

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Listing
<b>CCN:</b>	QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	Switching Adapter
<b>Model:</b>	GT-81087-WWVV-X.X-W2 series: WW is the standard rated output wattage, with a maximum "20.4"; VV is the standard rated output voltage designation, with a maximum value of "18"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments, blank is to indicate the no voltage different. VV-X.X together denotes the voltage range from 5 to 7.5Vdc and 9 to 12Vdc and 15 to 18Vdc.
<b>Rating:</b>	I/P: 100-240 Vac, 50/60 Hz, 0.7 A or 100-120 Vac, 50/60 Hz, 0.7 A O/P: 5.0-7.5 Vdc, 3.0 A maximum, 15 W maximum or 9.0-12.0 Vdc, 2.0 A maximum, 20.4 W maximum or 15.0 -18.0 Vdc, 1.36 A maximum, 20.4 W maximum.
<b>Applicant Name and Address:</b>	GLOBTEK (SUZHOU) CO LTD BLDG 4, #76 JINLING EAST RD SUZHOU PARK SUZHOU JIANGSU 215021 CHINA

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 Underwriters Laboratories Inc. ('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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Issue Date: 2011-04-01  
2011-07-06

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Report Reference #

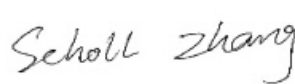
E336418-A44-UL

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Prepared by: Michelle Xu  
Underwriters Laboratories Inc.

A handwritten signature in black ink that reads "Michelle Xu".

Reviewed by: Scholl Zhang  
Underwriters Laboratories Inc.

A handwritten signature in black ink that reads "Scholl Zhang".

### 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

A direct plug-in switching power supply adaptor intended for use with indoor ITE products.

Consists of Class B switching transformer, Y capacitor, MOSFET, optical isolator, and other electronic components, then housed with two-piece plastic enclosures secured together by ultrasonic welding.

### Model Differences

See enclosure 4-02 for model differences.

### Technical Considerations

- Equipment mobility : direct plug-in
- 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%
- Tested for IT power systems : N/A
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class II (double insulated)

- Considered current rating (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 3000m
- Altitude of test laboratory (m) : up to 2000m
- Mass of equipment (kg) : 0.14 Max.
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 45 degree C
- The means of connection to the mains supply is: Pluggable A , Direct Plug-In Device
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Plug Blades
- The product was investigated to the following additional standards: This equipment is intended to be operated in altitudes up to 3000 m, so the clearance is multiplied by the altitude correction factor (1.14, linear interpolation used), specified in table A.2 of IEC 60664-1, 1992+A1: 2000., , The unit was investigated to the following additional standards: The unit were evaluated to the maximum acceptable moment, center of gravity, dimensions and weight of the unit in accordance with UL 1310 and CSA C22.2 No. 223. 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: Secondary side of CY1
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output terminal
- The blade dimension was additional evaluated according to UL1310, to comply with NEMA configurations in accordance with Wiring Devices - Dimensional Specifications, ANSI/NEMA WD6.


#### **Additional Information**

This equipment is intended to be operated in altitudes up to 3000 m, so the clearance is multiplied by the altitude correction factor (1.14, linear interpolation used), specified in table A.2 of IEC 60664-1, 1992+A1: 2000.

The product was investigated to the following additional standards: The unit was investigated to the following

additional standards: The unit were evaluated to the maximum acceptable moment, center of gravity, dimensions and weight of the unit in accordance with UL 1310 and CSA C22.2 No. 223. The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices- Dimensional Specifications, ANSI/NEMA WD6.

**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)
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

**Special Instructions to UL Representative**

N/A

**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	T1	--	Primary and Secondary	300 0 Vrms	4242 Vdc	1 s

**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:**

N/A

**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:**

N/A

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

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

**TABLE: List of Critical Components**

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
01. Enclosure	Various	Various	Two pieces construction secured together by ultrasonic welding. See Enclosure ID 4-01 for dimensions details.	--	--
01-1. Material of Enclosure	Sabic Innovative Plastics Us L L C	SE1X	Rated V-1, 105 degree C. Minimum 2.0 mm thick from top and bottom, minimum 2.5 mm thick from the sides. (HAI 0, HWI 0)	QMFZ2	UL
01-1a. Material of Enclosure (Alternate)	Sabic Innovative Plastics Us L L C	SE100X	Rated V-1, 80 degree C. Minimum 2.0 mm thick from top and bottom, minimum 2.5 mm thick from the sides. (HAI 0, HWI 2)	QMFZ2	UL
02. Label	Various	Various	Rated minimum 65 degree C, suitable for surface applied to Enclosure.	PGDQ2 or PGJI2	UL
03. Output Cable	Various	Various	Non-detachable, maximum 3.05 m long, FEP, PTFE, PVC, TFE neoprene, polyimide or marked VW-1, minimum 80 degree C, minimum 20 V, minimum 26 AWG. One end mechanically secured then soldered to PWB and with glues, not to touch primary, other end is terminated in molded on connector.	AVLV2	UL
04. Strain Relief	Various	Various	Minimum V-2. Integral molded to Output Cable. Strain Relief provided with a molded-on anti-kink bushing held in place by integral slots in top and bottom enclosure. For Strain Relief. See Enclosure ID. 4-02 for construction details.	QMFZ2	UL
05. Input Blades	--	--	Two copper alloy blades are injection molded to plastic Enclosure. Blades located minimum 5.1 mm from Enclosure edge. See Enclosure ID 4-03 for Blade dimensions.	--	--
06. Material of Blade Holder	Sabic Innovative Plastics Us L L C	SE1X	Rated V-0, 90 degree C, minimum 2.6 mm thick (HAI 2, HWI 2).	QMFZ2	UL
07. Internal Primary L/N Wires	Various	Various	FEP, PTFE, PVC, TFE, neoprene or surface marked VW*1; rated minimum 80 degree C, minimum 300 V. One end mechanically secured	AVLV2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
			and soldered to contact spring; other end mechanically secured and soldering to PWB. The wires shall be fixed by glue.		
08. Insulating Tubing / Sleeving (Optional)	Various	Various	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; minimum 105 degree C, minimum 300 V.	UZFT2, YDTU2 or YDPU2	UL
09. Printed Wiring Board	Various	Various	Minimum V-1. Minimum 105 degree C.	ZPMV2	UL
10. Fuse (F1)	Various	Various	Rated T1A or T2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with Insulation Tubing / Sleeving (Optional). Fuse ratings marking adjacent to Fuse.	JDYX	UL, VDE
10a. Fuse (F1) (Alternate)	Conquer Electronics Co Ltd	PTU	Rated T1A or T2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with Insulation Tubing / Sleeving (Optional). Fuse ratings marking adjacent to Fuse.	JDYX2	UL, VDE
10b. Fuse (F1) (Alternate)	Schurter AG	SPT 5x20	Rated T1A or T2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with Insulation Tubing / Sleeving (Optional). Fuse ratings marking adjacent to Fuse.	JDYX2	UL, VDE
10c. Fuse (F1) (Alternate)	Littelfuse Inc	677 Series	Rated T1A or T2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with Insulation Tubing / Sleeving (Optional). Fuse ratings marking adjacent to Fuse.	JDYX2	UL, VDE
10d. Fuse (F1) (Alternate)	Littelfuse Inc	876	Rated F2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with Insulation Tubing / Sleeving (Optional). Fuse ratings marking adjacent to Fuse.	JDYX2	UL, VDE
10e. Fuse (F1) (Alternate)	Littelfuse Inc	877	Rated T2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with Insulation Tubing / Sleeving (Optional). Fuse ratings marking adjacent to Fuse.	JDYX2	UL, VDE
10f. Fuse (F1) (Alternate)	Shenzhen Lanson Electronics Co Ltd	3N	Rated T1A or T2A, 250 V, pig - tai fuse leads soldered to PCB. The body provided with	JDYX2	UL, VDE



Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
			Insulation Tubing / Sleeveing (Optional). Fuse ratings marking adjacent to Fuse.		
10g. Fusible Resistor (F1) (Alternate)	Tzai Yuan	KNF	4.7ohm, 1W. The body provided with Insulation Tubing / Sleeveing (Optional).	--	--
10h. Fusible Resistor (F1) (Alternate)	VIS Electronics Ltd.	FRT	4.7ohm, 1W. The body provided with Insulation Tubing / Sleeveing (Optional).	FPEW2	UL
10i. Fusible Resistor (F1) (Alternate)	Jiangsu Xinyang Electronic Component Co Ltd	RF10-1W	4.7ohm, 1W. The body provided with Insulation Tubing / Sleeveing (Optional).	FPEW2	UL
10j. Fusible Resistor (F1) (Alternate)	Shimeng Electronic (ShenZhen) Co., Ltd.	FKN	4.7ohm, 1W. The body provided with Insulation Tubing / Sleeveing (Optional).	--	--
11. Varistor (MOV1) (Optional)	Uppermost Electronic Industries Co Ltd	V07K275, V10K275, V14K275	275Vac, 350Vdc	VZCA2	UL
11a. Varistor (MOV1) (Optional) (Alternate)	Uppermost Electronic Industries Co Ltd	V07K300, V10K300, V14K300	300Vac, 385Vdc	VZCA2	UL
11b. Varistor (MOV1) (Optional) (Alternate)	Centra Science Corp	CNR07D431K	275Vac, 350Vdc	VZCA2	UL
11c. Varistor (MOV1) (Optional) (Alternate)	Centra Science Corp	CNR10D431K, CNR14D431K	275Vac, 350Vdc	VZCA2	UL
11d. Varistor (MOV1) (Optional) (Alternate)	Centra Science Corp	CNR07D471K	300Vac, 385Vdc	VZCA2	UL
11e. Varistor (MOV1) (Optional) (Alternate)	Centra Science Corp	CNR10D471K, CNR14D471K	300Vac, 385Vdc	VZCA2	UL
11f. Varistor (MOV1) (Optional) (Alternate)	Joyin Co Ltd	7N431K, 10N431K, 14N431K	275Vac, 350Vdc	VZCA2	UL
11g. Varistor (MOV1) (Optional) (Alternate)	Joyin Co Ltd	7N471K,	300Vac, 385Vdc	VZCA2	UL
11h. Varistor (MOV1) (Optional) (Alternate)	Joyin Co Ltd	10N471K, 14N471K	300Vac, 385Vdc	VZCA2	UL
11i. Varistor (MOV1)	Walsin Technology	VZ7D431K,	250Vac, 350Vdc	VZCA2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
(Optional) (Alternate)	Corp	VZ10D431K, VZ14D431K			
11j. Varistor (MOV1) (Optional) (Alternate)	Walsin Technology Corp	VZ7D471K, VZ10D471K, VZ14D471K	300Vac, 385Vdc	VZCA2	UL
11k. Varistor (MOV1) (Optional) (Alternate)	Dongguan Littelfuse Electronics Co Ltd	SAS-431KD07 SAS-431KD10 SAS-431KD14 MOV-431KD07 MOV-431KD10 MOV-431KD14	275Vac, 350Vdc	VZCA2	UL
11l. Varistor (MOV1) (Optional) (Alternate)	Dongguan Littelfuse Electronics Co Ltd	SAS-471KD07 SAS-471KD10 SAS-471KD14 MOV-471KD07 MOV-471KD10 MOV-471KD14	300Vac, 385Vdc	VZCA2	UL
11m. Varistor (MOV1) (Optional) (Alternate)	Panasonic Corporation, Panasonic Corporation Of North America	10K431U, 14K431U	275Vac, 350Vdc	VZCA2	UL
11n. Varistor (MOV1) (Optional) (Alternate)	Panasonic Corporation, Panasonic Corporation Of North America	10K471U, 14K471U	300Vac, 385Vdc	VZCA2	UL
11o. Varistor (MOV1) (Optional) (Alternate)	Thinking Electronic Industrial Co Ltd	TVR07431 TVR10431 TVR14431	275Vac, 350Vdc	VZCA2	UL
11p. Varistor (MOV1) (Optional) (Alternate)	Thinking Electronic Industrial Co Ltd	TVR07471 TVR10471 TVR14471	300Vac, 385Vdc	VZCA2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
11q. Varistor (MOV1) (Optional) (Alternate)	Jya-Nay Co Ltd	7D431K, 10D431K, 14D431K	275Vac, 350Vdc	VZCA2	UL
11r. Varistor (MOV1) (Optional) (Alternate)	Jya-Nay Co Ltd	7D471K, 10D471K, 14D471K	300Vac, 385Vdc	VZCA2	UL
12. Choke (LF1) (Optional)		30C-040120-XXH (XX = 00-99 for marking use)	Rated minimum 105 degree C. Open type construction. Core: Ferrite. Copper magnet wire wound on bobbin. See Enclosure ID 4-04 for details.	--	--
12a. Choke (LF1) (Optional) (Alternate)		30D-007520-XXH (XX = 00-99 for marking use)	Rated minimum 105 degree C. Core: Ferrite. Copper magnet wire wound on core. The body provided with Insulation Tubing / Sleeving. See Enclosure ID 4-05 for details.	--	--
13. Bridge Diodes (D1, D2, D3, D4)	--	--	Rated minimum 1 A, minimum 600 V.	--	--
14. Electrolytic Capacitor (C1 and C2)	--	--	Electrolytic Type. Rated 2.2 to 10 uF, minimum 400 V, minimum 85 degree C.	--	--
15. Foam (Optional)	Various	Various	Minimum V-2, minimum 80 degree C. Provided between PWB and Enclosure.	QMFZ2	UL
16. Bridge Capacitor (CY1) (Optional)	TDK Corp	CD	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
16a. Bridge Capacitor (CY1) (Optional) (Alternate)	Murata Mfg Co Ltd	KX	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
16b. Bridge Capacitor (CY1) (Optional) (Alternate)	Success Electronics Co Ltd	SE	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
16c. Bridge Capacitor (CY1) (Optional) (Alternate)	Success Electronics Co Ltd	SB	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
16d. Bridge Capacitor	Jya-Nay Co. Ltd.	JN	Rated maximum 2200 pF, minimum 250 V.	FOWX2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
(CY1) (Optional) (Alternate)			Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)		
16e. Bridge Capacitor (CY1) (Optional) (Alternate)	Jyh Chung Electronics Co Ltd	JD	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
16f. Bridge Capacitor (CY1) (Optional) (Alternate)	Welson Industrial Co Ltd	WD	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
16g. Bridge Capacitor (CY1) (Optional) (Alternate)	Samwha Capacitor Co Ltd	SD	Rated maximum 2200 pF, minimum 250 V. Marked with an *Y1* Certified by VDE, DEMKO or SEV. (Meets IEC60384 - 14.)	FOWX2	UL
17. Transformer (T1)	--	--	Open type construction. Core: Ferrite. Coil: Copper magnet wire-wound on bobbin. See enclosure ID 4-06 Insulation construction. The secondary used Triple Insulation Wires.	--	--
17-1. Insulation system of Transformer (T1)		HIS-8A	Class B	OBJY2	UL
17-2. Bobbin of Transformer (T1)	Hitachi Chemical Co Ltd	CP-J-8800	Phenolic, minimum 0.71 mm thick, rated minimum V-2, 150 degree C.	QFMZ2	UL
17-3. Insulating Tape of Transformer (T1)	3M Company Electrical Markets Div (EMD)	1350F-1, 1350F-2	Rated 130 degree C.	OANZ2	UL
17-3a. Insulating Tape of Transformer (T1) (Alternate)	Symbio Inc	MY130	Rated 130 degree C.	OANZ2	UL
17-4. Insulating Tubing of Transformer (T1) (Optional)	Zeus Industrial Products Inc	TFE-TW-300	Rated 200 degree C.	YDPU2	UL
17-5. Magnet Wire of Transformer (T1)	Various	Various	Rated 130 degree C.	OBMW2	UL
17-6. Triple Insulated Wire (T1)	Furukawa Electric Co Ltd	TEX-E	Rated 130 degree C	OBJT2	UL
17-6a. Triple Insulated	Totoku Electric Co	TIW-E	Rated 130 degree C	OBJT2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
Wire (T1) (Alternate)	Ltd				
17-7. Varnish of Transformer (T1)	Hitachi Chemical Co Ltd	WP-2952F-2G, WA-238A, WF-285	Rated 130 degree C.	OBOR2	UL
17a-1. Insulation system of Transformer (T1)		YCI-130	Class B	OBJY2	UL
17a-2. Bobbin of Transformer (T1)	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, minimum 0.71 mm thick, rated minimum V-2, 150 degree C.	QFMZ2	UL
17a-2a. Bobbin of Transformer (T1) (Alternate)	Hitachi Chemical Co Ltd	CP-J-8800	Phenolic, minimum 0.71 mm thick, rated minimum V-2, 150 degree C.	QFMZ2	UL
17a-3. Insulating Tape of Transformer (T1)	3M Company Electrical Markets Div (EMD)	1350F-1, 1350F-2	Rated 130 degree C.	OANZ2	UL
17a-3a. Insulating Tape of Transformer (T1) (Alternate)	Symbio Inc	35660, 35661	Rated 130 degree C.	OANZ2	UL
17a-4. Insulating Tubing of Transformer (T1) (Optional)	Great Holding Industrial Co Ltd	TFT, TFS	Rated 200 degree C.	YDPU2	UL
17a-4a. Insulating Tubing of Transformer (T1) (Optional) (Alternate)	Zeus Industrial Products Inc	TFE-TW-300, TFE-SW-600	Rated 200 degree C.	YDPU2	UL
17a-5. Magnet Wire of Transformer (T1)	Various	Various	Rated 130 degree C.	OBMW2	UL
17a-6. Triple Insulated Wire (T1)	Young Chang Silicone Co Ltd	STW-B	Rated 130 degree C	OBJT2	UL
17a-7. Varnish of Transformer (T1)	Elantas Electrical Insulation Elantas Pdg Inc	468-2(+)	Rated 130 degree C.	OBJS2	UL
17a-7a. Varnish of Transformer (T1)	Hitachi Chemical Co Ltd	WP-2952F-2G	Rated 130 degree C.	OBOR2	UL

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Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
(Alternate)					
18. Glue	Various	Various	Minimum V-2, minimum 80 degree C.	QMFZ2	UL
19. Thermistor (NTC1)	Various	Various	Rated 2A minimum, 5 ohm at 25 degree C min.	--	--
20. Secondary Switch (Optional)	Various	Various	Plastic part of (QMFZ2) rated minimum V-2.	--	--

## **Enclosures**

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	Overall View 1
Photographs	3-02	Overall View 2
Photographs	3-03	PWB Trace Side
Photographs	3-04	PWB Component Side
Photographs	3-05	PWB Component Side (with alternate HS1)
Diagrams	4-01	Enclosure Drawing
Diagrams	4-02	Blade Dimension
Diagrams	4-03	Inductor LF1
Diagrams	4-04	Transformer T1 Specifications
Diagrams	4-05	Heatsink HS1
Diagrams	4-06	Heatsink HS2
Diagrams	4-07	Mylar Sheet
Diagrams	4-08	Transformer T1 Specifications
Schematics + PWB	5-01	PWB Layout
Manuals		
Miscellaneous	7-01	Additional Test Table
Miscellaneous	7-02	Model difference

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1	<b>GENERAL</b>		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950-1 or relevant component standard	(See appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.</p> <p>Components not certified are used in accordance with their ratings and they comply IEC60950-1 and the relevant component Standard.</p> <p>Components, for which no relevant IEC Standard exist, have been tested under the condition occurring in the equipment, using applicable parts of IEC60950-1.</p>	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers	See Annex C.	Pass
1.5.5	Interconnecting cables		Pass
1.5.6	Capacitors bridging insulation	<p>Accessible conductive parts separated from other parts by DOUBLE or REINFORCED INSULATION bridged by CY1 comply with the requirements for LIMITED CURRENT CIRCUITS. Measured 0.53 mApk.</p> <p>See 2.4 for details.</p>	Pass
1.5.7	Resistors bridging insulation		Pass
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Resistors bridging Functional Insulation.	Pass
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No bridging resistor provided.	N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		Pass
1.5.9.1	General	Evaluated in component approval.	Pass
1.5.9.2	Protection of VDRs		Pass
1.5.9.3	Bridging of functional insulation by a VDR		Pass
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	Power interface		Pass
1.6.1	AC power distribution systems	TN	Pass
1.6.2	Input current	The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under NORMAL LOAD.  (see appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor	Neutral insulation is provided in the power supply. Neutral serves as line conductor.	Pass
1.7	Marking and instructions		Pass
1.7.1	Power rating		Pass
	Rated voltage(s) or voltage range(s) (V) .....	100-240 Vac or 100-120 Vac	Pass
	Symbol for nature of supply, for d.c. only .....	AC Source	N/A
	Rated frequency or rated frequency range (Hz)....	50/60 Hz	Pass
	Rated current (mA or A) .....	0.7 A.	Pass
	Manufacturer's name or trademark or identification mark.....	GLOBTEK (SUZHOU) CO LTD or File Number.	Pass
	Model identification or type reference .....	Refer to the Model information at the beginning of this Test Report.	Pass
	Symbol for Class II equipment only.....	60417-1-IEC-5172 symbol marked.	Pass
	Other markings and symbols.....	Additional symbols may be provided when submitted for National Approval.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.2	Safety instructions and marking	Safety instructions in English. Other languages will be provided when submitted for national approval.	Pass
1.7.2.1	General		Pass
1.7.2.2	Disconnect devices	Direct Plug-In Unit.	Pass
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT Power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment .....		N/A
	Method and means of adjustment; reference to installation instructions .....		N/A
1.7.5	Power outlets on the equipment.....		N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	Fuse marking adjacent to fuse as follow : F1: T2AL, 250Vac	Pass
1.7.7	Wiring terminals	Direct Plug-In Unit.	N/A
1.7.7.1	Protective earthing and bonding terminals.....		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking .....		N/A
1.7.8.2	Colours .....		N/A
1.7.8.3	Symbols according to IEC 60417 .....		N/A
1.7.8.4	Markings using figures.....		N/A
1.7.9	Isolation of multiple power sources .....		N/A
1.7.10	Thermostats and other regulating devices .....		N/A
1.7.11	Durability	All markings provided on UL Recognized Component labels suitable for surface they are applied upon and meet the durability test.	Pass
1.7.12	Removable parts		N/A
1.7.13	Replaceable batteries.....		N/A
	Language(s) .....		-

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.14	Equipment for restricted access locations..... :	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2	<b>PROTECTION FROM HAZARDS</b>		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas		Pass
2.1.1.1	Access to energized parts		Pass
	Test by inspection..... :	No operator access to energized parts.	Pass
	Test with test finger (Figure 2A) ..... :	The test finger was unable to contact bare hazardous parts, basic insulation, or ELV circuits.	Pass
	Test with test pin (Figure 2B) ..... :	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe (Figure 2C) ..... :	No TNV present.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring	Internal wiring in an ELV circuit is not user accessible.	N/A
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm) ..... :		-
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards ..... :	The output of the power supply is not an energy hazard. Maximum VA = 29.7.	Pass
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		Pass
	Measured voltage (V); time-constant (s) ..... :	12 V at 1 s; time-constant: 0.246 s.	-
2.1.1.8	Energy hazards - d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the mains supply :		N/A
2.1.1.9	Audio amplifiers ..... :		N/A
2.1.2	Protection in service access areas	No bare parts operating at HAZARDOUS VOLTAGES in a service access area.	N/A
2.1.3	Protection in restricted access locations		N/A
2.2	SELV circuits		Pass
2.2.1	General requirements	SELV levels are maintained after single fault condition.	Pass
2.2.2	Voltages under normal conditions (V) ..... :	All accessible voltages are less than 42.4 V <sub>pk</sub> or 60 V dc	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

		and are classified as SELV.	
2.2.3	Voltages under fault conditions (V) .....	Under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	Pass
2.2.4	Connection of SELV circuits to other circuits .....	SELV circuits are only connected to other secondary circuits. SELV circuit and all interconnected circuits separated from primary by Reinforced insulation. The SELV circuit does not exceed the SELV limits under normal and fault conditions.	Pass
2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits .....		-
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions .....		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed.....		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed.....		-
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		Pass
2.4.1	General requirements		Pass
2.4.2	Limit values	0.7 mApk.	Pass
	Frequency (Hz) .....	--	-
	Measured current (mA).....	0.53 mApk	-
	Measured voltage (V) .....	U2=264 mV	-
	Measured circuit capacitance (nF or uF) .....	2200 pF	-
2.4.3	Connection of limited current circuits to other circuits	The LIMITED CURRENT CIRCUIT connected to other circuits complies with the	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

		requirements of Sub-clause 2.4.1.	
2.5	Limited power sources		Pass
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		Pass
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	See Enclosure Miscellaneous 7-01	-
	Current rating of overcurrent protective device (A) :		-
2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class II equipment.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :		-
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :		-
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (ohm), voltage drop (V), test current (A), duration (min)..... :		N/A
2.6.3.5	Colour of insulation..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		-
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	Overcurrent and earth fault protection in primary circuits		Pass
2.7.1	Basic requirements	Protective devices are integrated in the equipment.	Pass
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3.7	The protection devices are well dimensioned and mounted.	Pass
2.7.3	Short-circuit backup protection	The building installation is considered as providing short-circuit backup protection.	Pass
2.7.4	Number and location of protective devices ..... :	One fuse in the "LIVE" phase.	Pass
2.7.5	Protection by several devices	Only one protective device is provided.	N/A
2.7.6	Warning to service personnel..... :		N/A
2.8	Safety interlocks		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		Pass

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation.	Pass
2.9.2	Humidity conditioning	Humidity treatment performed for 48 hrs in condition:	Pass
	Relative humidity (%), temperature (°C)..... :	95 %, 25 degree C	-
2.9.3	Grade of insulation	Double/Reinforced Insulation provided between Primary and SELV/Operator Accessible Area. Functional Insulation employed within Primary and SELV circuits.	Pass
2.9.4	Separation from hazardous voltages		Pass
	Method(s) used..... :	Method I used	-
2.10	Clearances, creepage distances and distances through insulation		Pass
2.10.1	General	Pollution degree 2 applicable.  For Functional Insulation, see 5.3.4.	Pass
2.10.1.1	Frequency..... :	Less than 30 kHz.	Pass
2.10.1.2	Pollution degrees..... :	Pollution Degree 2.	Pass
2.10.1.3	Reduced values for functional insulation		Pass
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.2.1	General		Pass
2.10.2.2	RMS working voltage	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.2.3	Peak working voltage	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.3	Clearances	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.3.1	General		Pass
2.10.3.2	Mains transient voltages		Pass
	a) AC mains supply ..... :	OVC II, 2500 V	Pass



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Clause	Requirement + Test	Result - Remark	Verdict
	b) Earthed d.c. mains supplies .....		N/A
	c) Unearthed d.c. mains supplies .....		N/A
	d) Battery operation .....		N/A
2.10.3.3	Clearances in primary circuits	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.3.4	Clearances in secondary circuits	Functional insulation only. See sub-clause 5.3.4.	Pass
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....	1500 V	Pass
2.10.3.7	Transients from d.c. mains supply .....		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....		N/A
	For a d.c. mains supply .....		N/A
	b) Transients from a telecommunication network		N/A
2.10.4	Creepage distances	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.4.1	General		Pass
2.10.4.2	Material group and comparative tracking index		Pass
	CTI tests .....	Assume material group III b: $100 \leq \text{CTI} < 175$	-
2.10.4.3	Minimum creepage distances	(See appended table 2.10.3 and 2.10.4)	Pass
2.10.5	Solid insulation		Pass
2.10.5.1	General		Pass
2.10.5.2	Distances through insulation	(See appended table 2.10.5)	Pass
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		Pass
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material - General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) .....		-
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material - standard test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test..... :		-
2.10.5.10	Thin sheet material - alternative test procedure		N/A
	Electric strength test..... :		-
2.10.5.11	Insulation in wound components		Pass
2.10.5.12	Wire in wound components	Wire that has multi-layer extruded or spirally wrapped insulation (where only the finished wire can be tested) and passes the tests of annex U.	Pass
	Working voltage..... :	524 Vpk	Pass
	a) Basic insulation not under stress..... :		N/A
	b) Basic, supplementary, reinforced insulation..... :		N/A
	c) Compliance with Annex U..... :	REINFORCED INSULATION: three layers.	Pass
	Two wires in contact inside wound component; angle between 45° and 90°..... :	Prevented by insulating sleeving.	Pass
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test..... :		-
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage..... :		N/A
	- Basic insulation not under stress..... :		N/A
	- Supplementary, reinforced insulation..... :		N/A
2.10.6	Construction of printed boards		Pass
2.10.6.1	Uncoated printed boards		Pass
2.10.6.2	Coated printed boards	No coated printed wiring boards.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)..... :		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3	<b>WIRING, CONNECTIONS AND SUPPLY</b>		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection		Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass
3.1.3	Securing of internal wiring		Pass
3.1.4	Insulation of conductors	(See appended table 5.2)	Pass
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	Pass
3.1.8	Self-tapping and spaced thread screws		Pass
3.1.9	Termination of conductors		Pass
	10 N pull test	By inspection	N/A
3.1.10	Sleeving on wiring		N/A
3.2	Connection to mains supply		Pass
3.2.1	Means of connection	The unit is provided with a means for direct plug-in.	Pass
3.2.1.1	Connection to an a.c. mains supply	The unit is provided with a means for direct plug-in.	Pass
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type .....		-
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....		-
	Longitudinal displacement (mm) .....		-

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Clause	Requirement + Test	Result - Remark	Verdict

3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter of minor dimension D (mm); test mass (g) : .....		-
	Radius of curvature of cord (mm) : .....		-
3.2.9	Supply wiring space		N/A
3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) : .....		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) : .....		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	Disconnection from the mains supply		Pass
3.4.1	General requirement		Pass
3.4.2	Disconnect devices	The contact gap is 3 mm or larger. The plug blades are used as the disconnect device.	Pass
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment	Disconnect device disconnects all poles simultaneously.	Pass
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		Pass

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Clause	Requirement + Test	Result - Remark	Verdict

3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N/A
3.5.4	Data ports for additional equipment	No data port	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4	<b>PHYSICAL REQUIREMENTS</b>		Pass
4.1	Stability		N/A
	Angle of 10°	Based on construction, the test was deemed not necessary.	N/A
	Test force (N)..... :		N/A
4.2	Mechanical strength		Pass
4.2.1	General		Pass
4.2.2	Steady force test, 10 N	10N were applied to components. No energy or other hazards.	Pass
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazards as a result of the 250 N test. See enclosed test record.	Pass
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)..... :	No hazards as a result of the drop test. See enclosed test record.	Pass
4.2.7	Stress relief test	Sample remained intact after Stress Relief Test (89 degree C, 7 hrs).	Pass
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :		N/A
4.3	Design and construction		Pass
4.3.1	Edges and corners	All edges and corners judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N) ..... :		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		Pass
4.3.5	Connection by plugs and sockets		Pass
4.3.6	Direct plug-in equipment		Pass
	Torque ..... :	0.03 Nm	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance with the relevant mains plug standard:	ANSI/NEMA WD6.	Pass
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids..... :		N/A
	Quantity of liquid (l)..... :		N/A
	Flash point (°C)..... :		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) ..... :		-
	Measured high-voltage (kV) ..... :		-
	Measured focus voltage (kV) ..... :		-
	CRT markings..... :		-
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :		N/A
4.3.13.5	Laser (including LEDs)		N/A
	Laser class ..... :		-
4.3.13.6	Other types ..... :		N/A
4.4	Protection against hazardous moving parts		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas..... :		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.5	Thermal requirements		Pass
4.5.1	General		Pass



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Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	Temperature tests	(See appended table 4.5)	Pass
	Normal load condition per Annex L ..... :	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	-
4.5.3	Temperature limits for materials		Pass
4.5.4	Touch temperature limits		Pass
4.5.5	Resistance to abnormal heat..... :	See Table 4.5.5	Pass
4.6	Openings in enclosures		Pass
4.6.1	Top and side openings	No Opening.	Pass
	Dimensions (mm) ..... :	No Opening.	-
4.6.2	Bottoms of fire enclosures	No Opening.	Pass
	Construction of the bottom, dimensions (mm)..... :	No Opening.	-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		-
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks) ..... :		-
4.7	Resistance to fire		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
	Method 1, selection and application of components wiring and materials		Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	With having following parts:  - components in primary circuits  Fire Enclosure is required.	Pass
4.7.2.1	Parts requiring a fire enclosure		Pass

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Clause	Requirement + Test	Result - Remark	Verdict

4.7.2.2	Parts not requiring a fire enclosure		Pass
4.7.3	Materials		Pass
4.7.3.1	General		Pass
4.7.3.2	Materials for fire enclosures	V-1 minimum.	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures	See appended table 1.5.1	Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better.	Pass
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		Pass
5.1	Touch current and protective conductor current		Pass
5.1.1	General		Pass
5.1.2	Configuration of equipment under test (EUT)		Pass
5.1.2.1	Single connection to an a.c. mains supply		Pass
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Single phase equipment intended only for connection to star TN system.	Pass
5.1.4	Application of measuring instrument	Test made to 10X20 cm metal foil in contact with accessible non-conductive part.	Pass
5.1.5	Test procedure		Pass
5.1.6	Test measurements		Pass
	Supply voltage (V) .....	264 Vac.	-
	Measured touch current (mA) .....	0.13 mA maximum	-
	Max. allowed touch current (mA) .....	0.25 mA	-
	Measured protective conductor current (mA) .....		-
	Max. allowed protective conductor current (mA) ...		-
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General .....		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV circuit.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....		-
	Measured touch current (mA) .....		-
	Max. allowed touch current (mA) .....		-
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports .....		N/A
	b) EUT whose telecommunication ports have no		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	reference to protective earth		
5.2	Electric strength		Pass
5.2.1	General	Based on the electric strength test the use of the insulating materials within the equipment is satisfactory.	Pass
5.2.2	Test procedure	No insulation breakdown detected during the test. (See appended table 5.2)	Pass
5.3	Abnormal operating and fault conditions		Pass
5.3.1	Protection against overload and abnormal operation	(See appended table 5.3)	Pass
5.3.2	Motors	No motors.	N/A
5.3.3	Transformers	Transformers are constructed in accordance with the applicable Clause and Annex C.	Pass
5.3.4	Functional insulation..... :	Functional insulation complies with the requirements (c).	Pass
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE..... :		N/A
5.3.7	Simulation of faults	(See appended table 5.3.)	Pass
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		Pass
5.3.9.1	During the tests		Pass
5.3.9.2	After the tests		Pass

6	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>	N/A
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7	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>	N/A
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A	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>	N/A
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Clause	Requirement + Test	Result - Remark	Verdict

B	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N/A
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C	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		Pass
	Position .....	T1 located between primary and secondary	-
	Manufacturer .....	(see appended table 1.5.1)	-
	Type.....	Switching type	-
	Rated values.....	(see appended table 1.5.1)	-
	Method of protection.....	Inherently protection	-
C.1	Overload test	(see appended table 5.3)	Pass
C.2	Insulation	(see appended table 5.2)	Pass
	Protection from displacement of windings.....	Triple insulated wire used.	Pass

D	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		Pass
D.1	Measuring instrument		Pass
D.2	Alternative measuring instrument		N/A

E	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N/A
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F	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		Pass
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G	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
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H	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N/A
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J	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N/A
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Clause	Requirement + Test	Result - Remark	Verdict

K	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N/A
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L	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		Pass
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		Pass

M	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N/A
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N	<b>ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)</b>		N/A
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P	<b>ANNEX P, NORMATIVE REFERENCES</b>		Pass
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Q	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N/A
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R	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N/A
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S	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
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T	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

U	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		Pass
	..... :	Covered in component certification. (See appended table 1.5.1)	-

V	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		Pass
V.1	Introduction		Pass
V.2	TN power distribution systems		Pass

W	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		N/A
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X	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		Pass
X.1	Determination of maximum input current		Pass
X.2	Overload test procedure		Pass

Y	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		N/A
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Z	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		Pass
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AA	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N/A
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## **Enclosure**

### **National Differences**

USA / Canada



IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

USA / Canada - Differences to IEC 60950-1:2005 (Second Edition)			
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		Pass
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.		Pass
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.		Pass
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.		N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special		N/A

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SubClause	Difference + Test	Result - Remark	Verdict

	circuit classification requirements (e.g., TNV-2)		
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor.		N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses.		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.		N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2.1	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
2.3.2.4	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications when subjected to special construction requirements and		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	routine testing.		
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.3.3	For Pluggable Equipment Type A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A		N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.	See Annex U.	Pass
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.		Pass

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SubClause	Difference + Test	Result - Remark	Verdict
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		Pass
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.		Pass
3.2.1	Permitted use for flexible cords and plugs.		Pass
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG		N/A

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SubClause	Difference + Test	Result - Remark	Verdict

	(0.82 mm <sup>2</sup> ) and not less than 150 mm in length for connection of field installed wiring.		
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.		N/A
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.		N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated.		N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm <sup>2</sup> ) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A

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3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		Pass
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not		N/A

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	comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		
4.3.13.5	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m <sup>3</sup> of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m <sup>2</sup> or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	VW-1 or FT-1.	Pass
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.		N/A
5.3.7	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.		N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	telecommunication network.		
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific primary or secondary protector marked with suitable instructions.		N/A
NAD	Acoustic pressure from an ear piece less than 136 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets, and 121 dBA for insert earphones, for long duration disturbances.		N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A



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SubClause	Difference + Test	Result - Remark	Verdict

NAF	Household/Home Office Document Shredders		N/A
NAF.1.7	Markings and instructions alert the user to key safety considerations related to use of shredders, including not intended to be used by children, avoid touching document feed opening, avoid clothes and hair entanglement, and avoid aerosol products.		N/A
NAF.2.8.3	Safety interlock cannot be inadvertently activated by the articulated accessibility probe (figure NAF.1).		N/A
NAF.3.4	Provided with an isolating switch complying with 3.4.2, including 3 mm contact gap, with appropriate markings associated with the switch.		N/A
NAF.4.4	Hazardous moving parts are not accessible, as determined using the articulated accessibility probe (figure NAF.1) and the accessibility probe/wedge (figures NAF.2/NAF.3).		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)						Pass
U (V)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	condition/status	
--	--	--	--	--	--	Test model: GT-81087-2018-7.8-W2	
90Vac/50hz	0.45	--	25.2	F1	0.45	Maximum normal load (10.2Vdc/2.0A)	
90Vac/60Hz	0.46	--	25.3	F1	0.46	Maximum normal load (10.2Vdc/2.0A)	
100Vac/50hz	0.42	0.7	25.0	F1	0.42	Maximum normal load (10.2Vdc/2.0A)	
100Vac/60Hz	0.42	0.7	24.9	F1	0.42	Maximum normal load (10.2Vdc/2.0A)	
240Vac/50hz	0.23	0.7	24.9	F1	0.23	Maximum normal load (10.2Vdc/2.0A)	
240Vac/60Hz	0.23	0.7	24.5	F1	0.23	Maximum normal load (10.2Vdc/2.0A)	
254Vac/50hz	0.22	--	24.5	F1	0.22	Maximum normal load (10.2Vdc/2.0A)	
254Vac/60Hz	0.22	--	24.5	F1	0.22	Maximum normal load (10.2Vdc/2.0A)	
264Vac/50hz	0.22	--	24.5	F1	0.22	Maximum normal load (10.2Vdc/2.0A)	
264Vac/60Hz	0.22	--	24.5	F1	0.22	Maximum normal load (10.2Vdc/2.0A)	
--	--	--	--	--	--	Test model: GT-81087-157.5-W2	
90Vac/50hz	0.34	--	18.2	F1	0.34	Maximum normal load (7.5Vdc/2.0A)	
90Vac/60Hz	0.35	--	18.3	F1	0.35	Maximum normal load (7.5Vdc/2.0A)	
100Vac/50hz	0.32	0.7	18.1	F1	0.32	Maximum normal load (7.5Vdc/2.0A)	
100Vac/60Hz	0.32	0.7	18.2	F1	0.32	Maximum normal load (7.5Vdc/2.0A)	
240Vac/50hz	0.18	0.7	18.0	F1	0.18	Maximum normal load (7.5Vdc/2.0A)	
240Vac/60Hz	0.18	0.7	17.9	F1	0.18	Maximum normal load (7.5Vdc/2.0A)	
254Vac/50hz	0.17	--	18.0	F1	0.17	Maximum normal load (7.5Vdc/2.0A)	
254Vac/60Hz	0.17	--	18.0	F1	0.17	Maximum normal load (7.5Vdc/2.0A)	
264Vac/50hz	0.17	--	18.1	F1	0.17	Maximum normal load (7.5Vdc/2.0A)	
264Vac/60Hz	0.17	--	18.1	F1	0.17	Maximum normal load (7.5Vdc/2.0A)	
--	--	--	--	--	--	Test model: GT-81087-157.5-2.5-W2	

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
90Vac/50hz	0.36	--	19.4	F1	0.36	Maximum normal load (5.0Vdc/3.0A)
90Vac/60Hz	0.36	--	19.4	F1	0.36	Maximum normal load (5.0Vdc/3.0A)
100Vac/50hz	0.33	0.7	19.1	F1	0.33	Maximum normal load (5.0Vdc/3.0A)
100Vac/60Hz	0.33	0.7	19.2	F1	0.33	Maximum normal load (5.0Vdc/3.0A)
240Vac/50hz	0.19	0.7	18.9	F1	0.19	Maximum normal load (5.0Vdc/3.0A)
240Vac/60Hz	0.18	0.7	18.9	F1	0.18	Maximum normal load (5.0Vdc/3.0A)
254Vac/50hz	0.18	--	19.0	F1	0.18	Maximum normal load (5.0Vdc/3.0A)
254Vac/60Hz	0.18	--	19.0	F1	0.18	Maximum normal load (5.0Vdc/3.0A)
264Vac/50hz	0.17	--	19.0	F1	0.17	Maximum normal load (5.0Vdc/3.0A)
264Vac/60Hz	0.17	--	19.0	F1	0.17	Maximum normal load (5.0Vdc/3.0A)
--	--	--	--	--	--	Test model: GT-81087-2018-W2
90Vac/50hz	0.44	--	24.6	F1	0.44	Maximum normal load (18.0Vdc/1.14A)
90Vac/60Hz	0.45	--	24.5	F1	0.45	Maximum normal load (18.0Vdc/1.14A)
100Vac/50hz	0.41	0.7	24.3	F1	0.41	Maximum normal load (18.0Vdc/1.14A)
100Vac/60Hz	0.41	0.7	24.3	F1	0.41	Maximum normal load (18.0Vdc/1.14A)
240Vac/50hz	0.23	0.7	24.1	F1	0.23	Maximum normal load (18.0Vdc/1.14A)
240Vac/60Hz	0.23	0.7	24.1	F1	0.23	Maximum normal load (18.0Vdc/1.14A)
254Vac/50hz	0.22	--	24.2	F1	0.22	Maximum normal load (18.0Vdc/1.14A)
254Vac/60Hz	0.22	--	24.2	F1	0.22	Maximum normal load (18.0Vdc/1.14A)
264Vac/50hz	0.22	--	24.3	F1	0.22	Maximum normal load (18.0Vdc/1.14A)
264Vac/60Hz	0.22	--	24.3	F1	0.22	Maximum normal load (18.0Vdc/1.14A)
supplementary information:						
Maximum Normal Load is defined as follows: Unit connected to rated output and operated continuously.						

2.10.3 and 2.10.4	<b>TABLE: clearance and creepage distance measurements</b>					Pass
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional Insulation	--	--	--	--	--	--
L and N	< 420	< 250	1.8 (1.5*1.14)	2.9	2.5	2.9
Reinforced Insulation	--	--	--	--	--	--
Traces between U2 and C5	< 420 (344)	< 250 (201)	4.6 (4.0*1.14)	6.4	5.0	6.4
U2 primary and secondary	< 420 (344)	< 250 (201)	4.6 (4.0*1.14)	6.4	5.0	6.4
R9 and CY1 trace	< 420 (372)	< 250 (226)	4.6 (4.0*1.14)	5.6	5.0	5.6
CY1 primary and secondary	< 420 (372)	< 250 (226)	4.6 (4.0*1.14)	7.8	5.0	7.8
U2 secondary and T1 core	< 492	< 270	4.8 (4.2*1.14)	5.8	5.4	5.8
MOV1 and Enclosure	< 420	< 250	4.6 (4.0*1.14)	6.2	5.0	6.2
T1 core and HS1	< 524	< 290	5.1 (4.4*1.14)	11.5	6.2	11.5
T1 core and C7	< 524	< 290	5.1 (4.4*1.14)	10.2	6.2	10.2
T1 core and T1 secondary pin	< 524	< 290	5.1 (4.4*1.14)	5.2	6.2	7.3
CY1 and R5	< 420	< 250	5.1 (4.4*1.14)	6.1	5.0	6.1
Functional:						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
--	--	--	--	--	--	--
Basic/supplementary:						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
--	--	--	--	--	--	--
Reinforced:						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
--	--	--	--	--	--	--
supplementary information:						
- The CTI rating of PWB is material group IIIb (Cl. 2.10.4). - Separation Method between SELV and hazard circuit (Cl. 2.2.3.1) by double or reinforced insulation (Method 1). - This equipment is intended to be operated in						

altitudes up to 3000 m, so the clearance is multiplied by the altitude correction factor (1.14, linear interpolation used), specified in table A.2 of IEC 60664-1, 1992+A1: 2000. - Functional insulation shorted, see sub-clause 5.3.4. - One mylar sheet with 0.4 mm thick minimum is provided between T1 and secondary components. - Core of T1 is considered as Primary. - Glued components/parts: L/N terminal, C1, C3, LF1, CX1, NTC1, LF2, C7, C8, U3, mylar of T1 and L/N terminal.

[illegible]

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
supplementary information:		

4.5	<b>TABLE: Thermal requirements</b>					Pass
	Supply voltage (V)..... :	--	--	--	--	—
	Ambient Tmin (°C) ..... :	--	--	--	--	—
	Ambient Tmax (°C) ..... :	--	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				allowed Tmax (°C)
Model GT-81087-157.5-W2		--	--	--	--	--
90Vac/60hz		Horizontal. Test	Horizontal. Recalculated to Tma 45 degree C	Vertical . Test	Vertical . Recalculated to Tma 45 degree C	--
CX1 body		59.6	82.1	60.9	83.0	100
PWB near D2		60.4	82.9	61.3	83.4	130
C1 body		56.3	78.8	56.2	78.3	105
LF1 coil		64.7	87.2	64.0	86.1	105
C3 body		59.7	82.2	58.9	81.0	105
PWB near Q1		63.1	85.6	62.5	84.6	130
T1 core		65.7	88.2	63.9	86.0	110
T1 coil		68.2	90.7	67.3	89.4	110
U2 body		56.7	79.2	55.3	77.4	100
CY1 body		60.8	83.3	59.2	81.3	125
PWB near D7		69.0	91.5	67.2	89.3	130
C7 body		57.6	80.1	55.6	77.7	105
LF2 coil		51.7	74.2	49.5	71.6	105
Enclosure inside near T1		47.0	69.5	46.2	68.3	105
Enclosure outside near T1		41.8	64.3	40.7	62.8	95
Enclosure inside near plug		41.3	63.8	40.2	62.3	105
Enclosure outside near plug		36.3	58.8	36.0	58.1	95

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Clause	Requirement + Test			Result - Remark		Verdict

Ambient	22.5	45.0	22.9	45.0	--	--
264Vac/60hz	Horizontal. Test	Horizontal. Recalculated to Tma 45 degree C	Vertical . Test	Vertical . Recalculated to Tma 45 degree C	--	--
CX1 body	51.0	72.7	51.9	73.9	--	100
PWB near D2	48.6	70.3	49.5	71.5	--	130
C1 body	47.4	69.1	48.1	70.1	--	105
LF1 coil	55.7	77.4	56.2	78.2	--	105
C3 body	54.6	76.3	55.3	77.3	--	105
PWB near Q1	60.3	82.0	60.7	82.7	--	130
T1 core	67.4	89.1	66.7	88.7	--	110
T1 coil	68.8	90.5	69.2	91.2	--	110
U2 body	57.4	79.1	57.3	79.3	--	100
CY1 body	57.9	79.6	57.3	79.3	--	125
PWB near D7	68.8	90.5	67.6	89.6	--	130
C7 body	57.8	79.5	55.7	77.7	--	105
LF2 coil	51.3	73.0	50.0	72.0	--	105
Enclosure inside near T1	46.6	68.3	46.5	68.5	--	105
Enclosure outside near T1	38.7	60.4	40.5	62.5	--	95
Enclosure inside near plug	39.4	61.1	38.5	60.5	--	105
Enclosure outside near plug	34.1	55.8	34.2	56.2	--	95
Ambient	23.3	45.0	23.0	45.0	--	--
Model GT-81087-2018-7.8-W2	--	--	--	--	--	--
90Vac/60hz	Horizontal. Test	Horizontal. Recalculated to Tma 45 degree C	Vertical . Test	Vertical . Recalculated to Tma 45 degree C	--	--
CX1 body	71.3	93.9	73.3	96.4	--	100
PWB near D2	70.9	93.5	72.5	95.6	--	130
C1 body	67.8	90.4	70.2	93.3	--	105
LF1 coil	71.7	94.3	73.4	96.5	--	105
C3 body	64.5	87.1	64.5	87.6	--	105
PWB near Q1	79.1	101.7	78.9	102.0	--	130
T1 core	66.4	89.0	65.6	88.7	--	110
T1 coil	76.4	99.0	75.8	98.9	--	110
U2 body	58.9	81.5	58.2	81.3	--	100
CY1 body	68.8	91.4	68.1	91.2	--	125
PWB near D7	71.5	94.1	69.3	92.4	--	130
C7 body	62.2	84.8	59.7	82.8	--	105

IEC 60950-1						
Clause	Requirement + Test		Result - Remark			Verdict
LF2 coil	55.1	77.7	52.9	76.0	--	105
Enclosure inside near T1	52.5	75.1	51.5	74.6	--	105
Enclosure outside near T1	43.8	66.4	43.3	66.4	--	95
Enclosure inside near plug	43.5	66.1	44.1	67.2	--	105
Enclosure outside near plug	38.1	60.7	39.7	62.8	--	95
Ambient	22.4	45.0	21.9	45.0	--	--
264Vac/60hz	Horizo ntal. Test	Horizo ntal. Recalc ulated to Tma 45 degree C	Vertical . Test	Vertical . Recalc ulated to Tma 45 degree C	--	--
CX1 body	61.9	84.7	61.9	84.7	--	100
PWB near D2	56.8	79.6	56.7	79.5	--	130
C1 body	56.9	79.7	56.7	79.5	--	105
LF1 coil	58.6	81.4	58.5	81.3	--	105
C3 body	59.2	82.0	59.2	82.0	--	105
PWB near Q1	78.9	101.7	78.9	101.7	--	130
T1 core	69.3	92.1	69.5	92.3	--	110
T1 coil	79.3	102.1	79.8	102.6	--	110
U2 body	61.9	84.7	61.9	84.7	--	100
CY1 body	67.7	90.5	67.6	90.4	--	125
PWB near D7	72.0	94.8	72.0	94.8	--	130
C7 body	61.9	84.7	62.0	84.8	--	105
LF2 coil	55.2	78.0	55.4	78.2	--	105
Enclosure inside near T1	53.2	76.0	53.3	76.1	--	105
Enclosure outside near T1	45.0	67.8	45.1	67.9	--	95
Enclosure inside near plug	41.9	64.7	42.1	64.9	--	105
Enclosure outside near plug	37.5	60.3	37.7	60.5	--	95
Ambient	22.2	45.0	22.2	45.0	--	--
Model GT-81087-157.5-2.5-W2	--	--	--	--	--	--
90Vac/60hz	Horizo ntal. Test	Horizo ntal. Recalc ulated to Tma 45 degree C	Vertical . Test	Vertical . Recalc ulated to Tma 45 degree C	--	--
CX1 body	60.2	82.9	62.4	84.6	--	100
PWB near D2	67.0	89.7	68.1	90.3	--	130
C1 body	56.0	78.7	57.3	79.5	--	105
LF1 coil	62.9	85.6	62.7	84.9	--	105
C3 body	61.7	84.4	62.2	84.4	--	105
PWB near Q1	65.0	87.7	65.3	87.5	--	130
T1 core	66.1	88.8	66.1	88.3	--	110



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Clause	Requirement + Test			Result - Remark		Verdict
T1 coil	70.6	93.3	70.9	93.1	--	110
U2 body	59.5	82.2	58.8	81.0	--	100
CY1 body	68.1	90.8	65.7	87.9	--	125
PWB near D7	79.1	101.8	78.1	100.3	--	130
C7 body	62.7	85.4	61.9	84.1	--	105
LF2 coil	54.9	77.6	54.2	76.4	--	105
Enclosure inside near T1	50.4	73.1	49.1	71.3	--	105
Enclosure outside near T1	41.3	64.0	41.6	63.8	--	95
Enclosure inside near plug	43.0	65.7	41.5	63.7	--	105
Enclosure outside near plug	38.4	61.1	37.8	60.0	--	95
Ambient	22.3	45.0	22.8	45.0	--	--
264Vac/60hz	Horizo ntal. Test	Horizo ntal. Recalc ulated to Tma 45 degree C	Vertical . Test	Vertical . Recalc ulated to Tma 45 degree C	--	--
CX1 body	52.3	75.3	54.9	77.7	--	100
PWB near D2	54.3	77.3	56.0	78.8	--	130
C1 body	47.8	70.8	50.3	73.1	--	105
LF1 coil	54.2	77.2	55.5	78.3	--	105
C3 body	57.6	80.6	59.7	82.5	--	105
PWB near Q1	64.3	87.3	65.2	88.0	--	130
T1 core	68.8	91.8	70.1	92.9	--	110
T1 coil	73.2	96.2	74.6	97.4	--	110
U2 body	62.0	85.0	61.3	84.1	--	100
CY1 body	66.3	89.3	65.5	88.3	--	125
PWB near D7	79.6	102.6	78.9	101.7	--	130
C7 body	63.4	86.4	63.1	85.9	--	105
LF2 coil	55.8	78.8	55.2	78.0	--	105
Enclosure inside near T1	50.6	73.6	52.1	74.9	--	105
Enclosure outside near T1	39.9	62.9	44.3	67.1	--	95
Enclosure inside near plug	40.8	63.8	39.6	62.4	--	105
Enclosure outside near plug	36.3	59.3	35.8	58.6	--	95
Ambient	22.0	45.0	22.2	45.0	--	--
Model GT-81087-2018-W2	--	--	--	--	--	--
90Vac/60hz	Horizo ntal. Test	Horizo ntal. Recalc ulated to Tma 45 degree C	Vertical . Test	Vertical . Recalc ulated to Tma 45 degree C	--	--
CX1 body	72.7	94.9	73.0	95.7	--	100
PWB near D2	83.2	105.4	82.9	105.6	--	130

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Clause	Requirement + Test			Result - Remark			Verdict
C1 body	69.7	91.9	69.7	92.4	--		105
LF1 coil	77.1	99.3	75.3	98.0	--		105
C3 body	65.3	87.5	65.0	87.7	--		105
PWB near Q1	79.3	101.5	78.2	100.9	--		130
T1 core	76.5	98.7	75.0	97.7	--		110
T1 coil	80.0	102.2	78.5	101.2	--		110
U2 body	64.6	86.8	62.9	85.6	--		100
CY1 body	69.7	91.9	67.4	90.1	--		125
PWB near D7	78.2	100.4	76.7	99.4	--		130
C7 body	60.4	82.6	59.3	82.0	--		105
LF2 coil	54.9	77.1	53.5	76.2	--		105
Enclosure inside near T1	52.6	74.8	52.6	75.3	--		105
Enclosure outside near T1	40.7	62.9	43.2	65.9	--		95
Enclosure inside near plug	46.3	68.5	44.3	67.0	--		105
Enclosure outside near plug	42.7	64.9	41.1	63.8	--		95
Ambient	22.8	45.0	22.3	45.0	--		--
264Vac/60hz	Horizo ntal. Test	Horizo ntal. Recalc ulated to Tma 45 degree C	Vertical Test	Vertical Recalc ulated to Tma 45 degree C	--		--
CX1 body	61.2	84.1	61.5	84.5	--		100
PWB near D2	65.7	88.6	65.9	88.9	--		130
C1 body	55.5	78.4	56.4	79.4	--		105
LF1 coil	62.3	85.2	61.9	84.9	--		105
C3 body	63.1	86.0	62.8	85.8	--		105
PWB near Q1	72.5	95.4	72.4	95.4	--		130
T1 core	81.9	104.8	81.9	104.9	--		110
T1 coil	82.1	105.0	82.2	105.2	--		110
U2 body	67.7	90.6	66.8	89.8	--		100
CY1 body	69.7	92.6	68.6	91.6	--		125
PWB near D7	86.2	109.1	85.3	108.3	--		130
C7 body	65.4	88.3	65.2	88.2	--		105
LF2 coil	58.8	81.7	57.8	80.8	--		105
Enclosure inside near T1	53.8	76.7	55.7	78.7	--		105
Enclosure outside near T1	41.1	64.0	44.1	67.1	--		95
Enclosure inside near plug	42.4	65.3	41.1	64.1	--		105
Enclosure outside near plug	39.1	62.0	38.1	61.1	--		95
Ambient	22.1	45.0	22.0	45.0	--		--
temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	allowed T <sub>max</sub> (°C)	insulation class
--	--	--	--	--	--	--	--

4.7	TABLE: resistance to fire					Pass
part	manufacturer of material	type of material	thickness (mm)	flammability class	Evidence	
--	--	--	--	--	--	
supplementary information:						
-- See appended table 1.5.1 for details.						
-- All materials are determined to have adequate resistance to fire via relevant UL standards.						

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	<b>TABLE: electric strength tests, impulse tests and voltage surge tests</b>			Pass
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Unit		--	--	--
Primary to Secondary		DC	4242	No
Primary to Enclosure		DC	4242	No
Transformer		--	--	--
Primary to Secondary		AC	3000	No
Core to Secondary		AC	3000	No
Triple insulated wire		AC	3000	No
Thin Sheet Material		--	--	--
One layer of insulation tape		AC	3000	No
Mylar		AC	3000	No
Functional:				
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
--		--	--	--
Basic/supplementary:				
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
--		--	--	--
Reinforced:				
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
--		--	--	--
supplementary information:				
<ul style="list-style-type: none"> <li>- All electrical strength tests duration last at 60 seconds.</li> <li>- All applied test voltage for electrical strength (in Table 5B) are based on the working voltage measured on transformer T1, 290 Vrms, 524 Vpk.</li> <li>- Unit: Electrical Strength test is conducted while the equipment is still a well-heated condition immediately following the test in 4.5.1.</li> <li>- Transformer: Electrical Strength test is tested separately outside the equipment. All sources of triple insulated wire are tested. See table 1.5.1 for details of triple insulated wire.</li> <li>- The sheet material for SUPPLEMENTARY or REINFORCED INSULATION, electrical strength test is separately outside the equipment room temperature.</li> </ul>				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

- See table 1.5.1 for details of insulation tape and mylar.

5.3	<b>TABLE: fault condition tests</b>					Pass
	ambient temperature (°C) .....				25 degree C if not specified	—
	Power source for EUT: Manufacturer, model/type, output rating .....				GlobTek, GT-81087-WWVV-X.X-W2	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
--	--	--	--	--	--	Test model: GT-81087-2018-7.8-W2
D7	Short	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
U2 Pin1-2	Short	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
U2 Pin3-4	Short	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
U2 Pin1	Open	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
U2 Pin4	Open	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
R9 (A, B, C)	Short	240	1 sec	F1	0	Fuse open immediately, No hazard, no damage, NB, NC, NT, CD (F1)
Q1 PinG-S	Short	240	10 mins	F1	0	Fuse open immediately, No hazard, no damage, NB, NC, NT, CD (F1)
Q1 PinG-D	Short	240	1 sec	F1	0	Fuse open immediately, No hazard, no damage, NB, NC, NT, CD (F1)
Q1 PinD-S	Short	240	10 mins	F1	0	Fuse open immediately, No hazard, no damage, NB, NC, NT, CD (F1)
U1 Pin3-5	Short	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
U1 Pin3-6	Short	240	10 mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
C3	Short	240	1S	F1	0	Fuse open immediately, No

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Clause	Requirement + Test	Result - Remark	Verdict

						hazard, no damage, NB, NC, NT, CD (F1)
C1	Short	240	1S	F1	0	Fuse open immediately, No hazard, no damage, NB, NC, NT, CD (F1)
D3	Short	240	1S	F1	0	Fuse open immediately, No hazard, no damage, NB, NC, NT, CD (F1)
T1 Pin3-4	Short	240	10mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
T1 PinA-B	Short	240	10mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
T1 PinA-B after D7	Overload	240	8hrs	F1	0.25-0.31-0.03	Temperature stable while loaded to 0.8 A. Unit shut down at loaded 0.9A. The maximum temperature of T1 coil / Ambient: 94.0 / 27.6 degree C. No damage, no hazard. NB, NC, NT.
Output terminal +/-	Short	240	10mins	F1	0.03	Unit shutdown immediately, No hazard, no damage, NB, NC, NT
Output terminal +/-	Overload	240	7hrs	F1	0.25-0.3-0.03	Temperature stable while loaded to 2.6 A. Unit shut down at loaded 2.7A. The maximum temperature of T1 coil / Ambient: 85.0 / 23.5 degree C. No damage, no hazard. NB, NC, NT.
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T1 PinA-B after D5	Overload	240	9.5hrs	F1	0.26-0.32-0.03	Temperature stable while loaded to 0.56 A. Unit shut down at loaded 0.66A. The maximum temperature of T1 coil / Ambient: 104.0 / 22.8 degree C. No damage, no hazard. NB, NC, NT.
Output terminal +/-	Overload	240	8.5hrs	F1	0.23-0.3-0.03	Temperature stable while loaded to 1.6 A. Unit shut down at loaded 1.7A. The maximum temperature of T1 coil / Ambient: 91.6 / 22.8 degree C. No

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Clause	Requirement + Test	Result - Remark	Verdict

						damage, no hazard. NB, NC, NT.
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T1 PinA-B after D5	Overload	240	6.5hrs	F1	0.21-0.25-0.03	Temperature stable while loaded to 1.0 A. Unit shut down at loaded 1.1A. The maximum temperature of T1 coil / Ambient: 79.1 / 21.6 degree C. No damage, no hazard. NB, NC, NT.
Output terminal +/-	Overload	240	8.5hrs	F1	0.18-0.27-0.03	Temperature stable while loaded to 3.0 A. Unit shut down at loaded 3.1A. The maximum temperature of T1 coil / Ambient: 86.6 / 22.8 degree C. No damage, no hazard. NB, NC, NT.
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T1 PinA-B after D5	Overload	240	6.5hrs	F1	0.22-0.26-0.03	Temperature stable while loaded to 1.4 A. Unit shut down at loaded 1.5A. The maximum temperature of T1 coil / Ambient: 86.3 / 22.7 degree C. No damage, no hazard. NB, NC, NT.
Output terminal +/-	Overload	240	9hrs	F1	0.18-0.27-0.03	Temperature stable while loaded to 4.4 A. Unit shut down at loaded 4.5A. The maximum temperature of T1 coil / Ambient: 100.0 / 23.5 degree C. No damage, no hazard. NB, NC, NT.

supplementary information:

The following Electrical Strength (E.S) potentials were applied after fault condition were indicated for one minute: Plug (L, N) / Secondary: 4242 Vdc Plug (L, N) / Enclosure with foil: 4242 Vdc Fuse used during test: type 877 by Littelfuse. Results Key: IP = Internal protection operated (component indicated) CT = Constant temperatures were obtained T CD = Components damaged (damaged components indicated) NB = No indication of dielectric breakdown NC = Cheesecloth remained intact NT = Tissue paper remained intact