

| 1.0 Reference and Address |  |                             |   |
|---------------------------|--|-----------------------------|---|
| Report Number             | 191220145GZU-001   | Original Issued: 8-Apr-2020 | Revised: None   |
| Standard(s)               | <p>Safety Requirements For Electrical Equipment For Measurement, Control, And Laboratory Use; Part 1: General Requirements [UL 61010-1:2012 Ed.3 +R:21Nov2018]</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 61010-2-032:2014 Ed.1]</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#61010-2-032:2014 Ed.3]</p> <p>UL 61010-2-033 Issued: 2014/08/08 Ed:1 Safety Req. for Electrical Equipment for Measurement, Control, &amp; Laboratory Use – Part 2-033: Particular Requirements for Hand-held Multimeters &amp; Other Meters, for Domestic &amp; Professional Use, Capable of Measuring Mains Voltage</p> <p>CSA C22.2#61010-2-033 Issue: 2014/12/01 Electrical equipment for measurement, control, and laboratory use — Part 2-033: Particular requirements for HAND-HELD MULTIMETERS and other METERS, for domestic and professional use, capable of measuring MAINS voltage</p> |                             |   |
| Applicant                 | Uni-Trend Technology(China) Co., Ltd   | Manufacturer                | <b>Uni-Trend Technology(China) Co., Ltd</b>   |
| Address                   | No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN Guangdong Province 523808  | Address                     | No. 6, Gong Ye Bei 1st Road, Songshan Lake National High-Tech Industrial Development Zone, DONGGUAN Guangdong Province 523808 |
| Country                   | China  | Country                     | China   |
| Contact                   | Jim Mi   | Contact                     | Jim Mi  |
| Phone                     | 0769-8572 3888-662   | Phone                       | 0769-8572 3888-662  |
| FAX                       | --   | FAX                         | --  |
| Email                     | jim@uni-trend.com.cn   | Email                       | jim@uni-trend.com.cn  |

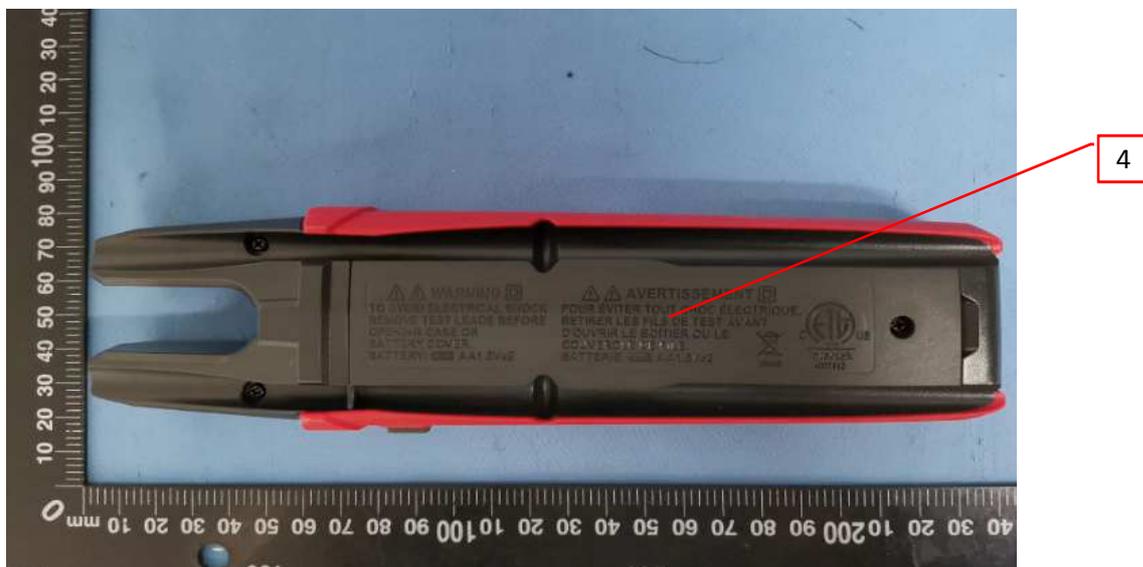
| <b>2.0 Product Description</b> |  |
|--------------------------------|--|
| Product                        | 200A AC Fork Meter   |
| Brand name                     | UNI-T  |
| Description                    | The UT256A is a stable, safe and reliable 6000-count AC fork meter. It measures AC current via the fork, AC/DC voltage (up to 1000V), resistance, and continuity via test leads, and can detect the presence of AC voltage via the non-contact voltage (NCV) sensor. It has data hold, auto/manual range, LCD backlight, audio/visual alarm, and flashlight functions. The full-scale overload protection and unique appearance design make it a special electrical meter with superior performance. |
| Models                         | UT256A   |
| Model Similarity               | NA   |
| Ratings                        | Measurement: CAT II 1000V, CAT III 600V<br>Powered: 2 x AA1.5V battery   |
| Other Ratings                  | NA   |

**3.0 Product Photographs**

Photo 1 - Front view



Photo 2 - Rear view

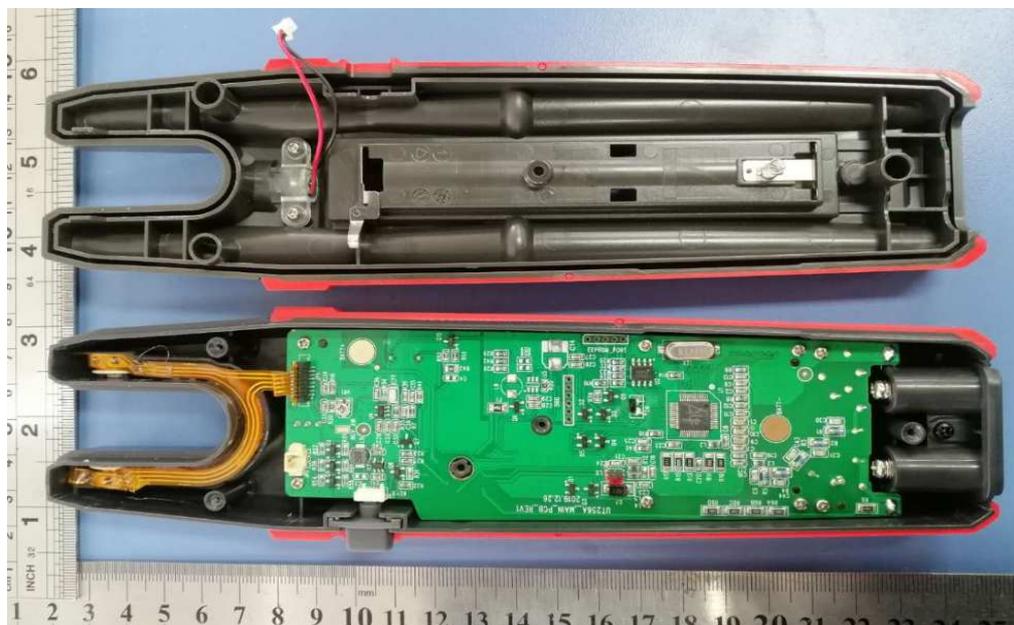


**3.0 Product Photographs**

Photo 3 - Battery box view



Photo 4 - Internal view



**3.0 Product Photographs**

Photo 5 - Internal view

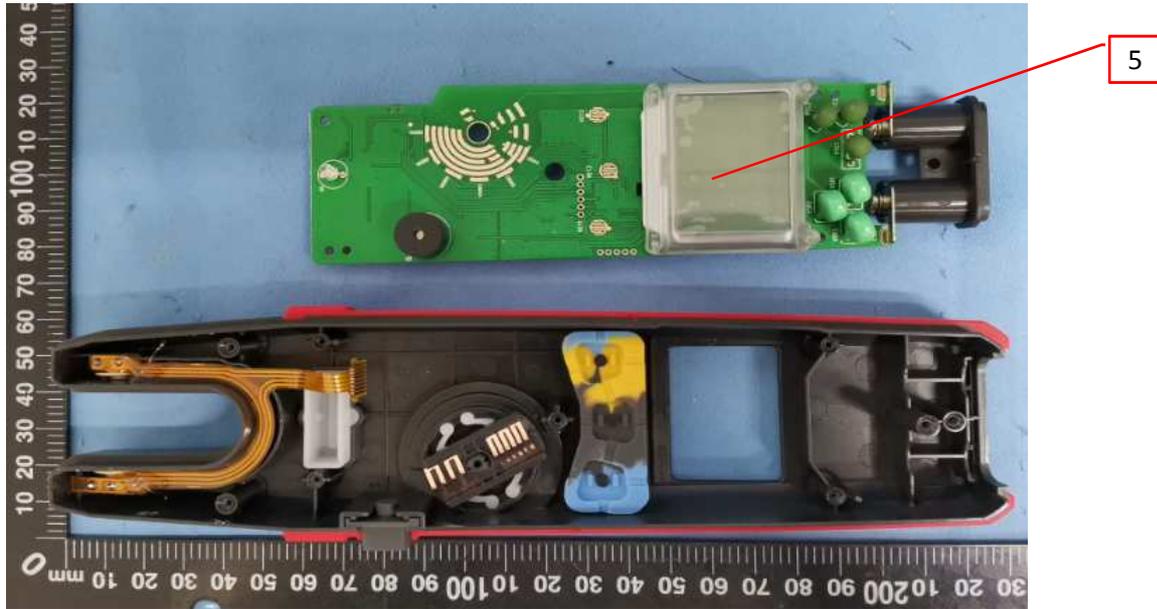
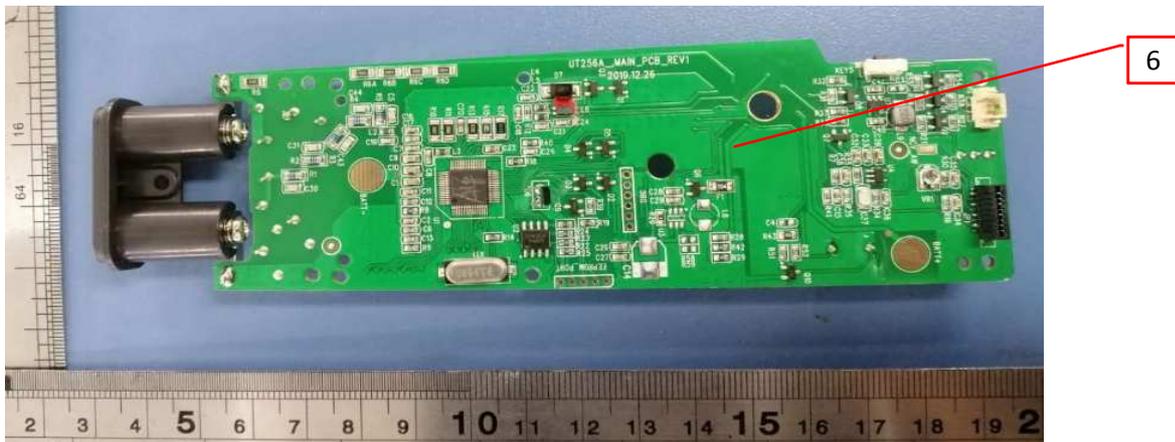


Photo 6 - PCB top layout



**3.0 Product Photographs**

Photo 7 - PCB bottom layout

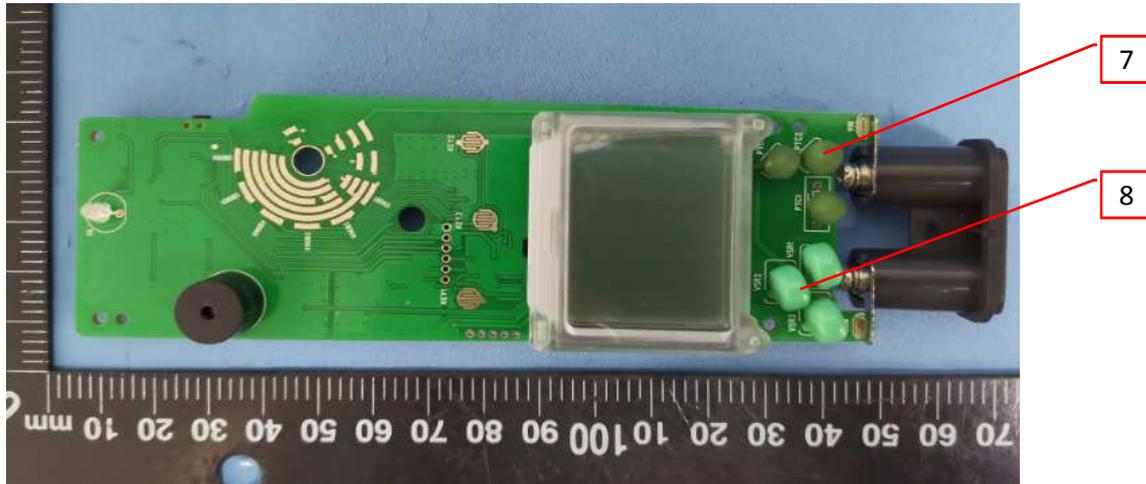


Photo 8 - JAW internal view



| 4.0 Critical Components |                       |                                    |   |                           |  |                                    |
|-------------------------|-----------------------|------------------------------------|---|---------------------------|--|------------------------------------|
| Photo #                 | Item no. <sup>1</sup> | Name                               | Manufacturer/<br>trademark <sup>2</sup>                   | Type / model <sup>2</sup> | Technical data and securement means                    | Mark(s) of conformity <sup>3</sup> |
| 1                       | 1                     | Enclosure                          | SHANGHAI CHANGWEI JINCI ENGINEERING PLASTICS CO LTD       | 5288F                     | V-0, 60°C, Min. thickness 1.0 mm, Material Group I     | cURus                              |
|                         |                       |                                    | SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD         | 2540(f1)                  | V-0, 60°C, Min. thickness 1.5 mm, Material Group II    | cURus                              |
| 1                       | 2                     | Button                             | SHIN-ETSU CHEMICAL CO LTD                                 | EK-5606@                  | V-1, 150°C, Min. thickness 0.38 mm, Material Group II  | cURus                              |
| 1                       | 3                     | Rotary switch                      | LG CHEM LTD   | AF312                     | V-0, 85°C, Min. thickness 1.5 mm, Material Group I     | cURus                              |
|                         |                       |                                    | CHI MEI CORPORATION                                       | PA-765A(+)                | V-0, 85°C, Min. thickness 2.1 mm, Material Group II    | cURus                              |
| 2                       | 4                     | Battery cover                      | LG CHEM LTD   | AF312                     | V-0, 85°C, Min. thickness 1.5 mm, Material Group I     | cURus                              |
|                         |                       |                                    | CHI MEI CORPORATION                                       | PA-765A(+)                | V-0, 85°C, Min. thickness 2.1 mm, Material Group II    | cURus                              |
| 5                       | 5                     | Transparency Cover for LCD windows | CHI MEI CORPORATION                                       | PA-758(+)                 | HB 60°C, Min. thickness: 1.5 mm, Material Group I      | cURus                              |
| 6                       | 6                     | PCB                                | various   | various                   | V-0, 130°C   | cURus or cETLus                    |
| 7                       | 7                     | PTC                                | SHENZHEN WEILIN HI-TECH CO LT                             | WMZ12A-152M003            | 1.5KΩ±20%, Withstand 900V                              | cURus                              |
|                         |                       |                                    | ShenZhen Ampron Sensitive Components Co., Ltd.            | MZ11-07M112M550           | 1.1KΩ±20% Withstand 1000V                              | cURus                              |
| 7                       | 8                     | Varistor                           | LIEN SHUN ELECTRONICS CO LTD                              | 07D821K                   | Varistor Voltage 675~825 Withstand surge Current 1200A | cURus                              |
|                         |                       |                                    | CENTRA SCIENCE CORP                                       | CNR-07D821K               | Varistor Voltage 675~825 Withstand surge Current 1200A | cURus                              |
|                         |                       |                                    | GUIZHOU KAILI ECONOMIC ZONE ZHONGHAO ELECTRONICS CO.,LTD. | WLR-07D821KH#             | Varistor Voltage 738~880 Withstand surge Current 1200A | cURus                              |
|                         |                       |                                    | SHENZHEN YUHE ELECTRONIC CO LTD                           | 07D821K                   | Varistor Voltage 738~902 Withstand surge Current 1750A | cURus                              |
|                         |                       |                                    | HONGZHI ENTERPRISES LTD                                   | HEL7D821K                 | Varistor Voltage 738~902 Withstand surge Current 1200A | 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.

| 4.0 Critical Components  |                       |      |   |                           |                                     |                                    |
|--|-----------------------|------|---|---------------------------|-------------------------------------|------------------------------------|
| Photo #  | Item no. <sup>1</sup> | Name | Manufacturer/<br>trademark <sup>2</sup> | Type / model <sup>2</sup> | Technical data and securement means | Mark(s) of conformity <sup>3</sup> |
| 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

Recognized Component - 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.

Listed Component - 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.

Unlisted Component - 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.

Critical Features/Components - 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.

Construction Details - 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.

1. Spacing -

Live parts to accessible parts, reinforced insulation: Clearance: min 10.5mm, Creepage distance: min 14.2 mm for material group II, min 10.5mm for material group I  
V terminal to COM terminal, basic insulation: Clearance: min 5.5mm, Creepage distance: min 5.5 mm  
Magnetic circuit to JAW surface, basic insulation: Clearance: min 5.5mm, Creepage distance: min 7.1 mm

2. Mechanical Assembly - 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.

3. Corrosion Protection - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.

4. Accessibility of Live Parts - 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.

5. Internal Wiring - 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.

6. Markings - The product is marked as follows:

- Trade mark: UNI-T
- Model number: UT256A
- Electrical rating: AA1.5V x 2
- Measurement category: CAT II 1000V, CAT III 600V
- ETL logo

7. Cautionary Markings -

The follow are marked on rear panel:

WARNING: TO AVOID ELECTRICAL SHOCK, REMOVE TEST LEADS BEFORE OPENING CASE OR BATTERY COVER.

AVERTISSEMENT: POUR ÉVITER TOUT CHOC ÉLECTRIQUE, RETIRER LES FILS DE TEST AVANT D'OUVRIER LE BOITIER OU LE COUVERCLE DE PILE

8. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration 1a, 1b of Section 7.0.

## 7.0 Illustrations

Illustration 1a - User manual (partial)

### III. Safety Instructions

The meter is designed according to IEC/EN61010-1, IEC/EN61010-2-033 and EN61326-1 safety standards, and conforms to CAT II 1000V, CAT III 600V, double insulation, and pollution degree 2. Use the meter only as specified, or the protection provided by the meter may be impaired.

1. Before use, please check if there is any item which is damaged or behaving abnormally. If any abnormal item (such as bare test lead, damaged meter casing, broken LCD, etc.) is found, or if the meter is considered to be malfunctioning, please do not use the meter.
2. Do not use the meter if the rear cover or battery cover is not covered up, or it will pose a shock hazard!
3. Before each use, verify meter operation by measuring a known voltage.
4. When using the meter, keep fingers behind the finger guards of the test leads, and do not touch exposed wires, connectors, unused inputs, or circuits being measured to prevent electric shock.
5. Place the function switch in the correct position before measurement. It is forbidden to change the position during measurement.
6. Do not apply more than the rated voltage, as marked on the meter, between any meter terminal and earth ground to prevent electric shock or damage to the meter.
7. Use caution when working with voltages above AC 30Vrms, 42Vpeak or DC 60V. Such voltages pose a shock hazard.
8. Never input a voltage or current which exceeds the specified limit. If the range of the measured value is unknown, the maximum range should be selected.
9. Before measuring the resistance, diode and continuity online, switch off the power supply of the circuit, and fully discharge all capacitors to avoid inaccurate measurement.
10. When the “” symbol appears on the LCD, please replace the batteries in time to ensure measurement accuracy. If the meter is not in use for a long time, please remove the batteries.
11. Do not change the internal circuit of the meter to avoid damage to the meter or user!
12. Do not use or store the meter in high temperature, high humidity, flammable, explosive or strong magnetic field environments.
13. Clean the meter casing with a soft cloth and mild detergent. Do not use abrasives or solvents!

## 7.0 Illustrations

Illustration 1b - User manual (partial)

### IV. Electrical Symbols

| Symbol  | Description  |
|---|--|
|  | Direct current   |
|  | Alternating current  |
|  | Earth (ground) TERMINAL  |
|  | Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION   |
|  | Caution, possibility of electric shock   |
|  | Warning or Caution   |
|  | Application around and removal from UNINSULATED HAZARDOUS LIVE conductors is permitted.  |
| <b>CAT II</b>   | It is applicable to testing and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage MAINS installation. |
| <b>CAT III</b>  | It is applicable to testing and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.                                |

| 8.0 Test Summary  |  |                     |                               |
|-------------------|--|---------------------|-------------------------------|
| Evaluation Period | 02 Dec 2019 - 03 Jan 2020  |                     | Project No. 191220145GZU      |
| Sample Rec. Date  | 2-Dec-2019   | Condition Prototype | Sample ID. S191220145-001~005 |
| Test Location     | Intertek Testing Services Shenzhen Ltd. Guangzhou Branch<br>Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, 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:21Nov2018; CSA C22.2#61010-1-12:2012 Ed.3 +U1;U2;A1 Clause | UL 61010-2-032:2014 Ed.1; CSA C22.2#61010-2-032:2014 Ed.3 Clause | UL 61010-2-033 Issued: 2014/08/08 Ed:1; CSA C22.2#61010-2-033 Issue: 2014/12/01 Clause |
|---|--|--|--|
| Fault condition   | 4.4.4  | -  | -  |
| Marking Durability Test   | 5.3  | -  | -  |
| Permissible limits for accessible part –normal condition              | 6.3.1  | -  | -  |
| Permissible limits for accessible part –Fault condition               | 6.3.2  | -  | -  |
| 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 (normal operation)                        | 10.1   | -  | -  |
| Non-metallic enclosure  | 10.5.2   | -  | -  |
| JAW impact test   | -  | 8.2.101  | -  |
| Resistance to heat of current sensors                                 | -  | 10.5.101   | -  |
| Protection by uncertified current limitation devices or by impedances | -  | 101.3.3  | -  |
| Protection against MAINS overvoltages                                 | -  | 101.4  | -  |
| Input voltages  | -  | -  | 4.4.2.101  |

**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: | Aaron Lu  | Reviewed by: | Justin He   |
| Title:        | Assistant 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,<br>Songshan Lake National High-Tech<br>Industrial Development Zone,<br>DONGGUAN Guangdong Province 523808 |
| Country      | China  |
| Product      | 200A AC Fork Meter   |

|                          |      |                     |
|--------------------------|------|---------------------|
| 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 issue 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.

**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.

**Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation**

Ship the samples to:  
Intertek Testing Services Shenzhen Limited Guangzhou Branch  
ETL Component Evaluation Center  
Block E, No. 7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City  
CETDD Guangzhou, 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

