

## **COVER PAGE FOR TEST REPORT**

Product Category:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
Product Category CCN:	QQGQ, QQGQ7
Test Procedure:	Listing
Product:	SWITCHING POWER ADAPTER
Model/Type Reference:	GT-41069PWWVV-X.X-T3YZ
	Where WW can be 01-90 for output power, VV can be 12 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
Rating(s):	- Input: 100-240 Vac, 1.5 A, 50-60 Hz.  - Output: 12 to 24 Vdc, max. 90 W for GT-41069PWWVV-X.X-T3YZ
Standards:	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Applicant Name and Address:	GLOBTEK INC 186 VETERANS DR NORTHVALE NJ 07647 UNITED STATES
This Report includes the following parts, in addition to this cover page: <ol style="list-style-type: none"><li>1. Specific Technical Criteria</li><li>2. Critical Components</li><li>3. Enclosures</li></ol>	

Issue Date: 2008-10-28  
Amendment 3 2009-08-12

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Report Reference #

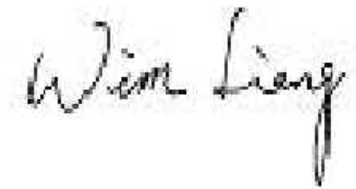
E170507-A26-UL-1

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

Test Report By:



Wim Liang  
Project Engineer  
UL-CCIC Company Limited

Reviewed By:



Paul Ip  
Senior Project Engineer  
UL International Limited

## **SPECIFIC TECHNICAL CRITERIA**

<b>UL 60950-1, First Edition</b> <b>Information technology equipment - Safety-</b> <b>Part 1: General Requirements</b>	
Report Reference No .....	E170507-A26-UL-1
Compiled by .....	Wim Liang
Reviewed by .....	Paul Ip
Date of issue .....	2008-10-28
Standards .....	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure .....	Listing
Non-standard test method .....	N/A
<b>Test item</b> description .....	SWITCHING POWER ADAPTER
Trademark .....	None
Model and/or type reference .....	GT-41069PWWVV-X.X-T3YZ
	Where WW can be 01-90 for output power, VV can be 12 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
Rating(s) .....	- Input: 100-240 Vac, 1.5 A, 50-60 Hz.  - Output: 12 to 24 Vdc, max. 90 W for GT-41069PWWVV-X.X-T3YZ

### **Particulars: test item vs. test requirements**

Equipment mobility .....	movable
Operating condition .....	continuous
Mains supply tolerance (%) .....	+10%, -10%
Tested for IT power systems .....	No
IT testing, phase-phase voltage (V) .....	N/A
Class of equipment .....	Special Application - Functional Earthing
Mass of equipment (kg) .....	0.49 for GT-41069P9012-T Z , GT-41069PWWVV-X.X-T3 Z; 0.46 for GT- 41069P9012-T3AZ, GT-41069PWWVV-X.X-T3AZ.
Protection against ingress of water .....	IP X0

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**Possible test case verdicts:**

- test case does not apply to the test object .....: N / A
- test object does meet the requirement .....: Pass
- test object does not meet the requirement .....: Fail (acceptable only if a corresponding, less stringent national requirement is "Pass")

**General remarks:**

- "(see Enclosure #)" refers to additional information appended to the Test Report
- "(see appended table)" refers to a table appended to the Test Report
- Throughout the Test Report a point is used as the decimal separator

<b>GENERAL PRODUCT INFORMATION:</b>	
CA1.0	<b>Report Summary</b>
CA1.1	N/A
CB1.0	<b>Product Description</b>
CB1.1	Electronic components mounted on PWB and housed in a plastic enclosure.
CC1.0	<b>Model Differences</b>
CC1.1	Models GT-41069PWWVV-X.X-T3YZ are identical to each other except for transformer, output rating, R43 rating, R46 rating, inlet type and model designation.  Where WW can be 01-90 for output power, VV can be 12 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
CD1.0	<b>Additional Information</b>
CD1.1	Issue 1, Amendment No. 2: Add LPS test for Models GT-41069P9012-T3YZ and GT-41069PWW24-X.X-T3YZ.
CE1.0	<b>Technical Considerations</b>
CE1.2	The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C
CE1.3	The means of connection to the mains supply is: Pluggable A, Detachable power cord,
CE1.4	The product is intended for use on the following power systems: TN
CE1.5	The equipment disconnect device is considered to be: Appliance inlet,
CE1.9	The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output for Models GT-41069P9012-T3YZ and GT-41069PWW24-X.X-T3YZ.
CE1.14	The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
CE1.16	The equipment employs Functional Earthing per 2.6.2. As anticipated by the NOTE for 1.2.4, it does not conform to one of the common Classes (I, II, or III). The following insulation is provided between the primary and accessible dead metal parts and circuits: Reinforced, Double

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	<b>TABLE: list of critical components</b>					Pass
Object/part No.	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Label	Various	Various	70 degree C, if maximum surface temperature not specified.	PGDQ2 or PGJ12	UL	
Enclosure	--	--	Measured minimum thick 2.75 mm. Two halves construction, secured together by ultrasonic welding. See enclosure 4-01 and 4-02 for dimension details.	--	--	
- Enclosure material	SABIC INNOVATIVE Plastics China Ltd.	SE1X	V-1, 105 degree C, minimum 1.5 mm thick.	QMFZ2	UL	
Power supply cord (optional)	Various	Various	Detachable, limited to between 1.5 and 4.5 m long, 18 AWG, type SVT or SPT-2, minimum 125 Vac, 10 A, with NEMA 5-15P or 250 Vac, 10 A. The Other end in an appliance coupler (with cord-connected body, grounding type, suitable for cord size, rating not less than that of attachment plug)	ZJCZ and RTRT and AXUT, or ELBZ	UL	
Output cord	Various	Various	External used wire, Jacketed. FEP, PTFE, PVC, TFE, Neoprene, Polyimide or marked VW-1; FT-1, max. 3.05 m length, 80 degree C, min. 300 V, min. 22AWG. Mechanically secured and soldered to PWB.	ZJCZ, AVL V2	UL	
Strain Relief for Output	Various	Various	Min V-1, plastic bushing	QMFZ2	UL	4-03

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Clause	Requirement + Test	Result - Remark	Verdict

cord			integrally molded on output cord, see enclosure 4-03 for details			
PWB	Various	Various	Rated V-1 minimum, 130 degree C minimum	ZPMV2	UL	5-01
Appliance Inlet	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-02	2.5A, 250V, 70 degree C minimum	AXUT2	UL	
Appliance Inlet (Alternate)	TECX-UNIONS TECHNOLOGY CORP	TU-301 Series	15A, 250V, 105 degree C minimum	AXUT2	UL	
Fuse (FS1)	WALTER ELECTRONIC CO LTD	ICP	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	DAS & SONS INTERNATIONAL LTD	385T1315	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	Conquer Electronics Co Ltd	MST	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	SAVE FUSETECH INC	SS-5	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	Various	Various	Listed, T 3.15A, 250Vac	JDYX	UL	
Varistor (MOV1) (Optional)	Various	Various	Rated minimum 300 Vac, minimum 385 Vdc.	XUHT2	UL	
Line Choke (LF1) (Optional)	Various	NF00081	Varnished, see enclosure 4-04 for details, 130 degree C minimum.	--	--	4-04
- Core	--	--	Ferrite, measured OD 12 mm by 5 mm ID by 3.5 mm width	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
- Triple Insulated Winding Wire	Furukawa Electric Co., Ltd.	TEX-E	Rated 130 degree C.	OBJT2	UL	
- Tape	Various	Various	Rated 130 degree C.	OANZ2	UL	

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Clause	Requirement + Test	Result - Remark	Verdict

- Varnish	Various	Various	Rated minimum 130 degree C.	OBOR2	UL	
X capacitor (CX1) (optional)	Ultra Tech Xiphi Enterprise Co., Ltd	HQX	Max. 0.47 uF, min. 250 Vac, 100 degree C, Class X1 or X2 type	FOWX2	UL	
X capacitor (CX1) (optional) (Alternate)	TENTA ELECTRIC INDUSTRIAL CO LTD	MEX	Max. 0.47 uF, min. 250 Vac, 100 degree C, Class X1 or X2 type	FOWX2	UL	
X capacitor (CX1) (optional) (Alternate)	CHENG TUNG INDUSTRIAL CO LTD	CTX	Max. 0.47 uF, min. 250 Vac, 100 degree C, Class X1 or X2 type	FOWX2	UL	
Line Choke (LF2) (Optional)	Various	NF00083	See enclosure 4-05 for details, 130 degree C minimum.	--	--	4-05
- Core	--	--	Ferrite, measured OD 21.5mm by 6 mm ID by 11 mm width	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
Bleeder resistor (RS1, RS2)	--	--	Each rated 1M ohm, 1/4W SMD type, connected in series	--	--	
Bridge Diode (BD1)	--	--	Rated 4A, 600 V minimum	--	--	
Storage Capacitor (C4)	--	--	Rated 400 V, maximum 120uF, minimum 105 degree C, provided with integral pressure relief	--	--	
PFC Choke (L1)	Various	RC00136	Varnished, see enclosure 4-06 for details, 130 degree C minimum.	--	--	4-06
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150degree C, Phenolic, thickness 0.8mm minimum	QMFZ2	UL	
- Bobbin (Alternate)	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150degree C, Phenolic, thickness 0.71mm minimum	QMFZ2	UL	
- Core	--	--	Ferrite, overall 32.0 by 19.5 by 30.0 mm..	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
- Tape	Various	Various	Rated 130 degree C.	OANZ2	UL	



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Clause	Requirement + Test	Result - Remark	Verdict

- Varnish	Various	Various	Rated minimum 130 degree C.	OBOR2	UL	
Line Choke (L2)	Various	RC00134	See enclosure 4-07 for details, 130 degree C minimum.	--	--	4-07
- Core	--	--	Ferrite, measured OD 21.5mm by 6 mm ID by 9 mm width	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
Tubing/Sleeving	Great Holding Industrial Co. Ltd.	TFL, TFS, TFT	Rated 200 degree C	YDPU2	UL	
Heat Sink (HS1) (Primary)	--	--	Aluminum material, see enclosure 4-08 for details	--	--	4-08
Heat Sink (HS1) (Primary) (Alternate)	--	--	Aluminum material, see enclosure 4-09 for details	--	--	4-09
Heat Sink (HS2) (Secondary)	--	--	Aluminum material, see enclosure 4-10 for details	--	--	4-10
Heat Sink (Cover) (Primary)	--	--	Aluminum material, see enclosure 4-11 for details	--	--	4-11
Heat Sink (Chassis) (Primary)	--	--	Aluminum material, see enclosure 4-12 for details	--	--	4-12
Tubing (For HS1)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; rated minimum 125 degree C, minimum 300 V, see enclosure 4-08 and 4-09 for details, thickness 0.4 mm minimum.	YDPU2	UL	
Tubing (For HS2)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; rated minimum 125 degree C, minimum 300 V, see enclosure 4-10 for details, thickness 0.4 mm minimum.	YDPU2	UL	
Transformer (T1) (For Models with output 12V	GLOBTEK	XF00500	See enclosure 4-15 for details	--	--	4-15

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Clause	Requirement + Test	Result - Remark	Verdict

to 15.9V.)						
Transformer (T1) (For Models with output 16V-24V.)	GLOBTEK	XF00501	See enclosure 4-16 for details	--	--	4-16
- Insulation system for Transformer (T1)	ENG Electric Co., Ltd.	ENG130-1	Class B, 130 degree C	OBJY2	UL	
- Core	--	--	EE type, Ferrite, overall each 28.5mm by 28.5 mm by 8 mm	--	--	
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150degree C, Phenolic, thickness 0.8mm minimum	QMFZ2	UL	
- Bobbin (Alternate)	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150degree C, Phenolic, thickness 0.71mm minimum	QMFZ2	UL	
- Tubing/Sleeving	Great Holding Industrial Co. Ltd.	TFL, TFS, TFT	Rated 200 degree C	YDPU2	UL	
- Varnish	John C. Dolph Co.	BC-346A	Rated minimum 200 degree C.	OBOR2	UL	
- Varnish (Alternate)	P D George/Viking	V1630FS	Rated minimum 130 degree C.	OBOR2	UL	
- Insulation Tape	3M Company	1350T-1	130 degree C.	OANZ2	UL	
- Insulation Tape (Alternate)	3M Company	1350F(#)	130 degree C.	OANZ2	UL	
- Insulation Tape (Alternate)	3M Company	44	130 degree C.	OANZ2	UL	
- Insulation Tape (Alternate)	Bondtec Pacific Co., Ltd.	370S	130 degree C.	OANZ2	UL	
- Triple Insulated Winding Wire	Great Leoflon Industrial Co., Ltd.	TRW(B)	Rated 130 degree C.	OBJT2	UL	
Semiconductor (US1, US2, US3)	--	--	Rated 0.7A, minimum 650 V.	--	--	
Bridging -Capacitor (CY1)	TDK Corp	CD	Rated maximum 2200 pF, minimum 250 Vac, 125 degree C, Class Y1	FOWX2	UL	
Bridging -Capacitor (CY1) (Alternate)	Success Electronics Co Ltd	SE	Rated maximum 2200 pF, minimum 250 Vac, 125 degree	FOWX2	UL	

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Clause	Requirement + Test	Result - Remark	Verdict

			C, Class Y1			
Bridging -Capacitor (CY1) (Alternate)	WALSIN TECHNOLOGY CORP / Pan Overseas	AH	Rated maximum 2200 pF, minimum 250 Vac, 125 degree C, Class Y1	FOWX2	UL	
Transistor (Q1, Q2)	--	--	Rated 10A, minimum 600 V.	--	--	
Optical Isolator (U1)	Sharp Corp., Electronic Components Group	PC817	Minimum 3000 Vac isolation. Double protection.	FPQU2	UL	
Optical Isolator (U1) (Alternate)	Bright LED Electronics Corp.	BPC-817xxxxxx	Minimum 3000 Vac isolation. Double protection.	FPQU2	UL	
Optical Isolator (U1) (Alternate)	Lite-On Technology Corp.	LTV-817	Minimum 3000 Vac isolation. Double protection.	FPQU2	UL	
Internal Plastic Part Materials	Various	Various	Rated V-2 minimum.	QMFZ2	UL	
Internal Wiring (Primary)	Various	Various	FEP, PTFE, PVC, TFE, neoprene, Polyimide or marked VW-1; min. 300 V, min. 80 degree C.	AVLV2	UL	
Current sense resistor (R1)	--	--	0.27 ohm, 2W.	--	--	
Current sense resistor (R2)	--	--	0.24 ohm, 2W.	--	--	
Glue	Various	Various	V-2 min. Components (LF1, LF2, L1, L2, C4, R1, R2, Output cord) need	QMFZ2	UL	
- Tubing for Functional Earthing	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; rated minimum 125 degree C, minimum 300 V, thickness 0.4 mm minimum.	YDPU2	UL	
Insulation Tape (between C10 and Heat Sink (Cover))	3M Company	1350T-1	130 degree C.	OANZ2	UL	

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Clause	Requirement + Test	Result - Remark	Verdict

Insulation Tape (between C10 and Heat Sink (Cover)) (Alternate)	Bondtec Pacific Co., Ltd.	370S	130 degree C.	OANZ2	UL	
Insulation sheet (between PWB and Appliance Inlet)	Various	Various	V-2 min, see Enclosure 4-13 for details	QMFZ2	UL	4-13
Insulation sheet for Heat Sink (Chassis)	FORMEX,DIV OF IL TOOL WORKS INC,FRMRLY FASTEX,DIV OF IL TOOL WORKS INC	FORMEX GK	V-2 min, thickness 0.4 mm minimum, see Enclosure 4-14 for details	QMFZ2	UL	4-14

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## **Enclosure**

## **Miscellaneous**

Supplement Id	Description
7-01	Model difference

90W 系列差异表(GLOBTEK)

Model	Rated voltage	Rated current	RS16	RS20	RS39,40	RS34	RS33	RS43	RS46
12V products	12V	7.5A	43K $\Omega$	180 $\Omega$	47 $\Omega$	4.7 $\Omega$	47K $\Omega$	18K $\Omega$	4.64 K $\Omega$
15.9V products	15.9V	5.66A	47K $\Omega$	180 $\Omega$	47 $\Omega$	10 $\Omega$	82K $\Omega$	18K $\Omega$	3.3K $\Omega$
16V products	16V	5.63A	47K $\Omega$	180 $\Omega$	47 $\Omega$	2 $\Omega$	56K $\Omega$	16.5K $\Omega$	3K $\Omega$
18.9V products	18.9V	4.76A	43K $\Omega$	180 $\Omega$	47 $\Omega$	10 $\Omega$	68K $\Omega$	20K $\Omega$	3K $\Omega$
19V products	19V	4.74A	43K $\Omega$	180 $\Omega$	47 $\Omega$	10 $\Omega$	68K $\Omega$	20K $\Omega$	3K $\Omega$
24V products	24V	3.75A	43K $\Omega$	100 $\Omega$	100 $\Omega$	22 $\Omega$	75K $\Omega$	38.3K $\Omega$	4.42K $\Omega$
Model No	Rated voltage	Rated current	RS48	RS51	RS62	RS63	C10,11	Q3	Q4
12V products	12V	7.5A	910 $\Omega$	10K $\Omega$	10 $\Omega$	15 $\Omega$	1500uF/25V	98A/75V	98A/75V
15.9V products	15.9V	5.66A	680 $\Omega$	10K $\Omega$	4.7 $\Omega$	47 $\Omega$	1500uF/25V	open	98A/75V
16V products	16V	5.63A	680 $\Omega$	10K $\Omega$	10 $\Omega$	15 $\Omega$	1500uF/25V	open	60A/100V
18.9V products	18.9V	4.76A	560 $\Omega$	10K $\Omega$	10 $\Omega$	15 $\Omega$	1500uF/25V	open	60A/100V
19V products	19V	4.74A	560 $\Omega$	10K $\Omega$	10 $\Omega$	15 $\Omega$	1500uF/25V	open	60A/100V
24V products	24V	3.75A	510 $\Omega$	20K $\Omega$	10 $\Omega$	15 $\Omega$	1000uF/35V	open	60A/100V
Model No	Rated voltage	Rated current	T1						
12V products	12V	7.5A	XF00500						
15.9V products	15.9V	5.66A	XF00500						
16V products	16V	5.625A	XF00501						
18.9V products	18.9V	4.76A	XF00501						
19V products	19V	4.74A	XF00501						
24V products	24V	3.75A	XF00501						

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## **Enclosure**

### **Test Record**

Description
Test Record 1
Construction Review Datasheets
Test Record 2
Construction Review Datasheets
Test Record 3
CRD
Datasheet
Test Record 4
CRD

## Test Record No. 4

- Representing production samples of the Switching Power Adaptor, Models GT-41069PWWVV-X.X-T3YZ, were submitted the manufacturer for examination and testing.
- Models of 12.1V-18.9V were added with same construction except for output voltage rating.
- No tests were considered necessary due to previous investigation.
- The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the U.S. and Canadian (Bi-National) Standard for Safety of Information Technology Equipment-Safety-Part1: General Requirements, CAN/CSA-C22.2 No. 60950-1-03, First Edition, including revisions through revision date July 7, 2006, UL 60950-1, First Edition, including revisions through revision date October 31, 2007, and, therefore, such products are judged eligible to bear UL's Mark as described of this Report.

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

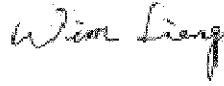


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Compliance Review  
Conducted by:

Wim Liang



2009-8-11

Printed Name

Signature

Date

**CONSTRUCTION COMPLIANCE REVIEW RECORD****SAMPLE IDENTIFICATION:**

Sample Card #	Date Received	Sample #	Manufacturer, Product Identification and Ratings
N/A	N/A	N/A	No sample required due to no construction change.

**MEASUREMENT INSTRUMENT INFORMATION:** (Ex. Micrometer, Calipers, Comparator)

Inst. ID #	Instrument Type	Function/Range	Last Cal. Date	Next Cal. Date
N/A	N/A	N/A	N/A	N/A

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID # below corresponds to the Inst. ID # above.

Inst. ID #	Make / Model / Serial Number / Asset No.
N/A	N/A

**CONSTRUCTION COMPLIANCE REVIEW:**

The sample was reviewed for compliance with the construction requirements in the standard(s) indicated below and a complete record including measurements to support compliance with those requirements is detailed in Report Reference Number E170507-A26

Standard(s): ☒ CSA C22.2 No. 60950-1-03 1st Ed. 2006-07  
☒ UL60950-1 1st Ed. 2007-10-31  
☐ UL60950-1 1st Ed. 2007-10-31; CSA C22.2 No. 60950-1-03 1st Ed. 2006-07; IEC 60950-1:2001, First Edition

## **SPECIFIC TECHNICAL CRITERIA**

<b>UL 60950-1, First Edition Information technology equipment - Safety- Part 1: General Requirements</b>	
Report Reference No .....	E170507-A26-UL-1
Compiled by .....	Richard Yue
Reviewed by .....	Wei Chen
Date of issue .....	2008-10-28
Standards .....	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure .....	Listing
Non-standard test method .....	N/A
<b>Test item</b> description .....	SWITCHING POWER ADAPTER
Trademark .....	None
Model and/or type reference .....	GT-41069P9012-T3YZ GT-41069PWWVV-X.X-T3YZ  Where WW can be 01-90 for output power, VV can be 19 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
Rating(s) .....	- Input: 100-240 Vac, 1.5 A, 50-60 Hz.  - Output: 12 Vdc, 7.5 A for GT-41069P9012-T3YZ 19 to 24 Vdc, max. 90 W for GT-41069PWWVV-X.X-T3YZ

### Particulars: test item vs. test requirements

Equipment mobility .....	: movable
Operating condition .....	: continuous
Mains supply tolerance (%) .....	: +10%, -10%
Tested for IT power systems .....	: No
IT testing, phase-phase voltage (V) .....	: N/A
Class of equipment .....	: Special Application - Functional Earthing
Mass of equipment (kg) .....	: 0.49 for GT-41069P9012-T Z , GT-41069PWWVV-X.X-T3 Z; 0.46 for GT-41069P9012-T3AZ, GT-41069PWWVV-X.X-T3AZ.
Protection against ingress of water .....	: IP X0

### Possible test case verdicts:

- |   |  |
|---|--|
| - test case does not apply to the test object ..... | N / A  |
| - test object does meet the requirement .....       | Pass   |
| - test object does not meet the requirement .....   | Fail (acceptable only if a corresponding, less stringent national requirement is "Pass") |

**General remarks:**

- "(see Enclosure #)" refers to additional information appended to the Test Report
- "(see appended table)" refers to a table appended to the Test Report
- Throughout the Test Report a point is used as the decimal separator

<b>GENERAL PRODUCT INFORMATION:</b>	
CA1.0	<b>Report Summary</b>
CA1.1	N/A
CB1.0	<b>Product Description</b>
CB1.1	Electronic components mounted on PWB and housed in a plastic enclosure.
CC1.0	<b>Model Differences</b>
CC1.1	Models GT-41069P9012-T3YZ, GT-41069PWWVV-X.X-T3YZ are identical to each other except for transformer, output rating, R43 rating, R46 rating, inlet type and model designation.  Where WW can be 01-90 for output power, VV can be 19 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
CD1.0	<b>Additional Information</b>
CD1.1	Issue 1, Amendment No. 2: Add LPS test for Models GT-41069P9012-T3YZ and GT-41069PWW24-X.X-T3YZ.
CE1.0	<b>Technical Considerations</b>
CE1.2	The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C
CE1.3	The means of connection to the mains supply is: Pluggable A, Detachable power cord,
CE1.4	The product is intended for use on the following power systems: TN
CE1.5	The equipment disconnect device is considered to be: Appliance inlet,
CE1.9	The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output for Models GT-41069P9012-T3YZ and GT-41069PWW24-X.X-T3YZ.
CE1.14	The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
CE1.16	The equipment employs Functional Earthing per 2.6.2. As anticipated by the NOTE for 1.2.4, it does not conform to one of the common Classes (I, II, or III). The following insulation is provided between the primary and accessible dead metal parts and circuits: Reinforced, Double

## **COVER PAGE FOR TEST REPORT**

Product Category:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
Product Category CCN:	QQGQ, QQGQ7
Test Procedure:	Listing
Product:	SWITCHING POWER ADAPTER
Model/Type Reference:	GT-41069P9012-T3YZ GT-41069PWWVV-X.X-T3YZ
	Where WW can be 01-90 for output power, VV can be 19 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
Rating(s):	- Input: 100-240 Vac, 1.5 A, 50-60 Hz.  - Output: 12 Vdc, 7.5 A for GT-41069P9012-T3YZ 19 to 24 Vdc, max. 90 W for GT-41069PWWVV-X.X-T3YZ
Standards:	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Applicant Name and Address:	GLOBTEK INC 186 VETERANS DR NORTHVALE NJ 07647 UNITED STATES
This Report includes the following parts, in addition to this cover page: <ol style="list-style-type: none"><li>1. Specific Technical Criteria</li><li>2. Clause Verdicts</li><li>3. Enclosures</li></ol>	

Issue Date: 2008-10-28  
Amendment 2 2009-03-23

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Report Reference #

E170507-A26-UL-1

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.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

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

Test Report By:

Reviewed By:



Richard Yue  
Associate Project Engineer  
UL-CCIC Company Limited



Wei Chen  
Associate Project Engineer  
UL-CCIC Company Limited

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 or relevant component standard	(see appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	<p>Components certified to IEC harmonized standard and checked for correct application.</p> <p>Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.</p>	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Transformers comply with the relevant requirements of this standard. See annex C for compliance.	Pass
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors in primary circuits .....	<ul style="list-style-type: none"> <li>- X/Y capacitors complied with IEC 60384-14: 1993.</li> <li>- Line-to-line capacitors are subclass X1 or X2.</li> <li>- Primary-to-earth capacitors are subclass Y1.</li> </ul>	Pass
1.5.7	Double insulation or reinforced insulation bridged by components		Pass
1.5.7.1	General		Pass
1.5.7.2	Bridging capacitors	Double Insulation bridged by a single capacitor complying with IEC 60384-14: 1993, subclass	Pass

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

		Y1.	
1.5.7.3	Bridging resistors		N/A
1.5.7.4	Accessible parts	Accessible conductive parts separated from other parts by DOUBLE or REINFORCED INSULATION bridged by CY1 comply with the requirements for LIMITED CURRENT CIRCUITS.	Pass
1.5.8	Components in equipment for IT power systems		N/A

1.6	<b>Power interface</b>		Pass
1.6.1	AC power distribution systems	AC power distribution systems are classified as 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	The neutral conductor was served as a line conductor.	Pass

1.7	<b>Marking and instructions</b>		Pass
1.7.1	Power rating	Rating marking readily visible to OPERATOR.	Pass
	Rated voltage(s) or voltage range(s) (V) .....	Refer to the Rating information at the beginning of this Test Report.	Pass
	Symbol for nature of supply, for d.c. only .....		N/A
	Rated frequency or rated frequency range (Hz).....	Refer to the Rating information at the beginning of this Test Report.	Pass
	Rated current (mA or A) .....	Refer to the Rating information at the beginning of this Test Report.	Pass
	Manufacturer's name or trademark or identification mark.....	GLOBTEK INC / E170507	Pass



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

	Type/model or type reference .....	Refer to the Model information at the beginning of this Test Report.	Pass
	Symbol for Class II equipment only .....		N/A
	Other symbols .....	Additional symbols/markings do not give rise to misunderstanding.	Pass
	Certification marks.....	UL and C-UL Listing Mark at least, other certification marks may be provided when submitted for national approvals.	Pass
1.7.2	Safety instructions	Operating/safety instructions made available to the USER.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment .....		N/A
1.7.5	Power outlets on the equipment.....		N/A
1.7.6	Fuse identification.....	Marking adjacent to fuse on PWB as FS1, T 3.15A, 250Vac.	Pass
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals.....		N/A
1.7.7.2	Terminal 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		Pass
1.7.8.1	Identification, location and marking.....	The function of controls affecting safety is obvious regardless of language.	Pass
1.7.8.2	Colours .....	A green LED is illuminated when the unit is operating.	Pass
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	IT power distribution systems		N/A
1.7.11	Thermostats and other regulating devices		N/A
1.7.12	Language.....	Reviewed only English	-

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

		markings/instructions.	
1.7.13	Durability	All markings provided on UL Recognized Component labels suitable for surface they are applied upon.	Pass
1.7.14	Removable parts		N/A
1.7.15	Replaceable batteries		N/A
	Language..... :		-
1.7.16	Operator access with a tool..... :	No OPERATOR ACCESS AREAS require the use of a tool.	N/A
1.7.17	Equipment for restricted access locations..... :	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

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	The operator has access to bare parts of SELV CIRCUITS.	Pass
	Test by inspection..... :	The OPERATOR cannot contact with any parts with only BASIC INSULATION to ELV CIRCUITS or HAZARDOUS VOLTAGES.	Pass
	Test with test finger ..... :	The test finger was unable to contact bare hazardous parts, basic insulation, or ELV circuits.	Pass
	Test with test pin..... :	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe ..... :	No TNV presents.	N/A
2.1.1.2	Battery compartments .....		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V); minimum distance (mm) through insulation ..... :		-
2.1.1.4	Access to hazardous voltage circuit wiring		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.5	Energy hazards .....	The output of the power supply is not an energy hazard.	Pass
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	The voltage at the external point of disconnection did decay to less than 37 percent of its original value in 1.0 second.	Pass
	Time-constant (s); measured voltage (V) .....	CX1 = 0.47 uF. Measurements taken from line-to-Neutral. Vo (V pk) = 376 max. 37% Vo (V pk) = 139.1 max. Vtc (V pk) = 98 max.	-
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

2.2	<b>SELV circuits</b>		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 42.4V peak or 60V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V) .....	Under fault conditions voltages never exceed 71V peak and 120V dc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	Pass
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	SELV CIRCUITS are separated from other circuits by providing DOUBLE or REINFORCED INSULATION in the meaning of this standard.	Pass
2.2.3.2	Separation by earthed screen (method 2)		N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N/A
2.2.4	Connection of SELV circuits to other circuits .....	SELV CIRCUITS are only connected to other SELV CIRCUITS and/or LIMITED CURRENT CIRCUITS.	Pass

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

2.3	<b>TNV circuits</b>		N/A
2.3.1	Limits	No TNV presents.	N/A
	Type of TNV circuits .....		-
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed.....		-
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	<b>Limited current circuits</b>		Pass
2.4.1	General requirements	The current measured between the user accessible part of a limited current circuit by IEC leakage current meter. Conducted on bridging capacitor CY1.	Pass
2.4.2	Limit values	0.7 mA peak.	Pass
	Frequency (Hz) .....	60 Hz	-
	Measured current (mA).....	0.165 MIU maximum.	-
	Measured voltage (V) .....	354 V peak maximum.	-
	Measured capacitance (mF).....	CY1: 2200 pF.	-
2.4.3	Connection of limited current circuits to other circuits	The LIMITED CURRENT CIRCUIT connected to other circuits complies with the requirements of Sub-clause 2.4.1.	N/A

2.5	<b>Limited power sources</b>		Pass
	Inherently limited output		Pass
	Impedance limited output		N/A

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

	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		Pass
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA):..... :	For Model GT-41069P9012-T3YZ: Uoc = 12.2 V, Isc = 8.0 A, VA = 96 VA. For model GT-41069P9024-3.75-T3YZ: Uoc = 24.2 V, Isc = 4.0 A, VA = 96 VA..	-
	Current rating of overcurrent protective device (A) :		-

2.6	<b>Provisions for earthing and bonding</b>		Pass
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing	Functional earthing separated from Hazardous voltage by reinforced insulation. Functional Earthing connected to protective bonding. Insulation on functional earthing conductor is not green-yellow.	Pass
2.6.3	Protective earthing and protective bonding conductors		Pass
2.6.3.1	General		Pass
2.6.3.2	Size of protective earthing conductors	Power supply cord earthing conductor complies with Table 3B (Optional provided).	Pass
	Rated current (A), cross-sectional area (mm2), AWG ..... :	(See appended table 1.5.1)	-
2.6.3.3	Size of protective bonding conductors	Only functional Earthing provided.	N/A
	Rated current (A), cross-sectional area (mm2), AWG ..... :		-
2.6.3.4	Resistance (Ohm) of earthing conductors and their terminations, test current (A) ..... :		N/A

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

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 and 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
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	<b>Overcurrent and earth fault protection in primary circuits</b>		Pass
2.7.1	Basic requirements	Protection provided as part of the building installation.	Pass
	Instructions when protection relies on building installation	Pluggable Type A.	Pass
2.7.2	Faults not covered in 5.3	Protection from faults not covered in 5.3 are provided by installation.	Pass
2.7.3	Short-circuit backup protection	The building installation is considered as providing short-circuit backup protection for PLUGGABLE EQUIPMENT TYPE A.	Pass
2.7.4	Number and location of protective devices ..... :	One protective device in the "LIVE" phase	Pass
2.7.5	Protection by several devices		N/A

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

2.7.6	Warning to service personnel .....	No protective device is provided in the neutral conductor.	N/A
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2.8	<b>Safety interlocks</b>		N/A
2.8.1	General principles	No SAFETY INTERLOCKS used.	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	<b>Electrical insulation</b>		Pass
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	The humidity treatment was conducted for 48 hrs. Electric strength test was conducted after the humidity treatment.	Pass
	Humidity (%) .....	95	-
	Temperature (°C).....	30	-
2.9.3	Grade of insulation		Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10	<b>Clearances, creepage distances and distances through insulation</b>		Pass
2.10.1	General	Pollution degree 2 applicable.  FUNCTIONAL INSULATION complied with Sub-clause 5.3.4.	Pass
2.10.2	Determination of working voltage		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	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4).	Pass
2.10.3.3	Clearances in secondary circuits	Functional insulation only. Waived by short circuit fault test per Sub-clause 5.3.4.	Pass
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4).	Pass
	CTI tests .....	Material Group IIIb assumed unless otherwise indicated. 100 <= CTI < 175	-
2.10.5	Solid insulation	Solid or laminated insulating materials having adequate thickness are provided.	Pass
2.10.5.1	Minimum distance through insulation	See Table 2.10.5	Pass
2.10.5.2	Thin sheet material	Two layers used, each of which complies with the required electric strength test (see appended table 5.2)	Pass
	Number of layers (pcs) .....	Reinforced Insulation - 2 layers	-
	Electric strength test .....	(see appended table 5.2)	-
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material .....		-
	Number of layers (pcs) .....		N/A
2.10.5.4	Wound components	The employed UL Recognized wiring meets the requirements	Pass



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

		of 2.10.5.4 and Annex U.	
	Number of layers (pcs) .....	Three extruded layers.	Pass
	Two wires in contact inside wound component; angle between 45° and 90° .....	Physical separation in the form of insulating sleeving provided to relieve mechanical stress at the crossover point.	Pass
2.10.6	Coated printed boards		N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C) .....		N/A
2.10.6.5	Electric strength test .....		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test .....		-
2.10.7	Enclosed and sealed parts .....		N/A
	Temperature T1=T2 = Tma - Tamb +10K (°C).....		N/A
2.10.8	Spacings filled by insulating compound .....	Approved Optical Isolator used.	Pass
	Electric strength test .....	(see appended table 2.10.5)	-
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A

3	<b>WIRING, CONNECTIONS AND SUPPLY</b>		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection	All internal wires and INTERCONNECTING CABLES possess adequate cross-sectional areas for their intended application and all internal wirings are adequately insulated.	Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	Internal wiring routed, supported, clamped or secured in a manner that excessive strain on wire and on terminal connections, loosening of terminal connections and damage of conductor insulation are unlikely.	Pass
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage.	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		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		Pass
	10 N pull test		Pass
3.1.10	Sleeving on wiring	The sleeving used as supplementary insulation on internal wiring is retained by positive means.	Pass

3.2	<b>Connection to an a.c. mains supply or a d.c. mains supply</b>		Pass
3.2.1	Means of connection	The unit is provided with an appliance inlet.	Pass
3.2.1.1	Connection to an a.c. mains supply		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 (mm) of cable and conduits .....		-
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320. Appliance inlet can be inserted without difficulty and so placed that, after insertion of the connector, the equipment is	Pass

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

		not supported by the connector for any position of normal use on a flat surface.	
3.2.5	Power supply cords	Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer. (Optional provided).	Pass
3.2.5.1	AC power supply cords	(Optional provided).	Pass
	Type..... :	(See appended table 1.5.1)	-
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :	(See appended table 1.5.1)	-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Strain Relief provided for output cord.	Pass
	Mass of equipment (kg), pull (N) ..... :	Equipment 0.49 kg maximum. 30 N pulling force was applied.	-
	Longitudinal displacement (mm) ..... :	0.6 mm maximum.	-
3.2.7	Protection against mechanical damage	Cord not exposed to sharp points or edges.	Pass
3.2.8	Cord guards		N/A
	D (mm); test mass (g)..... :		-
	Radius of curvature of cord (mm) ..... :		-
3.2.9	Supply wiring space		N/A

3.3	<b>Wiring terminals for connection of external conductors</b>		N/A
3.3.1	Wiring terminals	The equipment is not permanently connected or provided with a non-detachable power supply cord.	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> ) ..... :		-

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

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	<b>Disconnection from the mains supply</b>		Pass
3.4.1	General requirement		Pass
3.4.2	Disconnect devices	The Appliance Inlet is 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	No isolating switches fitted in flexible cords.	N/A
3.4.6	Single-phase equipment and d.c. equipment	Disconnect device disconnects all poles simultaneously.	Pass
3.4.7	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	<b>Interconnection of equipment</b>		Pass
3.5.1	General requirements	Interconnection circuit did continued conformance to the requirements of SELV CIRCUITS.	Pass
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits are SELV CIRCUITS/LIMITED CURRENT CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A

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

4	<b>PHYSICAL REQUIREMENTS</b>		Pass
4.1	Stability		N/A
	Angle of 10°	Based on construction review, the test was deemed not necessary.	N/A
	Test: force (N)..... :		N/A

4.2	<b>Mechanical strength</b>		Pass
4.2.1	General		Pass
4.2.2	Steady force test, 10 N		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.	Pass
4.2.5	Impact test		Pass
	Fall test	500 g steel sphere ball fall from 1.3 m height onto the enclosure, there are no safety relevant damages.	Pass
	Swing test		N/A
4.2.6	Drop test		N/A
4.2.7	Stress relief test	No indication of shrinkage or distortion on enclosures due to the stress relief test ( 101.3 degree C/7 h).	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	<b>Design and construction</b>		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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances over supplementary or reinforced insulation is likely to occur.	Pass
4.3.5	Connection of plugs and sockets	The equipment does not have any interchangeable plugs/sockets.	Pass
4.3.6	Direct plug-in equipment		N/A
	Dimensions (mm) of mains plug for direct plug-in :		N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)..... :		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		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; type of radiation		Pass
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)	This product contains only visible indicator LEDs (Class	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

		1). No IEC60825-1 evaluation was deemed necessary. Additional review may be required at the discretion of the accepting NCB.	
	Laser class .....	(For indicator LEDs, see above statement.)	-
4.3.13.6	Other types .....		N/A

4.4	<b>Protection against hazardous moving parts</b>		N/A
4.4.1	General	No hazardous moving part presents.	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	<b>Thermal requirements</b>		Pass
4.5.1	Maximum temperatures	The equipment and its components did not attain excessive temperatures during normal operation. (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.	Pass
4.5.2	Resistance to abnormal heat		N/A

4.6	<b>Openings in enclosures</b>		Pass
4.6.1	Top and side openings		Pass
	Dimensions (mm) .....	No openings.	-
4.6.2	Bottoms of fire enclosures		Pass
	Construction of the bottom .....	No openings.	-
4.6.3	Doors or covers in fire enclosures		N/A

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

4.6.4	Openings in transportable equipment	No openings.	Pass
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C)/time (weeks) ..... :		-

4.7	<b>Resistance to fire</b>		Pass
4.7.1	Reducing the risk of ignition and spread of flame		Pass
	Method 1, selection and application of components wiring and materials	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		Pass
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts except as noted in 4.7.2.2.	Pass
4.7.2.2	Parts not requiring a fire enclosure	Plugs and connectors forming part of a power supply cord or interconnecting cable.	Pass
4.7.3	Materials		Pass
4.7.3.1	General	The propagation of fire is minimized through satisfying the requirement of constructions and materials.	Pass
4.7.3.2	Materials for fire enclosures	Equipment is moveable with mass less than 18 kg. Fire enclosure material is V-1 minimum	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures		Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	PWBs are rated min. V-1. All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed).	Pass



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Clause	Requirement + Test	Result - Remark	Verdict

		See Table 1.5.1 for material information.	
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

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	Equipment under test (EUT)	Equipment designed for connection to only one power source.	Pass
5.1.3	Test circuit	Figure 5A. Single phase equipment intended only for connection to TN system.	Pass
5.1.4	Application of measuring instrument	Using the measuring instrument specified in annex D.1. Test made to 10 x 20 cm metal foil in contact with accessible non-conductive part.	Pass
5.1.5	Test procedure		Pass
5.1.6	Test measurements		Pass
	Test voltage (V) .....	264V/60Hz	-
	Measured touch current (mA).....	Max. 0.165 mA measured at output (-) as "e" open. Max. 0.004 mA measured at Enclosure with foil as "e" closed.	-
	Max. allowed touch current (mA).....	0.25 mA for Accessible plastic enclosure. 3.5 mA for output (-) and output (+).	-
	Measured protective conductor current (mA).....	--	-
	Max. allowed protective conductor current (mA)...	--	-
5.1.7	Equipment with touch current exceeding 3.5 mA..		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from	No TNV presents.	N/A

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

	telecommunication networks		
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N/A
	Test voltage (V) .....		-
	Measured touch current (mA).....		-
	Max. allowed touch current (mA).....		-
5.1.8.2	Summation of touch currents from telecommunication networks .....		N/A

5.2	<b>Electric strength</b>		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 Table 5.2 for details)	Pass

5.3	<b>Abnormal operating and fault conditions</b>		Pass
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	Pass
5.3.2	Motors		N/A
5.3.3	Transformers	Transformers are constructed in accordance with the applicable Clause and Annex C. (see appended 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	Simulation of faults	(see appended table 5.3)	Pass
5.3.7	Unattended equipment		N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire, emission of molten metal, deformation, excessive temperature rises or insulation breakdown was detected	Pass

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

		during these tests.	
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6	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Test voltage (V) .....		-
	Current in the test circuit (mA) .....		-
6.1.2.2	Exclusions .....		N/A

6.2	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
	Max. output current (A) .....		-
	Current limiting method .....		-

7	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

A	<b>Annex A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples..... :		-
	Wall thickness (mm) ..... :		-
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s) ..... :		-
	Sample 2 burning time (s) ..... :		-
	Sample 3 burning time (s) ..... :		-

A.2	<b>Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)</b>		N/A
A.2.1	Samples, material..... :		-
	Wall thickness (mm) ..... :		-
A.2.2	Conditioning of samples		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame		N/A
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) ..... :		-
	Sample 2 burning time (s) ..... :		-
	Sample 3 burning time (s) ..... :		-
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N/A

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

	Sample 1 burning time (s) .....		-
	Sample 2 burning time (s) .....		-
	Sample 3 burning time (s) .....		-

A.3	<b>Hot flaming oil test (see 4.6.2)</b>		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	<b>Annex B, MOTOR TESTS UNDER ABNORMAL CONDITIONS(see 4.7.2.2 and 5.3.2)</b>		N/A
B.1	General requirements		N/A
	Position .....		-
	Manufacturer .....		-
	Type.....		-
	Rated values.....		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days).....		-
	Electric strength test: test voltage (V).....		-
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h) .....		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A

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

B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		-

C	<b>Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		Pass
	Position ..... :	T1.	-
	Manufacturer ..... :	(See Table 1.5.1)	-
	Type..... :	(See Table 1.5.1)	-
	Rated values..... :	(See Table 1.5.1)	-
	Method of protection..... :	Regulation network provided.	-
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</b>		Pass
D.1	Measuring instrument	Using the measuring instrument specified in annex D.1.	Pass
D.2	Alternative measuring instrument		N/A

E	<b>Annex E, TEMPERATURE RISE OF A WINDING</b>		N/A
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F	<b>Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)</b>		Pass
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G	<b>Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A

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

G.3	Determination of telecommunication network transient voltage (V) : .....		N/A
G.4	Determination of required withstand voltage (V) ... :		N/A
G.5	Measurement of transient levels (V)..... :		N/A
G.6	Determination of minimum clearances .....		N/A

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
	Metal used .....		-

K	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)</b>		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

L	<b>Annex L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)</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

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

M	<b>Annex M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....		-
M.3.1.2	Voltage (V) .....		-
M.3.1.3	Cadence; time (s), voltage (V) .....		-
M.3.1.4	Single fault current (mA) .....		-
M.3.2	Tripping device and monitoring voltage .....		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....		N/A

N	<b>Annex N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)</b>		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	<b>Annex P, NORMATIVE REFERENCES</b>		Pass
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Q	<b>Annex Q, BIBLIOGRAPHY</b>		Pass
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R	<b>Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	<b>Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	<b>Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
	..... :		-

U	<b>Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		Pass
	..... :	Used of three layers of extruded insulation wire were approved. (See append table 1.5.1)	-

## **COVER PAGE FOR TEST REPORT**

Product Category:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
Product Category CCN:	QQGQ, QQGQ7
Test Procedure:	Listing
Product:	SWITCHING POWER ADAPTER
Model/Type Reference:	GT-41069P9012-T3YZ GT-41069PWWVV-X.X-T3YZ
	Where WW can be 01-90 for output power, VV can be 19 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
Rating(s):	- Input: 100-240 Vac, 1.5 A, 50-60 Hz.  - Output: 12 Vdc, 7.5 A for GT-41069P9012-T3YZ 19 to 24 Vdc, max. 90 W for GT-41069PWWVV-X.X-T3YZ
Standards:	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Applicant Name and Address:	GLOBTEK INC 186 VETERANS DR NORTHVALE NJ 07647 UNITED STATES
This Report includes the following parts, in addition to this cover page: <ol style="list-style-type: none"><li>1. Specific Technical Criteria</li><li>2. Critical Components</li><li>3. Test Results</li><li>4. Enclosures</li></ol>	

Issue Date: 2008-10-28  
Amendment 1 2008-12-19

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Report Reference #

E170507-A26-UL-1

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.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

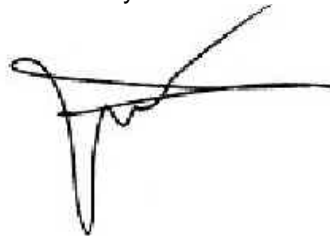
Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

Test Report By:



Glenn Wang  
Senior Project Engineer  
Underwriters Laboratories of Canada

Reviewed By:



Joseph Petilla  
Engineering Team Leader  
Underwriters Laboratories of Canada

## **SPECIFIC INSPECTION CRITERIA**

BA1.0	<b>Special Instructions to UL Representative</b>
BA1.1	N/A

BB1.0	<b>Supporting Documentation</b>
BB1.1	<p>The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:</p> <p>A. Authorization - The Authorization page may include additional Factory Identification Code markings.</p> <p>B. Generic Inspection Instructions -</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> </ul>

BC1.0	<b>Markings and instructions</b>	
BC1.1	The following markings and instructions are provided as indicated.	
BC1.2	All clause references are from UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements).	
Standard Clause	Clause Title	Marking or Instruction Details
1.7.1	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
1.7.6	Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

BD1.0	<b>Production-Line Testing Requirements</b>						
BD1.1	Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.						
					Test Potential		
	Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
	All models	T1	--	Primary to Secondary	3000	--	1
BD1.2	Earthing Continuity Test Exemptions - This test is not required for the following models:						
BD1.3	Electric Strength Test Exemptions - This test is not required for the following models:						
BD1.4	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:						

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL					
BE1.1	Model	Component	Material	Test	Sample(s)	Test Specifics
	N/A					

## **SPECIFIC TECHNICAL CRITERIA**

<b>UL 60950-1, First Edition Information technology equipment - Safety- Part 1: General Requirements</b>	
Report Reference No .....	E170507-A26-UL-1
Compiled by .....	Glenn Wang
Reviewed by .....	Joseph Petilla
Date of issue .....	2008-10-28
Standards .....	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure .....	Listing
Non-standard test method .....	N/A
<b>Test item</b> description .....	SWITCHING POWER ADAPTER
Trademark .....	None
Model and/or type reference .....	GT-41069P9012-T3YZ GT-41069PWWVV-X.X-T3YZ  Where WW can be 01-90 for output power, VV can be 19 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
Rating(s) .....	- Input: 100-240 Vac, 1.5 A, 50-60 Hz.  - Output: 12 Vdc, 7.5 A for GT-41069P9012-T3YZ 19 to 24 Vdc, max. 90 W for GT-41069PWWVV-X.X-T3YZ

### Particulars: test item vs. test requirements

Equipment mobility .....	movable
Operating condition .....	continuous
Mains supply tolerance (%) .....	+10%, -10%
Tested for IT power systems .....	No
IT testing, phase-phase voltage (V) .....	N/A
Class of equipment .....	Special Application - Functional Earthing
Mass of equipment (kg) .....	0.49 for GT-41069P9012-T Z , GT-41069PWWVV-X.X-T3 Z; 0.46 for GT-41069P9012-T3AZ, GT-41069PWWVV-X.X-T3AZ.
Protection against ingress of water .....	IP X0

### Possible test case verdicts:

- |   |  |
|---|--|
| - test case does not apply to the test object ..... | N / A  |
| - test object does meet the requirement .....       | Pass   |
| - test object does not meet the requirement .....   | Fail (acceptable only if a corresponding, less stringent national requirement is "Pass") |

**General remarks:**

- "(see Enclosure #)" refers to additional information appended to the Test Report
- "(see appended table)" refers to a table appended to the Test Report
- Throughout the Test Report a point is used as the decimal separator

<b>GENERAL PRODUCT INFORMATION:</b>	
CA1.0	<b>Report Summary</b>
CA1.1	N/A
CB1.0	<b>Product Description</b>
CB1.1	Electronic components mounted on PWB and housed in a plastic enclosure.
CC1.0	<b>Model Differences</b>
CC1.1	Models GT-41069P9012-T3YZ, GT-41069PWWVV-X.X-T3YZ are identical to each other except for transformer, output rating, R43 rating, R46 rating, inlet type and model designation.  Where WW can be 01-90 for output power, VV can be 19 to 24 for output voltage, X.X is optional for specifying output voltage deviations in .1 volt increments, X.X is to be subtracted from rated voltage or blank, Y can be blank (for C14 inlet type) or A (for C6 inlet type), Z can be 0-9, A-Z or blank for marketing purposes only.
CD1.0	<b>Additional Information</b>
CD1.1	N/A
CE1.0	<b>Technical Considerations</b>
CE1.2	The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C
CE1.3	The means of connection to the mains supply is: Pluggable A, Detachable power cord,
CE1.4	The product is intended for use on the following power systems: TN
CE1.5	The equipment disconnect device is considered to be: Appliance inlet,
CE1.14	The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
CE1.16	The equipment employs Functional Earthing per 2.6.2. As anticipated by the NOTE for 1.2.4, it does not conform to one of the common Classes (I, II, or III). The following insulation is provided between the primary and accessible dead metal parts and circuits: Reinforced, Double



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 or relevant component standard	(see appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	<p>Components certified to IEC harmonized standard and checked for correct application.</p> <p>Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.</p>	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Transformers comply with the relevant requirements of this standard. See annex C for compliance.	Pass
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors in primary circuits .....	<ul style="list-style-type: none"> <li>- X/Y capacitors complied with IEC 60384-14: 1993.</li> <li>- Line-to-line capacitors are subclass X1 or X2.</li> <li>- Primary-to-earth capacitors are subclass Y1.</li> </ul>	Pass
1.5.7	Double insulation or reinforced insulation bridged by components		Pass
1.5.7.1	General		Pass
1.5.7.2	Bridging capacitors	Double Insulation bridged by a single capacitor complying with IEC 60384-14: 1993, subclass	Pass

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

		Y1.	
1.5.7.3	Bridging resistors		N/A
1.5.7.4	Accessible parts	Accessible conductive parts separated from other parts by DOUBLE or REINFORCED INSULATION bridged by CY1 comply with the requirements for LIMITED CURRENT CIRCUITS.	Pass
1.5.8	Components in equipment for IT power systems		N/A

1.6	<b>Power interface</b>		Pass
1.6.1	AC power distribution systems	AC power distribution systems are classified as 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	The neutral conductor was served as a line conductor.	Pass

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

1.7	<b>Marking and instructions</b>		Pass
1.7.1	Power rating	Rating marking readily visible to OPERATOR.	Pass
	Rated voltage(s) or voltage range(s) (V) ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Symbol for nature of supply, for d.c. only ..... :		N/A
	Rated frequency or rated frequency range (Hz) .... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Rated current (mA or A)..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Manufacturer's name or trademark or identification mark ..... :	GLOBTEK INC / E170507	Pass
	Type/model or type reference..... :	Refer to the Model information at the beginning of this Test Report.	Pass
	Symbol for Class II equipment only ..... :		N/A
	Other symbols..... :	Additional symbols/markings do not give rise to misunderstanding.	Pass
	Certification marks ..... :	UL and C-UL Listing Mark at least, other certification marks may be provided when submitted for national approvals.	Pass
1.7.2	Safety instructions	Operating/safety instructions made available to the USER.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment..... :		N/A
1.7.5	Power outlets on the equipment ..... :		N/A
1.7.6	Fuse identification..... :	Marking adjacent to fuse on PWB as FS1, T 3.15A, 250Vac.	Pass
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals ..... :		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		Pass
1.7.8.1	Identification, location and marking .....	The function of controls affecting safety is obvious regardless of language.	Pass
1.7.8.2	Colours.....	A green LED is illuminated when the unit is operating.	Pass
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	IT power distribution systems		N/A
1.7.11	Thermostats and other regulating devices		N/A
1.7.12	Language.....	Reviewed only English markings/instructions.	-
1.7.13	Durability	All markings provided on UL Recognized Component labels suitable for surface they are applied upon.	Pass
1.7.14	Removable parts		N/A
1.7.15	Replaceable batteries		N/A
	Language.....		-
1.7.16	Operator access with a tool .....	No OPERATOR ACCESS AREAS require the use of a tool.	N/A
1.7.17	Equipment for restricted access locations.....	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

IEC 60950-1			
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	The operator has access to bare parts of SELV CIRCUITS.	Pass
	Test by inspection..... :	The OPERATOR cannot contact with any parts with only BASIC INSULATION to ELV CIRCUITS or HAZARDOUS VOLTAGES.	Pass
	Test with test finger..... :	The test finger was unable to contact bare hazardous parts, basic insulation, or ELV circuits.	Pass
	Test with test pin..... :	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe .....	No TNV presents.	N/A
2.1.1.2	Battery compartments..... :		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V); minimum distance (mm) through insulation .....		-
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.	Pass
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	The voltage at the external point of disconnection did decay to less than 37 percent of its original value in 1.0 second.	Pass
	Time-constant (s); measured voltage (V) .....	CX1 = 0.47 uF. Measurements taken from line-to-Neutral. Vo (V pk) = 376 max. 37% Vo (V pk) = 139.1 max. Vtc (V pk) = 98 max.	-
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.2	<b>SELV circuits</b>		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 42.4V peak or 60V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V).....	Under fault conditions voltages never exceed 71V peak and 120V dc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	Pass
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	SELV CIRCUITS are separated from other circuits by providing DOUBLE or REINFORCED INSULATION in the meaning of this standard.	Pass
2.2.3.2	Separation by earthed screen (method 2)		N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N/A
2.2.4	Connection of SELV circuits to other circuits.....	SELV CIRCUITS are only connected to other SELV CIRCUITS and/or LIMITED CURRENT CIRCUITS.	Pass

2.3	<b>TNV circuits</b>		N/A
2.3.1	Limits	No TNV presents.	N/A
	Type of TNV circuits .....		-
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed.....		-
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

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Clause	Requirement + Test	Result - Remark	Verdict

2.4	<b>Limited current circuits</b>		Pass
2.4.1	General requirements	The current measured between the user accessible part of a limited current circuit by IEC leakage current meter. Conducted on bridging capacitor CY1.	Pass
2.4.2	Limit values	0.7 mA peak.	Pass
	Frequency (Hz) .....	60 Hz	-
	Measured current (mA) .....	0.165 MIU maximum.	-
	Measured voltage (V) .....	354 V peak maximum.	-
	Measured capacitance (mF) .....	CY1: 2200 pF.	-
2.4.3	Connection of limited current circuits to other circuits	The LIMITED CURRENT CIRCUIT connected to other circuits complies with the requirements of Sub-clause 2.4.1.	N/A

2.5	<b>Limited power sources</b>		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA): .....		-
	Current rating of overcurrent protective device (A):		-

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Clause	Requirement + Test	Result - Remark	Verdict

2.6	<b>Provisions for earthing and bonding</b>		Pass
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing	Functional earthing separated from Hazardous voltage by reinforced insulation. Functional Earthing connected to protective bonding. Insulation on functional earthing conductor is not green-yellow.	Pass
2.6.3	Protective earthing and protective bonding conductors		Pass
2.6.3.1	General		Pass
2.6.3.2	Size of protective earthing conductors	Power supply cord earthing conductor complies with Table 3B (Optional provided).	Pass
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :	(See appended table 1.5.1)	-
2.6.3.3	Size of protective bonding conductors	Only functional Earthing provided.	N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :		-
2.6.3.4	Resistance (Ohm) of earthing conductors and their terminations, test current (A) ..... :		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 and 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
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



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Clause	Requirement + Test	Result - Remark	Verdict

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	<b>Overcurrent and earth fault protection in primary circuits</b>		Pass
2.7.1	Basic requirements	Protection provided as part of the building installation.	Pass
	Instructions when protection relies on building installation	Pluggable Type A.	Pass
2.7.2	Faults not covered in 5.3	Protection from faults not covered in 5.3 are provided by installation.	Pass
2.7.3	Short-circuit backup protection	The building installation is considered as providing short-circuit backup protection for PLUGGABLE EQUIPMENT TYPE A.	Pass
2.7.4	Number and location of protective devices..... :	One protective device in the "LIVE" phase	Pass
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :	No protective device is provided in the neutral conductor.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.8	<b>Safety interlocks</b>		N/A
2.8.1	General principles	No SAFETY INTERLOCKS used.	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	<b>Electrical insulation</b>		Pass
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	The humidity treatment was conducted for 48 hrs. Electric strength test was conducted after the humidity treatment.	Pass
	Humidity (%) ..... :	95	-
	Temperature (°C)..... :	30	-
2.9.3	Grade of insulation		Pass

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Clause	Requirement + Test	Result - Remark	Verdict

2.10	<b>Clearances, creepage distances and distances through insulation</b>		Pass
2.10.1	General	Pollution degree 2 applicable.  FUNCTIONAL INSULATION complied with Sub-clause 5.3.4.	Pass
2.10.2	Determination of working voltage		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	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4).	Pass
2.10.3.3	Clearances in secondary circuits	Functional insulation only. Waived by short circuit fault test per Sub-clause 5.3.4.	Pass
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4).	Pass
	CTI tests..... :	Material Group IIIb assumed unless otherwise indicated. 100 <= CTI < 175	-
2.10.5	Solid insulation	Solid or laminated insulating materials having adequate thickness are provided.	Pass
2.10.5.1	Minimum distance through insulation	See Table 2.10.5	Pass
2.10.5.2	Thin sheet material	Two layers used, each of which complies with the required electric strength test (see appended table 5.2)	Pass
	Number of layers (pcs) .....	Reinforced Insulation - 2 layers	-
	Electric strength test .....	(see appended table 5.2)	-
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material .....		-
	Number of layers (pcs) .....		N/A
2.10.5.4	Wound components	The employed UL Recognized wiring meets the requirements	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

		of 2.10.5.4 and Annex U.	
	Number of layers (pcs) .....	Three extruded layers.	Pass
	Two wires in contact inside wound component; angle between 45° and 90° .....	Physical separation in the form of insulating sleeving provided to relieve mechanical stress at the crossover point.	Pass
2.10.6	Coated printed boards		N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C) .....		N/A
2.10.6.5	Electric strength test .....		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test .....		-
2.10.7	Enclosed and sealed parts .....		N/A
	Temperature T1=T2 = Tma - Tamb +10K (°C).....		N/A
2.10.8	Spacings filled by insulating compound.....	Approved Optical Isolator used.	Pass
	Electric strength test .....	(see appended table 2.10.5)	-
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		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	All internal wires and INTERCONNECTING CABLES possess adequate cross-sectional areas for their intended application and all internal wirings are adequately insulated.	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	Internal wiring routed, supported, clamped or secured in a manner that excessive strain on wire and on terminal connections, loosening of terminal connections and damage of conductor insulation are unlikely.	Pass
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage.	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		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		Pass
	10 N pull test		Pass
3.1.10	Sleeving on wiring	The sleeving used as supplementary insulation on internal wiring is retained by positive means.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

3.2	<b>Connection to an a.c. mains supply or a d.c. mains supply</b>		Pass
3.2.1	Means of connection	The unit is provided with an appliance inlet.	Pass
3.2.1.1	Connection to an a.c. mains supply		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 (mm) of cable and conduits..... :		-
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320. Appliance inlet can be inserted without difficulty and so placed that, after insertion of the connector, the equipment is not supported by the connector for any position of normal use on a flat surface.	Pass
3.2.5	Power supply cords	Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer. (Optional provided).	Pass
3.2.5.1	AC power supply cords	(Optional provided).	Pass
	Type .....	(See appended table 1.5.1)	-
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....	(See appended table 1.5.1)	-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Strain Relief provided for output cord.	Pass
	Mass of equipment (kg), pull (N) .....	Equipment 0.49 kg maximum. 30 N pulling force was applied.	-
	Longitudinal displacement (mm)..... :	0.6 mm maximum.	-
3.2.7	Protection against mechanical damage	Cord not exposed to sharp points or edges.	Pass
3.2.8	Cord guards		N/A
	D (mm); test mass (g) .....		-

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	Radius of curvature of cord (mm) ..... :		-
3.2.9	Supply wiring space		N/A

3.3	<b>Wiring terminals for connection of external conductors</b>		N/A
3.3.1	Wiring terminals	The equipment is not permanently connected or provided with a non-detachable power supply cord.	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

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Clause	Requirement + Test	Result - Remark	Verdict

3.4	<b>Disconnection from the mains supply</b>		Pass
3.4.1	General requirement		Pass
3.4.2	Disconnect devices	The Appliance Inlet is 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	No isolating switches fitted in flexible cords.	N/A
3.4.6	Single-phase equipment and d.c. equipment	Disconnect device disconnects all poles simultaneously.	Pass
3.4.7	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	<b>Interconnection of equipment</b>		Pass
3.5.1	General requirements	Interconnection circuit did continued conformance to the requirements of SELV CIRCUITS.	Pass
3.5.2	Types of interconnection circuits .....	Interconnection circuits are SELV CIRCUITS/LIMITED CURRENT CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A

4	<b>PHYSICAL REQUIREMENTS</b>		Pass
4.1	Stability		N/A
	Angle of 10°	Based on construction review, the test was deemed not necessary.	N/A
	Test: force (N) .....		N/A



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Clause	Requirement + Test	Result - Remark	Verdict

4.2	<b>Mechanical strength</b>		Pass
4.2.1	General		Pass
4.2.2	Steady force test, 10 N		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.	Pass
4.2.5	Impact test		Pass
	Fall test	500 g steel sphere ball fall from 1.3 m height onto the enclosure, there are no safety relevant damages.	Pass
	Swing test		N/A
4.2.6	Drop test		N/A
4.2.7	Stress relief test	No indication of shrinkage or distortion on enclosures due to the stress relief test ( 101.3 degree C/7 h).	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

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Clause	Requirement + Test	Result - Remark	Verdict

4.3	<b>Design and construction</b>		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	No loosening of parts impairing creepage distances or clearances over supplementary or reinforced insulation is likely to occur.	Pass
4.3.5	Connection of plugs and sockets	The equipment does not have any interchangeable plugs/sockets.	Pass
4.3.6	Direct plug-in equipment		N/A
	Dimensions (mm) of mains plug for direct plug-in . :		N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) ..... :		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		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; type of radiation		Pass
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..... :		-

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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)	This product contains only visible indicator LEDs (Class 1). No IEC60825-1 evaluation was deemed necessary. Additional review may be required at the discretion of the accepting NCB.	Pass
	Laser class.....	(For indicator LEDs, see above statement.)	-
4.3.13.6	Other types .....		N/A

4.4	<b>Protection against hazardous moving parts</b>		N/A
4.4.1	General	No hazardous moving part presents.	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	<b>Thermal requirements</b>		Pass
4.5.1	Maximum temperatures	The equipment and its components did not attain excessive temperatures during normal operation. (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.	Pass
4.5.2	Resistance to abnormal heat		N/A

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4.6	<b>Openings in enclosures</b>		Pass
4.6.1	Top and side openings		Pass
	Dimensions (mm)..... :	No openings.	-
4.6.2	Bottoms of fire enclosures		Pass
	Construction of the bottom..... :	No openings.	-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment	No openings.	Pass
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C)/time (weeks) ..... :		-

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4.7	<b>Resistance to fire</b>		Pass
4.7.1	Reducing the risk of ignition and spread of flame		Pass
	Method 1, selection and application of components wiring and materials	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		Pass
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts except as noted in 4.7.2.2.	Pass
4.7.2.2	Parts not requiring a fire enclosure	Plugs and connectors forming part of a power supply cord or interconnecting cable.	Pass
4.7.3	Materials		Pass
4.7.3.1	General	The propagation of fire is minimized through satisfying the requirement of constructions and materials.	Pass
4.7.3.2	Materials for fire enclosures	Equipment is moveable with mass less than 18 kg. Fire enclosure material is V-1 minimum	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures		Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	PWBs are rated min. V-1. All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed). See Table 1.5.1 for material information.	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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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	Equipment under test (EUT)	Equipment designed for connection to only one power source.	Pass
5.1.3	Test circuit	Figure 5A. Single phase equipment intended only for connection to TN system.	Pass
5.1.4	Application of measuring instrument	Using the measuring instrument specified in annex D.1. Test made to 10 x 20 cm metal foil in contact with accessible non-conductive part.	Pass
5.1.5	Test procedure		Pass
5.1.6	Test measurements		Pass
	Test voltage (V) .....	264V/60Hz	-
	Measured touch current (mA) .....	Max. 0.165 mA measured at output (-) as "e" open. Max. 0.004 mA measured at Enclosure with foil as "e" closed.	-
	Max. allowed touch current (mA) .....	0.25 mA for Accessible plastic enclosure. 3.5 mA for output (-) and output (+).	-
	Measured protective conductor current (mA) .....	--	-
	Max. allowed protective conductor current (mA) ...	--	-
5.1.7	Equipment with touch current exceeding 3.5 mA ..		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	No TNV presents.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N/A
	Test voltage (V) .....		-
	Measured touch current (mA) .....		-

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	Max. allowed touch current (mA) .....		-
5.1.8.2	Summation of touch currents from telecommunication networks .....		N/A

5.2	<b>Electric strength</b>		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 Table 5.2 for details)	Pass

5.3	<b>Abnormal operating and fault conditions</b>		Pass
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	Pass
5.3.2	Motors		N/A
5.3.3	Transformers	Transformers are constructed in accordance with the applicable Clause and Annex C. (see appended 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	Simulation of faults	(see appended table 5.3)	Pass
5.3.7	Unattended equipment		N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire, emission of molten metal, deformation, excessive temperature rises or insulation breakdown was detected during these tests.	Pass

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6	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Test voltage (V) .....		-
	Current in the test circuit (mA) .....		-
6.1.2.2	Exclusions.....		N/A

6.2	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

6.3	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
	Max. output current (A) .....		-
	Current limiting method.....		-



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7	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A
7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

A	<b>Annex A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples..... :		-
	Wall thickness (mm) ..... :		-
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples..... :		N/A
A.1.4	Test flame		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		-
	Sample 2 burning time (s)..... :		-
	Sample 3 burning time (s)..... :		-

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A.2	<b>Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)</b>		N/A
A.2.1	Samples, material .....		-
	Wall thickness (mm) .....		-
A.2.2	Conditioning of samples		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame		N/A
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s).....		-
	Sample 2 burning time (s).....		-
	Sample 3 burning time (s).....		-
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N/A
	Sample 1 burning time (s).....		-
	Sample 2 burning time (s).....		-
	Sample 3 burning time (s).....		-

A.3	<b>Hot flaming oil test (see 4.6.2)</b>		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		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
B.1	General requirements		N/A
	Position .....		-
	Manufacturer.....		-
	Type .....		-
	Rated values .....		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days).....		-
	Electric strength test: test voltage (V).....		-
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h).....		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V).....		-

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C	<b>Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		Pass
	Position .....	T1.	-
	Manufacturer.....	(See Table 1.5.1)	-
	Type .....	(See Table 1.5.1)	-
	Rated values .....	(See Table 1.5.1)	-
	Method of protection .....	Regulation network provided.	-
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</b>		Pass
D.1	Measuring instrument	Using the measuring instrument specified in annex D.1.	Pass
D.2	Alternative measuring instrument		N/A

E	<b>Annex E, TEMPERATURE RISE OF A WINDING</b>		N/A
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F	<b>Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)</b>		Pass
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G	<b>Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V) :..... :		N/A
G.4	Determination of required withstand voltage (V) ... :		N/A
G.5	Measurement of transient levels (V)..... :		N/A
G.6	Determination of minimum clearances ..... :		N/A

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
	Metal used ..... :		-

K	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)</b>		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		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 4.5.1)</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
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz) .....		-
M.3.1.2	Voltage (V) .....		-
M.3.1.3	Cadence; time (s), voltage (V) .....		-
M.3.1.4	Single fault current (mA) .....		-
M.3.2	Tripping device and monitoring voltage .....		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....		N/A

N	<b>Annex N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)</b>		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

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P	<b>Annex P, NORMATIVE REFERENCES</b>		Pass
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Q	<b>Annex Q, BIBLIOGRAPHY</b>		Pass
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R	<b>Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	<b>Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	<b>Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
	..... :		-

U	<b>Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		Pass
	..... :	Used of three layers of extruded insulation wire were approved. (See append table 1.5.1)	-

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1.5.1	<b>TABLE: list of critical components</b>					Pass
Object/part No.	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Label	Various	Various	70 degree C, if maximum surface temperature not specified.	PGDQ2 or PGJ12	UL	
Enclosure	--	--	Measured minimum thick 2.75 mm. Two halves construction, secured together by ultrasonic welding. See enclosure 4-01 and 4-02 for dimension details.	--	--	
- Enclosure material	SABIC INNOVATIVE Plastics China Ltd.	SE1X	V-1, 105 degree C, minimum 1.5 mm thick.	QMFZ2	UL	
Power supply cord (optional)	Various	Various	Detachable, limited to between 1.5 and 4.5 m long, 18 AWG, type SVT or SPT-2, minimum 125 Vac, 10 A, with NEMA 5- 15P or 250 Vac, 10 A, with NEMA 6-15P. The Other end in an appliance coupler (with cord-connected body, grounding type, suitable for cord size, rating not less than that of attachment plug)	ZJCZ and RTRT and AXUT, or ELBZ	UL	
Output cord	Various	2464	External used wire, Jacketed. FEP, PTFE, PVC, TFE, Neoprene, Polyimide or marked VW-1; FT-1, max. 3.05 m length, 80 degree C, min. 300 V. Mechanically secured and soldered to PWB.	ZJCZ, AVLV2	UL	



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Strain Relief for Output cord	Various	Various	Min V-1, plastic bushing integrally molded on output cord, see enclosure 4-03 for details	QMFZ2	UL	4-03
PWB	Various	Various	Rated V-1 minimum, 130 degree C minimum	ZPMV2	UL	5-01
Appliance Inlet (For GT-41069P9012-T3AZ, GT-41069PWWVV-X.X-T3AZ)	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-02	2.5A, 250V, 70 degree C minimum	AXUT2	UL	
Appliance Inlet (For GT-41069P9012-T3 Z, GT-41069PWWVV-X.X-T3 Z) (Alternate)	TECX-UNIONS TECHNOLOGY CORP	TU-301 Series	15A, 250V, 105 degree C minimum	AXUT2	UL	
Fuse (FS1)	WALTER ELECTRONIC CO LTD	ICP	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	DAS & SONS INTERNATIONAL LTD	385T1315	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	Conquer Electronics Co Ltd	MST	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	SAVE FUSETECH INC	SS-5	T 3.15A, 250Vac	JDYX2	UL	
Fuse (FS1) (Alternate)	Various	Various	Listed, T 3.15A, 250Vac	JDYX	UL	
Varistor (MOV1) (Optional)	Various	Various	Rated minimum 300 Vac, minimum 385 Vdc.	XUHT2	UL	
Line Choke (LF1) (Optional)	Various	NF00081	Varnished, see enclosure 4-04 for details, 130 degree C minimum.	--	--	4-04
- Core	--	--	Ferrite, measured OD 12 mm by 5 mm ID by 3.5 mm width	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	

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- Triple Insulated Winding Wire	Furukawa Electric Co., Ltd.	TEX-E	Rated 130 degree C.	OBJT2	UL	
- Tape	Various	Various	Rated 130 degree C.	OANZ2	UL	
- Varnish	Various	Various	Rated minimum 130 degree C.	OBOR2	UL	
X capacitor (CX1) (optional)	Ultra Tech Xiphi Enterprise Co., Ltd	HQX	Max. 0.47 uF, min. 250 Vac, 100 degree C, Class X1 or X2 type	FOWX2	UL	
X capacitor (CX1) (optional) (Alternate)	TENTA ELECTRIC INDUSTRIAL CO LTD	MEX	Max. 0.47 uF, min. 250 Vac, 100 degree C, Class X1 or X2 type	FOWX2	UL	
X capacitor (CX1) (optional) (Alternate)	CHENG TUNG INDUSTRIAL CO LTD	CTX	Max. 0.47 uF, min. 250 Vac, 100 degree C, Class X1 or X2 type	FOWX2	UL	
Line Choke (LF2) (Optional)	Various	NF00083	See enclosure 4-05 for details, 130 degree C minimum.	--	--	4-05
- Core	--	--	Ferrite, measured OD 21.5mm by 6 mm ID by 11 mm width	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
Bleeder resistor (RS1, RS2)	--	--	Each rated 1M ohm, 1/4W SMD type, connected in series	--	--	
Bridge Diode (BD1)	--	--	Rated 4A, 600 V minimum	--	--	
Storage Capacitor (C4)	--	--	Rated 400 V, maximum 120uF, minimum 105 degree C, provided with integral pressure relief	--	--	
PFC Choke (L1)	Various	RC00136	Varnished, see enclosure 4-06 for details, 130 degree C minimum.	--	--	4-06
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150degree C, Phenolic, thickness 0.8mm minimum	QMFZ2	UL	
- Bobbin (Alternate)	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150degree C, Phenolic, thickness 0.71mm minimum	QMFZ2	UL	
- Core	--	--	Ferrite, overall 32.0 by 19.5 by	--	--	

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			30.0 mm..			
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
- Tape	Various	Various	Rated 130 degree C.	OANZ2	UL	
- Varnish	Various	Various	Rated minimum 130 degree C.	OBOR2	UL	
Line Choke (L2)	Various	RC00134	See enclosure 4-07 for details, 130 degree C minimum.	--	--	4-07
- Core	--	--	Ferrite, measured OD 21.5mm by 6 mm ID by 9 mm width	--	--	
- Coil	Various	Various	Rated minimum 130 degree C.	OBMW2	UL	
Tubing/Sleeving	Great Holding Industrial Co. Ltd.	TFL, TFS, TFT	Rated 200 degree C	YDPU2	UL	
Heat Sink (HS1) (Primary) (For GT-41069P9012-T3 Z, GT-41069PWWVV-X.X-T3 Z)	--	--	Aluminum material, see enclosure 4-08 for details	--	--	4-08
Heat Sink (HS1) (Primary) (For GT-41069P9012-T3AYZ, GT-41069PWWVV-X.X-T3AZ) (Alternate)	--	--	Aluminum material, see enclosure 4-09 for details	--	--	4-09
Heat Sink (HS2) (Secondary)	--	--	Aluminum material, see enclosure 4-10 for details	--	--	4-10
Heat Sink (Cover) (Primary)	--	--	Aluminum material, see enclosure 4-11 for details	--	--	4-11
Heat Sink (Chassis) (Primary)	--	--	Aluminum material, see enclosure 4-12 for details	--	--	4-12
Tubing (For HS1)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; rated minimum 125 degree C, minimum 300 V, see enclosure 4-08 and 4-09 for	YDPU2	UL	

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			details, thickness 0.4 mm minimum.			
Tubing (For HS2)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; rated minimum 125 degree C, minimum 300 V, see enclosure 4-10 for details, thickness 0.4 mm minimum.	YDPU2	UL	
Transformer (T1) (For GT-41069P9012-T3YZ)	Globtek	XF00500	See enclosure 4-15 for details	--	--	4-15
Transformer (T1) (For GT-41069PWWVV-X.X-T3YZ) (Alternate)	Globtek	XF00501	See enclosure 4-16 for details	--	--	4-16
- Insulation system for Transformer (T1)	ENG Electric Co., Ltd.	ENG130-1	Class B, 130 degree C	OBJY2	UL	
- Core	--	--	EE type, Ferrite, overall each 28.5mm by 28.5 mm by 8 mm	--	--	
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150degree C, Phenolic, thickness 0.8mm minimum	QMFZ2	UL	
- Bobbin (Alternate)	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150degree C, Phenolic, thickness 0.71mm minimum	QMFZ2	UL	
- Tubing/Sleeving	Great Holding Industrial Co. Ltd.	TFL, TFS, TFT	Rated 200 degree C	YDPU2	UL	
- Varnish	John C. Dolph Co.	BC-346A	Rated minimum 200 degree C.	OBOR2	UL	
- Varnish (Alternate)	P D George/Viking	V1630FS	Rated minimum 130 degree C.	OBOR2	UL	
- Insulation Tape	3M Company	1350T-1	130 degree C.	OANZ2	UL	
- Insulation Tape (Alternate)	3M Company	1350F(#)	130 degree C.	OANZ2	UL	
- Insulation Tape (Alternate)	3M Company	44	130 degree C.	OANZ2	UL	
- Insulation Tape (Alternate)	Bondtec Pacific Co., Ltd.	370S	130 degree C.	OANZ2	UL	

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Clause	Requirement + Test	Result - Remark	Verdict

- Triple Insulated Winding Wire	Great Leoflon Industrial Co., Ltd.	TRW(B)	Rated 130 degree C.	OBJT2	UL	
Semiconductor (US1, US2, US3)	--	--	Rated 0.7A, minimum 650 V.	--	--	
Bridging -Capacitor (CY1)	TDK Corp	CD	Rated maximum 2200 pF, minimum 250 Vac, 125 degree C, Class Y1	FOWX2	UL	
Bridging -Capacitor (CY1) (Alternate)	Success Electronics Co Ltd	SE	Rated maximum 2200 pF, minimum 250 Vac, 125 degree C, Class Y1	FOWX2	UL	
Bridging -Capacitor (CY1) (Alternate)	WALSIN TECHNOLOGY CORP / Pan Overseas	AH	Rated maximum 2200 pF, minimum 250 Vac, 125 degree C, Class Y1	FOWX2	UL	
Transistor (Q1, Q2)	--	--	Rated 10A, minimum 600 V.	--	--	
Optical Isolator (U1)	Sharp Corp., Electronic Components Group	PC817	Minimum 3000 Vac isolation. Double protection.	FPQU2	UL	
Optical Isolator (U1) (Alternate)	Bright LED Electronics Corp.	BPC-817xxxxxx	Minimum 3000 Vac isolation. Double protection.	FPQU2	UL	
Optical Isolator (U1) (Alternate)	Lite-On Technology Corp.	LTV-817	Minimum 3000 Vac isolation. Double protection.	FPQU2	UL	
Internal Plastic Part Materials	Various	Various	Rated V-2 minimum.	QMFZ2	UL	
Internal Wiring (Primary)	Various	Various	FEP, PTFE, PVC, TFE, neoprene, Polyimide or marked VW-1; min. 300 V, min. 80 degree C.	AVLV2	UL	
Current sense resistor (R1)	--	--	0.27 ohm, 2W.	--	--	
Current sense resistor (R2)	--	--	0.24 ohm, 2W.	--	--	
Glue	Various	Various	V-2 min. Components (LF1, LF2, L1, L2, C4, R1, R2,	QMFZ2	UL	

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Clause	Requirement + Test	Result - Remark	Verdict

			Output cord) need			
- Tubing for Functional Earthing	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; rated minimum 125 degree C, minimum 300 V, thickness 0.4 mm minimum.	YDPU2	UL	
Insulation Tape (between C10 and Heat Sink (Cover))	3M Company	1350T-1	130 degree C.	OANZ2	UL	
Insulation Tape (between C10 and Heat Sink (Cover)) (Alternate)	Bondtec Pacific Co., Ltd.	370S	130 degree C.	OANZ2	UL	
Insulation sheet (between PWB and Appliance Inlet) (For GT-41069P9012-T3 Z, GT-41069PWWWV-X.X-T3 Z)	Various	Various	V-2 min, see Enclosure 4-13 for details	QMFZ2	UL	4-13
Insulation sheet for Heat Sink (Chassis)	FORMEX,DIV OF IL TOOL WORKS INC,FRMRLY FASTEX,DIV OF IL TOOL WORKS INC	FORMEX GK	V-2 min, thickness 0.4 mm minimum, see Enclosure 4-14 for details	QMFZ2	UL	4-14

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)						Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status	
--	--	--	--	--	--	Model: GT-41069P9012-T3YZ.	
FS1	--	90Vac/50Hz	104.44	1163	1163	Maximum normal load	
FS1	--	90Vac/60Hz	104.37	1162	1162	Maximum normal load	
FS1	1.5	100Vac/50Hz	103.56	1037	1037	Maximum normal load	
FS1	1.5	100Vac/60Hz	103.52	1037	1037	Maximum normal load	
FS1	1.5	240Vac/50Hz	101.53	432	432	Maximum normal load	
FS1	1.5	240Vac/60Hz	101.46	436	436	Maximum normal load	
FS1	--	254Vac/50Hz	101.44	411	411	Maximum normal load	
FS1	--	254Vac/60Hz	101.42	415	415	Maximum normal load	
FS1	--	264Vac/50Hz	101.37	397	397	Maximum normal load	
FS1	--	264Vac/60Hz	101.34	402	402	Maximum normal load	
--	--	--	--	--	--	Model: GT-41069P9019-T3YZ.	
FS1	--	90Vac/50Hz	101.97	1134	1134	Maximum normal load	
FS1	--	90Vac/60Hz	101.92	1134	1134	Maximum normal load	
FS1	1.5	100Vac/50Hz	101.20	1013	1013	Maximum normal load	
FS1	1.5	100Vac/60Hz	101.16	1013	1013	Maximum normal load	
FS1	1.5	240Vac/50Hz	99.57	425	425	Maximum normal load	
FS1	1.5	240Vac/60Hz	99.50	428	428	Maximum normal load	
FS1	--	254Vac/50Hz	99.45	403	403	Maximum normal load	
FS1	--	254Vac/60Hz	99.45	408	408	Maximum normal load	
FS1	--	264Vac/50Hz	99.40	390	390	Maximum normal load	
FS1	--	264Vac/60Hz	99.36	395	395	Maximum normal load	

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Clause	Requirement + Test				Result - Remark	Verdict
--	--	--	--	--	--	Model: GT-41069P9024-T3YZ.
FS1	--	90Vac/50Hz	101.57	1132	1132	Maximum normal load
FS1	--	90Vac/60Hz	101.50	1132	1132	Maximum normal load
FS1	1.5	100Vac/50Hz	100.75	1010	1010	Maximum normal load
FS1	1.5	100Vac/60Hz	100.72	1010	1010	Maximum normal load
FS1	1.5	240Vac/50Hz	99.55	424	424	Maximum normal load
FS1	1.5	240Vac/60Hz	99.47	428	428	Maximum normal load
FS1	--	254Vac/50Hz	99.43	403	403	Maximum normal load
FS1	--	254Vac/60Hz	99.42	407	407	Maximum normal load
FS1	--	264Vac/50Hz	99.35	389	389	Maximum normal load
FS1	--	264Vac/60Hz	99.31	394	394	Maximum normal load
supplementary information:						
Maximum normal load: Output connected to resistive load as rated and operated continuously.						

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements						Pass
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)	
GT-41069P9012-T3YZ.	--	--	--	--	--	--	
T1 Pin A TO T1 Pin 1	512	349	4.4	8.98	7.2	8.98	
T1 Pin A TO T1 Pin 2	460	315	4.2	8.98	6.8	8.98	
T1 Pin A TO T1 Pin 4	360	167	4	7.74	4	7.74	
T1 Pin A TO T1 Pin 5	364	165	4	7.74	4	7.74	
T1 Pin B TO T1 Pin 1	512	361	4.4	8.98	7.4	8.98	
T1 Pin B TO T1 Pin 2	412	317	4	8.98	6.8	8.98	
T1 Pin B TO T1 Pin 4	336	163	4	7.74	4	7.74	
T1 Pin B TO T1 Pin 5	394	165	4	7.74	4	7.74	
T1 Pin 9 To T1 Pin 1	526	184	4.4	8.98	4	8.98	
T1 Pin 9 To T1 Pin 2	168	64	4	8.98	4	8.98	
T1 Pin 9 To T1 Pin 4	176	67	4	7.74	4	7.74	
T1 Pin 9 To T1 Pin 5	208	77	4	7.74	4	7.74	
U1 Pin 1 TO U1 Pin 3	348	170	4	7.88	4	7.88	
U1 Pin 1 TO U1 Pin 4	346	169	4	7.65	4	7.65	



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Clause	Requirement + Test	Result - Remark	Verdict

U1 Pin 2 TO U1 Pin 3	346	170	4	7.64	4	7.64
U1 Pin 2 TO U1 Pin 4	346	168	4	7.86	4	7.86
CY1 Pin 1 TO CY1 Pin 2	354	174	4	7.33	4	7.33
D4 Pin 1 TO U1 Pin 2	418	183	4	7.81	4	7.81
C5 Pin 1 TO RS48 Pin 1	352	173	4	9.13	4	9.13
C5 Pin 1 TO RS49 Pin 1	354	174	4	9.13	4	9.13
GT-41069P9019-T3YZ.	--	--	--	--	--	--
T1 Pin A TO T1 Pin 1	548	344	4.4	8.98	7.2	8.98
T1 Pin A TO T1 Pin 2	486	302	4.2	8.98	6.6	8.98
T1 Pin A TO T1 Pin 4	426	178	4.2	7.74	4	7.74
T1 Pin A TO T1 Pin 5	422	175	4.2	7.74	4	7.74
T1 Pin B TO T1 Pin 1	556	364	4.4	8.98	7.6	8.98
T1 Pin B TO T1 Pin 2	392	300	4	8.98	6.4	8.98
T1 Pin B TO T1 Pin 4	350	173	4	7.74	4	7.74
T1 Pin B TO T1 Pin 5	406	175	4	7.74	4	7.74
T1 Pin 9 To T1 Pin 1	546	181	4.4	8.98	4	8.98
T1 Pin 9 To T1 Pin 2	174	72	4	8.98	4	8.98
T1 Pin 9 To T1 Pin 4	186	83	4	7.74	4	7.74
T1 Pin 9 To T1 Pin 5	220	86	4	7.74	4	7.74
U1 Pin 1 TO U1 Pin 3	356	176	4	7.88	4	7.88
U1 Pin 1 TO U1 Pin 4	352	174	4	7.65	4	7.65
U1 Pin 2 TO U1 Pin 3	352	175	4	7.64	4	7.64
U1 Pin 2 TO U1 Pin 4	352	174	4	7.86	4	7.86
CY1 Pin 1 TO CY1 Pin 2	350	172	4	7.33	4	7.33
D4 Pin 1 TO U1 Pin 2	410	177	4	7.81	4	7.81
C5 Pin 1 TO RS48 Pin 1	350	172	4	9.13	4	9.13
C5 Pin 1 TO RS49 Pin 1	348	172	4	9.13	4	9.13
GT-41069P9024-T3YZ.	--	--	--	--	--	--
T1 Pin A TO T1 Pin 1	560	355	4.4	8.98	7.4	8.98
T1 Pin A TO T1 Pin 2	502	305	4.4	8.98	6.6	8.98
T1 Pin A TO T1 Pin 4	426	180	4.2	7.74	4	7.74
T1 Pin A TO T1 Pin 5	416	175	4	7.74	4	7.74
T1 Pin B TO T1 Pin 1	572	377	4.6	8.98	7.8	8.98
T1 Pin B TO T1 Pin 2	394	303	4	8.98	6.6	8.98
T1 Pin B TO T1 Pin 4	356	174	4	7.74	4	7.74
T1 Pin B TO T1 Pin 5	412	177	4	7.74	4	7.74
T1 Pin 9 To T1 Pin 1	551	188	4.4	8.98	4	8.98
T1 Pin 9 To T1 Pin 2	176	58	4	8.98	4	8.98
T1 Pin 9 To T1 Pin 4	179	67	4	7.74	4	7.74
T1 Pin 9 To T1 Pin 5	215	82	4	7.74	4	7.74
U1 Pin 1 TO U1 Pin 3	376	191	4	7.88	4	7.88
U1 Pin 1 TO U1 Pin 4	374	190	4	7.65	4	7.65
U1 Pin 2 TO U1 Pin 3	378	190	4	7.64	4	7.64
U1 Pin 2 TO U1 Pin 4	374	189	4	7.86	4	7.86
CY1 Pin 1 TO CY1 Pin 2	334	162	4	7.33	4	7.33
D4 Pin 1 TO U1 Pin 2	432	192	4.2	7.81	4	7.81
C5 Pin 1 TO RS48 Pin 1	334	162	4	9.13	4	9.13

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Clause	Requirement + Test	Result - Remark	Verdict

C5 Pin 1 TO RS49 Pin 1	332	162	4	9.13	4	9.13
supplementary information:						
- Functional Insulation employed and complied with the requirements of 5.3.4 (a), (b), or (c).						

2.10.5	<b>TABLE: distance through insulation measurements</b>				Pass
distance through insulation di at/of:		Up (V)	test voltage (V)	required di (mm)	di (mm)
Optical Isolator (U1)		420	3000Vac	0.4	>0.4
supplementary information:					
--					

4.5	<b>TABLE: temperature rise measurements</b>					Pass
	test voltage (V).....	--	--	--	--	—
	t1 (°C).....	--	--	--	--	—
	t2 (°C).....	--	--	--	--	—
maximum temperature T of part/at:		T (°C)				allowed Tmax (°C)
Model: GT-41069P9012-T3YZ.		--	--	--	--	--
Test condition		90V, 60Hz (Label down)	264V, 60Hz (Label down)	90V, 60Hz (Label up)	264V, 60Hz (Label up)	--
Duration (hrs)		3	3.28	3.38	3	--
1.AC Inlet		62.0	54.0	63.4	54.9	70
2.LF1 coil		90.1	73.7	93.7	75.1	130
3.LF2 coil		109.7	79.9	115.0	81.9	130
4.L1 coil		96.1	78.8	101.8	81.4	130
5.L2 coil		107.7	80.8	111.5	82.3	130
6.L3 coil/C10		93.4	84.1	95.8	85.4	130
7.T1 coil		98.9	84.6	103.8	86.7	110
8.T1 core		96.3	81.9	101.5	83.9	110
9.U1 body		95.4	84.2	97.1	84.5	100
10.CY1 body		91.9	78.2	93.2	77.3	125
11.CX1 body		93.5	76.3	99.3	78.9	100
12.C4 body		98.4	83.2	103.1	85.2	105
13.BD1 body		106.4	80.2	114.5	83.1	130
14.PCB under Q2		100.6	83.5	103.8	84.0	130
15. PCB under Q1/D1		107.2	85.7	110.8	86.7	130

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Clause	Requirement + Test			Result - Remark		Verdict

16. PCB under Q3	94.4	84.8	97.0	85.7	--	130
17.MOV1 body	86.2	72.3	89.9	74.0	--	130
18.Inside Enclosure near T1	81.4	70.8	91.3	76.9	--	95
19.Outside Enclosure near T1	51.6	48.7	70.7	62.6	--	95
20.Ambient	40.7	40.7	41.0	40.7	--	--
Model: GT-41069P9019-T3YZ.	--	--	--	--	--	--
Test condition	90V, 60Hz (Label down)	264V, 60Hz (Label down)	90V, 60Hz (Label up)	264V, 60Hz (Label up)	--	--
Duration (hrs)	3.6	2.56	3.31	2.83	--	--
1.AC Inlet	58.9	53.1	62.8	54.8	--	70
2.LF1 coil	86.2	72.3	86.2	71.7	--	130
3.LF2 coil	101.5	76.4	104.3	78.0	--	130
4.L1 coil	93.6	77.3	96.1	78.7	--	130
5.L2 coil	96.3	76.5	100.2	78.6	--	130
6.L3 coil/C10	76.9	71.2	75.3	69.5	--	130
7.T1 coil	87.2	77.6	90.1	79.0	--	110
8.T1 core	86.4	77.1	89.1	78.0	--	110
9.U1 body	85.8	78.5	86.1	78.0	--	100
10.CY1 body	82.0	72.6	83.9	73.4	--	125
11.CX1 body	89.8	74.6	91.3	74.9	--	100
12.C4 body	87.1	75.3	91.6	77.6	--	105
13.BD1 body	99.3	76.4	103.4	78.6	--	130
14.PCB under Q2	90.3	78.2	92.9	79.3	--	130
15. PCB under Q1/D1	102.0	84.3	104.0	84.9	--	130
16. PCB under Q3	86.0	80.4	85.8	79.5	--	130
17.MOV1 body	83.8	72.0	84.3	71.4	--	130
18.Inside Enclosure near T1	69.9	62.4	79.8	69.2	--	95
19.Outside Enclosure near T1	47.4	45.8	62.4	57.0	--	95
20.Ambient	40.4	40.4	40.8	40.5	--	--
Model: GT-41069P9024-T3YZ.	--	--	--	--	--	--
Duration (hrs)	3.31	2.61	3.41	3.3	--	--
1.AC Inlet	57.0	52.1	59.3	53.4	--	70
2.LF1 coil	85.6	73.2	88.5	75.1	--	130
3.LF2 coil	100.3	78.9	104.3	81.4	--	130
4.L1 coil	90.3	77.5	95.2	80.7	--	130
5.L2 coil	101.4	80.1	104.5	82.3	--	130
6.L3 coil/C10	81.6	75.9	81.2	75.6	--	130
7.T1 coil	88.0	78.7	90.8	80.6	--	110
8.T1 core	89.0	78.6	92.7	81.2	--	110
9.U1 body	87.6	81.1	87.0	80.5	--	100
10.CY1 body	84.9	75.3	86.9	76.7	--	125
11.CX1 body	88.7	75.1	93.0	77.9	--	100
12.C4 body	94.5	84.1	96.6	85.5	--	105

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Clause	Requirement + Test	Result - Remark	Verdict

13.BD1 body	101.6	79.4	105.9	82.3	--	130
14.PCB under Q2	93.0	82.2	95.7	83.8	--	130
15. PCB under Q1/D1	100.9	84.4	103.5	86.1	--	130
16. PCB under Q3	85.8	81.5	86.2	81.7	--	130
17.MOV1 body	82.1	71.6	84.7	73.2	--	130
18.Inside Enclosure	76.5	68.1	85.1	74.6	--	95
19.Outside Enclosure	47.2	45.7	63.9	59.8	--	95
20.Ambient	40.7	40.7	41.0	41.0	--	--
temperature T of winding:		R <sub>1</sub> (Ω)	R <sub>2</sub> (Ω)	T (°C)	allowed Tmax (°C)	insulation class
--		--	--	--	--	--

supplementary information:

-- The temperatures were measured by thermal couple under worst case normal mode defined in 1.2.2.1 and described in 1.6.2 at voltages as described in 1.4.5.

-- With maximum ambient temperature specified as 40 degree C, therefore, the maximum temperature is as follows:

-- Winding components: (thermal couple used)  
Class B (Transformers: T1) -> Tmax = 120 - 10 = 110 degree C

-- Components with:  
max. absolute temp. of 70 degree C (Inlet).  
max. absolute temp. of 100 degree C (U1, CX1);  
max. absolute temp. of 105 degree C (C4);  
max. absolute temp. of 125 degree C (CY1);  
max. absolute temp. of 130 degree C (PWB)

-- User accessible area:  
Plastic Enclosure: 95 degree C

4.5.2	TABLE: ball pressure test of thermoplastics			N/A
	allowed impression diameter (mm) ..... :			—
part		test temperature (°C)	impression diameter (mm)	
supplementary information:				

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4.7	<b>TABLE: resistance to fire</b>			Pass
part	manufacturer of material	type of material	thickness(mm)	flammability class
--	--	--	--	--
supplementary information:				
See Critical Components for details.				

5.2	<b>TABLE: electric strength tests, impulse tests and voltage surge tests</b>		Pass
test voltage applied between:		test voltage (V) a.c./d.c.	breakdown Yes / No
2.10.5.2, 2.9.5 Transformer/Insulation Electric Strength Test		--	--
One layer of insulation Tape for T1 3M Company / 1350T-1, 1350F(#), 44 Bondtec Pacific Co., Ltd. / 370S		3000 Vac	No
Transformer (T1) Primary to Secondary		3000 Vac	No
Transformer (T1) Secondary to Core		3000 Vac	No
5.2.2 Electric Strength Test		--	--
Unit Primary to Secondary Output		3000 Vac	No
Unit Primary to Enclosure with foil		3000 Vac	No
Tubing (For HS1 and HS2): CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD / CB-HFT		3000 Vac	No
Tubing for Functional Earthing: GUANGZHOU KAIHENG ENTERPRISE GROUP / K-2		3000 Vac	No
Insulating Tape (between C10 and Heat Sink (Cover)): 3M Company / 1350T-1		3000 Vac	No
Insulation sheet for Heat Sink (Chassis): FORMEX,DIV OF IL TOOL WORKS INC,FRMRLY FASTEX,DIV OF IL TOOL WORKS INC / FORMEX GK		3000 Vac	No
supplementary information:			
--			

5.3	<b>TABLE: fault condition tests</b>		Pass
	ambient temperature (°C) .....	25 degree C, if ambient not specified.	—
	model/type of power supply .....	--	—
	manufacturer of power supply .....	--	—
	rated markings of power supply.....	--	—

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component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
--	--	--	--	--	5.3.1, 5.3.4, 5.3.6	Component Failure Test
--	--	--	--	--	--	Model: GT-41069P9012-T3YZ.
BD1	Short	240Vac/ 60Hz	1sec	FS1	0.438 to 0	NB,NC,NT,CD(FS1) (b)
C4	Short	240Vac/ 60Hz	1sec	FS1	0.438 to 0	NB,NC,NT,CD(FS1) (b)
Q3	Short	240Vac/ 60Hz	1sec	FS1	0.438 to 0.26	NB,NC,NT,IP(US2) (a)
U1 Pin 1-2	Short	240Vac/ 60Hz	1sec	FS1	0.438 to 0.045	NB,NC,NT,IP(US2) (a)
U1 Pin 3-4	Short	240Vac/ 60Hz	1sec	FS1	0.438 to 0.044	NB,NC,NT,IP(US2) (a)
U1 Pin 1	Open	240Vac/ 60Hz	1sec	FS1	0.438 to 0.043	NB,NC,NT,IP(US2) (a)
U1 Pin 3	Open	240Vac/ 60Hz	1sec	FS1	0.438 to 0.043	NB,NC,NT,IP(US2) (a)
Q1(G-D)	Short	240Vac/ 60Hz	1sec	FS1	0.442 to 0	NB,NC,NT,CD(FS1,Q1,R1) (b)
Q1(D-S)	Short	240Vac/ 60Hz	1sec	FS1	0.440 to 0	NB,NC,NT,CD(FS1,Q1,R1) (b)
Q1(G-S)	Short	240Vac/ 60Hz	6.5hrs	FS1	0.699	NB,NC,NT, (c)
Q2(G-D)	Short	240Vac/ 60Hz	1sec	FS1	0.440 to 0	NB,NC,NT,CD(FS1,Q2,R2) (b)
Q2(D-S)	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0	NB,NC,NT,CD(FS1,Q2,R2) (b)
Q2(G-S)	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0.041	NB,NC,NT,IP(US2) (a)
R1	Short	240Vac/ 60Hz	4.1hrs	FS1	0.962 to 0.054	NB,NC,NT, Unit shutdown after fault condition at 90 mins.
R2	Short	240Vac/ 60Hz	1sec	FS1	0.438 to 0.042	NB,NC,NT,IP(US2) (a)
US1 Pin 5-6	Short	240Vac/ 60Hz	3.4hrs	FS1	0.703	NB,NC,NT, (c)
US1 Pin 6-7	Short	240Vac/ 60Hz	4.2hrs	FS1	0.712	NB,NC,NT, (c)
US2 Pin 2-6	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0.042	NB,NC,NT,IP(US2) (a)
US2 Pin 4-6	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0.042	NB,NC,NT,IP(US2) (a)
US2 Pin 5-6	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0.042	NB,NC,NT,IP(US2) (a)

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Clause	Requirement + Test			Result - Remark		Verdict
US2 Pin 3	Open	240Vac/ 60Hz	1sec	FS1	0.439 to 0.041	NB,NC,NT,IP(US2) (a)
US3 Pin 5-6	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0.052	NB,NC,NT,IP(US2) (a)
US3 Pin 6-7	Short	240Vac/ 60Hz	1sec	FS1	0.439 to 0.052	NB,NC,NT,IP(US2) (a)
--	--	--	--	--	5.3.3, 5.3.6b, Annex C.1	Transformer Abnormal Operation Test
--	--	--	--	--	--	Model: GT-41069P9012-T3YZ.
T1 after Q3	Short	240Vac/ 60Hz	10min	FS1	0.438 to 0.176	NB,NC,NT,IP(US2) (a)
T1 after Q3	Overload	240Vac/ 60Hz	10.8hr	FS1	0.471 to 0.045	NB,NC,NT,IP(US2),unit shutdown,while the output loaded to 8.0A, T1 coil:113.4 degree C, T1 core:106.5 degree C, Amb:23.8 degree C, no hazards.
--	--	--	--	--	--	Model: GT-41069P9019-T3YZ.
T1 after Q3	Short	240Vac/ 60Hz	10min	FS1	0.431 to 0.158	NB,NC,NT,IP(US2) (a)
T1 after Q3	Overload	240Vac/ 60Hz	10.5hr	FS1	0.490 to 0.04	NB,NC,NT,IP(US2),unit shutdown,while the output loaded to 5.44A, T1 coil:94.6 degree C, T1 core:90.0 degree C, Amb:24.0 degree C, no hazards.
--	--	--	--	--	--	Model: GT-41069P9024-T3YZ.
T1 after Q3	Short	240Vac/ 60Hz	10min	FS1	0.429 to 0.146	NB,NC,NT,IP(US2) (a)
T1 after Q3	Overload	240Vac/ 60Hz	9.8hr	FS1	0.562 to 0.042	NB,NC,NT,IP(US2),unit shutdown,while the output loaded to 5.05A, T1 coil:101.0 degree C, T1 core:96.9 degree C, Amb:23.3 degree C, no hazards.
--	--	--	--	--	5.3.6	Power Supply Output Short- Circuit/ Overload
--	--	--	--	--	--	Model: GT-41069P9012-T3YZ.
Output	Short	240Vac/ 60Hz	10min	FS1	0.436 to 0.172	NB,NC,NT,IP(US2) (a)
Output	Overload	240Vac/	9hr	FS1	0.485 to 0.041	NB,NC,NT,IP(US2),unit

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Clause	Requirement + Test	Result - Remark	Verdict

		60Hz				shutdown,while the output loaded to 8.4A, T1 coil:102.1, degree C, T1 core:96.5 degree C, Amb:24.2 degree C, no hazards.
--	--	--	--	--	--	Model: GT-41069P9019-T3YZ.
Output	Short	240Vac/ 60Hz	10min	FS1	0.427 to 0.156	NB,NC,NT,IP(US2) (a)
Output	Overload	240Vac/ 60Hz	10.3hr	FS1	0.479 to 0.041	NB,NC,NT,IP(US2),unit shutdown,while the output loaded to 5.34A, T1 coil:99.6, degree C, T1 core:92.1 degree C, Amb:25.5 degree C, no hazards.
--	--	--	--	--	--	Model: GT-41069P9024-T3YZ.
Output	Short	240Vac/ 60Hz	10min	FS1	0.429 to 0.146	NB,NC,NT,IP(US2) (a)
Output	Overload	240Vac/ 60Hz	10.4hr	FS1	0.556 to 0.043	NB,NC,NT,IP(US2),unit shutdown,while the output loaded to 4.95A, T1 coil:100.7, degree C, T1 core:95.5 degree C, Amb:25.3 degree C, no hazards.

supplementary information:

Comments Key: IP - Internal protection operated (list component). CT - Constant temperatures were obtained. TW - Transformer winding opened. CD - Components damaged (list damaged components). NB - No indication of dielectric breakdown. YB - Dielectric breakdown (indicate time and location). NC - Cheesecloth remained intact. YC - Cheesecloth charred or flamed. NT - Tissue paper remained intact. YT - Tissue paper charred or flamed. (a) - Unit shutdown instantly. (b) - Fuse open instantly. (c) - Unit operated normally and no hazard, no damaged. Component Failure Test: Test items interrupted by the opening of Fuse (FS1) were repeated with following source. (1) WALTER ELECTRONIC CO LTD / ICP, (2) DAS & SONS INTERNATIONAL LTD / 385T1315, (3) Conquer Electronics Co Ltd / MST, (4) SAVE FUSETECH INC / SS-5.



**Enclosure**  
**National Differences**

USA / Canada

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

USA / Canada - Differences to IEC 60950-1:2001, First 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.	INTERCONNECTING CABLES used complied with the relevant requirements of this standard.	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

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
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	Screw shell of Edison-base lampholder tied to the neutral conductor.		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	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications when		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
	subjected to special construction requirements and routine testing.		
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
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 neither a) or b) are 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
2.10.5.4	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.4 and		Pass

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

	Annex U.		
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.	All internal wires possess adequate cross-sectional areas for their intended application and all internal wirings are adequately insulated.	Pass
3.1.1	All interconnecting cables protected against overcurrent and short circuit.	All INTERCONNECTING CABLES possess adequate cross-sectional areas for their intended application and all internal wirings are adequately insulated.	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.		Pass
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		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	equipment.		
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 (0.82 mm <sup>2</sup> ) and not less than 152 mm in length for connection of field installed wiring.		N/A
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.		Pass
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		Pass
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		Pass
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		Pass
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		N/A

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SubClause	Difference + Test	Result - Remark	Verdict

	than those specified in 3.3 if wiring is reliably separated.		
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
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
4.3.2	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.		N/A
4.3.12	The maximum quantity of flammable liquid stored		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	in equipment complies with ANSI/NFPA 30(Table NAE.6).		
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 comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
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.		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
5.3.6	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.		N/A
5.3.6	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.8.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A



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SubClause	Difference + Test	Result - Remark	Verdict
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 telecommunication network.		N/A
6.2.1	Special requirements for enameled wiring used as electrical separation provided between parts connected to telecommunication network and telecommunication circuitry intentionally isolated from network.		N/A
6.2.1	Digital line termination equipment (e.g., NCTE) subject to separation requirements.		N/A
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
6.5	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
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

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SubClause	Difference + Test	Result - Remark	Verdict

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
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 to the user, as determined using the articulated accessibility probe (figure NAF.1) and the accessibility probe/wedge (figures NAF.2/NAF.3).		N/A