

1.0 Reference and Address			
Report Number	231011122GZU-001	Original Issued: 5-Dec-2023	Revised: None
Standard(s)	<p>Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements [UL 61010-1:2012 Ed.3+R:19Jul2019]</p> <p>Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use Part 1: General Requirements [CSA C22.2#61010-1-12:2012 Ed.3+U1;U2;A1]</p> <p>Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 2-032: Particular Requirements for Hand-held and Hand-manipulated Current Sensors for Electrical Test and Measurement [UL 61010-2-032:2020 Ed.2]</p> <p>Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-032: Particular Requirements for Hand-Held and Hand-Manipulated Current Sensors for Electrical Test and Measurement [CSA C22.2#61010-2-032:2020 Ed.4]</p>		
Applicant	Uni-Trend Technology(China) Co., Ltd	Manufacturer	Uni-Trend Technology(China) Co., Ltd
Address	No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN CITY Guangdong Province 523808	Address	No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN CITY Guangdong Province 523808
Country	CHINA	Country	CHINA
Contact	Jim Mi	Contact	Jim Mi
Phone	0769-85723888-662	Phone	0769-85723888-662
FAX	--	FAX	--
Email	jim@uni-trend.com.cn	Email	jim@uni-trend.com.cn

2.0 Product Description	
Product	Professional AC/DC Clamp Meter-SOLAR
Brand name	UNI-T
Description	<p>UT219PV is a True-RMS AC/DC clamp meter specially designed for photovoltaic high-voltage environments. It can be used to measure AC/DC voltage (2500VDC, 1500Vac for floating voltage in no measurement category circuit), 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.</p>
Models	UT219PV
Model Similarity	NA
Ratings	<p>Powered: 2 x 1.5V AA batteries Measurement: CAT III 1500V, CAT IV 600V, 1000A Rated voltage of measurement terminals: 2500 Vdc, 1500 Vac</p>
Other Ratings	IP65

3.0 Product Photographs

Photo 1 - Front view



Photo 2 - Rear view



3.0 Product Photographs

Photo 3 - Internal view

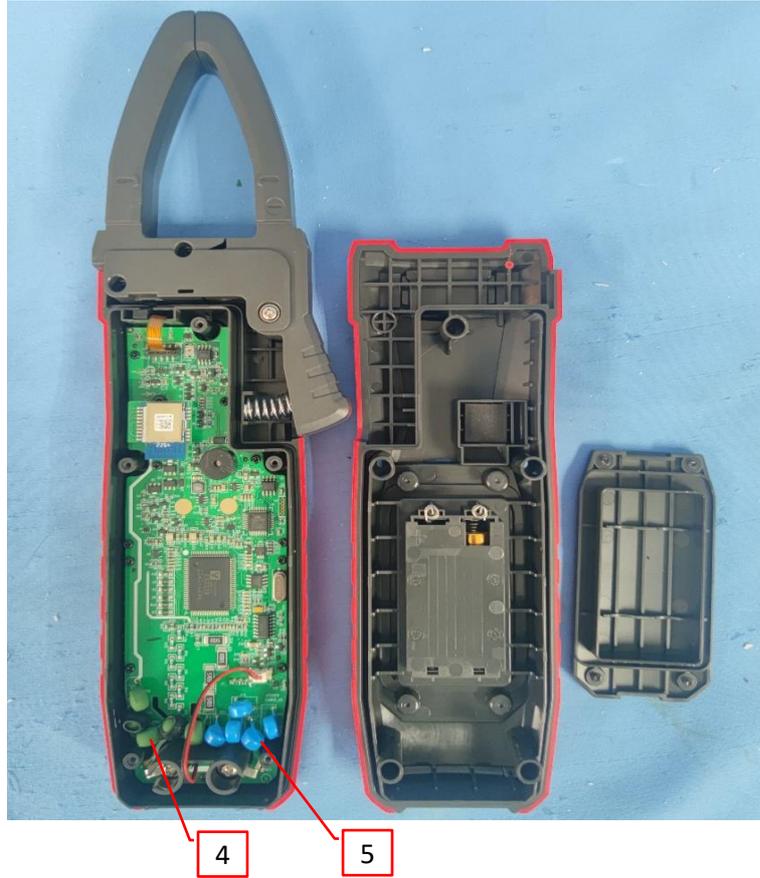
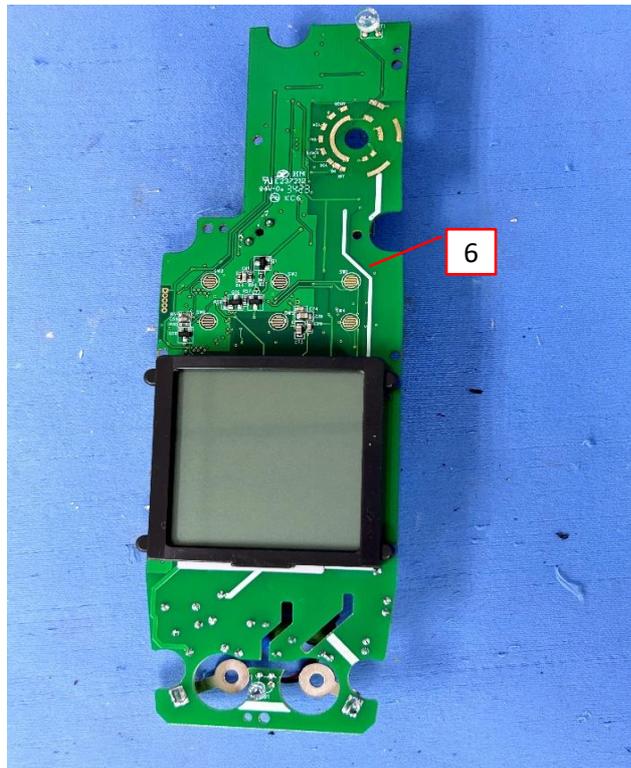


Photo 4 - PCB top view



3.0 Product Photographs

Photo 5 - JAW internal view



4.0 Critical Components						
Photo #	Item no. ¹	Name	Manufacturer/ trademark ²	Type / model ²	Technical data and securement means	Mark(s) of conformity ³
1	1	JAW case	SABIC INNOVATIVE PLASTICS US L L C	940A	V-2, 130°C, min thickness:1.5mm, material Group III	cURus
				945A (GG)	V-0, 120°C, min thickness:1.5mm, Material Group III	cURus
			CHI MEI CORPORATION	PC-6600(Y)(a)	PC, 120°C, V-0, min thickness: 1.0mm, material group II	cURus
			SHANGHAI CHANGWEI JINCI ENGINEERING PLASTICS CO LTD	5288F	PC/ABS, V-0, 60°C, Min. thickness: 1.5mm, Material Group I	cURus
1	2	Plastic enclosure	SHANGHAI CHANGWEI JINCI ENGINEERING PLASTICS CO LTD	5288F	V-0, 60°C, PC/ABS, Min. thickness: 1.5mm, Material Group I	cURus
			FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC310(+)	60°C, V-0, min thickness: 1.0 mm Material Group I	cURus
			SABIC INNOVATIVE PLASTICS B V	C2950	60°C, V-0, min thickness: 1.0 mm, material group I	cURus
1	3	Transparent Cover	SABIC INNOVATIVE PLASTICS US L L C	940A	V-2, 130°C, min thickness:1.5mm, material Group III	cURus
				945A (GG)	V-0, 120°C, min thickness:1.5mm, Material Group III	cURus
			Covestro Deutschland AG [PC Resins]	2405+(z)	PC, V-2, 125°C, min thickness: 1.5mm, material Group III	cURus
3	4	PTC	SHENZHEN WEILIN HI-TECH CO LTD	WMZ12A-681M005	1.1KΩ±20% Withstand 550V	cURus
3	5	Varistor	Guizhou Kaili Economic Zone Zhonghao Electronics Co.,LTD.	WLR-07D-911K	Varistor Voltage 819 ~ 1001V Withstand surge Current 1500A	cURus
4	6	PCB	Various	Various	V-0, 130°C	cURus

NOTES:

- 1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.
- 2) "Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.
- 3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

5.0 Critical Unlisted CEC Components

No Unlisted CEC components are used in this report.

6.0 Critical Features
<p><u>Recognized Component</u> - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.</p>
<p><u>Listed Component</u> - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.</p>
<p><u>Unlisted Component</u> - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.</p>
<p><u>Critical Features/Components</u> - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.</p>
<p><u>Construction Details</u> - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.</p>
<p>1. <u>Spacing</u> - Between Live conductor and magnetic circuit is basic insulation, clearance 11.0mm, creepage distance 11.0 mm. Between Live parts and accessible plastic enclosure is reinforced insulation, clearance 22.0mm, creepage distance 22.0 mm. Between V and COM terminal is basic insulation, clearance 11.0mm, creepage distance 11.0mm.</p>
<p>2. <u>Mechanical Assembly</u> - Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.</p>
<p>3. <u>Corrosion Protection</u> - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.</p>
<p>4. <u>Accessibility of Live Parts</u> - All uninsulated live parts in primary circuitry are housed within a non-metallic enclosure constructed with no openings other than those specifically described in Sections 4 and 5.</p>
<p>5. <u>Grounding</u> - This product is not provided with a means of grounding as it is double insulated.</p>
<p>6. <u>Internal Wiring</u> - Internal wiring is routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized Component separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets. Refer to section 4.0 for the specification of the wirings.</p>
<p>7. <u>Markings</u> - The product is marked as follows: - Applicant or brand name - Model number - Electrical rating</p>
<p>8. <u>Cautionary Markings</u> - Refer to Illustration 1 of section 7.0 for details.</p>
<p>9. <u>Installation, Operating and Safety Instructions</u> - Instructions for installation and use of this product are provided by the manufacture. Manual version: 2023</p>

7.0 Illustrations

Illustration 1 - Warning Markings on rear panel



8.0 Test Summary			
Evaluation Period	11 Oct 2023 – 20 Nov 2023		Project No. 231011122GZU
Sample Rec. Date	11-Oct-2023	Condition Prototype	Sample ID. S231011122-001~003
Test Location	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room 101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China		
Test Procedure	Testing Lab		
Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.			
The following tests were performed:			
Test Description	UL 61010-1:2012 Ed.3+R:19Jul2019; CSA C22.2#61010-1-12:2012 Ed.3+U1;U2;A1 Clause	UL 61010-2-032:2020 Ed.2 CSA C22.2#61010-2-032:2020 Ed.4 Clause	--
Fault condition	4.4.4	--	--
Marking Durability Test	5.3	--	--
Permissible limits for accessible part	6.3	--	--
Creepage distance and clearance	6.7	--	--
Voltage test and impulse test	6.8	--	--
Static test	8.2.1	--	--
Drop test	8.3	--	--
Equipment temperature limit	10.1	--	--
Non-metallic enclosure	10.5.2	--	--
Equipment RATED with a degree of ingress protection	11.6	--	--
JAW ENDS abrasion test	--	8.101	--
Jaw impact test	--	8.102	--
Protection against mismatches of inputs and ranges	--	101.3	--
Protection against MAINS overvoltages	--	101.4	--
Protection against short-circuits during clamping	--	102.2	--
Battery level	--	EE.5.2	--
Over-range voltages	--	EE.5.3	--
Permanent overvoltages	--	EE.5.4	--

8.1 Signatures			
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.			
Completed by:	Bin Zhong	Reviewed by:	Justin He
Title:	Engineer	Title:	Manager
Signature:		Signature:	

9.0 Correlation Page For Multiple Listings

The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program.

BASIC LISTEE	Uni-Trend Technology(China) Co., Ltd
Address	No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN CITY Guangdong Province 523808
Country	CHINA
Product	Professional AC/DC Clamp Meter-SOLAR

MULTIPLE LISTEE 1	None
Address	
Country	
Brand Name	

ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 1 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 2	None
Address	
Country	
Brand Name	

ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 2 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 3	None
Address	
Country	
Brand Name	

ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 3 MODELS	BASIC LISTEE MODELS

10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

- 1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"
- 2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)
- 3) a control number issued by Intertek
- 4) a product descriptor that identifies the standards used for certification. Example:

For US standards, the words, "Conforms to" shall appear with the standard number along with the word, "Standard" or "Std." Example: "Conforms to ANSI/UL Std. XX."

For Canadian standards, the words "Certified to CAN/CSA Standard CXX No. XX." shall be used, or abbreviated, "Cert. to CAN/CSA Std. CXX No. XX."

Can be used together when both standards are used.

If all standards on the ATM have the same standard title, the shared title or its abbreviation may be used in place of the examples above. Example: "Medical Electrical Equipment" or "MEE"; "Information Technology Equipment" or "ITE"; "Audio/Video Information And Communication Technology Equipment" or "A/V ICTE".

Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use.

The facsimile need not have a control number. A control number will be issued **after signed Certification Agreements** have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

The Applicant will be notified, in writing, via the applicable contact methods, as defined in Section 1.0, when these components must be selected and sent to Component Evaluation Center (CEC) for re-evaluation.

Due to particular testing requirements, some components may be requested to be shipped to specific labs. Thus, specific shipment destination(s) for each sample will be provided in the written notification.

Managing CEC Location:

Intertek Testing Services Shenzhen Limited Guangzhou Branch

ETL Component Evaluation Center

Room 101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District

Guangzhou, Guangdong, China

Attn: Ms. Joey Kuang

Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

Required Tests

None

