# UL TEST REPORT AND PROCEDURE

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|---|---|
| **Standard:** | UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements)<br>CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements) |
| **Certification Type:** | Listing |
| **CCN:** | QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment) |
| **Product:** | ITE Power Supply |
| **Model:** | GT-86120-WWVV-X.X-W2, "-W2" can be optional, when it is blank, denote to be with replaceable plug.<br>("WW", "VV" and "-X.X" is variables; see enclosure ID7-04 for details.) |
| **Rating:** | Input: 100-240 Vac or 100-120 Vac, 0.5 A, 50/60 Hz<br>Output: See Enclosure ID 7-04 for details. |
| **Applicant Name and Address:** | GLOBTEK (HONG KONG) LTD<br>UNIT 1402, BENSON TOWER<br>74 HUNG TO RD<br>KWUN TONG<br>KOWLOON HONG KONG |

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

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**Supporting Documentation**

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

**Product Description**

Direct plug-in ITE Power Supply, provided non-polarized plug, all electronic components are mounted on PWB and housed in a plastic enclosure.

**Model Differences**

All models identical to each other except for Input rating, output rating and model designation.
See supplement Enclosure ID 7-04 for details.

GT-86120-WWVV-X.X with detachable plug.
GT-86120-WWVV-X.X-W2 with non-detachable plug.

PWB layout A is evaluated as 3000m altitude. PWB layout B is evaluated as 5000m altitude.
PWB layout A is identical to PWB layout B except for the distance of the layout under CY1.

**Technical Considerations**

- Equipment mobility : direct plug-in and transportable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10% / -10% (Manufacturer declared)
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class II (double insulated)
- Considered current rating of protective device as part of the building installation (A) : 20 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : For construction A: 3000m, for construction B: 5000m
- Altitude of test laboratory (m) : less than 2,000 m
- Mass of equipment (kg) : Approx. 0.071
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma)

permitted by the manufacturer's specification of: 50°C

- The means of connection to the mains supply is: Pluggable A
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Plug
- The product was investigated to the following additional standards: The product was evaluated to the maximum acceptable moment, center of gravity, dimensions and weight of the product in accordance with UL 1310., The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices-Dimensional Specifications, ANSI/NEMA WD6.
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY1 secondary
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output terminal
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- This equipment has evaluated to be operated under altitude up to 3,000m for PWB layout A or 5,000m for PWB layout B, so the clearance is multiplied by the altitude correction factors(1.14 or 1.48), specified in table A.2 of IEC 60664-1: 1992 + A1: 2000 + A2: 2002.

**Additional Information**

N/A

**Additional Standards**

The product fulfills the requirements of: N/A

**Markings and instructions**

| Clause Title | Marking or Instruction Details |
|---|---|
| Power rating - Ratings | Ratings (voltage, frequency/dc, current) |
| Power rating - Company identification | Listee's or Recognized company's name, Trade Name, Trademark or File Number |
| Power rating - Model | Model Number |
| Power rating - Class II symbol | Symbol for Class II construction  (60417-2-IEC-5172) |
| LPS Marking (Optional) | Marked "LPS" or "Limited Power Source". |
| Fuse or Fusing | F1: T6.3AL or T1AL or T2AL 250Vor 3.3ohm 2W or 1W. |

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| resistor rating | F2: T2AL 250V or 3.3 ohm, 1W or 3.3 ohm, 2W or 1W |

**Special Instructions to UL Representative**

Inspect the transformer(s) listed in BD1.1 per AA1.1- (C). When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in BD1.1 be conducted at the component manufacturer.

**Production-Line Testing Requirements**

**Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.**

| Model | Component | Removable Parts | Test probe location | V rms | V dc | Test Time, s |
|---|---|---|---|---|---|---|
| All models | Transformer (T1) | -- | PRI-SEC | 3000 | 4242 | 1 |

**Earthing Continuity Test Exemptions - This test is not required for the following models:**

All models

**Electric Strength Test Exemptions - This test is not required for the following models:**

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**Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:**

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**Sample and Test Specifics for Follow-Up Tests at UL**

| Model | Component | Material | Test | Sample(s) | Test Specifics |
|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- |

| 1.5.1 | **TABLE: list of critical components** | | | | | Pass |
|---|---|---|---|---|---|---|
| Object/part or Description | Manufacturer/ trademark | type/model | technical data | Product Category CCN(s) | Required Marks of Conformity | Supplement ID |
| 01. Label | Interchangeable | Interchangeable | Minimum 75 degree C, suitable to surface. | PGDQ2 or PGJI2 | UL | |
| 01a. Permanency of Marking (Alternate) | -- | -- | Permanently ink-stamped, silk-screened, molded in. | -- | -- | |
| 02. Enclosure dimension for GT-86120-WWVV-X.X | -- | -- | See 4-01 for details | -- | -- | 4-01 |
| 03 Enclosure dimension for GT-86120-WWVV-X.X-W2Z | -- | -- | See 4-02 for details | -- | -- | 4-02 |
| 04. Enclosure material | Sabic Innovative Plastics Us L L C | SE1X | Rate V-1 minimum, 1.5mm thick minimum, 105 degree C minimum, HWI=0. Plastic enclosure secured together by ultra-sonic welding. | QMFZ2 | UL E121562 | |
| 04a. Enclosure material (Alternate) | Asahi Kasei Chemicals Corp Xyron Polymer | 540V | Rated minimum V-1, minimum 105 degree C. Minimum 1.5 mm thickness, HWI=1. Plastic enclosure secured together by ultra-sonic welding. | QMFZ2 | UL E82268 | |
| 04b. Enclosure material (Alternate) | Bayer Materialscience Ag | 6485 | Rated minimum V-0, minimum 115 degree C. Minimum 1.5 mm thickness, HWI=2. Plastic enclosure secured together by ultra-sonic welding. | QMFZ2 | UL E41613 | |
| 04c. Enclosure material (Alternate) | Sabic Japan L L C | 925U | Rated minimum V-0, minimum 115 degree C. Minimum 1.5 mm thickness, HWI=3. Plastic enclosure secured together by ultra-sonic welding. | QMFZ2 | UL E207780 | |
| 04d. Enclosure material (Alternate) | Idemitsu Kosan Co., Ltd. | AZ2201 | Rated minimum V-0, minimum 125 degree C. Minimum 1.5 mm thickness, HWI=3. Plastic | QMFZ2 | UL E48268 | |

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| | | | enclosure secured together by ultra-sonic welding. | | | |
| 04e. Enclosure material (Alternate) | Sabic Japan L L C | CH6410 | Rated minimum V-0, minimum 100 degree C. Minimum 1.5 mm thickness, HWI=3. Plastic enclosure secured together by ultra-sonic welding. | QMFZ2 | UL E207780 | |
| 04f. Enclosure material (Alternate) | Sabic Japan L L C | SE1X | Rated minimum V-0, minimum 105 degree C. Minimum 1.5 mm thickness, HWI=3. Plastic enclosure secured together by ultra-sonic welding. | QMFZ2 | UL E207780 | |
| 05. Primary lead wire | Interchangeable | Interchangeable | Rated VW-1 minimum 24 AWG, minimum 300 V, minimum 80 degree C. | AVLV2 | UL | |
| 06.PWB | Interchangeable | Interchangeable | V-1 or better, 130 degree C. | ZPMV | UL | |
| 07.Current fuse (F1) (Optional, provided when MOV1 provided) | Interchangeable | Interchangeable | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX | UL | |
| 07a.Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Littelfuse Wickmann Werke | 392 | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E67006 | |
| 07b.Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Walter Electronic Co Ltd | 2010 | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E56092 | |
| 07c. Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Conquer Electronics Co Ltd | MST | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E82636 | |
| 07d. Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Cooper Bussmann Llc | SS-5 | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E19180 | |
| 07e. Current fuse (F1) (Alternate) (Optional, | Bel Fuse Inc | RST | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure | JDYX2 | UL E20624 | |

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| provided when MOV1 provided) | | | 7-04 for detail) | | | |
| 07f. Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Nippon Seisen Cable Ltd | SLT series | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E120786 | |
| 07g. Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Conquer Electronics Co Ltd | PTU | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E82636 | |
| 07h. Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Chi Lick Schurter Ltd | SPT series | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E184831 | |
| 07i. Current fuse (F1) (Alternate) (Optional, provided when MOV1 provided) | Littelfuse Inc | 877+ | T2AL or T6.3AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E10480 | |
| 08. Fusing resistor (F1) (Optional, provided when MOV1 provided) | Anhui Changsheng Electronics Co Ltd | FRT | 3.3 ohm, 1W, or 2W (Fuse condition see Enclosure 7-04 for detail) | FPEW2 | UL E306095 | |
| 08a. Fusing resistor (F1) (Alternate) (Optional, provided when MOV1 provided) | Tzai Yuan Enterprise Co Ltd | KNF | 3.3 ohm, 1W, or 2W (Fuse condition see Enclosure 7-04 for detail) | FPEW2 | UL E355632 | |
| 08b. Fusing resistor (F1) (Alternate) (Optional, provided when MOV1 provided) | Hua Sheng Electronics | FKN | 3.3 ohm, 1W, or 2W (Fuse condition see Enclosure 7-04 for detail) | -- | -- | |
| 09. Current fuse (F2) (Optional) | Interchangeable | Interchangeable | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX | UL | |
| 09a. Current fuse (F2) (Optional, Alternate) | Littelfuse Wickmann Werke | 392 | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E67006 | |
| 09b. Current fuse (F2) (Optional, Alternate) | Walter Electronic Co Ltd | 2010 | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 | JDYX2 | UL E56092 | |

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| | | | for detail) | | | |
| 09c. Current fuse (F2) (Optional, Alternate) | Conquer Electronics Co Ltd | MST | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E82636 | |
| 09d. Current fuse (F2) (Optional, Alternate) | Cooper Bussmann Llc | SS-5 | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E19180 | |
| 09e. Current fuse (F2) (Optional, Alternate) | Bel Fuse Inc | RST | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E20624 | |
| 09f. Current fuse (F2) (Optional, Alternate) | Nippon Seisen Cable Ltd | SLT series | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E120786 | |
| 09g. Current fuse (F2) (Optional, Alternate) | Conquer Electronics Co Ltd | PTU | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E82636 | |
| 09h. Current fuse (F2) (Optional, Alternate) | Chi Lick Schurter Ltd | SPT series | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E184831 | |
| 09i. Current fuse (F2) (Optional, Alternate) | Littelfuse Inc | 877+ | T1A or T2AL, 250Vac (Fuse condition see Enclosure 7-04 for detail) | JDYX2 | UL E10480 | |
| 10. Fusing resistor (F2) (Optional) | Anhui Changsheng Electronics Co Ltd | FRT | 3.3 ohm, 1W, or 2W (Fuse condition see Enclosure 7-04 for detail) | FPEW2 | UL E306095 | |
| 10a. Fusing resistor (F2) (Alternate) (Optional) | Tzai Yuan Enterprise Co Ltd | KNF | 3.3 ohm, 1W, or 2W (Fuse condition see Enclosure 7-04 for detail) | FPEW2 | UL E355632 | |
| 10b. Fusing resistor (F2) (Alternate) (Optional) | Hua Sheng Electronics | FKN | 3.3 ohm, 1W, or 2W (Fuse condition see Enclosure 7-04 for detail) | -- | -- | |
| 11. Varistor (MOV1) (Optional) | Thinking Electronic Industrial Co Ltd | TVR10431, TVR10471, TVR14431, TVR14471 | Minimum 300Vac, Coating V-0. | VZCA2 | UL E314979 | |
| 11a. Varistor (MOV1) (Optional) (Alternate) | Centra Science Corp | CNR10D431K CNR10D471K | Minimum 300Vac, Coating V-0. | VZCA2 | UL E316325 | |

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| | | CNR14D431K<br>CNR14D471K | | | | |
| 11b. Varistor (MOV1) (Optional) (Alternate) | Uppermost Electronic Industries Co Ltd | V10K300-385,<br>V14K300-385 | Minimum 300Vac, Coating V-0. | VZCA2 | UL E330441 | |
| 11c. Varistor (MOV1) (Optional) (Alternate) | Jya-Nay Co Ltd | 10D431K,<br>10D471K,<br>14D431K,<br>14D471K | Minimum 300Vac, Coating V-0. | VZCA2 | UL E333951 | |
| 11d. Varistor (MOV1) (Optional) (Alternate) | Joyin Co Ltd | JVR10N431,<br>JVR10N 471K,<br>JVR14N431,<br>JVR14N 471K, | Minimum 300Vac, Coating V-0. | VZCA2 | UL E325508 | |
| 11e. Varistor (MOV1) (Optional) (Alternate) | Walsin Technology Corp | VZ10D431-471K, BS,<br>VZ14D431-471K, BS | Minimum 300Vac, Coating V-0. | VZCA2 | UL E309297 | |
| 11f. Varistor (MOV1) (Optional) (Alternate) | Guangdong Fenghua Advanced Technology Holding Co Ltd. Xianhua New Sensitive Components Branch | FNR-10K431 471,<br>FNR-14K431-471 | Minimum 300Vac, Coating V-0. | VZCA2 | UL E325462 | |
| 11g. Varistor (MOV1) (Optional) (Alternate) | | 10D431-471K,<br>14D431-471K, | Minimum 300Vac, coating V-0. | VZCA2 | UL E327997 | |
| 11h. Varistor (MOV1) (Optional) (Alternate) | Littelfuse Inc | V300LA10P,<br>V300LA20AP,<br>V385LA10P,<br>V385LA20AP,<br>V10E300P,<br>V10E385P,<br>V14E300P,<br>V14E385P | Minimum 300Vac, coating V-0. | VZCA2 | UL E320116 | |
| 11i. Varistor (MOV1) (Optional) (Alternate) | Guangxi New Future Information Industry Co Ltd | 10D431-471K,<br>14D431-471K, | Minimum 300Vac, coating V-0. | VZCA2 | UL E323753 | |
| 11j. Varistor (MOV1) (Optional) (Alternate) | Panasonic Corporation, | 10K431U,<br>10K471U, | Minimum 300Vac, coating V-0. | VZCA2 | UL E323753 | |

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| | Panasonic Corporation Of North America | 14K471U | | | | |
| 12. Choke (LF1) | -- | -- | Minimum 130 degree C. See 7-01 for details. | -- | -- | 7-01 |
| 13. Bridge Rectifier (BD1) | -- | -- | Minimum 1.0A, Minimum 1000V | -- | -- | |
| 14.Input blade | --- | -- | Copper or Copper Alloy, non-polarized (NEMA 1-15P configuration). Integrally melded onto Plug Holder, perimeter of face section from which Blade projection minimum 5.5 mm from any point on either blade. See Enclosure Id. 4-03 for details. | -- | -- | 4-03 |
| 15.Electrolytic capacitors (C1, C2) | -- | -- | Minimum 400V (for100-240VAC), Minimum 200V (for100-120AC),<br>6.8-22uF,<br>105 degree C. Type is guard against exploding. | -- | -- | |
| 16. PWM IC (U1) | -- | -- | Minimum 2A, Minimum 600V | -- | -- | |
| 17. Y - Capacitor (CY1) (optional) | Success Electronics Co., Ltd. | SE, SB | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E114280 | |
| 17a. Y - Capacitor (CY1) (optional) (Alternate) | Tdk-Epc Corp | CD | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E37861 | |
| 17b. Y - Capacitor (CY1) (optional) (Alternate) | Murata Mfg Co Ltd | KX | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E37921 | |
| 17c. Y - Capacitor (CY1) (optional) (Alternate) | Jya-Nay Co Ltd | JN | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E201384 | |
| 17d. Y - Capacitor (CY1) (optional) (Alternate) | Welson Industrial Co Ltd | WD | Rated maximum 2200 pF, minimum 250 V, minimum 125 | FOWX2 | UL E104572 | |

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| | | | degree C. Marked with Y1. | | | |
| 17e. Y - Capacitor (CY1) (optional) (Alternate) | Samwha Capacitor Samwha Capacitor | SD | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E97754 | |
| 17f. Y - Capacitor (CY1) (optional) (Alternate) | Nanjing Yuyue Electronics Co,. Ltd. | CT7 | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E237728 | |
| 17g. Y - Capacitor (CY1) (optional) (Alternate) | Yinan Don's Electronic Component Co | CT81 | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E145038 | |
| 17h. Y - Capacitor (CY1) (optional) (Alternate) | Jyh Hsu (Jec) Electronics Ltd | JD. JY | Rated maximum 2200 pF, minimum 250 V, minimum 125 degree C. Marked with Y1. | FOWX2 | UL E356696 | |
| 18. Opto Coupler (U3) | Sharp Corp Electronic Components And Devices Div | PC817, PC123 | Providing 5000 Vac isolation, minimum100 degree C. | FPQU2 | UL E64380 | |
| 18a. Opto Coupler (U3) (Alternate) | Lite-On Technology Corp | LTV-817 | Providing 5300 Vac isolation, minimum115 degree C. | FPQU2/8 | UL E113898 | |
| 18b. Opto Coupler (U3) (Alternate) | Everlight Electronics Co Ltd | EL 817 | Providing 5000 Vac isolation, minimum110 degree C. | FPQU2/8 | UL E214129 | |
| 18c. Opto Coupler (U3) (Alternate) | Cosmo Electronics Corp | K1010, KP1010 | Providing 5000 Vac isolation, minimum115 degree C. | FPQU2/8 | UL E169586 | |
| 18d. Opto Coupler (U3) (Alternate) | Fairchild Semiconductor Corp | H11A817B | Providing 5000 Vac isolation, minimum110 degree C. | FPQU2/8 | UL E90700 | |
| 18e. Opto Coupler (U3) (Alternate) | Bright Led Electronics Corp | BPC817B, BPC817C | Providing 5000 Vac isolation, minimum100 degree C. | FPQU2/8 | UL E236324 | |
| 18f. Opto Coupler (U3) (Alternate) | Renesas Electronics Corporation | PS2561 | Providing 5000 Vac isolation, minimum100 degree C. | FPQU2 | UL E72422 | |
| 19. Transformer (T1) | | 1\90E12PT05-xxx 2\90E12PT12-xxx 3\90E12PT03-xxx (“xxx” to denote the part number, can be any alphanumeric character for | Class B 90E12PT05-xxx see 7-02 for construction details. 90E12PT12-xxx see 7-03 for construction details.90E12PT03-xxx see 7-05 for construction | -- | -- | |

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| | | marketing purposes only.) | | | | |
| 19-1. Transformer (T1) insulation system | | YCI-130 | Class 130(B) | OBJY2 | UL E159480 | |
| 19-2. Transformer - Bobbin | Sumitomo Bakelite Co Ltd | PM-9820 | Phenolic, V-0, 150 degree C , Min. thickness 0.71mm | QMFZ2 | UL E41429 | |
| 19-2a. Transformer – Bobbin (Alternate) | Hitachi Chemical Co Ltd | CP-J-8800 | Phenolic, V-0, 150 degree C , Min. thickness 0.71mm | QMFZ2 | UL E42956 | |
| 19-3. Transformer - Insulation Tape | 3m company electrical markets div (EMD) | 1350F-1, 1350F-2 | Rated 130 degree C. | OANZ2 | UL E17385 | |
| 19-3a. Transformer - Insulation Tape (Alternate) | Symbio Inc | 35660, 35661, 35660Y | Rated 130 degree C. | OANZ2 | UL E50292 | |
| 19-4 Transformer - Core | -- | -- | Ferrite, dimensions see 7-02 or 7-03 for details. With min. 2 layers of insulation tape wrapped around core body. | -- | -- | |
| 19-5 Transformer Winding | Interchangeable | Interchangeable | MW75 or MW28 rated 130 degree C. | OBMW2 | UL | |
| 19-6. Triple insulation wire | Young Chang Silicone Co Ltd | STW-B | Rated 130 degree C | OBJT2 | UL E242198 | |
| 19-7 Transformer - Varnish | Hitachi Chemical Co Ltd | WP-2952F-2G | Rated 130 degree C. | OBOR2 | UL E72979 | |
| 19-7a. Transformer – Varnish (Alternate) | Elantas Electrical Insulation Elantas Pdg Inc | 468-2(x) | Rated 130 degree C. | OBOR2 | UL E75225 | |
| 20.Glue | Interchangeable | Interchangeable | V-2 minimum or HF-2 minimum | QMFZ2 | UL | |
| 21. Mylar sheet between LN and components | Interchangeable | Interchangeable | V-2 minimum, See 4-04 for details. | QMFZ2 | UL | 4-04 |
| 22. Current sense resistor (R11, R11A) | -- | -- | Minimum 1.0 ohm, minimum 1/8 W. | -- | -- | |
| 23. Output wire | Interchangeable | Interchangeable | Rated VW-1, minimum 24AWG, minimum 300V, minimum 80 degree C. | AVLV2 | UL | |
| 24. Strain relief | Interchangeable | Interchangeable | V-2 minimum, total size see 4- | QMFZ2 | UL | 4-05 |

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| | | | 05 for details. | | | |
| 25.Heat-shrinkable tube for F1 | Interchangeable | Interchangeable | Rated VW-1, minimum 600V, 125 degree C. | YDPU2 | UL | |

# Enclosures

| Type | Supplement Id | Description |
|---|---|---|
| Photographs | 3-01 | Overall view 1 for GT-86120-WWVV |
| Photographs | 3-02 | Overall view 2 for GT-86120-WWVV |
| Photographs | 3-03 | Overall view 3 for GT-86120-WWVV |
| Photographs | 3-04 | Internal view 1 for GT-86120-WWVV |
| Photographs | 3-05 | Internal view 2 for GT-86120-WWVV |
| Photographs | 3-06 | Internal view 3 for GT-86120-WWVV |
| Photographs | 3-07 | Internal view 4 for GT-86120-WWVV |
| Photographs | 3-08 | Internal view 5 for GT-86120-WWVV |
| Photographs | 3-09 | Overall view 1 for GT-86120-WWVV-X.X-W2 |
| Photographs | 3-10 | Internal view 1 for GT-86120-WWVV-X.X-W2 |
| Diagrams | 4-01 | Enclosure for GT-86120-WWVV |
| Diagrams | 4-02 | Enclosure for GT-86120-WWVV-X.X-W2 |
| Diagrams | 4-03 | Input blade |
| Diagrams | 4-04 | Mylar sheet |
| Diagrams | 4-05 | Strain relief |
| Schematics + PWB | 5-01 | PWB layout A |
| Schematics + PWB | 5-02 | PWB layout B |
| Miscellaneous | 7-01 | LF1 specification |
| Miscellaneous | 7-02 | Transformer T1 specification- 90E12PT05-xxx |
| Miscellaneous | 7-03 | Transformer T1 specification -90E12PT12-xxx |
| Miscellaneous | 7-04 | Model list |
| Miscellaneous | 7-05 | Transformer T1 specification -90E12PT03-xxx |

## Test Record No. 1

Tests on Model(s) GT-86120-WWVV-X.X-W2 series are not required due to copy file from Applicant

The following tests were conducted:

| Test | Testing Location/Comments |
|---|---|
| End Product Reference Page | |
| Power Supply Reference Page | |
| Guide Information Page - Maximum Output Voltage, Current, and Volt Ampere Measurement (1.2.2.1) | |
| Input: Single-Phase (1.6.2) | |
| SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1) | |
| Limited Current Circuit Measurement (2.4.1, 2.4.2) | |
| Limited Power Source Measurements (2.5) | |
| Humidity (2.9.1, 2.9.2, 5.2.2) | |
| Determination of Working Voltage; Working Voltage Measurement (2.10.2) | |
| Transformer and Wire /Insulation Electric Strength (2.10.5.13) | |
| Strain Relief (3.2.6, 4.2.1, 4.2.7) | |
| Steady Force (4.2.1 - 4.2.4) | |
| Drop (4.2.6, 4.2.1) | |
| Stress Relief (4.2.7, 4.2.1) | |
| Direct Plug-In Equipment-Moment (4.3.6) | |
| Direct Plug-In Blade Securement (4.3.6) | |
| Direct Plug-In Security of Input Contacts (4.3.6) | |
| Direct Plug-In Resistance to Crushing (4.3.6) | |
| Direct Plug-In Rod Pressure (4.3.6) | |
| Direct Plug-In Input Blade Endurance (4.3.6) | |
| Heating (4.5.1, 1.4.12, 1.4.13) | |
| Ball Pressure (4.5.5, 4.5) | |
| Touch Current (Single-Phase; TN/TT System) (5.1, Annex D) | |
| Component Failure (5.3.1, 5.3.4, 5.3.7) | |
| Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1) | |
| Power Supply Output Short-Circuit/Overload (5.3.7) | |

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.