Uninstall the software through the uninstallation function of mobile phone.

10. Battery Installation

1. With the front side of the Clamp Meter facing down, loosen the screws, open the battery cover, and install new batteries (AA*2).
2. Install the battery cover and tighten the screws.

Battery cover   Screw

Battery
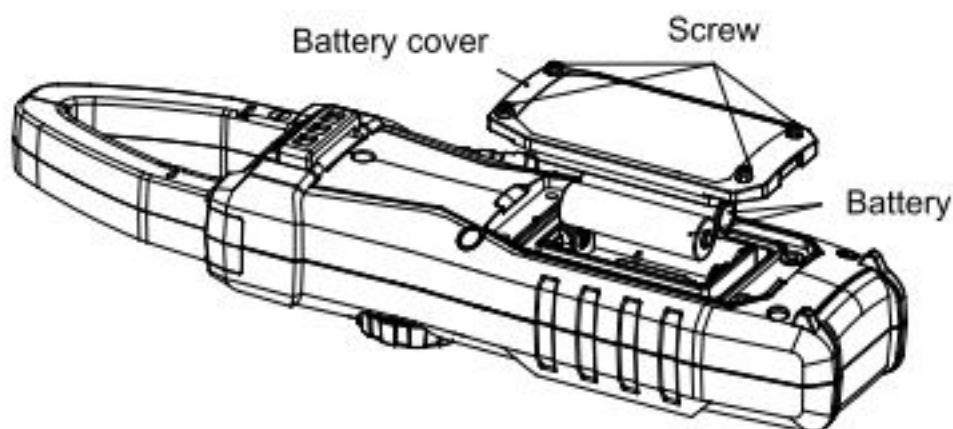
The pictures shown above are for reference only. The contents in the Quick Start Guide are subject to change without further notice.